Lessons Learned by the National Technical Review Committee for the Louisiana Coastal Area Study

September 2004

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TABLE OF CONTENTS

ABBREVIATIONS v

EXECUTIVE SUMMARY viii

INTRODUCTION 1
Purpose 1
Background 1
Louisiana Coastal Area Study 2
National Technical Review Committee 2
Methodology and Organization of the Paper 3
Appreciation 4

LESSONS LEARNED IN RESPONSE TO FIVE QUESTIONS 5
Question #1: What has been the best thing about the NTRC experience? 5
Question #2: What has been the worst thing about the NTRC experience? 6
Question #3: What one thing did the NTRC not do that it should have done? 9
Question #4: What is the NTRC's most important lesson to pass along to any future committee that may be similarly involved with a large, complex comprehensive Corps' study? 11
Question #5: Other lessons learned from the NTRC experience to pass along to the Corps and future committees. 14
Comments of Others. 22

LESSON THEMES ACROSS QUESTIONS 25
A national review group adds value to a Corps' study. 25
The host Corps' office must think through the structure, process and use of a national review group 25
Reach an early agreement on the structure, process and use of a national review group 28

REFERENCES 29

EXHIBIT
Exhibit 1 – Process – Provide supporting staff, meeting infrastructure and supplies, and break time 15

ABBREVIATIONS

CD	Compact Disc
ERDC	Engineer Research and Development Center
FACA	Federal Advisory Committee Act
LCA	Louisiana Coastal Area (study)
NGO	Non-Governmental Organization
NTRC	National Technical Review Committee, also referred to as the “Committee”
VE	Value Engineering

EXECUTIVE SUMMARY

This paper presents the lessons that ten scientists and engineers learned about the function of a national review committee for a major U.S. Army Corps of Engineers water resources study. The study was the Louisiana Coastal Area Study, and the committee was the National Technical Review Committee (NTRC). The Committee members hope that these lessons will enlighten and provide advice to future members of similar committees, team members and others who participate in Corps' studies, as well as people interested in review of comprehensive, complex, controversial studies of our nation's natural resources and infrastructure.

Lessons learned were collected as responses to five questions asked of the Committee members. The questions and a summary of the members' key responses are:

What has been the best thing about the NTRC experience?

- The Committee made a difference with the Corps.
- The Committee was a worthwhile professional and personal experience.

What has been the worst thing about the NTRC experience?

- Lack of responses to the Committee's comments.
- The Committee's business process was generally disorganized.
- The Committee's business process had specific flaws.
- The Committee's purpose was not clearly defined.
- The Committee was engaged too late in the study process.

What one thing did the NTRC not do that it should have done?

- Early and clearly defined the purpose, business process and other rules of the Committee.
- Worked harder at insisting that the Corps pay attention to the Committee's comments.

What is the NTRC's most important lesson to pass along to any future committee that may be similarly involved with a large, complex, comprehensive Corps' study?

- A review group is a valuable addition to a Corps' study.
- Think through the review group's business process and related issues.
- A review group should be involved and clearly organized early.
- Resolve Federal Advisory Committee Act (FACA) questions.

Do you have any other lessons learned from the NTRC experience to pass along to the Corps and future committees?

- Business process lessons:
    - Clearly define the committee's purpose.
    - Develop good meeting agenda.
    - Provide read-ahead material.
    - Provide supporting staff, meeting infrastructure and supplies, and break time.
    - Agree on reaching agreement.
    - Think through documentation and recommendations.
    - Respond to comments.
    - Think through schedule and time.
    - Vary the meeting location.
- Membership lessons:
    - Address who should be on the committee.
    - Appoint a strong chairperson.
    - Compensate members fairly.
    - Respect members' names.
    - Address whether the committee should be interactive or independent.
    - Educate participants.

Looking across all the Committee members' responses suggests several important cross-cutting themes that should be considered if the Corps establishes national review groups of its water resource studies in the future:

- A national review group adds value to a Corps' study.
- The host Corps' office must think through the structure, process and use of a national review group, including:
    - What's the group's purpose?
    - Will the group be independent or interactive?
    - How will group members be treated?
    - What will be done with the group's comments?
    - What is the schedule and timing of group activities?
    - What's needed to support the group?
- Reach an *early* agreement on the structure, process and use of a national review group.

While the National Technical Review Committee found much that should lead to improvements for future groups, it strongly believes that seeking top professional advice during the course of study is the right thing for the Corps to do. And, the Committee members found their experiences to be professionally and personally rewarding. As one of our number remarked, *"It is exciting to be involved in this."*

INTRODUCTION

Purpose

This paper presents the lessons that ten scientists and engineers learned about the function of a national review committee for a major U.S. Army Corps of Engineers water resources study. The study was the Louisiana Coastal Area Study and the committee was the National Technical Review Committee. The Committee members hope that these lessons will enlighten and provide advice to future members of similar committees, team members and others who participate in Corps' studies, as well as people interested in review of comprehensive, complex, controversial studies of our nation's natural resources and infrastructure.

Background

Through its Civil Works program, the U.S. Army Corps of Engineers plans, designs and constructs projects to reduce flood damages, improve commercial navigation, restore degraded ecosystems, and manage the nation's water and related land resources. If, during the initial planning phase, a feasible and justified project to solve a water problem is identified, the Corps prepares a report that will eventually be sent to the United States Congress requesting approval to implement the project.

Corps' reports have a long history of undergoing various reviews as they are prepared and work their way to the Congress. The National Research Council's ***Review Procedures for Water Resources Project Planning*** (2002) presents an excellent overview of that history and procedures related to the review of Corps' planning reports. The Council's report also commented on the role of review in the Corps' process:

> *"Whatever type of review process is implemented within the Corps, the role of review panels should be to identify, evaluate, explain, and comment on key assumptions that underlie technical, economic, and environmental analysis. Review panels should highlight areas of disagreement and controversies to be resolved by the Administration and Congress. A review panel should be given the freedom to comment on those topics it deems relevant to decision makers, leaving it to the recipient of the review to decide whether those issues constitute 'technical' issues or "policy" issues. Review panels should also be able to evaluate whether interpretations of analysis and conclusions based on analysis are reasonable. But review panels should not be tasked to provide a final "thumbs up/thumbs down" judgment on whether a particular alternative from a planning study should be implemented, as the Corps of Engineers is ultimately responsible for this final decision."*

In recent years, various interests have advocated independent peer reviews of Corps' reports by unbiased external experts, and this view has been included in proposed legislation affecting the Corps. In September 2003 the United States House of Representatives approved the Water Resources Development Act of 2003. Among its provisions, the Act establishes a peer review process for Corps' projects. "It sets a $50

million cost threshold for mandatory peer reviews of project studies, with certain discretionary exemption authorities for the Chief of Engineers appealable by a governor or federal or state agency head". Such reviews are to be conducted by a peer review panel and are limited to "scientific and technical matters, not policy or compliance with law. The Chief of Engineers must respond in writing to peer review, but review recommendations are only advisory" (U.S. House of Representatives 2003).

More recently, in June 2004 the United States Senate introduced its Water Resources Development Act of 2004, which also includes provisions for independent reviews of Corps' studies or reports. The Senate language requires the Inspector General of the Army to convene independent peer review panels to report on "the economic, engineering, and environmental analyses of the project". The Chief of Engineers would be required to prepare a written response to peer review reports (U.S. Senate 2004). At the time of this writing the Congress has not acted on either the House or Senate bills.

Louisiana Coastal Area Study

The Louisiana Coastal Area Ecosystem Restoration Study (popularly called the LCA Study) is a major feasibility planning study of coastal Louisiana. The study is being conducted by the U.S. Army Corps of Engineers, New Orleans District and the State of Louisiana, Department of Natural Resources, in partnership with other public agencies and public interests. The study's purpose is to investigate ways to sustain a coastal ecosystem that supports and protects the environment, economy and culture of southern Louisiana and that contributes greatly to the economy and well-being of the nation. The current feasibility phase of planning was initiated in 1999, and a report is expected to be sent to the Congress in late 2004. Additional information about the study is available from the study website at www.lca.gov.

National Technical Review Committee

The National Technical Review Committee was established in early 2002 by the Corps' New Orleans District office to "provide an external, independent technical review of the Louisiana Coastal Area study through a close coordination with the study team. Their purpose is to ensure quality and credibility" (U.S. Army Corps of Engineers 2003).

The Committee consisted of ten scientific and engineering experts recognized in their respective fields. Committee members, their affiliations and expertise were:

- Dr. John Day, Louisiana State University, Baton Rouge, Louisiana, coastal ecology and management. Dr. Day served as the Chairperson of the NTRC.
- Dr. Donald Bosch, University of Maryland, Cambridge, Maryland, estuarine ecology and management.
- Dr. William Mitsch, The Ohio State University, Columbus, Ohio, wetlands ecology and water quality.
- Kenneth Orth, U.S. Army Corps of Engineers, Institute for Water Resources, Alexandria, Virginia, water resources planning.
- Dr. Leonard Shabman, Resources for the Future, Washington DC, economics.
- Charles Simenstad, University of Washington, Seattle, Washington, fisheries.

- Dr. William Streever, BP Exploration (Alaska), Inc., Anchorage, Alaska, wetland ecology and restoration.
- Dr. Chester Watson, Colorado State University, Fort Collins, Colorado, river engineering.
- Dr. John Wells, The Virginia Institute of Marine Sciences, Gloucester Point, Virginia (formerly with The University of North Carolina at Chapel Hill, Morehead City, North Carolina), coastal engineering and geomorphology.
- Dr. Dennis Whigham, The Smithsonian Institution, Edgewater, Maryland, wetlands ecology.

The Committee met nine times at the New Orleans District office. Meeting dates were:

- June 10-13, 2002
- August 25-28, 2002
- January 6-9, 2003
- March 10-13, 2003
- April 21-24, 2003
- July 22-24 2003
- November 4-6, 2003
- April 27-29, 2004
- August 16-17, 2004

Each meeting usually consisted of an initial day of briefings to the Committee by Louisiana Coastal Area study team members and other experts, a day and a half of closed-door sessions for writing and discussion among Committee members, and an out-briefing of the Committee's comments to a study team representative.

During and immediately after each meeting, NTRC members prepared their individual comments that covered a wide range of scientific and engineering issues, including:

- General planning and socioeconomic elements.
- Scientific and conceptual bases for restoration and management.
- Specific plan elements.
- Future trends issues.

The Committee's comments were not intended to represent a consensus of opinion among the different scientists but rather to maintain an open and objective discussion of ideas and suggested courses of action.

Committee comments were discussed with a representative of the study team at each meeting's out-briefing for immediate incorporation into the planning process. And, after each meeting, the Committee report was updated to reflect recent discussions. Thus the report represented a living document through August 2004 when the final NTRC report was presented to the study team.

Methodology and Organization of the Paper

By the time the NTRC met in its third meeting the members recognized that the process they were experiencing was resulting in some early successes and opportunities as well as problems and failures. The Committee agreed that it would be valuable to begin to

capture these lessons and document them in a paper that could be useful to future similar committees.

In January 2003 Committee members were asked to begin individually documenting the lessons they were learning by responding to a survey with the following questions:

- What has been the best thing about the NTRC experience?
- What has been the worst thing about the NTRC experience?
- What one thing did the NTRC not do that it should have done?
- What is the NTRC's most important lesson learned that it should pass along to future committees that may be similarly involved with a large, complex comprehensive Corps' study?
- Please list any other lessons learned from the NTRC experience that you would like to pass along to the Corps and future committees.

Committee members submitted their responses between February and July 2003. The responses were analyzed by question and in total to identify recurring themes. An initial draft paper presenting the results was prepared in October 2003 and critiqued during the November 2003 meeting. The draft was updated during the summer of 2004 and completed following the August 2004 meeting. This final paper presents a collection of the key lessons learned by the NTRC during its association with the Louisiana Coastal Area study. The lessons are presented in the member's own words to preserve their original incisive intent.

This paper is organized in three chapters. This introductory chapter describes the paper's purpose, and provides overviews of the Coastal Louisiana Area study, the National Technical Review Committee, and the methodology and organization for this paper. The next chapter presents the lessons learned in response to each of the five survey questions. The final chapter summarizes the key lesson themes that emerged across all the survey questions.

Appreciation

The Committee extends its deepest appreciation to the members of the Louisiana Coastal Area Study team and others who briefed and met with the NTRC. Mr. Troy Constance of the Corps' New Orleans District and Mr. Jon Porthouse of the Louisiana Department of Natural Resources, the study's co-managers, were always helpful and forthcoming in our discussions. We especially appreciate the support of Dr. Buddy Clairain and Dr. Russ Theriot, both of the Corps' Engineer Research and Development Center, in assisting with logistics and other administrative matters.

The Committee also thanks Ms. Susan Durden of the Corps' Institute for Water Resources and Ms. Carol Sanders, the Corps' Chief of Public Affairs, for their assistance in reviewing and analyzing the Committee members' survey responses.

LESSONS LEARNED IN RESPONSE TO FIVE QUESTIONS

This chapter presents the NTRC members' lessons learned in response to each of the five survey questions:

- Question #1 - What has been the best thing about the NTRC experience?
- Question #2 - What has been the worst thing about the NTRC experience?
- Question #3 - What one thing did the NTRC not do that it should have done?
- Question #4 - What is the NTRC's most important lesson learned that it should pass along to future committees that may be similarly involved with a large, complex comprehensive Corps' study?
- Question #5 - Please list any other lessons learned from the NTRC experience that you would like to pass a long to the Corps and future committees.

Question #1 - What has been the best thing about the NTRC experience?

Committee members' responses sounded two main themes in response to this question: that the NTRC made a difference with the Corps, and that the NTRC was a worthwhile professional and personal experience.

- **The Committee Made a Difference With the Corps.**

"Being in a position to make a potentially material difference <u>within</u> the process: It is relatively rare to serve in an independent consultative capacity and find that your collective advice is being seriously considered and even incorporated into the emerging products."

"I have felt that the overall study has been modified to accommodate at least some of the NTRC comments. In other words the participation in the NTRC appears to have influenced the scope and quality of the study (although we have yet to see written products so this remains more an assumption than a matter of evidence.)"

"…it seems clear that the NTRC will have some influence on the plan put forward to Congress… The very fact that the Corps is attempting to convene something like an NTRC seems promising."

"The best point about the Committee was that the Corps chose to have such a group at all. The Committee understood that this was the Corps' first attempt at such an arrangement and commends the Corps for taking this step."

"Forcing openness in the Corps' approach and working on what is clearly a national problem of the first order."

"Being part of an effort that, to date, has not been part of the COE culture and seeing that there is recognition that large-scale projects of the type proposed for coastal Louisiana can not be developed without appropriate conceptual planning."

"The positive feedback that the advice offered on a very important problem resulted in positive improvements in the study process and outcome."

"Providing input to the Corps, well ahead of project implementation, of suggested strategies in ecological approaches that will enhance their probabilities of success of the restoration project."

"Providing the Corps with a sound scientifically based form for bouncing their ideas."

- **The Committee Was a Worthwhile Professional and Personal Experience.**

"I have enjoyed and professionally benefited from the direct access to the technical leadership of this study, as they have led a planning effort for a complex and important topic of national interest. This participation has enhanced my understanding of the difficulty of planning at this scale, while accommodating multiple stakeholders."

"The effect of that position [described in the previous response] is amplified when working in a cordial, multidisciplinary group such as this NTRC because you have an opportunity to get expert feedback on your ideas and recommendations. There are many NTRC members with expertise both of Louisiana coastal processes and broader ecosystem-scale dynamics who can clarify processes about which others of us may be less knowledgeable, appraise critical assumptions and bring pertinent scientific literature and knowledge to bear on the question at hand."

"The most positive aspect of the NTRC experience has been the interaction among such a knowledgeable group of scientists working towards a problem of national significance. NTRC members had their "hearts in it" and were a well-versed and well-prepared group of individuals. I personally learned new information outside my general field of expertise each day of each meeting."

"Observing the synergism that operates when a group of individuals with differing experiences and skills apply themselves to a single effort."

"It is exciting to be involved in this."

Question #2 - What has been the worst thing about the NTRC experience?

The Committee's responses raised particular concerns about the lack of responses to its comments, and general and specific concerns about the process of conducting the Committee's business. Some Committee members also observed that the Committee's purpose was not clearly defined and that it was engaged too late in the LCA Study process.

- **Lack of Responses to the Committee's Comments.**

"The Committee and the Corps should have agreed early in the process on how Committee comments – advice and questions – would be exchanged. When the Committee provided comments it anticipated Corps reactions and responses, but it was not clear what the Corps did with the Committee's input. There should have been a better understanding and process for writing Committee comments, receiving written Corps' responses, and documenting the Committee's satisfaction with Corps' responses."

"Lack of explicit feedback on NTRC comments and recommendations: Feedback from the Corps and partners has been exceedingly inconsistent and unspecific."

"The lack of genuine response in many respects. Also, working on such a short time frame (which in many respects seems unnecessary)."

"…it is remarkable that the New Orleans District is asking us to be involved and then continuing to softly stonewall the NTRC. Basic ideas such as to include the watershed in the system that must be analyzed do not appear to be given much consideration outside the NTRC."

"I have found the absence of written materials to comment on and respond to has been a source of frustration. I recognize that writing has not been a top priority for the study team, however I find it hard to believe – given the schedule – that there has not been some written materials prepared to date (for example on the without action condition)."

"There is a sense that no one is paying attention (either as a written response to what we write or as someone pointing out how what we had to say made a difference). But that may be a bigger problem than just for the NTRC. The study management process is, to be kind, somewhat chaotic and driven by false deadlines. We may just be a victim of that circumstance."

- **The Committee's Business Process Was Generally Disorganized.**

"In a word, 'disorganization.' While I believe that future efforts such as this one should be more organized, I recognize that this was one of the first times the Corps has adopted this approach, and with that in mind the apparent lack of organization is not surprising."

"The lack of effective planning for the work that the NTRC would be asked to accomplish. The first two meetings were, in particular, not focused and a lot of time was spent in determining what the tasks of the NTRC would be relative to the LCA planning process."

"The poorly organized mode of operation, which resulted in wasted time and ineffectiveness in achieving and communicating scientific consensus."

"The second meeting was focused on value assessment. That task was inappropriate given the status of the overall LCA planning process."

"In my opinion, many of the issues being discussed at the end of the third meeting should have been resolved much earlier. This was by no means a fatal aspect of the NTRC experience but certainly detracted from it."

- **The Committee's Business Process Had Specific Flaws.**

"Committee meetings seemed to be randomly scheduled without any relation to key study events and products. Future meetings should be timed such that the Committee can provide meaningful input to, for example, the study objectives and constraints, the future without-project condition, and the management measures to be considered; and review of key documents such as the draft 905(b) analysis, documents developed for the feasibility scoping meeting and the alternative formulation briefing, and the draft feasibility report."

"Not a lot of bad experiences but it has been frustrating trying to allocate time to studying the material supplied to us and giving intelligent feedback, given the short time we are paid to be part of this project. The entire committee is a very busy bunch and we have to devote our time to things that may be less interesting but more necessary."

"The Committee faced the fundamental issue of whether it should be independent of the Corps study team, or work closely with the study team. In practice the Committee came down somewhat in the middle between these extremes, periodically meeting with the project manager and receiving numerous briefings from team members. The nature of the relationship and expected interactions between the Committee and the Corps should have been clearly and jointly discussed and documented in the Committee's charter."

"At least one senior person from the Corps' study team should have been present in the room with the Committee at all times (unless requested otherwise by the Committee). The Committee's discussions were rich with questions, solutions and other ideas that were not always captured in its written documentation but could have been absorbed directly by a team member. At other times a team member could have answered Committee questions, thus eliminating informational roadblocks and permitting the Committee to pursue additional ideas. The Corps simply was not getting its money's worth from the Committee when a team member was not present."

"Status updates from Corps' project managers and Committee Chair is neither consistent nor timely: Given the gaps between NTRC meetings and the interim develop of products expected from the members, coordination should be enhanced by regular updates, status reports and product revisions. This could very easily be handled by a dedicated NTRC website with password-protected access to active files."

"No obvious mechanism for providing advice: Although the process defining NTRC interactions with the Corps and other LCA has evolved over time, initiation of the NTRC was extremely rocky because of the lack of a well-defined process guiding advisory input and feedback."

"It was not clear how the Corps intended to use the Committee's work, and, by extension, the good names of the Committee members. There must be a clear understanding up front between the Corps and the Committee members about how, why, when by who, and in what ways (in reports, presentations, etc.) the Corps will use the results developed by the Committee."

- **The Committee's Purpose Was Not Clearly Defined.**

"In the future, NTRC's should start with clear goals and clear deliverables. If these need to be adjusted along the way, that can occur, but it should only occur for a good reason. Without clear targets, the NTRC was not able to develop a strategy that would best enable them to accomplish specific tasks or objectives, and often the NTRC proceedings appeared to ramble with little purpose."

"The worst aspect of the NTRC experience has been the decided lack of clarity, especially early on, in the NTRC mission and how it should be accomplished in the time frame that was available. The pathway has not been clear and NTRC members felt that the goals/mission/final products were a moving target. There should have been better organization within the Corps prior to convening the NTRC. At the end of the first meeting, many of us could not answer the simple question 'why are we here?'"

- **The Committee Was Engaged Too Late in the Study Process.**

"Entering the process at an intermediate stage? In such a complex program, that has had much iteration before the Corps' process, it is unclear whether the NTRC could have been involved before some critical steps in the Corps' process had passed."

"The lack of recognition that the planning process had proceeded relatively far without any conceptual planning that was based on an understanding of the ecological complexities of the coastal zone."

Question #3 - What one thing did the NTRC not do that it should have done?

Many Committee members responded that more time very early in the process should have been devoted to clearly defining the purpose, business process and other rules about how the Committee would operate. Several members expressed concerns that Committee should have worked harder at insisting that the Corps pay attention to its advice. Finally, some members commented on other things that the Committee should have done, including: improve the quality of written materials, work in specialty sub-teams of the full Committee, stay engaged between meetings, and

- **Early and clearly defined the purpose, business process and other rules of the Committee.**

"Clearly define process and sequence of products and timeline: Entry into the NTRC process was aimless. It would have been so much easier if the goals, processes and schedule would have been laid out from the very beginning, instead of the NTRC members having to persistently inquire about 'where we are heading?'"

"The Committee and the Corps should have invested more time during the first meeting discussing the rules of the game, what the Corps and the Committee members expected, how the Committee would conduct business, and other understandings. These and other similar issues surfaced over the course of the Committee's meetings and led to some degree of frustration and missed opportunities as a result of having to fix things as we went along. Early planning will not resolve every conceivable question but it will certainly smooth the process. The Corps and the Committee should have jointly prepared a charter documenting these early understandings."

"Have a planning meeting before the formal committee meetings began. A preliminary meeting (in person or by a conference call) may have allowed us to avoid a lot of questions and inefficient time spent in the first two meetings."

"Wasted time initially on value engineering exercises. It was clearly premature to do value engineering and a waste of the committee's time."

"Probably given us a little more direction as to our mission. We spend the first couple meetings going down blind alleys. In retrospect, probably necessary to do that."

- **Worked harder at insisting that the Corps pay attention to the Committee's comments.**

"Perhaps be more forceful in getting the Corps to respond in a more genuine manner. Insist more on changes we thought necessary."

"However, at this point I suspect that the NTRC will not succeed in convincing the Corps to bring some of the most pressing planning issues to resolution. As we move along towards the 4th meeting, questions about rationale, feasibility, modeling and decision-making continue to loom large. If the NTRC is to play an interactive role with the Corps in formulating the LCA Plan, as opposed to simply reviewing and providing recommendations, then the NTRC will probably come up short on where some of those interactions end up leading."

"Another problem was putting our arms around this project. We spent a lot of time talking about overall policy stuff that, while academically interesting, was like talking about a freight train going past at 100 mph and saying that maybe it should be on another track. Since we were organized probably too late in the process, I think jumping on the train, then talking to the engineer constantly about where he was going is going to be our contribution."

" Demanded documentation about specific measures or changes taken in response to our written comments, including as appropriate documentation that simply stated that particular pieces of advice were not taken (and why)."

- **Other Things The Committee Should Have Done.**

"The Corps should have insisted that all written materials should clear an editorial review before circulation. Although the NTRC members and presumably Corps employees assigned to this project were pressed for time, there is no excuse for some of the cryptic

writing that was presented to (and presented by) the NTRC. I believe that cryptic reports are worse than no reports, and that if there is not time to write with reasonable clarity then a project such as this should not go forward."

"Written documents, once released in any form, will be quoted and held as the work of the NTRC. I was unaware that these drafts were being circulated. The unfinished drafts can cause many unforeseen problems, and only finished reports should be circulated."

"We should have broken into sub-teams to focus on topics where we had the greatest expertise. This would have allowed time to provide comments and us to work on topics between meetings and our input would have been timelier. This would have made sense because we are not an advisory committee, but are rather individuals with particular expertise. There would have been meetings of the whole, but fewer of them."

"We should have found a way to commit more time (appropriately compensated, as needed) to stay engaged between meetings with each other and with the study leadership.

"We should have spent at least 20% of our time in the field. How can NTRC members pretend to understand issues when they have not seen sites on the ground?"

Question #4 - What is the NTRC's most important lesson to pass along to any future committee that may be similarly involved with a large, complex, comprehensive Corps' study?

Committee member responses to this question centered on three themes. First, a review group similar to the NTRC is a valuable addition to comprehensive, complex and controversial study such as the LCA Study. Second, both the study team and the review group should think through the groups' business process and issues related to both the group and its process. Third, a review group should be involved and clearly organized very early in the course of a study. Some Committee members also recognized the need to resolve Federal Advisory Committee Act (FACA) questions.

- **A Review Group Is a Valuable Addition to a Corps' Study.**

"Value of scientific scrutiny, even if 'internally advisory', in formulating responses to complex problems, such as ecosystem-scale restoration: The NTRC has learned that, if incorporated into the on-going Corps' General Investigation (GI) process, its most valuable service is identifying and transmitting 'red flags' in underlying hypotheses, assumptions, and strategies."

"Large, complex, controversial Corps studies should include a committee, based on the NTRC experience, as an integral part of the way in which such studies are conducted. Although such a committee would not be a substitute for independent technical review it is a good vehicle to ensure independent seamless review when, from a practitioner's perspective, it is most helpful - during the course of study rather than after the fact."

"On-going external, independent scientific review can be an important part of the design and decision making in complex environmental restoration and management. There is a

'middle ground' of intimate involvement in the process and completely detached and dispassionate technical review that can be very constructive as well as evaluative."

- **Think Through the Review Group's Business Process and Related Issues.**

"I think this kind of effort could be fruitfully organized around the steps in the traditional planning process, recognizing that we need to iterate though that process several times."

"For those of us who may be asked to be in similar groups in the future, we should, as a group, closely examine the purpose of the Committee and the expectations of the agency calling for Committee formation. The resources available to the Committee and the time required to complete the project must also be closely examined."

"We should have sought a "charge" from as high a level as possible - preferably from all the project sponsors and not just the Corps- and we should have had access to that leadership on our own. The ERDC [Engineer Research and Development Center] staff did a commendable job organizing our meetings and activities, but I feel as if we have been "out of the loop", as perhaps has ERDC."

"Because there is often a very tight time schedule for completion of work by committees such as the NTRC, one important lesson is to be actively involved in setting the agenda, both short-term and long-term, so that the key people from the Corps will be available to overlap with the NTRC during its meetings. Although seemingly obvious, there were numerous instances when interactions between the NTRC and the Corps were so short that little progress could be made. Moreover, the NTRC has been 'leapfrogging' back and forth with the Corps in terms of recommendations, responses to those recommendations, and in some cases having the key people available to even know the status of implementation of recommendations."

"There was too much of a lag between our comments and the delivery to the study team, as a result of trying to coordinate and consolidate the comments. Related to this, the effort to prepare a coherent summary NTRC report was a misallocation of our time. We needed to have a record each time we met with comments on what we discussed. That might include the comments made at that time. Also, there should have been a record of any communications that occurred between meetings. As I noted, we were not expected to work and add value between the meetings. I was able to do that in some ways, but I was freelancing."

"I remain concerned that our credentials will be used (misused?) to add credibility to the report that is produced. While we may feel that our criticism will be there for all to see, the fact is that the focus will not be on our comments, and if they are, the study team can plead agency discretion and say we were heard and our views were carefully considered. I have seen this done (without intentional malice) many times. I think that this is inevitable, but the risk that our credibility will be misused is less if we are just listed by name as individual experts offering advice under a loose NTRC umbrella and there is not an NTRC appendix in the larger report."

"To be dogged in making the Corps really responsive. There is so much inertia and lack of openness in the Corps. They need to realize that the old way of doing business is not going to continue."

"There needs to be better feedback from the study team to the NTRC. This could be written, but it might be just as effective to have more discussion at the start of each meeting focused on the points made in previous comments from NTRC members."

- **A Review Group Should Be Involved and Clearly Organized Early.**

"Activities such as this should happen much earlier in the planning process. Too many things appeared to be cast in stone by the time this committee was established."

"Start with such an independent panel very early in the process. For a project of this size, even though the decision was made to start NTRC in December 2001, the first meeting could not be scheduled until June 2002 and even then several important committee members could not attend. Thus we were able to get organized only about 12 months before the project was reported to Congress. I think a 2 year lead time on projects of this scale is essential for such NTRC committees to exist."

"The study was not well organized when we were first engaged, and the role we could play had not been well thought out. Initially they assumed we would rank projects they had selected for possible implementation. This was cast out as a role immediately because the NTRC saw that the request to Congress was not going to be an exact replication of the Everglades. In short the frustration was that the district was not sure what it was trying to accomplish and so it was not clear to them how we could best help the effort. That being said, I suspect that our digging in our heels has been in part responsible for helping to clarify the purpose of this phase of the study effort."

"Determine at the outset the type of output that might be most useful to the project group. The NRTC originally had the collective opinion that we would write a report. At the third meeting, however, we realized that the report was not appropriate at the time because the project participants wanted input on an ongoing basis and questions and comments that were appropriate at the time of one meeting were not relevant to the next meeting. The NTRC decided that providing comments in a bullet format was most appropriate with a request that each comment and question be responded to by the time of the next meeting. This format seems to work for this group but the issue needs to be discussed prior to the formulation of the committee and the start and finish of its work."

- **Resolve Federal Advisory Committee Act (FACA) Questions.**

"In addition to a need for clear organization (including a clear, upfront description of deliverables), I believe that this process would be more valuable if the NTRC was required to reach a consensus position. This would require clearance through the FACA [Federal Advisory Committee Act] process, but it would improve the process."

"We are not a committee, but a collection of individuals. (as an aside, ambiguity in this regard must be addressed so that FACA issues do not continue to haunt this kind of process)."

Question #5 – Please list any other lessons learned from the NTRC experience that you would like to pass along to the Corps and future committees.

A final survey question asked Committee members to identify any other lessons learned that they would like to pass along. Members' responses generally fall into two major categories: lessons concerning the NTRC's business process and lessons concerning the NTRC's membership.

Business process lessons repeated many of the points raised in previous responses, including to clearly define the Committee's purpose, think through documentation, respond to comments, and think through schedule and time. Other lessons are to develop good meeting agenda, provide read-ahead material, agree on whether agreement is needed, and vary the meeting locations. Members also identified many needs for supporting staff, meeting infrastructure and supplies, and break time, and their specific suggestions are listed in Exhibit 1.

Lessons learned about the NTRC membership generally surfaced here for the first time, and included: who should be on the committee, appoint a strong chairperson, compensate members fairly, respect members' names, should the committee be interactive or independent, and educate participants. Many of these points were not mentioned until this final survey question. While members usually agreed on these lessons there were differing opinions about the questions of who should be on the Committee and the degree to which the Committee should interact with the Corps and others, or be independent.

- **Process – Clearly Define the Committee's Purpose**

"The question must be asked (and honestly answered) by the Corps 'for what reason are we establishing this review committee?'"

"The Corps should have engaged the Committee in a partnership to write a brief, clearly-written charter (mission/purpose/vision statement) that spells out what the Corps expected. This should have been done during the first day of the first meeting."

"There should be a clearer understanding of the expectations and roles and relationships of NTRC's from the start and periodic recalibration of these as the process goes along."

"Clarify NTRC job - are we to advise on "science", on the "plan development process", or on both?"

- **Process – Develop Good Meeting Agenda**

"The first order of business for each meeting should be a discussion of the agenda for that meeting, including an explanation of the reasons and purpose for each speaker and topic to be covered."

"Committee members should have opportunities to have input into the agenda for each meeting."

EXHIBIT 1

Process – Provide supporting staff, meeting infrastructure and supplies, and break time.

Provide dedicated **supporting staff** with skills in:

- Visual computer technology, including skills with video systems, projectors, and other visual equipment and materials.
- Computer networking, including skills in creating central directories and exchanging files among participants' computer equipment and systems.
- Administration, including making paper and digital copies.
- Logistics, including making travel arrangements and assisting with travel vouchers.
- Meeting facilitation.
- Writing and editing, including notes, meeting minutes, and committee reports.

Provide **meeting infrastructure and supplies**:

- Meeting room.
- Flip charts, with markers and masking tape.
- Projectors.
- White boards.
- Telephones.
- NTRC website.
- Desktop computers.
- Disks, including CDs, 3 ½ inch disks, and data sticks, and accompanying disk drives.
- Access to outlets for electrical, telephone, and high-speed internet services.
- Coffee, soda, donuts.

Provide **break time** for:

- Checking and returning phone calls.
- Checking and returning email messages.
- Off-line conversations.
- Mental breaks.
- Restroom breaks.
- Food and drink.

- **Process – Provide Read-Ahead Material**

"Provide sufficient background information electronically: Although some of the fundamental technical and informational reports were initially provided to the NTRC, we continually had to encourage the Corps, state and other staff to provide fundamental information for NTRC deliberations. These included background scientific literature that had synopsized the state of the knowledge about (wetland) land loss in the Delta, LCA management and planning documents and some preliminary NTRC guidance information. However, information describing the Corps' and local sponsor's plans for developing a comprehensive restoration approach and process was not provided. As a result, the NTRC spend more of the early Committee meetings on understanding the intended process than on content. The NTRC could have focused its attentions much earlier if the Corps would have distributed a CD (or more, as required) to all the Committee members with sufficient time prior to the first meeting for them to become completely up to date."

"Determine what background reading material must be available to committee members and deliver prior to the first meeting."

"Prior to the July 2003 Committee meeting, the Corps completed its first preliminary draft report, consisting of numerous appendices totaling several hundred pages of text. The appendices were distributed within the Corps several weeks before they were made available to the Committee. When the appendices were finally sent to the Committee, it was not until less than one week before the upcoming meeting, and they were sent to only one Committee member who in turn sent them to the other members. Material must be distributed to all Committee members as early as possible for the Corps to gain full advantage of the Committee members' advice."

- **Process – Agree on Reaching Agreement**

"The Committee struggled with whether it should attempt to reach consensus in its findings and comments, or if comments should be presented as the views of individual members. This should be clarified during the first meeting."

"There is a certain degree of discord in every organization (e.g. clearly the case with the Corps of Engineers at our meetings)."

"It will be difficult to get complete agreement on committee recommendations."

- **Process – Think Through Documentation and Recommendations**

"The Committee struggled with the nature of its report – whether it should be a cumulative, rolling report revised after each meeting, or a diary in which the results of each meeting are separately documented."

"Don't let scientific community think NTRC ignores qualified input: There is a need to formalize input such as presented to the NTRC by Dr. Irv Mendelssohn, Louisiana State University. This might be most efficiently accomplished by soliciting from the scientific community feedback on technical aspects of the Corps and NTRC interim products,

initially in short written form and then in oral presentation and questions and answers with the NTRC, should they feel the need to request it."

"The Committee should have come to an early agreement on how it intended to document its activities and advice. One option is to document each meeting in a stand-alone set of minutes. Another option – followed by the NTRC – is to have a rolling set of minutes that evolve from one meeting to the next. The Committee should also have reached an early agreement on whether members' names would be associated with individual and specific comments and recommendations."

"Recommendations must reflect a realization that they be applied in a societal framework."

"Provide up front a clear indication of legal constraints or other external hurdles that may limit the recommendations of the committee."

- **Process – Respond to Comments**

"The Committee provided both technical scientific comments as well as more non-technical policy comments, particularly comments related to the planning process and study recommendations. While we believe that the Committee was intended to address the scientific aspects of the LCA, it is not at all clear how the Corps has received the Committee's policy comments, what it intends to do about them, and how they relate to the Corps' internal review processes. Policy-related comments should have been ruled in or out early in the NTRC process."

"Such committees should be independent and responses to committee requests should be required."

- **Process – Think Through Schedule and Time**

"From the beginning, the NTRC and the Corps need to cooperatively arrange a full schedule for all meetings, information exchange, and deadlines for input, and a full commitment for attendance by each Committee member."

"There is never going to be enough time for the task at hand."

"When such a Committee is composed largely of academic experts, the Corps should, to the extent practicable, schedule Committee meetings during common academic break and vacation periods to minimize lost class time on the part of those who teach university classes."

"The Committee could have been more helpful if it had met more often."

- **Process – Vary the Meeting Location**

"The field trip during the first meeting was an essential element in quickly building the Committee's understanding of the problems and potential solutions under consideration by

the Corps. There is no substitute for exposure to field conditions, and an early field trip should be required in any future Committee established by the Corps."

"Meetings should have been held at multiple locations around Louisiana. While it is convenient to work from the Corps District offices, at least some of the NTRC members had limited experience in Louisiana and they would have benefited from site visits and discussions with stakeholders throughout the state."

- **Process – How to Measure Success**

During preparation of the final report NTRC members were asked to suggest metrics that could be used to measure the success of the NTRC. Responses to this question included:

"The goal is to have a sense that we were listened to and our suggestions thoughtfully considered (even if not adopted). The success metrics I would suggest ate about the process and not outcomes:
"(1) Has there been a set of written responses to our written materials within two weeks after the NTRC report is filed?
"(2) Has there been open discussion in the out-brief with high level senior study leadership?
"(3) Has there been full participation from the HQ-level members of the vertical team and the state in NTRC deliberations?"

"If the Corps documented ways in which NTRC comments were used (and not used), each comment could be ranked from 1 (very low influence) to 5 (fundamentally changed the direction of the plan). These rankings could be compiled as a metric."

- **Process – Other Comments**

"It is always a difficult to coordinate (herd?) an imposing collection of scientists that are, in addition to the NTRC, juggling a plethora of other commitments. But, whether due to the lack of control by the NTRC Chair or just pure lack of interest, the level of attention and participation of NTRC members to the issues at hand has been extremely inconsistent. In the middle of deliberations or even presentations by non-NTRC participants or invitees, it was not uncommon to see NTRC members in the middle of separate, and often loud, conversations or replying to their e-mail. This is more likely the result of taking the advantage of an inattentive operation of the NTRC program and schedule, rather than intent to be disengaged per se. Nonetheless, the <u>impression</u> is of being discourteous and uninterested, especially when the NTRC is supposed to be obtaining important information or feedback."

"Provide clear instructions to committee members at the outset."

"I feel that a committee such as the NTRC should be a permanent part of the Louisiana Coastal Area process and other similar processes."

"At the first meeting the corps and the Committee should have addressed and cleared up any questions or issues related to the Federal Advisory Committee Act (FACA). As the

Committee came to understand it, the best way to avoid becoming ensnarled in FACA question was to avoid the need for consensus in the Committee's business."

"New question? 6. What one thing that the NTRC did that it should not have done? Value Engineering (VE): It is not evident whether this wasn't a particularly useful application for Value Engineering, was premature, or the person conducting it wasn't effective, is not apparent. But, considerable, critical time was consumed during the first meeting in the VE exercise. As it turns out, the time required establishing the NTRC goals and process wasn't sufficient until subsequent meetings."

- **Membership – Who Should Be on the Committee?**

"The NGO [non-governmental organization] community should be represented on the NTRC."

"Seek to have representatives of the vertical team from beyond the field offices as part of our meetings and as a client for our work."

"Avoid 'balancing' the NTRC: I do disagree with one recommendation in the existing (3/4/03) draft: "The NGO [non-governmental organizations] community should be represented on the NTRC." The NTRC should be assembled on the basis of technical expertise, <u>not</u> representative stakeholders or affiliations. If there is a specialty that is best represented by someone who happens to be in a NGO that is entirely appropriate. But, the composition of the NTRC should not be designed for political balance: there is too much at stake in terms of the scientific and technical expertise required to assess these complex issues."

"The Corps' included a senior Corps' employee as a member of the Committee. This could have jeopardized the Committee's ability to be independent in the eyes of some outside observers. Corps employees should not be included on such Committees in the future."

"If NTRC's are to be independent commenting bodies, NTRC members should not be dependent on grants related to the plans being considered… to support their own research programs. That is, committees should be formed of people with appropriate expertise who do not have a vested interest in specific research agendas or outcomes of programs."

"The NTRC should be more diverse in terms of a. cultural backgrounds, b. sex, c. sector (academic, private, foundation, NGO, government). While I recognize that there is a limited pool of relevant expertise available, even this limited pool was not reflected in the make up of the NTRC; for example, there are many female wetland experts that could have been selected as NTRC members, there are many private sector consultants with very strong practical backgrounds in all aspects of wetland restoration, economics, and engineering, and there are many NGOs that could have provided expertise."

"The Corps should have compiled and distributed a list of Committee members during the first meeting, and updated it at each subsequent meeting. The list should include each member's name, and work and home addresses, phone numbers, fax numbers and email addresses."

- **Membership – Appoint a Strong Chairperson**

"It is important to appoint (select) a strong committee chair, and to do it early on. It must be clear that the chair is willing and able to devote the time and energy to the task."

"Chairperson needs to keep the Committee focused and engaged."

- **Membership - Compensate Members Fairly**

"NTRC members should be paid for their participation. While a generous stipend was offered by the Corps, for those members who did not draw salaries while working on the NTRC the hourly value of the stipend was very low."

"Committee members should be paid commensurate with their level of work. The Corps took great care to select nationally-recognized experts, yet initially paid only a token honorarium of $1,000 for each meeting. While there is a certainly an element of important public service in being a Committee member, there is a need to be fair and to balance that service with reasonable compensation for the quality and extent of work expected of Committee members by the Corps."

"Also, the lack of sufficient funding resulted in committee members only putting time into the effort while they were on site."

- **Membership – Respect Members' Names**

"Don't put NTRC in promotional situation: Avoid putting Committee members in position of being advocates/endorsers of political expressions of the aligned restoration initiatives, such as "Restore America's Wetlands!" Keep the NTRC purely technical, and don't ask or assume that the Committee members can provide such endorsements, even though they may support the concepts."

"It is necessary to establish at the first meeting whether committee members will be reporting as individuals or as part of a larger group, whether there will there be a chance for minority opinions, and how committee members will be recognized in the report."

- **Membership - Interactive or Independent?**

"Committee meetings should have had more time devoted to discussions with the study team members rather than in observing team member PowerPoint presentations."

"There were frequent periods when there was no study team member present during Committee meetings, and valuable discussions and debates among Committee members were not captured and therefore lost from the team. The Corps did not get the full benefit of the Committee's work."

"Unless there is a reason for confidentiality, arrange for key agency personnel to listen to committee deliberations. Some important elements of the discussions may never make their way into a list of recommendations."

"It may be that a failure to get any response could be addressed by a more open dialogue with study leadership during our meetings- leaders who often were not even there. Then written feedback would be less needed."

"Committee members often had the opportunity to speak with study team members outside the formal Committee meetings (in the hallway, over coffee, etc.). These exchanges were often as important as the Committee's formal comments."

"The Committee should have more opportunities to interact with senior Corps leaders and interests outside the Corps, such as the Framework Development Team."

"The Committee out briefs at the end of each meeting were strategic events, but they were not attended by senior officials who could have benefited from Committee insights and comments. As a minimum, the District Commander and the senior study and district leadership should have participated in the out briefs."

"Demand attendance at meetings from, and on-going discussion with, the highest levels of study leadership."

"Address early on whether there are other panels, committees, or commissions working in tandem on the same issues and, if so, how the responsibilities vary."

"If the NTRC review is to be considered independent, working behind closed doors and in confidence should be encouraged. If it is not an independent review, it should not be presented as an independent review."

"Such committees should be independent and responses to committee requests should be required."

- **Membership – Educate Participants**

"Communication between our committee and the Corps on ecological restoration/engineering was hampered by the fact that, despite its immense talent in conventional engineering, the Corps and its principle engineering consulting firms are quite low on understanding the principles of successful restoration—self-design, adaptive management, etc. Educational institutes are there to help solve on the learning curve but there has been very little opportunity to carry this out. Given that there are now 2 very big restoration projects under the Corps and hundreds of smaller ones, the retraining of the Corps in fundamental techniques is much needed."

"It is presumptuous for a panel to assume that they necessarily have more technical expertise than agency scientists/engineers."

"During the first meeting the Committee should have been given a "Corps 101" presentation to set the context for the study, what the study team was trying to accomplish, and the various internal Corps stakeholders to be involved. Most Committee

members were at best only generally familiar with Corps planning procedures, requirements, terminology, etc."

Comments of Others

The Committee invited the Louisiana Coastal Area study team to contribute comments to this report. One individual responded to this opportunity and offered the following thoughts about communication between the Committee and the study team:

"The following recommendations are intended to improve upon what has been an important part of the LCA Comprehensive Study process. My goal is to recommend changes that would result in more robust dialogue between members of the interagency team developing the LCA Plan and members of the NTRC. While I do not know the extent to which such changes can occur within the current planning process, the recommendations do, I believe, apply to future applications of an NTRC-like group for other studies or, possibly, other phases of the LCA process.

Improved dialogue between the NTRC and study team members would have two major benefits:

- *Greater understanding of the views, questions, and recommendations of the NTRC. This better understanding would enable the team to better respond to the NTRC.*

- *Enhanced NTRC understanding of the study process and major components of the study. Understanding complex projects from the outside can be like the blind men feeling an elephant. The more views and perspectives one can get, the better the odds of developing a complete and accurate understanding.*

Recommendations for Improved Dialogue:

1. *More team members (from different agencies, areas of expertise, and team roles) at the NTRC meetings.*

2. *Provide a brief overview (with time for discussion) of the study at the beginning of each NTRC meeting. This overview would cover the study goals and objectives, major milestones to date, and next steps. In addition to allowing for discussion of overarching or 'big picture' issues, this would put the subsequent presentations into context.*

3. *Build in more time for discussion after the presentations on specific aspects of the study process. While formal presentations are necessary, more dialogue after such presentations would help the team develop a better understanding of any issues or concerns NTRC may have, thus enabling a better response.*

4. *Discussions should include both the presenter and other team members. Consider actively seeking any differing opinions within the team on a particular issue; again, with the goal of a more robust dialogue.*

5. *NTRC meetings should have a discussion of 'major challenges' or 'unresolved issues' in which the team would frankly discuss the downsides, weaknesses, vulnerabilities, or, if this is too threatening, the 'opportunities for improvement' in the study process. The goals would be to ensure full disclosure of potential problems and to more fully engage the outside experts in problem solving on the most difficult issues.*

6. *Provide more time each meeting for the 'out-briefing' and related dialogue.*

7. *The NTRC could, as appropriate and needed, send an 'observer' to key team meetings. This would allow for fuller understanding of how the team functions, and provide greater insight on the thought processes behind important aspects of study. The obvious downsides to this suggestion are that it would place further schedule/time requirements on NTRC members and it could be seen as reducing the separation needed for objective review of team activities.*

8. *There should be more dialogue with management level teams and advisory groups (such as the Framework Development Team). This could be accomplished by scheduling NTRC meetings such that they overlap with Framework Development Team meetings and such.*

LESSON THEMES ACROSS QUESTIONS

The National Technical Review Committee responses suggest several important themes that cut across the five survey questions, specifically:

- A national review group adds value to a Corps' study.
- The host Corps' office must think through the structure, process and use of a national review group.
- Reach an early agreement on the structure, process and use of a national review group.

This chapter summarizes these key lesson learned themes.

A National Review Group Adds Value to a Corps' Study.

Members generally agreed that they believed that the NTRC had made a positive difference in the Louisiana Coastal Area Study. While it may not be practical to establish such a group for all Corps' studies, it is surely a good investment for comprehensive, complex, controversial and highly uncertain studies such as the LCA Study.

"Providing input to the Corps, well ahead of project implementation, of suggested strategies in ecological approaches that will enhance their probabilities of success of the restoration project."

"Value of scientific scrutiny, even if 'internally advisory', in formulating responses to complex problems, such as ecosystem-scale restoration: The NTRC has learned that, if incorporated into the on-going Corps' General Investigation (GI) process, its most valuable service is identifying and transmitting 'red flags' in underlying hypotheses, assumptions, and strategies."

"On-going external, independent scientific review can be an important part of the design and decision making in complex environmental restoration and management. There is a 'middle ground' of intimate involvement in the process and completely detached and dispassionate technical review that can be very constructive as well as evaluative."

The Host Corps' Office Must Think Through the Structure, Process and Use of a National Review Group.

While the intent of having a national review group is commendable, the host office must follow it with a substantial amount of the basic work necessary to make the group functional and useful to the Corps. Some of the most important questions that were repeatedly suggested in the NTRC members' responses were:

What's the Review Group's Purpose? The Corps' purpose for the NTRC was not at all clear to its members, especially in the early meetings:

"The worst aspect of the NTRC experience has been the decided lack of clarity, especially early on, in the NTRC mission and how it should be accomplished in the time frame that was available. The pathway has not been clear and NTRC members felt that the goals/mission/final products were a moving target... At the end of the first meeting, many of us could not answer the simple question 'why are we here?'"

"In the future, NTRC's should start with clear goals and clear deliverables. If these need to be adjusted along the way, that can occur, but it should only occur for a good reason. Without clear targets, the NTRC was not able to develop a strategy that would best enable them to accomplish specific tasks or objectives, and often the NTRC proceedings appeared to ramble with little purpose."

"The question must be asked (and honestly answered) by the Corps 'for what reason are we establishing this review committee?'"

Will the Review Group Be Independent or Interactive? Although the NTRC members were not unanimous in their comments on this question, most would have preferred a more interactive relationship with the study team and others:

"The Committee faced the fundamental issue of whether it should be independent of the Corps study team, or work closely with the study team… The nature of the relationship and expected interactions between the Committee and the Corps should have been clearly and jointly discussed and documented in the Committee's charter."

"Unless there is a reason for confidentiality, arrange for key agency personnel to listen to committee deliberations. Some important elements of the discussions may never make their way into a list of recommendations."

"The Committee should have more opportunities to interact with senior Corps leaders and interests outside the Corps, such as the Framework Development Team."

How Will Review Group Members Be Treated? The NTRC was a group of ten scientific and engineering experts recognized in their respective fields. Most Committee members were from academic institutions. In assembling such groups in the future, the Corps must recognize that members have concerns about things such as their time, their names, and compensation:

"Not a lot of bad experiences but it has been frustrating trying to allocate time to studying the material supplied to us and giving intelligent feedback, given the short time we are paid to be part of this project. The entire committee is a very busy bunch and we have to devote our time to things that may be less interesting but more necessary."

"It was not clear how the Corps intended to use the Committee's work, and, by extension, the good names of the Committee members."

"NTRC members should be paid for their participation. While a generous stipend was offered by the Corps, for those members who did not draw salaries while working on the NTRC the hourly value of the stipend was very low."

What Will Be Done With the Review Group's Comments? Although the NTRC members felt that they were making a positive difference, one of their major frustrations

was that they did not understand what became of specific Committee comments that were provided to the study team:

"Lack of explicit feedback on NTRC comments and recommendations: Feedback from the Corps and partners has been exceedingly inconsistent and unspecific."

"When the Committee provided comments it anticipated Corps reactions and responses, but it was not clear what the Corps did with the Committee's input. There should have been a better understanding and process for writing Committee comments, receiving written Corps' responses, and documenting the Committee's satisfaction with Corps' responses."

"…it is remarkable that the New Orleans District is asking us to be involved and then continuing to softly stonewall the NTRC.

What Is the Schedule and Timing of Review Group Activities? The NTRC found it difficult to understand the flow of the study's work and decisions, and how it's comments played into that flow. Many Committee members, especially those affiliated with the universities, often had conflicts between the timing of NTRC activities and the demands of their "regular job":

"Committee meetings seemed to be randomly scheduled without any relation to key study events and products."

"Clearly define process and sequence of products and timeline: Entry into the NTRC process was aimless. It would have been so much easier if the goals, processes and schedule would have been laid out from the very beginning, instead of the NTRC members having to persistently inquire about 'where we are heading?'"

"From the beginning, the NTRC and the Corps need to cooperatively arrange a full schedule for all meetings, information exchange, and deadlines for input, and a full commitment for attendance by each Committee member."

What's Needed to Support the Review Group? The NTRC spent too much of its scarce meeting time attending to the details of its own administrative support: exchanging electronic files, learning how to operate audio-visual equipment, returning emails and telephone calls, and so forth. To ensure that it makes the most of valuable meeting time, the host office must fully support a group's needs for support staff, meeting infrastructure, supplies, and agenda breaks:

"The Corps should have provided administrative assistance during the meeting so that Committee members could focus on their assignment."

"I would strongly reinforce the observation that the lack of a dedicated staff person, facilities and services inhibited the NTRC's efficiency. It is difficult to remember just how many times we had to go seek a computer equipment technician just to get the video projection system running for a visiting presentation or NTRC deliberations."

Reach an Early Agreement on the Structure, Process and Use of a National Review Group.

This lesson reinforces the previous points about thinking through the structure, process and use of a National Review Group, and adds "and do it early!" Committee members found numerous examples where earlier actions and decisions may have improved its value to the study. The importance of addressing and resolving questions during, or even before, the first meeting cannot be over-emphasized:

"The Committee and the Corps should have agreed early in the process on how Committee comments – advice and questions – would be exchanged."

"The study was not well organized when we were first engaged, and the role we could play had not been well thought out."

"The Committee and the Corps should have invested more time during the first meeting discussing the rules of the game, what the Corps and the Committee members expected, how the Committee would conduct business, and other understandings."

"In my opinion, many of the issues being discussed at the end of the third meeting should have been resolved much earlier. This was by no means a fatal aspect of the NTRC experience but certainly detracted from it."

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