MINUTES
CHIEF OF ENGINEERS' ENVIRONMENTAL ADVISORY BOARD MEETING
U.S. Army Corps of Engineers, Vicksburg District
4155 Clay Street
Vicksburg, Mississippi 39183
2 November 2001

The meeting was called to order by LTG Robert Flowers, Chief of Engineers, at 0815, 2 November 2001. The following Board members were present:

Dr. Paul E. Hosier (retired)
Dr. Theodore L. Hullar
Dr. Fred Weinmann

In addition to LTG Flowers, Corps of Engineers general officers or Senior Executive Service members attending were BG Robert Griffin, Director of Civil Works; BG Edwin Arnold, Commander, Mississippi Valley Division; Dr. James Johnson, Chief, Planning and Policy Division, Civil Works; and Ms. Patricia Rivers, Chief, Environmental Division, Military Programs.

After brief welcoming remarks by LTG Flowers; COL Frederick Clapp, Commander, Vicksburg District; and BG Arnold, Dr. Fred Weinmann and Dr. Theodore Hullar were sworn in. Dr. Paul Hosier, who is leaving the Board, was recognized for his service to the Board.

Dr. William Klesch, Civil Works Planning and Policy Directorate, reported on the workshop on sustainability held earlier in the week at the U.S. Army Engineer Research and Development Center (ERDC) in Vicksburg, Mississippi. Workshop participants were representative of diverse professional interests including planning, engineering and design, construction, and operations functions. The purpose of the workshop was to discuss issues and concepts of sustainability and determine how it is integrated into our work. Dr. Klesch stated that environmental sustainability is important because it combines and balances three critical components: economics, environment, and social well-being. There is nothing that the Corps does as an organization in the conduct of its activities that in some way or another doesn't impact these three features. There are a growing number of Civil Works authorities with environmental responsibilities as well as a national emphasis on protecting natural resources. The Corps is in the process of developing environmental operating principles, one of these principles is achieving sustainability.

This workshop focused on key questions: a) how do our research and development (R&D) activities track with our corporate activities; b) can we identify challenges and potential obstacles to achieving sustainability and how can we use this information to direct operational and R&D activities; and c) can we identify ways to improve the transfer of technology from the R&D community into our field offices?

The workshop participants developed a working definition of sustainability. It was defined as a synergistic process whereby environmental, economic, and quality of life considerations are effectively balanced in project planning, design and construction, and operation and maintenance in meeting the needs of the present without compromising the quality of life for future generations. Dr. Klesch suggested that we need to think "cradle to cradle", i.e. plan for what you need to do if a project must be removed. He also discussed the theory of ecological capital, leaving principal for future generations and look only at impacting the interest. He discussed the following key features of the process for achieving environmental sustainability:
(1) collaboration, (2) life cycle of projects, (3) watersheds/systems analysis, (4) adaptive management (need to have ability to adjust, change and re-evaluate), (5) multi-objective approach (no single purpose projects), (6) consideration of cumulative impacts, (7) carrying capacity (our natural resources are finite), (8) balance (trade-offs are necessary, develop techniques to get equity between the environment, economics and social well being), (9) training, (10) transfer of technology, and (11) role of research and technology.

Dr. Klesch concluded with the following recommendations. The Corps has the responsibility to deliver products to its local sponsors while fulfilling its duty as a Federal agency with national environmental stewardship responsibilities. The Corps also needs some indicators or "report card" type measurements of environmental sustainability.

LTG Flowers asked if there was any discussion about opening the process for input into the development of a Water Resources Development Act of 2002 proposal to the other Federal agencies.

Dr. Klesch replied that the participants did not specifically discuss the legislative process but focused on identifying needs and potential policy issues such as cost sharing. Participants discussed multiple sponsors in terms of a number of programs and foundations that could potentially be sponsors of environmental components of projects. One of the programs mentioned was the Corporate Wetlands Program which began in Massachusetts. This concept is exciting in that it brings in corporate America as a potential sponsor.

Dr. Weinmann said there is a missing link in sustainability in that adaptive management requires that we have a knowledge base which would tell us how to adapt, what should be changed or tweaked in order to adapt and do it better. That knowledge base requires that we keep track of our principal, how much principal we are using, and how much principal do we have relative to interest. One example given was the harvesting of timber beyond the principal. This knowledge base is difficult to develop and requires a great deal of effort to maintain.

Dr. Hosier responded that it is a concept of assessment, of taking a look at the environment, etc., and assessing whether those expected results are being achieved. You have to have measures there to weigh yourself against. He asked if requirements for assessment are built into authorizations of projects.

Dr. Klesch responded that the Corps has had difficulty in getting some of the Congressional committees to accept extending the funding stream in order to be able to monitor projects over a

period of time. The Corps needs to have champions on the Hill who understand that for the Corps to get to where Congress wants it to go, the Corps has to have flexibility and tools to monitor projects.

Dr. Hullar commented that you could take the adaptive management idea and host an entire workshop on this one concept. How is monitoring built into projects—is it a "Oh, I hope it happens," or is it an obligation, and if so, whose obligation, under what terms, and how do we know if it is working? What are the local and national roles? How does that get built into the policy framework? It could be an interesting case study. He also noted the use of the word "system." Watersheds were used as an example. It is hard to think in terms of systems, though, because of how problems are defined, how pieces fit together, what are bounds, etc. How does that idea get embedded? What is the role of the social sciences; e.g., sociology, organizational behavior, government, in a systems approach to managing our natural resources?

LTG Flowers responded that it would be useful to conduct a series of environmental sustainability workshops across the country, including participation by the Board members and perhaps individually. The social sciences are a very interesting addition. He noted an example of a study where the interdisciplinary team included sociologists who had broad insights into what information should be gathered, examined, etc.

Dr. Klesch commented that the prospect of conducting joint regional meetings with other agencies to talk about opportunities under environmental sustainability had been discussed. The U.S. Fish and Wildlife Service, EPA, and Agriculture have said they would be interested. There is a lot of enthusiasm about collaboration. The Corps hopes to have a number of these type meetings within the next 3 or 4 months and have a number of the Board members participate.

Dr. Hullar expressed his appreciation for the tours of the Yazoo Backwater area and ERDC. There is a way of combining the research and study activities of research and development labs with the national needs across the country.

Dr. Klesch responded that our operating projects across the country provide very fertile ground for field verification of some of the bench science that is done. They provide us with an opportunity to test some of the techniques being developed at ERDC and other labs. There is a huge shortfall in terms of O&M and there are opportunities to effectively argue that there is a real reason to bolster that in the long term.

Dr. Hullar said it would be interesting if in each of the 38 districts there would be long-term study sites involving colleges and universities, significant collaboration with the Corps. It would be meaningful to engineering and sociology students and faculty as well.

Dr. Weinmann agreed with the systems approach and that sociology and policy and political aspects are probably as important as any thing else. You need to keep compartmentalization up to a point as you work through the science, and when each group has the factors together, you put them together to do the social overlays.

Dr. Hullar agreed with the sentiment of that approach, but wondered about the wisdom of the idea of separateness. It is a difficult topic. Too much separateness and you can't get back to togetherness; too much togetherness and you may not go down the right disciplinary paths. It is a process question.

LTG Flowers stated that if you are to have the opportunity for synergy, there has to be some interaction and interplay. Collaboration is not easy.

Dr. Klesch replied that there is an element of trust that has to be developed in a collaborative effort..

Dr. Hosier pointed out that they had contrasted collaboration with cooperation. It is fairly easy to cooperate, but collaboration is somewhat different. Everyone has to a have a stake in the outcome.

LTG Flowers said he could use some advice from the Board on the subject of collaboration. Collaboration and the ability to do sustainable development get much easier as the science gets better and you are able to understand what you can measure and how. The Board will continue to visit some of the research laboratories and highlight areas where the Corps is engaging local universities to keep track of this area. We need to push the science and tie it to our ability to measure. We want to work to enhance the environment. The Corps has to identify the areas in science that we need to go after. He asked how we can better tie into research and academia to achieve our goals. **LTG Flowers** also discussed the environmental principles and doctrine being developed. The process is to adopt a set of principles and use these to prepare a doctrine on how to do business to achieve stated goals. He stated that the principles basically codify what the Corps is currently doing. The number one principle was to achieve environmental sustainability.

Dr. Weinmann viewed the environmental operating principles as a call to creativity, but believes the Corps is currently constrained by policies and authorities.

After a short break, the meeting continued with Board discussion on the application of the concept of environmental sustainability to the Yazoo Backwater Area Reformulation Report and to Corps research.

COL Clapp gave a synopsis of the Board's tour of the Yazoo Backwater area and Dr. Ed Theriot, ERDC, gave a synopsis of the Board's tour of ERDC.

Dr. Hullar said he and his colleagues learned things that he could not have imaged during their tours earlier in the week. He felt it was interesting to have the U.S. Fish and Wildlife Service presenting their views while at the same time hearing the Corps views during the tour of the Yazoo Basin. As a believer in collaboration, he felt one of the special opportunities in Vicksburg is the intellectual capacity at ERDC. However, there is not a single entity that has all of the answers and all the perspectives. One needs to reach out and capture as much talent, including the research perspective, as possible right at the very beginning of the tough-issue projects. A set of expectations must be developed, or a place made for that kind of "pre-scoping scoping."

Dr. Weinmann commended the parties responsible for the tours and presentations. He has had a close association with the Corps and has much respect for their technical expertise and their ability to solve problems if given the latitude to do so. He also believed that collaboration, including the researchers, needs to begin at the scoping stage.

Dr. Hosier was also appreciative of the time and effort involved in the events of the week. He noted that during the Yazoo Backwater presentations, all sides of the issue were discussed which served the Board well.

Dr. Hullar commented that he had a nagging concern about the Yazoo Backwater project in that the project is 60 years old. The government does not do well if it stretches things out that far. It is also apparent that the Fish and Wildlife Service (FWS) and the Environmental Protection Agency (EPA) and the Corps have two points of view that are pretty far apart and this is not a good situation. If the theme of the Corps is to be environmentally sustainable as well as economically useful, it is reasonable to ask this applies to the Yazoo project. The project cannot be started all over again, making this a difficult case. One challenge is how do you bring these two different views together, and there may not be an answer right now. There are some specific reservations concerning the Yazoo Backwater project. A key element is the acquisition of the 62,500 acres for reforestation, which would be done on a voluntary, willing seller basis. Anyone can conceive of an economic circumstance where the 62,500 acres do not materialize and a significant environmental benefit of securing more bottom-lands is thus lost. Usually, items like that are built into projects as obligations. This is a topic that will have to be resolved. He mentioned that a second point was the idea of ongoing monitoring as a part of the project as an initial capital cost and adapting over time.

Dr. Weinmann said that one of the reasons that there is a dichotomy in the reports of the agencies (FWS, EPA, and the Corps) has to do with uncertainty regarding the 62,500 acres. There are other uncertainties that could be dealt with through a tracking process. He gave an example of the concern of the environmental community that 200,000 acres would be adversely impacted by the project. This could be addressed through the adaptive management process by monitoring over time to see if they really are impacted. One problem is that we are poorly prepared to predict the future in terms of any specific ecological situation, and it takes time to assess the success of environmental features. We need to be prepared for the kind of O&M that goes with all project features and treat them equally. The Board members' charge was to look at this project and not be too project-specific but look at it in a more generic sense. A project is not complete without keeping track of the environmental features as well as all other project features.

Dr. Hosier followed up with questioning how the environmental labs work with Corps Districts in terms of responding to their needs and desires at the beginning stages of project development. His impression was that the labs wait for the Districts to call and this doesn't always occur, whether it is a funding issue or political issue. There is a real benefit to bringing labs and their expertise onboard early on in the process when issues and problems are defined. This would

help the Corps at the District level sort out what the issues are in order to come to the best solution in these projects.

Dr. Johnson replied that some Districts routinely use the labs and perhaps some of the Districts that do not use the labs are the ones that need them the most. It should not be a random event, but should fall into the stream of consciousness of all the Districts without making it a requirement.

LTG Flowers said that there is someone from ERDC that goes to each Division's quarterly business meeting and serves as a point of contact as the Divisions review their programs. It would be a good idea to think of ways to apply creativity to involve the research and development community earlier on in the planning process. The Corps is reinvigorating its planner training program in the Corps. We may want to include something like this in that course.

Ms. Rivers stated that one area where the labs get connected with the Districts is the Districts' use of its centers of expertise.

LTG Flowers suggested that a list of centers of expertise be provided to EAB members. Some are mandatory centers which are required by policy and process in the developing of work; others can be used as needed or when wanted.

Dr. Hullar replied that there is a related aspect discussed earlier, which is scoping by interested parties as a necessary first step in collaboration. On difficult projects, it is reasonable to assume that there will be items raised for which it is clear that there is no expertise. That should automatically lead to an involvement by the research and knowledge community beyond that group.

Dr. Johnson stated this could be done during the initial studies of the feasibility phase. In some programs, the labs make their personnel available to the Districts for one or two days without cost. It is very user-friendly.

Dr. Weinmann replied that often times it boils down to funding and money. There are different programs (water quality, wetland regulation, dredging) in place that are good opportunities where there is no cost to the Districts for a certain length of time. One thing that could be considered is that there could be some expanded flexibility with those if some money was added to make it easier for the Districts to access those. There may also be a problem with particular lab personnel not being available when the District has that need. In that case, university experts could be assigned for a short time.

LTG Flowers commented to Dr. Johnson that the issue of setting aside some funds for these purposes should be looked at so districts would not be taxed.

Dr. Hullar stated that long-term monitoring is hard to do. The Corps has a special opportunity to do this because of the type of organization it is and because of its research and knowledge

capabilities. Dr. Hullar asked if it would be possible for the Corps to push forward more long-term monitoring in its authorizations in 2002. It would be an extraordinary national contribution. One item discussed earlier in the week among the Board members was the idea of technology transfer or knowledge and technology transfer. The issue of technology transfer and adoption is a very generic one across the country. It is very much on the minds of the Corps and it could be a wonderful area for innovation.

Dr. Hosier said that some projects are very focused, narrow, and simple and that information can be transferred very quickly and easily and be used by one or more Corps Districts. Others are more complex, and the need is to look at larger, longer life modeling systems which are not easily transferred to the district level or the division level without a great deal of input from modelers, etc. Some of the most complex models may never get to the district level. While in 5 or 10 years, you will see that some of the models developed by the labs will be used at the district level on a regular basis.

LTG Flowers mentioned that the Corps has an ongoing process called the Learning Advisory Board. He said that he owed the Board some background information on the Learning Advisory Board and what the Corps is doing about becoming a learning organization. He highlighted the fact that one thing the leaders learned was that we do a good job at giving employees technical training, but we do not train people in communication or leadership skills which is important to be a learning organization.

Dr. Weinmann said that there has to be some ability to provide the expertise or methodology to the person on a timely basis (getting it when needed). You can put money for technology transfer in the research program at the beginning, but there are two reasons why that does not work. One, you have to spend it during the time you are doing the research, and number two, researchers would prefer to spend their research funds gathering data rather than transferring technology. There needs to be a separate mechanism to make the technology transfer happen when needed.

Dr. Hullar replied that this is another area for increased relationships with universities and colleges. The students of today are employees of tomorrow. It could be a Corps/university collaboration that could be systemic.

Dr. Johnson concluded the discussion with four recommendations made by the Board at the April 2001 meeting and the response to those.

Recommendation: The Board should continue to hold onsite meetings where regional issues could be examined and/or a specific project could be the focus.
Response: We intend to continue to visit our labs and view a project for each EAB meeting to accommodate this request.

Recommendation: The Chief should hold meetings whenever the need arises.
Response: Due to logistical problems and scheduling complexities, the use of VTC's was proposed. This could lead to more than two meetings a year.

Recommendation: Given the varying backgrounds of Board members, the Board has a need to learn from field personnel on the ground.
Response: As we did this week with the visits to the Yazoo project and ERDC, we will strive to provide the EAB with the opportunity to interact with the field.

Recommendation: In an effort to be more visible and reach out to the community, there should be district-level EAB's.
Response: While recognizing the importance of community-level interaction and the problems associated with getting the word out, Boards such as the EAB are governed by regulatory requirements which would be cumbersome at the District level. The Corps will continue to explore options for ways to increase stakeholder involvement and further public participation at the District level.

LTG Flowers responded that collaboration is probably a great word to use, especially at the local and regional levels. If we are able to conduct some regional conferences on sustainability, that may help in that regard.

Dr. Weinmann said that was an expansion on the concept of not necessarily regional environmental boards, but it was the idea that early in the process of any particular project, if there is clearly an area where there are not enough data, or varied interpretations of that data exist, we should encourage solicitation or involvement at that stage of a university or a neutral party. This lends creditability to the process. You have to deal with perceptions as well as reality.

LTG Flowers stated that a summary of the meeting would be prepared and called for public statements.

PUBLIC COMMENT

Mrs. Ruby Johnson, Chairman of South Delta Flood Control Committee, spoke in support of the Yazoo Backwater pumping plant as proposed in the Corps Yazoo Backwater Reformulation Report.

Ms. Jackie Rollins, Environmental Coalition of Mississippi, spoke in opposition to the Yazoo Backwater pumping plant as an outdated approach to solving problems. We have to know the consequences. She mentioned DDT contamination as a potential consequence of what she believes is the pumps' partner project, the dredging of the Big Sunflower River. She requested that notification of EAB meetings be more widespread to the general public.

Mr. Louie Miller, field director of the Mississippi chapter of the Sierra Club, also spoke in opposition to the Yazoo Backwater pumping plant as an environmentally damaging and cost-prohibitive project. He also commented that the environmental community views the Big Sunflower dredging project as a tandem project with the pumps. He volunteered to arrange a

tour of the Delta for the Board members. Mr. Miller also requested that notification of EAB meetings be more widespread to the general public. See Attachment 2 for prepared statement.

Mr. Jim Wanamaker, Chief Engineer, Mississippi Levee Board, gave a brief summary of the background of the Yazoo Backwater reformulation study and the purpose of the consensus meetings. He felt that the Corps had made great strides in the recommended plan with the 62,500 acres of restoration, which is 60 percent of Fish and Wildlife Service's goal. The Levee Board feels like reforestation could be accomplished from willing sellers.

Ms. Rollins commented that several thousand "Dump the Pumps" postcards had been mailed to the Vicksburg District in opposition to the pump project. They received in response a one-or two-page letter from the Corps that basically said they were misinformed, the Corps knows what's best and this project is going to solve all problems, and we will keep you updated. She asked the question if the Corps asks for input from the public, what is done with that information from the public, how is it used, and what does the public need to do to get comments to the Corps and get these comments heard.

LTG Flowers stated that this was not to be a public meeting on the Yazoo Backwater project. This is an Environmental Advisory Board to get comments to the Board. He told Ms. Rollins that he owes her feedback based on her comments and he will get that feedback back to her, after researching some of her concerns.

LTG Flowers concluded the meeting by thanking everyone's participation and efforts in organizing and carrying out the Board's itinerary. His intent was to give the EAB the opportunity to see first-hand a controversial project. The next meeting would include a visit to CREL showcasing military projects and a look at the Upper Mississippi Navigation study.

There being no further comment, the meeting was adjourned at 1200.
1 Attachment

(This document was signed electronically by the members present on various dates in March 2002.)