Table of Contents, FY1990

Ecological Advisory Team Meeting
October 16-17, 1989
Bettendorf, Iowa

The Ecological Advisory Team meeting convened at 1 p.m., October 16, 1989. A list of attendees is attached (attachment #6). The agenda was approved and followed throughout the meeting.

Jerry Rasmussen, Assistant Program Manager, Environmental Management Technical Center (EMTC), presented information on the Long Term Resource Monitoring Program (LTRMP) (attachment #1) which included FY 89 accomplishments and proposed FY 90 work plans. The following items were questioned and discussed by EAT.

Travel costs for QA/QC. Randy Burkhardt of EMTC Ecology Section expended $7,000 this past fiscal year on travel. The Team discussed whether this amount of travel was excessive. It was concluded that a good Quality Analysis/Quality Control program necessarily involves extensive travel and that costs probably will not decrease in the next few years.

Continuous monitoring of light, temperature and D.O. Present plans call for cessation of monitoring during winter months. Tom Boland pointed out that winter is the period when hazards are greatest for personnel to collect samples and it would be very desirable to develop a means of employing continuous monitoring during winter months.

Authorized budget will not allow completion of Resource Trend Analysis work planned for FY 90. Jerry Rasmussen asked for EAT guidance on which items in RTA should be cut from the proposed FY 90 work plan to bring the budget into line. EAT discussed three possible means of reducing FY 90 costs—delaying start-up of field stations at Lake City, Havana and Cape Girardeau; reducing components monitored under RTA; delaying implementation of Problem Analysis (PA) program elements. A motion was made and seconded to ask the EMPCC to recommend that EMP overhead costs be cut to cover the RTA deficit, but after discussion the motion was withdrawn. General consensus was that reduced funding was unacceptable if viability of RTA was to be maintained. It was decided that a position paper expressing this concern be sent to the UMRCC and UMRBA with copies to EMPCC. The purpose is to promote support for full funding of RTA. The position paper was drafted and reviewed by EAT (attachment #2). The chairman will attend to distribution as instructed.

Plans for evaluation of HREP sites have progressed (attached #3) but will go little further until additional money is available. Selection of "key" sites for HREP monitoring falls within the purview of EAT, but further action by EAT was proposed in interest of pursuing more immediate issues. Possible "key" HREP selection may be pursued by mail to EAT to avoid necessity of another meeting.

Joe Wlosinski of EMTC presented an update on CRIC's successful pilot effort in aerial photography and mapping using GIS to illustrate aquatic areas and land use/land cover for two sites in Pool 13. The results will be sent to CRIC and

EAT for review and feedback on applicability to managers. Coverage of the entire river will be very expensive. CRIC and EAT will hold a joint meeting on the project February 6-7, 1990.

Ken Lubinski of the EMTC discussed development of problem analysis strategy (attachment #4). A draft scope of work (attachment #5) was provided as an example of what will be produced for each problem to be addressed. Drafts will be provided to EAT members as they are developed and Ken asked for critical review of the SOWs. Proposed FY 90 Problem Analysis efforts are:

sedimentation - $30,000

navigation - $300,000
*single event physical impacts
*ichthyoplankton pilot study

water level fluctuations - $30,000

reduced fish populations - $30,000
*ichthyoplankton mortality
*annual response model pilot

lack of aquatic plants - $30,000
*annual mapping of selected beds

Other items discussed included: the delay in use of the scientific review board; visitation of Russian representatives to EMTC; flexibility to address unanticipated problems; distribution of EMTC reports by EAT members, and reliance upon field biologists for assistance and guidance.

The meeting was adjourned at 11 a.m., October 17, 1989.

#1

LONG TERM RESOURCE MONITORING PROGRAM
ECOLOGY SECTION

575 Lester Drive
Onalaska WI 54650
(608) 783-7550
FTS 725-3526

Jerry Rasmussen - Assistant Program Manager

Vacant - Biometrician

Dr. Ken Lubinski - Problem Analysis Coordinator

Vacant - HREP/RTA Coordinator

Dr. Jim Davies - Aquatic Ecologist

Randy Burkhardt - QA/QC Coordinator

Jim Rogala - Hydrographic Survey Specialist

Pete Boma - Assistant Hydrographic Survey Specialist

#2

ASSESSMENT AND RECOMMENDATIONS
RELATIVE TO BUDGETARY CONSTRAINTS OF FY 90 LTRMP/ECOLOGY PROGRAM

The Ecological Analysis Team met in Bettendorf, Iowa on October 16-17, 1989 to review FY 89 Ecology Section accomplishments and proposed FY 90 Annual Work Plan. Information provided by the Environmental Management Technical Center (EMTC) staff revealed that within-current budgets and estimated costs the EMTC would be unable to implement all portions of the proposed FY 90 Annual Work Plan. The budgetary shortfall amounted to an estimated $407,000.

Resource Trend Analysis is high cost item in the EMTC budget, however, it is recognized as a key element of the LTRMP. Trend Analysis documents long-term changes in the River System's environment, and provides information regarding the geographic extent and magnitude of problems under investigation in the LTRMP Problem Analysis component. Resource Trend Analysis information is further viewed as critical to future management decisions related to maintaining the River's environmental integrity and capacity to accommodate competing uses. This is particularly critical in light of the presently proposed navigation system expansion.

Recent unanticipated changes in the River's aquatic vegetation and invertebrate populations have emphasized the value of baseline data available only as a product of Trend Analysis.

The LTRMP Operating Plan projected the FY 90 budget for the Ecology Program to be $5.772 million. The FY 90 budgetary need projected in the LTRMP 1st Annual Report was $3.015 million. However, the President's FY 90 budget included only $2.499 million for this program. Budgetary projections of the Operating Plan and the 1st Annual Report were based on "soft" estimates. Actual costs to accomplish Annual Work Plan objectives commensurate with present capabilities total $2.906 million. This places the Ecological Analysis Team in the position of making recommendations to the EMTC to reduce Program activities by tasks totaling an estimated $407,000.

Three alternatives were considered to meet these budgetary constraints:

- Delay start-up of the new Field Stations at Lake City, Havana and Cape Girardeau.

- Reduce the number of Trend Analysis components monitored at all Field Stations.

- Delay implementation of Problem Analysis program elements to cover projected deficit.

The Ecological Analysis Team resolved that any of the above alternatives will jeopardize the success of the LTRMP. Therefore, the Team urges management to secure sufficient funds to accomplish the FY 90 EMTC Annual Work Plan as proposed.

It was further noted that while LTRMP goals have not changed and the ability to implement the Program presently exists, the LTRMP will not achieve Program objectives under projected future funding scenarios. Therefore, every effort must be made to achieve full funding.

HREP.CVR / 2537-11D1

DAVIES:10/89

EXPLANATION OF HREP DESCRIPTION DATABASE.

INTRODUCTION: A SMALL DATABASE HAS BEEN DESIGNED TO ALLOW RAPID QUERY OF ACTIVE HREP PROJECTS AND STATUS OF PROJECT DEVELOPMENT. INFORMATION CONTAINED HEREIN IS BASED UPON THE "FOURTH ANNUAL ADDENDUM" FACT SHEETS AND THE COE SPREADSHEET DATED 15 SEP 89.

IN AN ATTEMPT TO SUMMARIZE AND CATEGORIZE THE PROJECTS FOR POSSIBLE MONITORING, A SERIES OF CODES HAVE BEEN DEVELOPED TO MAKE QUERIES EASY AND SPECIFIC (EG: "LAKES" AS A HABITAT TARGET PROJECT, "DREDGING" AS A PROCESS CATEGORY, ETC). SEVERAL OF THE CODE DESCRIPTIONS ARE GENERAL, OTHERS ARE VERY SPECIFIC. PAGES 1 AND 2 OF THE CODE SHEETS ADDRESS THESE CATEGORIES.

PAGE THREE OF THE CODE SHEETS ADDRESSES THE STATUS AS GIVEN BY THE COE SPREADSHEET (15 SEP 89).

REPORT: THE REPORT SHEETS ARE DIVIDED INTO TWO GROUPS--DATA REPORT AND NOTE REPORT. NOT ALL OF THE INFORMATION IN THE DATABASE IS ON THE DATA REPORT (EG., CONTRACT DATE AND COMPLETION DATE). SOME SPECIAL NOTES ARE AS FOLLOWS:

A) TO MAINTAIN INTEGRITY OF DATABASE "WHERE" CLAUSE FOR THE "POOL" COLUMN, SOME VARIATION IN ENTRIES WAS NECESSARY--**SEE NOTE** AT BOTTOM OF EACH REPORT SHEET.

B) WHEN NOT PROVIDED IN FACT SHEET, RIVER MILE RANGES WERE OBTAINED FROM RIVER CHARTS.

C) SPONSOR: ALTHOUGH ALL PROJECTS HAVE FEDERAL SPONSORSHIP, A LISTING SUCH AS "ILDOC" IMPLIES **NON-FEDERAL** SPONSOR AS SET FORTH ON FACT SHEETS. ENTRIES SUCH A "COE/DOI/IADNR" IMPLIES A JOINT COOPERATIVE AGREEMENT.

D) IN GENERAL, THE FIRST ENTRY IN ANY "DESCRIPTION" CATEGORY (EG., "PROBLEM," "PROCESS," "RESOURCE," ETC.) IS THE FIRST ONE INDICATED IN THE FACT SHEET--**SEQUENCE OF ENTRY DOES NOT** IMPLY PRIORITY.

E) PROJECTS: "4-10 BANK STABILIZATION" AND "STONE DIKE ALTERATIONS" INVOLVE SEVERAL POOLS AND/OR LOCATIONS.

F) NOTE REPORT IS INTENDED TO PROVIDE A FEW GENERAL ITEMS CONCERNING THE PROJECT. STATEMENTS VARY BASED UPON HIGHLIGHTS PROVIDED WITHIN FACT SHEETS.

NOTE: THIS "FIRST COPY" OF HREP INFORMATION IS FOR YOUR REVIEW. IT HAS BEEN GROUPED BY STATE. OBVIOUSLY, QUERY ENTRY ALLOWS GROUPING BY WHATEVER "HEADING" IS YOUR PREFERENCE AND YOU CAN ELIMINATE COLUMNS THAT ARE OF NO INTEREST TO YOU.

#4

OPERATING PLAN → PROBLEM ANALYSIS LONG-TERM RESEARCH STRATEGY

TASK: PA(NE)1

DETERMINE TURBULENCE AND SHEAR PATTERNS IN THE MAIN CHANNEL BORDER ASSOCIATED WITH COMMERCIAL VESSEL PASSAGE BY VESSEL SPEED, SIZE, DIRECTION AND RIVER FLOW AND CHANNEL CHARACTERISTICS

SUB-PROBLEM: 1 (HYPOTHESIS)

SINGLE TRAFFIC EVENTS PRODUCE SHORT-TERM PHYSICAL CHANGES IN CHANNEL TROUGH AND CHANNEL BORDER HABITATS

OP-LTRS1

#5

DRAFT SCOPE OF WORK:

PHYSICAL EFFECTS OF BARGE TOWS ON THE UPPER MISSISSIPPI RIVER SYSTEM: FY 90

October 12, 1989

by

Kenneth S. Lubinski

U. S. Fish and Wildlife Service
Environmental Management Technical Center
575 Lester Drive
Onalaska, WI 54650

NAME	ORG.	PHONE
BILL BERTRAND	ILL DEPT CONS	309-582-5311
John Colman	USGS	217 398 5371
Dan Ragland	CE, St. Louis Dist.	314/263-5711
David Kennedy	Wis DNR LaCrosse	608 785 9008
Mike Davis	MN DNR	(612) 345-3331
Russ Gent	IA DNR	319-872-5495
Tom Boland	IDNR	319 872 4976
Gail Carmody	USFWS	309/793-5800
KEN LUBINSKI	USFWS/EMTC	608/783-7550
JOE WLOSINSKI	USFWS / EMTC	608 783 7650
KEITH BESEKA	USFWS	507/454-4232
LeRoy Sowl	USFWS	309/793-5800
JERRY RASMUSSEN	USFWS	608/783-7551
Norm Stucky	Mo Dept of Cons.	314/751-4115
Dan Wilcox	Corps - St Paul	612 220 0276

Computerized River Information Center Analysis Team Meeting October 10-11, 1989

October 10

The meeting was called to order by acting chairperson, Glenn Radde. A new membership list was distributed. Terry Birkenstock said he is representing the Corps of Engineers until a replacement for Andy Bruzewicz is appointed.

Joe Wlosinski updated the group on personnel and management changes at the Environmental Management Technical Center (EMTC).

Robert Delaney is the new Program Manager replacing Joe Scott.

Rick Lemon is now the Regional Office person responsible for what happens at the EMTC.

Marvin Moriarty is the new Environmental Management Program Coordinating Committee (EMPCC) representative for the Fish and Wildlife Service.

General Vander Els and Jim Gritman have signed an agreement on the operation of EMTC. EMTC will have control over technical matters affecting its operation.

The Science Review Board will have its first meeting no earlier than December, 1989.

In response to a rapid change in the number of personnel, EMTC may request additional building space. If approved, it would probably result in a new building next to the existing facility.

Joe Wlosinski provided an update on the Computerized River Information Center (CRIC). Personnel have:

Acquired and installed:

- Prime 9955 Mini Computer
- Altek and Calcomp Digitizing tables
- Calcomp Electrostatic Plotter (To be installed late October)
- Erdas Image Processing System
  - Software
  - Arc/Info
  - EPPL7
  - SAS
  - Oracle (To be installed November)

Opened the Center to River Managers. The current schedule calls for data, which is on the Prime, to be available for direct access via modem by the end of December. At that time appropriate security and access provisions will be in place. Prior to then data can be accessed through CRIC staff.

Performed the following Geographical Information System (GIS) activities:

- Developed guidelines for spatial data.

Developed possible applications for GIS.

In conjunction with the Ecological Analysis Team, prioritized systemic data acquisitions.

Collected aerial photography for the entire Upper Mississippi River System (UMRS) using color Infra Red film plus true color for the pooled areas of the system. Since only one set of photography was acquired, logistics will control access. As funds become available, additional copies will be made.

Collected 1987, 1988 and 1989 LANDSAT satellite imagery for the entire UMRS. Collected SPOT imagery for Pool 13 for 1989.

Initiated a pilot project on Pool 13 to define the most logistically feasible techniques for the creation of the land cover/land use and aquatic zones GIS data layers. The pilot project is being conducted by the Fish and Wildlife Services National Ecology Research Laboratory (NERC) at Fort Collins. The analysis team has conducted ground truthing of Pool 13.

Developed and coordinated hierarchial land cover and aquatic zones classification systems.

Contracted with Rory Vose at St. Marys College to perform an evaluation of the Meyer vegetation survey of 1977.

Completed a data base management strategy. The Oracle data base management system is the platform on which all data base management applications will be built. The Arc/Oracle interface will be acquired. However, we will not abandon Info at the present time for GIS data. For the individual user Info is still much more user oriented and usable than Oracle.

Completed the first phase of the Data Set Inventory. Joe Janacek has inventoried all data sets in the Upper Mississippi River Conservation Committee (UMRCC) library.

Completed an evaluation on the applicability of using remote sensing techniques for determining suspended solid concentrations in the UMRS.

Joe Wlosinski provided a summary of the FY 90 and FY 91 budgets. A general concern expressed by the group is that at current funding levels CRIC will become the bottle neck restricting the development and implementation of Long Term Resource Monitoring Program (LTRMP) within the next couple years. Based on these concerns the following recommendations were made:

- Recommendation: Request that the Program Manager reapportion the EMTC FY 91 budget to cover; one additional GIS biologist, additional mass storage for the prime, and data acquisition.

- Recommendation: Any additions to EMTC budget be evenly distributed between CRIC and Ecology.

Joe Wlosinski introduced the FY 90 Work Plan.

Data Set Inventory. A final product containing information from the UMRCC library will be available in the near future. Dave Bergstedt has completed an user friendly interface for accessing and adding information. He will be evaluating a run-time version of RBase. This would allow us to distribute a compiled version of the Inventory, so users would not be responsible for purchasing RBase.

- Recommendation: Distribute the PC version of the Data Set Inventory. Wait and see how use and development of other applications proceed (Oracle) before porting the Inventory to the Prime or another data base platform.

- Establish conventions for identifying the date (version) of the inventory and for updating it.

UMRS Bibliography. CRIC will look at using and expanding upon the UMRCC bibliographic system. The bibliography will not be directly linked to the Data Set Inventory.

Prime User Interface (presented by Frank Fassino). A Prime user interface will be developed to facilitate use of the system by inexperienced Prime users. Two levels of interaction are expected; simple data transfers to and from the system and interactive analysis using system software. A prototype for the later type of interface will be developed by NERC as part of a contract to develop a habitat evaluation GIS interface.

Data Base Management (presented by Frank Fassino). CRIC has identified Oracle as the data base management system for all new developmental data base work. Applications development will occur on a PC platform, then uploaded to the Prime. CRIC anticipates field station data and the soon to be developed contaminant data base will use Oracle. CRIC will investigate the feasibility of replacing RBase with PC Oracle at the field station level.

October 11, 1989

Barry Drazkowski discussed ongoing GIS applications.

Waterfowl Test Case. This application is being developed in conjunction with the work John Wetzel, Wisconsin Department of Natural Resources, and Bob Dahlgren, Fish and Wildlife Service, are doing on nesting habitat and success of waterfowl on the Mississippi River. Initially they felt a limited range of habitat types would characterize mallard nesting habitat on the UMRS. However, they are finding the character of mallard nesting habitat is much more general than they originally thought. In general, riverine habitat is mallard nesting habitat. If this proves to be true, mapping potential mallard nesting habitat will not be a viable GIS project.

Black Tern Test Case. This application is being developed in conjunction with research being conducted by Dr. Raymond Faber at St. Marys College. He is currently developing a detailed model or characterization of black tern nesting habitat. This model will be coded into the GIS to develop a map of potential habitat.

Forest Management Plan. Timber stand information from the Rock Island District, was digitized into the GIS. It will be used via the interactive link to the ERDAS software to facilitate classification of the imagery. We hope to differentiate several stand types in the floodplain forest.

Pool 8 Island Erosion Study. Lower Pool 8 Islands for 1939, 1947, 1954, 1961, 1967, 1977 and 1983 are digitized and plotted on a draft map. This information will be related to changes in depth and vegetation information to try and document why the area has changed over time.

Barry Drazkowski discussed the development of system-wide GIS data.

Transportation and Hydrology. The 1:100,000 U.S. Geological Survey Digital Line Graphs were purchased and received. The data will be loaded and processed as time and disk access permits. At present personnel time and space availability on the Prime are restricting loading this data base.

Elevation. The 1:250,000 Defense Mapping Agency digital elevation models were purchased and received. The loading and processing of this data base is controlled by the same constraints as transportation and hydrography.

Land Cover/Land Use and Aquatic Zones. As mentioned earlier a pilot project to evaluate the logistics of developing the land cover/land use and aquatic zones data layers is under way with the NERC. Test data on a small area will be available on January 1, 1990. Final results of their project will be available in March 1990. Joe Wlosinski requested CRICAT involvement during the review, to ensure the applicability of the NERC product. He said the product will be available in the Arc/Info, EPPL7, and GRASS formats. All of the team members said they would like to see the data. Joe Wlosinski also requested names of any additional individuals that would review the data.

- Recommendation: CRIC host a mid-February meeting to discuss and evaluate the NERC data. The first 2 days of the meeting will concentrate on the data and deciding how to proceed with the development of the systemic land cover/land use and aquatic zones data base. This will be held in a workshop format, with members of both advisory teams and other key reviewers. The third day will consist of a strategic planning session to define CRIC program goals and objectives. Attendance at this session will be limited to the Analysis Teams. Barry Drazkowski will develop a proposed format for the workshop. Tentative dates are the 1st or 2nd weeks in February, 1990.

Current Bathymetry Data. Frank Fassino has found that bathymetry data on the Ross system cannot be uploaded to the Prime. There is no communications software, nor is there an inexpensive serial port for connecting the two computers. EMTC has initiated acquisition of a new Hewlett Packard workstation which has the capability of communicating with the Prime, and a new set of software which will allow processing of the bathymetry data. Once installed CRIC will have the capability to upload the bathymetry data to the Prime, and import it to Arc/Info.

Historic Elevation Data. Joe Wlosinski asked the analysis team, "to what extent CRIC should acquire and digitize historic elevation data"?

- Recommendation: Acquire and digitize historic data for key pools, and for specifically requested areas (ie., Habitat Rehabilitation and Enhancement Projects).

GIS Habitat Model Demonstration. Barry Drazkowski described the proposed GIS/Habitat Evaluation user interface. It would provide an interactive, graphic program allowing users to enter project areas, potential management areas, conduct habitat impact assessments, select from a variety of Fish and Wildlife Service's Habitat Suitability Index and Missouri's Wildlife Habitat Appraisal Guide type evaluation models, and conduct analysis of the benefits and costs of various management programs.

Additional GIS Themes. Joe Wlosinski explained that if funding were not a problem, the next data set CRIC would recommend to acquire is elevation. However, given the current and projected funding levels, acquisition of system-wide elevation data is not logistically feasible within the next couple years if the decision is made to obtain system-wide Land cover/land use and aquatic area themes. The CRIC staff will continue to research the best ways to acquire elevation data.

Trend Analysis for Land Cover/Land Use. Mark Laustrup will be developing a scope of work on how CRIC will address trend analysis for land cover/land use. The Scope of Work is due in February, 1990.

Attendance List:

CRIC Advisory Team

Deb Southworth	U. S. Fish and Wildlife Service
Glenn Radde	Minnesota Department of Natural Resources
Terry Birkenstock	U. S. Army Corps of Engineers St. Paul District
Paul Tessar	Wisconsin Department of Natural Resources
Gordon Farabee	Missouri Department of Conservation
Rob Krumm	Illinois State Geological Survey

Others in attendance

Joe Wlosinski	U. S. Fish and Wildlife Service
Frank Fassino	U. S. Fish and Wildlife Service
Dave Bergstedt	U. S. Fish and Wildlife Service
Robert Delaney	U. S. Fish and Wildlife Service
Barry Drazkowski	U. S. Fish and Wildlife Service
Frank Magazino	U. S. Fish and Wildlife Service

[redacted]

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Environmental Management Technical Center
575 Lester Drive
Onalaska, Wisconsin 54650

IN REPLY REFER TO:

December 7, 1989

Dear Analysis Team Member;

I have reviewed the minutes of the Computerized River Information Center Analysis Team (CRICAT) meeting (copy attached). In general I agree with your recommendations and will respond to each.

First, however, I would like to mention that the Pilot Project for developing Geographical Information System (GIS) data for landcover/landuse and aquatic zones is on schedule. For those of you who now have GIS capabilities and would like to examine this data at your agency, please call Joe Wlosinski (608) 783-7550. The pilot data will be ready in early January.

Additionally a series of meetings is now being planned for March along the Upper Mississippi River (UMR) so we can show potential GIS users how they may be able to use GIS capabilities at their own office and how we anticipate the Computerized River Information Center (CRIC) can help river managers. We also wish to solicit the needs of users and managers at these meetings to enable us to match our Program with users needs. I will mention more about these meetings in discussing your recommendations.

Now concerning each of your recommendations:

* I agree that another biologist, whose main task will be to work on GIS applications, is needed. However, three things must first happen before this becomes a reality: 1) I must convince the Regional Director to allow the Center an additional staff position, a process which has already been started. 2) The Long Term Resource Monitoring Program (LTRMP) must receive a substantial increase in funding over this fiscal year, and; 3) I must be further convinced that we will have appropriate data for the biologist to use and that the EMP community will use GIS products. I expect that feedback from the meetings planned for March will weigh heavily in this decision.

* Funding over-target work items were identified in the Annual Work Plan. If we receive sufficient additional funding this fiscal year a part of it will be for the acquisition of mass storage devices for the Prime computer.

* I support the notion that part of the CRIC budget be used for systemic GIS data acquisition, and that is the direction we are heading with the Pilot Project. Again, feedback from the March meetings will be used in planning for data acquisition for the next few years.

* Additions to LTRMP funding will be split between Ecology and CRIC in a rough proportion as was set out in the Operating Plan unless: 1) There are unforseen events; or 2) Results from the critical planning process that we will be engaged in this year dictates otherwise.

* Recommendations concerning the Data Set Inventory will be carried out.

* I agree that the National Ecology Research Center data should be evaluated before a decision is made to acquire additional data covering the entire Upper Mississippi River System (UMRS). However: 1) I would like input from as wide a group as possible concerning this matter; 2) I want to make sure that members of the Environmental Management Program (EMP) community who do not have experience with GIS start to gain that experience and learn how a GIS can help them; and 3) I would also like learn about other ways that the Environmental Management Technical Center can help the EMP community. I have asked Joe Wlosinski and his staff to plan a number of meetings for this March which will be held up and down the UMRS, with the objective of accomplishing all three of these tasks.

* I also agree with the recommendation of holding a strategic planning session for the CRIC, and I view the feedback from the meetings discussed above as being vital for the success of such a session. For that reason, I believe that April would be the best time for such a meeting, and I will be working with the Chairman of the CRICAT in planning for this session.

* I agree with the recommendations concerning acquisitions and digitization of historic data for key pools and specifically requested area.

I want to thank each of you for your assistance in helping the EMTC to become as technically efficient and helpful to River Managers as possible.

Robert L. Delaney
Program Manager

attachment

cc: Ecological Advisory Team

UPPER MISSISSIPPI RIVER CONSERVATION COMMITTEE

OFFICIAL STATE CONSERVATION AGENCIES COOPERATING:
ILLINOIS -:- IOWA -:- MINNESOTA -:- MISSOURI -:- WISCONSIN

1830 Second Avenue
Rock Island, Illinois 61201

309/793-5800

October 26, 1989

Brigadier General Jude W. P. Patin
Division Engineer
U.S. Army Engineers Division
North Central
536 South Clark Street
Chicago, Illinois 60605

Dear General Patin:

The Upper Mississippi River Conservation Committee has been a strong proponent of the Environmental Management Program and its Long Term Resource Monitoring Program component. We believe that achieving the objectives of this program is crucial in protecting and managing this nationally significant resource. However, achievement of those objectives are in jeopardy due to budget constraints and budget allocation decisions.

We fully support the enclosed assessment and recommendations made by the LTRMP Ecological Analysis Team at their recent meeting. We urge you to secure sufficient funds to accomplish the LTRMP work as outlined in the Environmental Management Technical Center's FY90 Annual Work Plan.

Please keep us apprised of your efforts in this regard.

Sincerely,

Lee Kernen

Lee Kernen
Chairman

Enclosure

cc: Executive Board
James Gritman, FWS
Don Vonnahme, UMRBA
Mark Frech, IL DOC
Larry Wilson, IA DNR
Jerry Presley, MO DOC
C.D. Besadny, WI DNR
Joseph Alexander, MN DNR
Environmental Management Program-Coordinating Committee
Ecological Analysis Team

LONG TERM RESOURCE MONITORING PROGRAM
ECOLOGICAL ANALYSIS TEAM

ASSESSMENT AND RECOMMENDATIONS
RELATIVE TO BUDGETARY CONSTRAINTS OF THE LTRMP ECOLOGY PROGRAM

OCTOBER 17, 1989

The Long Term Resource Monitoring Program (LTRMP) Ecological Analysis Team met in Bettendorf, Iowa on October 16-17, 1989 to review FY 89 Ecology Section accomplishments and the proposed FY 90 Annual Work Plan. Information provided by the Environmental Management Technical Center (EMTC) staff revealed that the current budget, which is below authorized levels, is insufficient to implement all portions of the proposed FY 90 Annual Work Plan.

The LTRMP Operating Plan projected the FY 90 budget needs for the Ecology Program to be $5.772 million. However, the FY 90 budget guidelines from the Corps of Engineers reduced the Program's budget to $3.015 million as reflected in the LTRMP 1st Annual Report. The President's FY 90 budget included only $2.499 million for this Program. Cost estimates provided by earlier planning documents indicated that EMTC FY 90 Annual Work Plan objectives could be met within the President's budget. However, actual State costs to accomplish Annual Work Plan objectives commensurate with present capabilities total $2.906 million. This places the Ecological Analysis Team in the position of making recommendations to the EMTC to reduce Program activities and tasks totaling an estimated $407,000.

Three alternatives were considered to meet these budgetary constraints:

1) Delay start-up of the new Field Stations at Lake City, Havana and Cape Girardeau.

2) Reduce the number of Resource Trend Analysis components monitored at all Field Stations.

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While Resource Trend Analysis is a high cost item in the EMTC budget, it is recognized as a key element of the LTRMP. Trend Analysis documents long-term changes in the River System's environment, and provides information regarding the geographic extent and magnitude of problems under investigation in the LTRMP Problem Analysis component. Recent unanticipated changes in the River's aquatic vegetation and invertebrate populations have emphasized the value of baseline data available only as a product of Trend Analysis. Resource Trend Analysis information is further viewed as critical to future management decisions related to maintaining the River's environmental integrity and capacity to accommodate competing uses.

The Ecological Analysis Team supported the EMTC on their recommendation to pursue Alternative No. 2 to meet immediate budgetary constraints. However, the Team resolved that pursuing any of the three stated alternatives will jeopardize the success of the LTRMP. Therefore, the Team urges that the Federal Agencies and States work to secure sufficient funds to accomplish the FY 90 EMTC Annual Work Plan as proposed.

On a related issue, it was noted that while LTRMP goals have not changed and the ability to implement the Program presently exists, the LTRMP <u>will not</u> achieve Program objectives without full funding for FY 91 and beyond. Therefore, the Ecological Analysis Team urges the Corps of Engineers and the Upper Mississippi River Basin Association to make every effort to seek authorized funding levels in future fiscal years.

Norman P. Stucky, Chairman
Ecological Analysis Team

CRIC

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Environmental Management Technical Center
575 Lester Drive
Onalaska, Wisconsin 54650

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

April 12, 1990

Memorandum

To: Computerized River Information Center and Ecological Analysis Team Members

From: Robert L. Delaney, Program Manager, Environmental Management Technical Center, Onalaska, WI

Subject: Meeting April 20th 1990

I want to take this opportunity to bring you up to date on the Computerized River Information Center (CRIC) Program of the Environmental Management Technical Center (EMTC). A date for the next CRIC Analysis Team meeting has not been set, but your Chairman and Assistant Program Manager Joe Wlosinski will probably schedule the next meeting before the Annual Work Plan preparations.

First, I would like to mention that we have a new representative for the COE on the CRIC Analysis Team. Richard Astrack is with the St. Louis District and is taking the place of Andy Bruzewicz. Andy has left the Rock Island District to take a position at the COE Cold Regions Research and Engineering Laboratory. We wish Andy the best and would like to thank him for all the time, effort and ideas he contributed to the Integrated Data Management System Work Team and to the CRIC Analysis Team. An updated address list for the CRIC Analysis Team is attached.

The CRIC staff and I have been working closely with Chairman Glenn Radde on a Comprehensive Planning Process for the CRIC as was recommended at your last meeting. Glenn and Tony Starfield (University of Minnesota) have travelled to Onalaska on two occasions within the last two months to assist us in the planning process. The planning process is broader in scope than was conceptualized by the CRIC Analysis Team, but I want input concerning CRIC tasks from a wide audience. The planning process will help us refine our goals and objectives and make sure we are being responsive to the needs of the user community, will set out strategies to attain objectives, and will develop a method to measure our effectiveness. Included in the process will be a strategic planning meeting attended by about 25 personnel from various agencies and backgrounds on May 23 and 24, 1990. Tony Starfield will assist as the facilitator at that meeting. My staff or I may contact you shortly for some help concerning the planning process.

Consideration of establishing GIS capabilities at the LTRMP field stations is underway. Tim Loesch, from the Minnesota Land Management Information Center, has developed a GIS interface for forestry applications which gives novice computer users the ability to use GIS with little training. We are

considering developing the same type of interface for river applications. Tim will be at the EMTC on Friday, April 20, at 1:30 pm to give a demonstration of the GIS interface. I would like to invite you to attend this demonstration. Please let Joe Wlosinski (608) 783-7550 know if you will be able to attend.

The Pilot Project for developing Geographical Information System (GIS) data for landcover/landuse and aquatic zones is almost complete. We have just received copies of the entire Pool 13 data set and the first draft of a report from the National Ecology Research Center. For those of you who now have GIS capabilities and would like to examine the Pool 13 data set at your agency, please call Joe Wlosinski (608) 783-7550.

As we have done for the first two years of the Program, we developed a list of additional Operating Plan tasks which could be accomplished at the EMTC should we receive additional funds. The list was sent to the Corps a few weeks ago. We are presently awaiting word on additional funding levels. A list of the tasks are included with this letter. I invite your review and comments concerning the identified tasks.

With advice of the CRIC staff, I have postponed the series of meetings which were being planned for this spring along the Upper Mississippi River to show potential GIS users how they may be able to use GIS capabilities at their own office. First, an interface similar to the one described above should be developed and in place; and second, some of the same information that we were going to gather at those meetings will be provided at the comprehensive planning session. After the interface is developed we will hold the series of information meetings later this year.

Lastly, I would like to ask for your help on the data set inventory. We have received information on a few hundred data sets, but we know there is still a lot of data sets, maps, and photographs that we still need information about. I am including a copy of the questionnaire with this letter, and would like your help in getting us needed information from your agencies.

I continue to look forward to working with you as we continue to move aggressively toward implementing all of the tasks outlined in the Operating Plan.

attachments

CRIC Analysis Team

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(217) 333-0150

LTRMP Ecological Analysis Team Meeting

LTRMP PROBLEM ANALYSIS - FY 90

May 3-4, 1990

OUTLINE

1) Highlights of the year to date

2) Coverage of Tasks underway, proposed, and alternates

3) Additional topics

   - Data synthesis needs (Proposed River Ecology Course, Modifications to Field Station Weekly Activity Reports, Personnel needs)

   - Coordination with POS and Navigation Studies

   - Time constraints associated with mid-year budget enhancements

HIGHLIGHTS OF THE YEAR TO DATE

1) ICHTHYOPLANKTON WORKSHOP

2) VALLISNERIA SHADING STUDY - PHASE I

3) PORTABLE CONTINUOUS MONITOR DEVELOPMENT

4) LINKAGES BETWEEN PHYSICAL AND BIOLOGICAL NAVIGATION STUDIES

5) RECREATIONAL WAVE STUDY

Ecological Analysis Team Meeting

May 3 and 4, 1990
Davenport, Iowa

The Ecological Analysis Team (EAT) met at noon, May 3, 1990 at the Davenport Holiday Inn. An agenda and attendance list are attached (attachments 1 and 2).

FUNDING AND PROJECT STATUS

Jerry Rasmussen, Assistant Program Manager - Ecology, presented a summary of FY90 spending and a status of funding projections for the next 7-10 years (Attachment 3). Jerry noted that the reduction in FWS overhead has resulted in considerable additional dollars being available. In spite of future funding optimism, less than authorized funding to date and inflation will cause the program to not be able to complete all the tasks identified in the Operating Plan. Tasks which will remain incomplete in 1997, based on funding level projections, will include the following (taken from draft Fifth Annual Adendum):

Resource Trend Analysis

Water and Sediment Monitoring - Only 9.5 years of data will be available for Pools 8, 13 and 26; 8.5 years for the LaGrange Pool; 8 years for Pool 4; and 7 years for the Open River.

Vegetation Monitoring - Only 8.5 years of data will be available for Pools 8, 13 and 26; 8 years for Pool 4 and the LaGrange Pool; and 7 years for the Open River.

Invertebrate Monitoring - Only 7 years of data will be available for Pools 8, 13 and 26; and only 6 years of data will be available for Pool 4, LaGrange Pool and the Open River.

Fisheries Monitoring - Only 8.5 years of data will be available for Pools 8, 13 and 26; 8 years for Pool 4 and the LaGrange Pool; and 7 years for the Open River.

Waterfowl Monitoring - Data will be limited to that collected through our cooperative efforts with ongoing U.S. Fish and Wildlife Service migratory waterfowl surveys.

Furbearer Monitoring - Data will be limited to casual observations made by our field stations.

Public Use Monitoring - Only one combined Creel/Public Use Survey will be available for each of the six study Pools/Reaches.

Problem Analysis

Sedimentation - Evaluation of problem causes will not be complete, evaluations of limiting areas will not have begun, control measures will not be developed, implemented or evaluated through the HREP process.

Navigation Effects - Turbidity and shear evaluations, physical impact models, evaluations of cold season effects, biological impacts models, evaluation of fleeting impacts, and design and evaluation of alternative fleeting measures will be incomplete.

Lack of Aquatic Vegetation - Management recommendation will not be developed or evaluated.

Reduced Fisheries Populations - Limiting factors will not be completely evaluated and management recommendations will not be developed or evaluated.

HREP Analysis

Some HREP Analysis is currently being completed by the Field Stations. This work is being accomplished independently by the States in addition to their Resource Trend Analysis and Problem Analysis activities. The EMTC has had little involvement in setting up these projects and is providing no direct oversight of the work. The sampling is, however, being completed according to established LTRM procedures.

Involvement of the EMTC in HREP Analysis is dependent on receipt of HREP funds. EMTC is prepared to hire an HREP Analysis Coordinator and begin development and oversight of monitoring activity for selected habitat projects, but budget limitations have prevented from doing so. Unless full funding is reached, no additional HREP monitoring activity can be expected from LTRM without support from the HREP accounts.

As for Trend Analysis, each of the eight resources are scheduled to be monitored for a ten year period, and each year's delay in start up delays completion by a corresponding year. Even if all components were added in 1990, completion of 10 years of Trend Analysis will not be achieved until the year 2000. Trend Analysis for Invertebrates will not be possible until January 1991.

Sporadic start/finish dates for Trend Analysis and the extension of the Problem Analysis tasks will continue to cause the Program to become fragmented. If the EMP ends in 1997 as currently authorized and all of the aforementioned tasks remain incomplete, the EMP will not have achieved the goals laid out by authorizing legislation. Long term monitoring simply requires a long term commitment to achieve results. Benefits are not achieved until at least ten years of Trend Analysis data have been collected. Additionally, because of the direct interdependence of Problem Analysis and HREP Analysis on Trend Analysis data they too will not achieve expected results.

The EMP was intended to (1) improve baseline data, (2) analyze resource problems and (3) develop tools to solve those problems. At least ten years of Resource Trend Analysis data on all selected components is needed to significantly improve baseline information. Resource problems must be analyzed through sound scientific procedures to make good resource management recommendations. These recommendations must then be evaluated through pilot implementation efforts and habitat projects. These projects must then be evaluated for 2-3 years to determine their success. Then and only then can the EMP be considered complete as envisioned.

It should be noted that the most important data synthesis steps for trend analysis, by necessity, are scheduled to take place during the program's final years. This is to take advantage of as much data as possible.

In terms of program scheduling, the need for final data synthesis presents two problems. The importance of including a maximum number of years in the synthesis is illustrated by noting that the first two years of trend analysis data collection have also been years of record low river discharge. If the data base established during LTRM is to be adequate, it must cover a period of time that places these years in their proper long-term perspective.

Second, enough time must be allowed for complete analysis of the data. Our experience with the data that are being produced annually at the LTRM field stations suggests that a minimum of 2 complete years of analysis will be required to summarize the volume of data that will be generated.

Shortening of either the data collection or data analysis phase of trend analysis will result in direct loss of product quantity and quality.

Discussion then turned to a number of questions. Will LTRMP produce the products needed by the resource managers? Are they the products originally envisioned? Are the right tasks being done? Should emphasis change? Are hypotheses to be tested within available budget? What hypotheses will not be tested? The consensus of the EAT was that the Operating Plan roadmap is still good, but that these questions are central in LTRMP implementation. Additional discussion was deferred until after the Problem Analysis projects were presented.

The request for additional FY90 funding was reviewed. Concerns were expressed on the coordination and development of the list and the role of the EAT. The group did not want such funding requests to have the appearance of an open slush fund. They suggested that the EMTC more clearly justify such requests. The EMTC staff explained the deadline imposed by the Corps precluded much coordination on the funding request. They agreed to provide additional justifications in future requests. The additional FY90 money has been approved by the Corps. While the dollar amount ($2.3 million) is fixed, there is some latitude in specific decisions provided that the total is obligated. See discussion below on Problem Analysis.

ROLE OF THE ECOLOGICAL ANALYSIS TEAM

Norman Stucky, EAT chairman, initiated discussion on the role of the EAT. He expressed the concerns and frustrations of the States in their inability to have effective input to the EAT because of the myriad and growth of the planning requirements of the federal agencies (EMP-CC, EAT, CRICAT, RRCT, FWIC, OSIT, CMR, FWWG, POS, etc.). The States can only stretch their personnel so far. He wanted the EMTC to know that it is the States' desire to be full fledged partners in the LTRMP planning process. Their lack of time to provide input to the EMTC does not signify any lack of interest. John Wetzel commented further that the EMTC should expect the EAT to be like a board of directors that provides general program direction and guidance rather than technical input to every aspect of the program. Technical assistance should be sought out in addition to EAT review.

Robert Delaney, LTRMP Program Manager, pointed out that the volume of review material will grow greatly as the program achieves full funding. He hopes that the Science Review Committee will be able to provide additional technical input. Terry Boyles stated that as a first time participant to the EAT, he had a hard time understanding the legislative and administrative imperatives for the LTRMP based on the information provided. He believes that the questions need to be better

defined and ranked so that technical tasks can be developed. He suggested that the EAT needed to define explicit targets and products for the LTRMP.

It was agreed that it would be worthwhile to complete an information package of clearly readable goals, objectives, and products to be achieved by the LTRMP. Delaney said this would be a valuable addition to the Operating Plan and could be used for a brochure the EMTC was considering producing. Further discussion was deferred until after the Problem Analysis discussion.

SCIENCE REVIEW COMMITTEE

Robert Delaney reported that the first Science Review Committee meeting will be the week of June 4. The EAT should review the agenda and provide any comments as soon as possible. He hopes that the SRC will be able to meet at least once again this year as this first meeting will only be a familiarization process.

COMPUTERIZED RIVER INFORMATION CENTER

Joe Wlosinski, Assistant Program Manager - CRIC, informed the EAT that the CRIC was planning a strategy session May 23 and 24 to develop a comprehensive plan. They want to better define what the resource mangers and decisionmakers expect as a product of the CRIC. Delaney noted that there is not enough funding to complete a GIS for the UMRS. However the key Trends Analysis pools can be completed. Initial work in pools 8 and 13 is complete and available. Within 5 years there will be detailed GIS data available for 5 pools. Wlosinski also requested assistance from the EAT in getting as many people as possible to input to the Data Set Inventory.

Norm Stucky and Bill Bertrand expressed concern over the expanding role of CRIC. They said that the primary role of CRIC is to be a servant to the Trends Analysis and the Problem Analysis components and to develop correlations and relationships in that data base. They believe that if additional funding and capabilities are available, it would be nice to go beyond the primary goal, but only after that goal has been satisfied. Wetzel suggested that maybe the CRIC Team and the EAT should merge since the major jobs of the CRIC Team, hardware and software selection, were now complete. The CRIC Team does not include the proper membership to address the potential strategy and products of the CRIC. The EAT should assume this role.

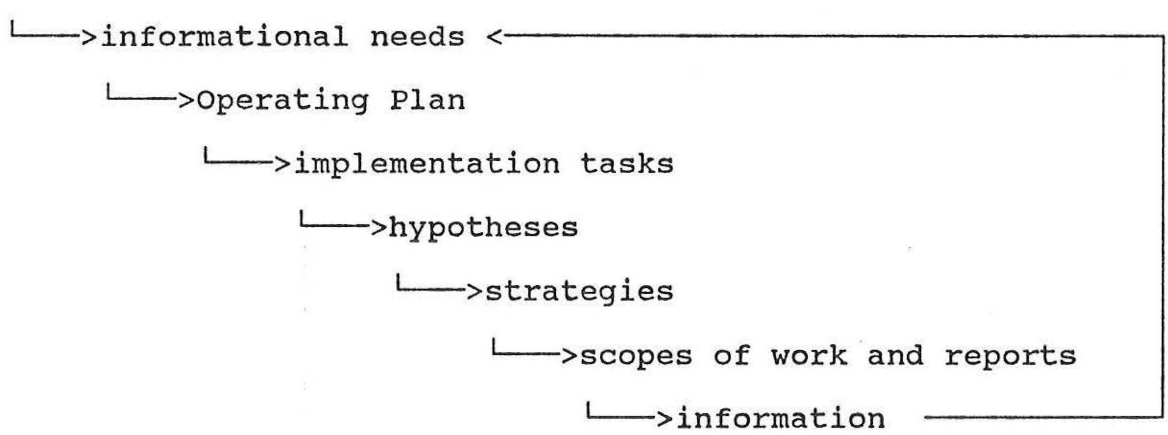
RELATIONSHIP TO ST. LOUIS DISTRICT PLAN OF STUDY

Norm Stucky reported that many of the EAT members are also members of the St. Louis District POS Team. The POS is about ready for public review. It details all the necessary studies to quantify the effects of navigation traffic. The overlap with the

LTRMP is recognized, and Ken Lubinski, Problem Analysis Coordinator, has written a section of the POS to describe the complementary nature of the two. EMTC has already initiated discussions with the St. Louis District on shared funding for some of the studies. Gail Carmody noted that the POS is more comprehensive than what is being planned by the LTRMP. The LTRMP can be a cost savings to the POS not vice versa.

PROBLEM ANALYSIS

Ken Lubinski presented an overview of the Problem Analysis process:



He said that hypotheses are also being addressed in a step down fashion. First cause and effects are addressed, then problem areas, and finally solutions are to be evaluated.

Terry Siemsen, Louisville District, briefly summarized the NAVPAT model that the district is developing to address navigation effects on the Ohio River. The model integrates one-dimensional hydraulic models, habitat suitability indices for selected fisheries life stages, economic planning alternatives, and tow characteristics. It will be used to compare the relative difference among traffic levels that are projected for various navigation improvement alternatives. It does not address population level change, but could be highly useful in identifying significant impact areas and potential avoid and minimize alternatives.

Lubinski proposed to the EAT that a demonstration of the NAVPAT be done in Pool 13 to determine the potential applicability of the model to the UMRS. The pilot project will help identify data input requirements and possible changes to ongoing physical forces and trends data collection to help complete and/or verify the model for the UMRS. The EAT members expressed concern about

the verification process and the ultimate level of confidence needed for modelling, but agreed that the pilot should be done.

Rasmussen reported that HREP monitoring has been deferred since it was a low priority in the Operating Plan. The EAT expressed their continuing concern of when and how HREP monitoring would get done and if the GIS would be able to address.

Discussion then ensued on concerns for task selection. Problems relate to unknown funding, poor timing, lack of staff, adequate input and feedback, insufficient EAT involvement, and understanding of the big picture. It was agreed that considering everything, task selection was proceeding as well as possible. Tasks proposed for FY90 year end funding and EAT comments are included as Attachment 4. The EAT gave general approval to the tasks and any alternates that are necessary to fully spend available dollars.

MORE ROLE OF EAT

The meeting concluded with continued discussion on the role of the EAT. The States believe that their role is not in writing scopes of work or similar detailed technical assistance, but to define products and review progress in achieving products. The Team agreed that they need to meet more frequently in order to provide meaningful input to the planning process. Next order of business must be development of the Problem Analysis objectives for FY91. A meeting for **July 24 and 25** was tentatively scheduled to address this topic and HREP evaluation concerns.

In addition, it was agreed that the vision, goals, objectives, and products of the LTRMP need to summarized as quickly as possible. The report will be used as 1) a technical communication tool,
2) to assist in marketing the program, and 3) to help in developing a strategy to accomplish tasks that will not get done under this program due to funding constraints. Wetzel and Carmody agreed to begin on this report the first week in June.

The meeting adjourned at 12:15 p.m., May 4.

LONG TERM RESOURCE MONITORING PROGRAM
ECOLOGICAL ADVISORY TEAM

DAVENPORT, IOWA
MAY 3-4, 1990

MEETING AGENDA

THURSDAY, MAY 3, 1990

12:00-12:15 P.M.	INTRODUCTIONS/OPENING REMARKS - STUCKY
12:15-12:45 P.M.	GENERAL DISCUSSION OF FUNDING AND PROJECT STATUS (WHERE ARE WE WITH RESPECT TO THE OPERATING PLAN AND CAN WE GET WHERE WE NEED TO GO?) - RASMUSSEN
12:45-1:15 P.M.	SCIENCE REVIEW COMMITTEE (STATUS/PRIORITIES) - DELANEY
1:15-1:45 P.M.	INTERRELATIONSHIP WITH THE SECOND LOCK POS - STUCKY/LUBINSKI/CARMODY
1:45-2:15 P.M.	STRATEGY FOR LONG TERM UMRS MANAGEMENT AND THE ROLE OF THE ECOLOGICAL ANALYSIS TEAM IN LTRMP/2ND LOCK POS/ETC. - STUCKY/CARMODY/ALL
2:15-2:45 P.M.	CRIC PROGRAM REVIEW - WLOSINSKI
2:45-3:00 P.M.	BREAK
3:00-5:00 P.M.	REVIEW PROBLEM ANALYSIS PROPOSALS/SCOPES OF WORK - LUBINSKI - SEDIMENTATION - NAVIGATION EFFECTS
5:00 P.M.	ADJOURN

FRIDAY, MAY 4, 1990

8:00-11:45 A.M.	CONTINUE REVIEW OF PROBLEM ANALYSIS PROPOSALS/ SCOPES OF WORK - LUBINSKI - NAVIGATION EFFECTS - WATER LEVEL FLUCTUATIONS - LACK OF AQUATIC VEGETATION - REDUCED FISHERIES POPULATIONS
11:45-NOON	CLOSING COMMENTS - STUCKY
12:00 NOON	ADJOURN

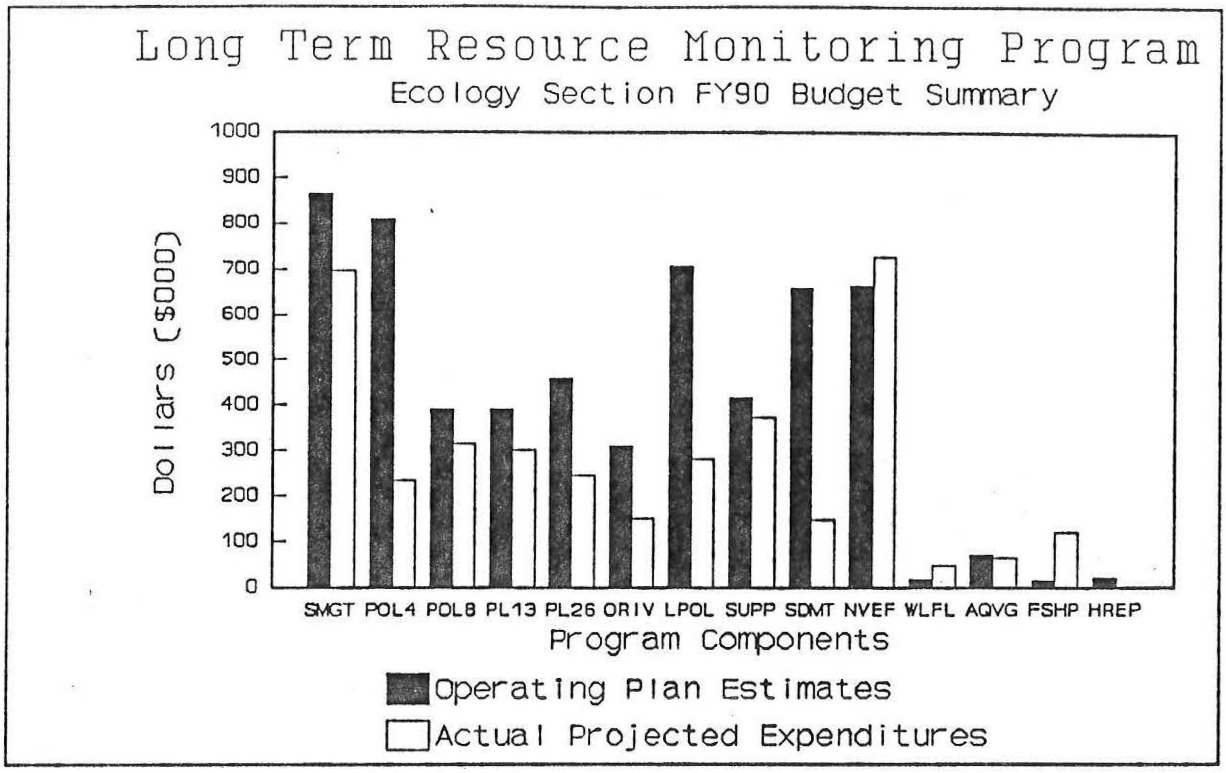
ATTACHMENT 1

EAT Attendance

May 3-4, 1990

NAME	AGENCY	PHONE
Gail Carmody	U.S. Fish and Wildlife Service	309/793-5800
Bob Clevenstine	U.S. Army Corps of Engineers	309/788-6361
Bill Bertrand	Illinois Dept. of Conservation	309/582-5611
Ken Lubinski	U.S. Fish and Wildlife Service	608/783-7550
Dan Wilcox	U.S. Army Corps of Engineers	612/220-0276
Terry Boyles	National Park Service	303/491-1452
Tom Boland	Iowa Dept. of Natural Resources	319/872-4976
Jerry Rasmussen	U.S. Fish and Wildlife Service	608/783-7550
Norm Stucky	Missouri Dept. of Conservation	314/751-4115
Mike Davis	Minn. Dept. of Natural Resources	612/345-3331
John Wetzel	Wisc. Dept. of Natural Resources	608/785-9994
David Kennedy	Congressman Steve Gunderson	715/284-7431
Robert Delaney	U.S. Fish and Wildlife Service	608/783-7550
Bernard Schonhoff	Iowa Dept. of Natural Resources	319/263-5062
Joe Wloskinski	U.S. Fish and Wildlife Service	608/783-7550
John Colman	U.S. Geological Survey	217/398-5371
Dick Weisbrod	National Park Service	612/433-5663
Terry Siemsen	U.S. Army Corps of Engineers	502/582-5550

ATTACHMENT 2



COMPONENT	ABBREVIATION	OPERATING PLAN	PROJECTED EXPENDITURE
STUDY MANAGEMENT	(SMGT)	862	696
TREND ANALYSIS			
POOL 4	(POL4)	807	234
POOL 8	(POL8)	389	315
POOL 13	(PL13)	389	302
POOL 26	(PL26)	458	245
OPEN RIVER	(ORIV)	310	151
LAGRANGE POOL	(LPOL)	704	282
SUPPLIES	(SUPP)	414	373
PROBLEM ANALYSIS			
SEDIMENTATION	(SDMT)	656	149
NAVIGATION EFFECTS	(NVEF)	662	726
WATER LEVEL FLUCTUATIONS	(WLFL)	17	47
LACK OF AQUATIC VEGETATION	(AQVG)	69	63
REDUCED FISH POPULATIONS	(FSHP)	14	120
HREP EVALUATION	(HREP)	21	0
TOTAL		5772	3703

ATTACHMENT 3

TABLE 1. ACTUAL EXPENDITURES AND PROJECTED BUDGET FOR THE ECOLOGY SECTION OF THE LONG TERM RESOURCE MONITORING PROGRAM.

FUNDING BY FISCAL YEAR ($000)

	FY86	FY87	FY88	FY89	CUMULATIVE BUDGET FY86-89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	BALANCE TO COMPLETE FY90-97	FY98	FY99	FY200	FY201	BALANCE TO COMPLETE FY98-201
ECOLOGICAL ANALYSES/MANAGEMENT		33	139	302	474	696	540	627	572	602	631	662	649	4979	700	700	500	350	2250
ESTABLISH/MAINTAIN QA/QC			STAFF	STAFF	0	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	0	STAFF	STAFF	STAFF	STAFF	0
RESOURCE TREND ANALYSIS					0									0					0
DEVELOP PROCEDURES MANUALS					0									0					0
WATER AND SEDIMENT			STAFF		0									0					0
HYDROGRAPHIC SURVEYS			STAFF	STAFF	0	STAFF								0					0
VEGETATION				STAFF	0									0					0
INVERTEBRATES					0	STAFF								0					0
FISHERIES				STAFF	0									0					0
CREEL SURVEYS					0	STAFF								0					0
WATERFOWL					0	STAFF								0					0
FURBEARERS					0	STAFF								0					0
PUBLIC USE					0	STAFF								0					0
QA/QC			STAFF	STAFF	0									0					0
TRAINING			STAFF	STAFF	0	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	0	STAFF	STAFF	STAFF	STAFF	0
ACQUIRE/MAINTAIN FIELD GEAR		195	292	331	818				100	250	250	250	200	1050	50	50	50	50	200
ACQUIRE HYDROGRAPHIC SURVEY GEAR			316	100	416				100	110	40			250					0
ESTABLISH/MAINTAIN FIELD STATIONS			17		17									0					0
CONDUCT MONITORING					0									0					0
WATER AND SEDIMENT			269	461	730	919	1037	1093	1148	1205	1265	1329	1395	9390	1465	775	325		2565
HYDROGRAPHIC SURVEYS				STAFF	0	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	0	STAFF	STAFF	STAFF	STAFF	0
VEGETATION				163	163	324	355	372	391	410	431	452	475	3209	499	524	100		1123
INVERTEBRATES					0	100	441	463	486	510	536	563	591	3690	620	621	652		1893
FISHERIES				280	280	559	640	671	705	740	777	816	856	5763	899	472	165		1536
CREEL SURVEYS					0		140	140				140	140	560					0
WATERFOWL					0									0					0
MAMMALS					0									0					0
PUBLIC USE					0									0					0
LAND USE/LAND USE				STAFF	0	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	0					0
RTA FINAL REPORT					0									0				20	20
PROBLEM ANALYSIS					0									0					0
DEVELOP SCOPES OF WORK		STAFF	STAFF	STAFF	0	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	0	STAFF	STAFF	STAFF	STAFF	0
INITIATE CONTRACTS		STAFF	STAFF	STAFF	0	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF	0	STAFF	STAFF	STAFF	STAFF	0
DEVELOP HABITAT CLASSIFICATION SCHEME				STAFF	0	STAFF								0					0
APPLY/EVALUATE HAB CLASS SCHEME					0	STAFF	STAFF							0					0

TABLE 1. CONTINUED.

	FY86	FY87	FY88	FY89	CUMULATIVE BUDGET FY86-89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	BALANCE TO COMPLETE FY90-97	FY98	FY99	FY200	FY201	BALANCE TO COMPLETE FY98-201
SEDIMENTATION					0									0					0
PA(S)1 CLASSIFY AREAS				STAFF	0	4								4					0
PA(S)2 INIT LIMITING FACTORS EVALS					0									0					0
PA(S)2a COND LIT SEARCH			9		9									0					0
PA(S)2b DET SHDNG EFCTS (VALLISNERIA)			2	20	22	21								21					0
PA(S)2c DEV PORTABLE TURB METERS					0	51								51					0
PA(S)2d OTHER LIMITING FACTORS EVALS					0		100	100	100					300					0
PA(S)3 INIT PROBLEM CONC EVALS					0									0					0
PA(S)3a COND LIT SEARCH			9		9									0					0
PA(S)3b OTHER PROBLEM CONC EVALS				12	12		100	100	100	75	75			450					0
PA(S)4 INIT PROBLEM AREA EVALS					0									0					0
PA(S)4a DEF REM SENS CAPBLTY			6		6									0					0
PA(S)4b DEV REGREESIONS TURB/SUS SOLS					0	4								4					0
PA(S)4C DET BIOL/PHYS TURB COMPONENTS					0	25								25					0
PA(S)4d EVAL SPATIAL SED PATTERNS					0	10								10					0
PA(S)4e OTHER PROBLEM AREA EVALS					0						29			29					0
PA(S)5 DET PROBLEM CAUSES					0		72	66						138					0
PA(S)6 CHAR SEDIMENT INFLOW					0			82						82					0
PA(S)7 DET LIMITING AREAS					0						52	30		82					0
PA(S)8 DET LIMITING AREAS					0									0					0
PA(S)8a EVAL IL RIV SUBSTRATE AS FCTR					0	34					48			82					0
PA(S)8b OTHER LIMITING AREA EVALS					0									0					0
PA(S)9 DET LIMITING AREAS					0						52	30		82					0
PA(S)10 INIT HREP REVIEW					0	STAFF								0					0
PA(S)10a DEVELOP DATA BASE					0		STAFF							0					0
PA(S)10b REVIEW DATA BASE					0		STAFF							0					0
PA(S)10c PRIORITIZE HREPs					0		STAFF							0					0
PA(S)11 SELECT HREPs					0		STAFF							0					0
PA(S)11a DEVELOP MONITORING PLANS					0			STAFF	STAFF					0					0
PA(S)11b INIT HREP MONITORING					0									0					0
PA(S)11b1 HREP1					0				HREP	HREP	HREP			0					0
PA(S)11b1 HREP2					0				HREP	HREP	HREP			0					0
PA(S)11b1 HREP3					0					HREP	HREP	HREP		0					0
PA(S)11b1 HREP4					0					HREP	HREP	HREP		0					0
PA(S)11b1 HREP5					0						HREP	HREP	HREP	0					0
PA(S)11b1 HREP6					0						HREP	HREP	HREP	0					0
PA(S)12 DET METHDS/FEASIBILITY					0							50		50					0
PA(S)13 DESIGN CONTRL MEASURES					0							50		50					0
PA(S)14 DESIGN CONTRL MEASURES					0								50	50					0
PA(S)15 IMPLMT CONTRL MEASURES					0								HREP	0	HREP				0
PA(S)16 CONDUCT EXPERIMENTS					0									0		289	289	289	867
PA(S)17 IMPLMT CONTRL MEASURES					0									0	HREP				0
PA(S)18 CONDUCT EXPERIMENTS					0									0	166	166	166		498
SEDIMENTATION SUMMARY REPORT					0									0			10		10

TABLE 1. CONTINUED.

	FY86	FY87	FY88	FY89	CUMULATIVE BUDGET FY86-89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	BALANCE TO COMPLETE FY90-97	FY98	FY99	FY200	FY201	BALANCE TO COMPLETE FY98-201
NAVIGATION EFFECTS					0									0					0
PA(NE)1 INIT TURB/SHEAR EVALS					0									0					0
PA(NE)1a OHIO RIVER DATA COLL		7			7									0					0
PA(NE)1b UMRS DATA COLL			93		93	140								140					0
PA(NE)1c REC CRAFT WAVE EVAL				21	21									0					0
PA(NE)1d CLASSIFY RIVER REACHES					0	36								36					0
PA(NE)1e MAP CLASSIFIED REACHES					0	2								2					0
PA(NE)1f OTHER TURB/SHEAR EVALS					0		63							63					0
PA(NE)2 DET ICHTHPLKTN DIST'N				18	18	60	90	95	93	113	100	27		578					0
PA(NE)3 INIT LARVAE/EGG MORTLTY EVALS					0									0					0
PA(NE)3a COND ICHTHYPLANKTON WORKSHOP					0	10								10					0
PA(NE)3b SIMULATE IMPACTS IN LAB					0	51								51					0
PA(NE)3c OTHR LARV/EGG MORT STUDIES					0		65	65	66					196					0
PA(NE)4 INIT VEL/SUS SOL EVALS					0									0					0
PA(NE)4a OHIO RIVER DATA COLL		7			7									0					0
PA(NE)4b UMRS DATA COLL			93		93	140								140					0
PA(NE)4c REC CRAFT WAVE EVAL				22	22									0					0
PA(NE)4d CLASSIFY RIVER REACHES					0	36								36					0
PA(NE)4e MAP CLASSIFIED REACHES					0	2								2					0
PA(NE)4f OTHER VEL/SUS SOL EVALS					0	79	90	90	79	81				419					0
PA(NE)5 INIT BENTHIC IMPACTS EVALS					0									0					0
PA(NE)5a SIMULATE IMPACTS IN LAB					0	51								51					0
PA(NE)5b OTHR BENTHIC IMPACT STUDIES					0	51	83	22						156					0
PA(NE)6 INIT FISH BEHAV IMPACTS EVALS					0									0					0
PA(NE)6a TEST NAVPAT MODEL ON UMRS					0	69								69					0
PA(NE)6b OTHR FISH BEHAV IMPCT STUD					0		34							34					0
PA(NE)7 INIT IMPACT MODEL DEV					0									0					0
PA(NE)7a EVALUATE PHYSICAL DATA					0		15							15					0
PA(NE)7b EVALUATE BIOLOGICAL DATA					0		15							15					0
PA(NE)7c DEVELOP PHYS/BIOL MODEL					0		88	50						138					0
PA(NE)7d REFINE PHYS/BIOL MODELS					0				65	43				108					0
PA(NE)8 CLD SEAS EFCTS-BENTHOS					0			14						14					0
PA(NE)9 CLD SEAS EFCTS-FISH					0			14						14					0
PA(NE)10 CLD SEAS EFCTS-WAT LEVLS					0			14						14					0
PA(NE)11 DEV CLD SEAS MGMT RECS					0			14						14					0
PA(NE)12 INIT FLEETING AREA EVALS					0									0					0
PA(NE)12a DOC UMRS FLEETING			19		19									0					0
PA(NE)12b OTHER FLEETING EVALUATIONS					0		70	70	92	94				326					0
PA(NE)13 DESIGN ALT FLEETING MEASURES					0						50			50					0
PA(NE)14 CONST ALT FLEETING AREAS					0							NREP		0					0
PA(NE)15 EVAL ALT FLEETING IMPACTS					0									0	101	147	124		372
NAVIGATION EFFECTS SUMMARY REPORT					0									0			10		10

TABLE 1. CONTINUED.

	FY86	FY87	FY88	FY89	CUMULATIVE BUDGET FY86-89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	BALANCE TO COMPLETE FY90-97	FY98	FY99	FY200	FY201	BALANCE TO COMPLETE FY98-201
WATER LEVEL FLUCTUATIONS					0									0					0
PA(WL)1 INIT FLEXIBILITY EVAL					0									0					0
PA(WL)1a IDENT COE CONSTRAINTS					0	34								34					0
PA(WL)1b IDENT CANDIDATE POOLS					0	STAFF								0					0
PA(WL)2 INIT FEASIBILITY EVALS					0									0					0
PA(WL)2a EVAL LAND OWNER PROBS					0	13								13					0
PA(WL)2b CONDUCT PILOT STUDY					0									0					0
PA(WL)2c EVALUATE FEASIBILITY					0									0					0
PA(WL)3 DEV WATER LEVL MGMT PLAN					0		16							16					0
PA(WL)4 IMPLMNT WATER LEVL MGMT PLAN					0			COE						0					0
PA(WL)5 DOC EFFECTS OF MGMT PLAN					0				55	53	57			165					0
PA(WL)6 EVAL MGMT PLAN FOR UMRS					0						6			6					0
WATER LEVEL FLUCS SUMMARY REPORT					0							10		10					0
LACK OF AQUATIC VEGETATION					0									0					0
PA(V)1 INIT REQMNTS OF AQ PLANTS EVALS					0									0					0
PA(V)1a SEED TRANSPLANT STUDIES					0	20								20					0
PA(V)1b OTHER PLANT REQMNT STUDIES					0		50							50					0
PA(V)2 INIT FCTRS EFFECTING PLANT DIST EVALS					0									0					0
PA(V)2a VALLISNERIA TRANSPLANTS					0	34								34					0
PA(V)2b OTHER STUDIES OF PLANT DIST					0		36							36					0
PA(V)3 INIT PLANT TOL LEVLS EVALS					0									0					0
PA(V)3a TRACK VEG BEDS IN POOL 19					0	9								9					0
PA(V)2b OTHER STUDIES OF PLANT TOL					0		61							61					0
PA(V)4 SELECT REACHES FOR STUDY					0			3						3					0
PA(V)4a EVALUATE SELECTED BEDS					0			40						40					0
PA(V)5 SECURE/INTPRT AERIAL PHOTOS					0				7					7					0
PA(V)6 GROUND TRUTH AERIAL PHOTOS					0				14					14					0
PA(V)7 DEV MGMT RECS FOR PLANTS					0				14					14					0
PA(V)8 IMPLMNT MGMT RECS FOR PLANTS					0					AGENCY				0					0
PA(V)9 EVAL EFFECTS OF MGMT RECS					0						32	32	32	96					0
AQUATIC VEGETATION SUMMARY REPORT					0								10	10					0
REDUCED FISHERIES POPULATIONS					0									0					0
PA(F)1 DEV REPRESENTATIVE FISH LIST				STAFF	0									0					0
PA(F)2 SELECT STUDY SPECIES				STAFF	0									0					0
PA(F)3 SELECT STUDY REACHES				STAFF	0									0					0
PA(F)4 INIT BASELINE POPN STATUS EVALS					0									0					0
PA(F)4a INIT RECRUITMENT MODEL					0	STAFF								0					0
PA(F)4a1 REVIEW EXISTING MODELS					0	30	4							34					0
PA(F)4a2 EVALUATE LARVAL MORTALITY					0	55								55					0
PA(F)4a3 DEVELOP WORKING MODEL					0		95	95	64					254					0
PA(F)4a4 REFINE MODEL					0			50	50					100					0
PA(F)4a5 FINALIZE MODEL					0					40				40					0
PA(F)5 INIT FCTRS LIMITING FISH EVALS					0									0					0
PA(F)5a EVAL YOY VEG REQUIRMENTS					0	34								34					0
PA(F)5b OTHR LIMITING FACTORS STUDIES					0		200	150	200	160				710					0
PA(F)6 DEV FISH MGMT PLANS					0					14				14					0
PA(F)7 IMPLMNT FISH MGMT PLANS					0						STATE			0					0
PA(F)8 EVAL EFFECTS OF MGMT PLANS					0						69	60	78	207					0
FISH POPULATIONS SUMMARY REPORT					0								10	10					0
PROBLEM ANALYSIS SUMMARY REPORT					0									0				20	20
TOTAL ECOLOGY BUDGET	242	1264	1730		3236	3703	4500	4500	4500	4500	4500	4500	4486	35189	4500	3744	2391	729	11364

SUMMARY OF ALL FY90 UMRR ECOLOGY SECTION EXPENDITURES, INCLUDING MID YEAR FUNDING REQUEST ($000)

ACTIVITY/TASK		VENDOR/POTENTIAL VENDOR	COST	COST + FWS OVERHEAD
STUDY MANAGEMENT				
Programmed Funds				
Salaries		FWS/EMTC	201	277
Supplies/Travel/Training/Etc		Miscellaneous	75	103
Year End Funds		?	13	18
Water Quality Specialist		WI Dept of Nat Res	32	34
Statistician		?	20	28
Fisheries Scientist		?	20	28
Invertebrate Biologist		?	20	28
Aerial Camera		?	127	175
TOTAL PROJECTED STUDY MANAGEMENT EXPENDITURES			508	690
RESOURCE TREND ANALYSIS TASKS				
Programmed Funds				
State Coop Agreements		IA/IL/MN/WI	1309	1378
Bathymetry/Supplies/Training/Other Coops		Miscellaneous	100	138
Year End Funds				
Bathymetry Supplies		?	36	50
Continue Development of Continuous Monitors		U.S. Geol Survey	62	86
Invertebrate Sampling Supplies		?	72	100
Open River Water Quality Sampling		MO Dept of Conservation	143	151
TOTAL PROJECTED RESOURCE TREND ANALYSIS EXPENDITURES			1722	1902
PROBLEM ANALYSIS TASKS				
SEDIMENTATION (All Funds)				
PA(S)1	Classify River Reaches	UW LaCrosse	4	4
PA(S)2b	Effects of Shading (Vallisneria Phase II)	N Prairie Wildl Res Unit	15	21
PA(S)2c	Continue Development of Portable Water Quality Meters	Iowa State Univ	48	51
PA(S)4b	Develop Regressions for Turbidity/Suspended Solids	W IL Univ	4	4
PA(S)4c	Evaluate Biological/Physical Contributions to Turbidity	UW LaCrosse	24	25 ← ?
PA(S)4d	Evaluate Spatial Sedimentation Patterns	Luther College	10	10
PA(S)8a	Evaluate Quality of IL River Substrates	IL State Water Survey	32	34
TOTAL PROJECTED SEDIEMATION EXPENDITURES			137	149
NAVIGATION EFFECTS				
PA(NE)1b	Collect Field Data on Velocity and Shear	IL State Water Survey	133	140
PA(NE)1d	Classify River Reaches for Velocity/Shear Impacts	IL State Water Survey	34	36
PA(NE)1e	Map Classified Reaches	UW LaCrosse	2	2
PA(NE)2	Document Ichthyoplankton Distribution	Nat Fish Res Lab-LaCrosse	44	60
PA(NE)3a	Ichthyoplankton Workshop		7	10
PA(NE)3b	Simulate Impacts on Fish in the Laboratory	Univ MN Coop Unit (FWS)	37	51
PA(NE)4b	Collect Field Data on Turbidity and Suspended Solids	IL State Water Survey	133	140
PA(NE)4d	Classify River Reaches for Turbidity/Suspended Solids	IL State Water Survey	34	36
PA(NE)4e	Map Classified Reaches	UW LaCrosse	2	2
PA(NE)4f	Other Velocity/Suspended Solids Evaluations	?	57	79
PA(NE)5a	Simulate Impacts on Invertebrates in the Laboratory	Univ MN Coop Unit (FWS)	37	51
PA(NE)5b	Other Benthic Impacts Studies	?	37	51
PA(NE)6a	Evaluate NAVPAT Model on Upper Mississippi River	US Army COE-Louisville	50	69
TOTAL PROJECTED NAVIGATION EXPENDITURES			607	726
WATER LEVEL FLUCTUATIONS				
PA(WL)1a	Evalate COE Operational Constraints	US Army COE-N Central Div	34	34
PA(WL)2a	Evaluate Problems with Land Owners	US Army COE-N Central Div	13	13
TOTAL PROJECTED WATER LEVEL FLUCTUATIONS EXPENDITURES			47	47
LACK OF AQUATIC VEGETATION				
PA(V)1a	Transplant Aquatic Vegetation Seeds to new Habitats	Iowa State Univ	19	20
PA(V)2a	Transplant Vallisneria to Uninhabited Reachs	N Prairie Wildl Res Unit	25	34
PA(V)3a	Track Aq Plant Bed Expansions/Contractions in Pool 19	W IL Univ	8	9
TOTAL PROJECTED LACK OF AQUATIC VEGETATION EXPENDITURES			52	63
REDUCED FISHERIES POPULATIONS				
PA(F)4a1	Review Existing Recruitment Models	Nat Fish Res Lab-LaCrosse	22	30
PA(F)4a2	Conduct Larvae Mortality Studies	Nat Fish Res Lab-LaCrosse	40	55
PA(F)5a	Evaluate YOY Fish/Aquatic Vegetation Associations	Nat Fish Res Lab-LaCrosse	25	34
TOTAL PROJECTED REDUCED FISHERIES POPULATIONS EXPENDITURES			87	120
UNPROGRAMMED FUNDS			5	7
TOTAL ECOLOGY EXPENDITURES			3165	3703

ORIGINAL FUNDING	2499
LOSS OF ORIGINAL FUNDS TO GRAM RUDMAN	117
ORIGINAL FUNDS AFTER GRAM-RUDMAN	2382
YEAR END FUNDS	1321
TOTAL FUNDS AVAILABLE FOR FY 90	3703
% COMSUMED BY FWS OVERHEAD	0.15

30-Apr-90

COVERAGE OF TASKS UNDERWAY AND PROPOSED AND ALTERNATES

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(1)
TASK: PA(S)1 ACTIVITY: Classify River Reaches
VENDOR: UW LaCrosse ANTICIPATED COST (K): 4

DESCRIPTION: Student to organize maps to start classification process.

PRODUCT: digital line graph base maps.

COMMENTS: Illinois State Water Survey to complete classification under current scope of work. See #9 & #15 below.

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(2)
TASK: PA(S)2b ACTIVITY: Effects of Shading (Vallisneria Phase II)
VENDOR: Northern Prairie ANTICIPATED COST (K): 15

DESCRIPTION: Repeat portions of Phase I work where tubers were non-viable in 1989. Investigate exposure treatments.

PRODUCT: Addition to FY89 report.

COMMENTS:

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(3)
TASK: PA(S)2c ACTIVITY: Continue Dev. Port. Monitors
VENDOR: Iowa State University ANTICIPATED COST (K): 48

DESCRIPTION: Calibration of 10 meters diurnally in Pool 7 and testing of 1 meter at each field station.

PRODUCT: Calibrated meters for use by field stations

COMMENTS: Check propriatory rights and try to fix meter costs.

ATTACHMENT 4

COVERAGE OF TASKS UNDERWAY AND PROPOSED AND ALTERNATES

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(4)
TASK: PA(S)4b ACTIVITY: Develop regressions for turb/susp. solids
VENDOR: Western Illinois Univ. ANTICIPATED COST (K): 4

DESCRIPTION: Student to collect historical data and assess any relationships

PRODUCT: regression analysis

COMMENTS:

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(5)
TASK: PA(S)4c ACTIVITY: Biogenic vs physical turbidity
VENDOR: ~~UW LaCrosse~~ ANTICIPATED COST (K): 24

DESCRIPTION: Assess organic and inorganic components of turbidity

PRODUCT:

COMMENTS: No available vendor

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(6)
TASK: PA(S)4d ACTIVITY: Evaluate spatial patterns of ~~turbidity~~ suspended solids
VENDOR: Luther College ANTICIPATED COST (K): 10

DESCRIPTION: qualitative evaluation of suspended solids from satellite data.

PRODUCT: guidelines for use of LANDSAT as a tool

COMMENTS:

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(7)
TASK: PA(S)8a ACTIVITY: Evaluate Quality of Illinois River Substrates
VENDOR: Ill. Water Survey ANTICIPATED COST (K): 32

DESCRIPTION: Determine substrates that limit plant growth, including literature review, characterization of Illinois River substrates, and field bioassays.

PRODUCT: Report on limiting factors

COMMENTS: Add chemical analysis (i.e. REDOX potential) and % organics to analysis.

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(8)
TASK: PA(NE)1b ACTIVITY: Collect field data on velocity and shear
VENDOR: Ill. Water Survey ANTICIPATED COST (K): 133

DESCRIPTION: Continuation of FY89 work at 2 UMR sites and 1 - Illinois R. site.

PRODUCT: ?

COMMENTS: End product? Future years work depends on outcome of classification and number of sites necessary to characterize UMRS.

---

(9)
TASK: PA(NE)1d ACTIVITY: Classify River Reaches for vel. and shear impacts
VENDOR: Ill. Water Survey ANTICIPATED COST (K): 34

DESCRIPTION: Classify river reaches using DLG base maps (see #1).

PRODUCT: Classification system for UMRS for physical impact analysis.

COMMENTS:

COVERAGE OF TASKS UNDERWAY AND PROPOSED AND ALTERNATES

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(10)
TASK: PA(NE)1e ACTIVITY: Map classified reaches
VENDOR: UW LaCrosse ANTICIPATED COST (K): 2

DESCRIPTION: Map classified reaches

PRODUCT: Map.

COMMENTS:

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(11)
TASK: PA(NE)2 ACTIVITY: Document Ichthyoplankton Distribution
VENDOR: NFRL- LaCrosse ANTICIPATED COST (K): 44

DESCRIPTION: Analysis of FY89 data collected by field stations.

PRODUCT: Analysis of variance and recommendation on number of samples needed for future work.
COMMENTS:

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(12)
TASK: PA(NE)3a ACTIVITY: Ichthyoplankton Workshop
VENDOR: ANTICIPATED COST (K): 7

DESCRIPTION: Workshop held in January 1990

PRODUCT: Transcript of workshop

COMMENTS: Need to fund a summary.

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(13)
TASK: PA(NE)3b ACTIVITY: Simulate impacts to fish in lab
VENDOR: Univ Minn Coop (FWS). ANTICIPATED COST (K): 37

DESCRIPTION: Develop laboratory simulators, test feasibility on early life stages of fish. See also #18 for invertebrate simulation.

PRODUCT: feasibility report.

COMMENTS: Need to review and incorporate methods discussed in POS Work Units 3 and 14. Cost seems high for feasibility test. WES capabilities?

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(14)
TASK: PA(NE)4b ACTIVITY: Collect field data on turbidity and susp. solids
VENDOR: Ill. Water Survey ANTICIPATED COST (K): 133

DESCRIPTION: Continuation of FY89 work at 2 UMR and 1 IR sites. See #8 above.

PRODUCT: ?

COMMENTS: See #8 above

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(15)
TASK: PA(NE)4d ACTIVITY: Classify River Reaches for Turb/Susp. Solids
VENDOR: Ill. Water Survey ANTICIPATED COST (K): 34

DESCRIPTION: See #9 above

PRODUCT:

COMMENTS:

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(16)
TASK: PA(NE)4e ACTIVITY: Map classified reaches
VENDOR: UW Lacrosse ANTICIPATED COST (K): 2

DESCRIPTION: See #10 above

PRODUCT:

COMMENTS:

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(17)
TASK: PA(NE)4f ACTIVITY: Other Vel/Suspended Solids Evaluations
VENDOR: ANTICIPATED COST (K): 57

DESCRIPTION: Uncommitted funds

PRODUCT:

COMMENTS: Use to assist St. Louis District in contruction of flume at WES and necessary equipment to evaluate physical forces of Tows.

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(18)
TASK: PA(NE)5a ACTIVITY: Simulate impacts on invertebrates in lab
VENDOR: Univ Minn Coop (FWS) ANTICIPATED COST (K): 37

DESCRIPTION: Develop laboratory simulators, test feasibility on invertebrates. See also #13

PRODUCT: feasibility report

COMMENTS: See #13

COVERAGE OF TASKS UNDERWAY AND PROPOSED AND ALTERNATES

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(19)
TASK: PA(NE)5b ACTIVITY: Other Benthic Impact studies
VENDOR: ANTICIPATED COST (K): 37

DESCRIPTION: Uncommitted

PRODUCT:

COMMENTS: No ideas

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(20)
TASK: PA(NE)6a ACTIVITY: Evaluate NAVPAT on UMRS
VENDOR: USACOE-Louisville ANTICIPATED COST (K): 50

DESCRIPTION: Pilot Test of model in Pool 13

PRODUCT: feasibility report including data requirements.

COMMENTS:

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(21)
TASK: PA(WL)1a ACTIVITY: Evaluate COE Operational Constraints
VENDOR: USCOE-NCD ANTICIPATED COST (K): 34

DESCRIPTION: SOW approved. Pools 9 and 18 to be evaluated.

PRODUCT: Report on constraints

COMMENTS: FY91 work to evaluate additional pools.

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(22) Aerial Photo Investigation of Water Level Elevations
TASK: PA(WL)2a ACTIVITY: ~~Evaluate Problems with Land Owners~~
VENDOR: USCOE-NCD ANTICIPATED COST (K): 13

DESCRIPTION: Complete aerial photos of 2 water levels in Pools 9 & 18 (flat pool & ±1 ft.) Investigate land boundries.

PRODUCT: Photos

COMMENTS: Needs public notice. Actual impact of Pool 18 due to leveed floodplain?

---

(23)
TASK: PA(V)1a ACTIVITY: Transplants of Vallisneria Tubers - Lake Onalaska
VENDOR: Iowa State Univ ANTICIPATED COST (K): 19

DESCRIPTION: Field verification of limnocorals light and Temperature relationships. Sediment analysis for status of Tubers and potential seed bank. Done at same stations as #3 above.

PRODUCT: Equations and graphs and analysis on relationship to laboratory measurements

COMMENTS: Identify all species found in seed bank

---

(24)
TASK: PA(V)2a ACTIVITY: Transplant Vallisneria to Trend Analysis Pools
VENDOR: Northern Prairie / Field Stations ANTICIPATED COST (K): 25

DESCRIPTION: Monitor transplant sites, field verification

PRODUCT: Relationship between light and growth in Trend analysis pools.

COMMENTS: Use plants from area to avoid effects of varying strains.

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(25)
TASK: PA(V)3a ACTIVITY: Track Aquatic Plant Beds - Pool 19
VENDOR: Western Ill. Univ. . ANTICIPATED COST (K): 8

DESCRIPTION: Monitor light, substrate, water level fluctuations, nutrients in relation to vegetation changes.

PRODUCT: Summary of historical changes and baseline data

COMMENTS: Will be continued annually

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(26)
TASK: PA(F)4a1 ACTIVITY: Review Existing Recruitment Models
VENDOR: NFRL - LaCrosse ANTICIPATED COST (K): 22

DESCRIPTION: Review of literature on fish recruitment models

PRODUCT: Recommendations on models to use and data variables needed.

COMMENTS: Will be available for review at UMRCC Fisheries Section meeting.

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(27)
TASK: PA(F)4a2 ACTIVITY: Conduct Larval Mortality Studies
VENDOR: NFRL - LaCrosse ANTICIPATED COST (K): 40

DESCRIPTION: Continuation of ongoing work, evaluation of natural mortality rates

PRODUCT: % decline in number of larvae over season

COMMENTS: Need field data in addition to literature. May not be useful in population models.

COVERAGE OF TASKS UNDERWAY AND PROPOSED AND ALTERNATES

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(28)
TASK: PA(F)5a ACTIVITY: Evaluate YOY Vegetation Requirements
VENDOR: NFRL - LaCrosse ANTICIPATED COST (K): 25

DESCRIPTION: Determine YOY sport fish associations with vegetation using several sampling methods.

PRODUCT: Evaluation of gear types

COMMENTS: Future work needed on fish vegetation requirements. Use trap nets now at field stations. Need to be more than tool development.

( )
TASK: ACTIVITY:
VENDOR: ANTICIPATED COST (K):

DESCRIPTION:

PRODUCT:

COMMENTS:

( )
TASK: ACTIVITY:
VENDOR: ANTICIPATED COST (K):

DESCRIPTION:

PRODUCT:

COMMENTS:

Long Term Resource Monitoring Program
Analysis Team Meeting

July 24 and 25, 1990
Bettendorf, Iowa

A joint meeting of the Ecological Analysis Team (EAT) and the Computerized River Information Center Analysis Team (CRICAT) convened at 12:00 p.m., July 24, 1990 at Jumer's Castle Lodge, Bettendorf, Iowa (attendance list attached).

Fiscal Year 1990 Budget

Robert Delaney presented a summary of the FY 1990 funding for the LTRMP. Of the original $4,214,000 allocated to the EMTC, $448,000 was reduces by savings and slippage and $214,000 to Gramm/Rudman/Hollings budget reductions. This left a total budget of $3,590,000. A request was submitted to the COE and additional funding of $2,340,000 was received in March 1990. Additional aid was received through the Fish & Wildlife Service with a reduction in the overhead charges on money passed through the EMTC to fund Cooperative Agreements for field station operations and other studies. An additional transfer of $214,000 from the COE is expected in late July, raising the 1990 budget to $6,144,000, which approximates full funding.

CRICAT and EAT Reorganization

The merits of merging the two LTRMP analysis teams was discussed. Gail Carmody provided a handout that listed the major duties and responsibilities of the two analysis teams and pointed out that there was extensive overlap. Glen Radde, CRICAT Chairman, stated that he perceived CRICAT's function to provide technical expertise and information about updated GIS developments to the EMTC. Norm Stucky, EAT Chairman, added that the EAT needs input from the CRICAT to utilize the state-of-the-art technology available in data management and analysis. Dan Wilcox stated that the role of the analysis teams was to provide program development and technical oversight for the EMTC, and that these functions could be effectively fulfilled with a joint team. Norm Stucky moved that the two analysis teams be merged and there was no dissention.

Discussion on membership of the joint analysis team followed and it was decided to retain all members from both teams to provide maximum input. Jerry Rasmussen stated that the EMTC needed technical assistance from the team to review studies and that team members would be contacts in the states to evaluate scopes of work, etc. The point was again stressed that services and information from the EMTC must be usable for river managers.

The next business involved appointing a chairperson for the joint team. It was decided that a rotating chair among the participating states be utilized. The appointed term would coincide with the federal fiscal year (Oct. - Sept.) The order of rotation was established as; Iowa, Illinois, Minnesota, Missouri, and Wisconsin. Tom Boland (IA DNR) was appointed chairman. An assistant chairman was established among the federal members of the team and would carry responsibility for the meeting minutes. This would also be a rotating term to

coincide with the chairman. Rotation order will be; U.S. Army Corps of Engineers, Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Geologic Survey, National Park Service, and the Soil Conservation Service. Dan Wilcox will be the current assistant chair.

Problem Analysis Update

Ken Lubinski presented an update of all completed and current problem analysis studies. Thirty studies either have been or are currently being funded with a total cost of $1,398,500. Categorization of projects are: Navigation - 13 studies, sedimentation - 9 studies; water level fluctuations - 1 study; lack of aquatic vegetation - 4 studies; and reduced fish populations - 3 studies. Individual projects were reviewed.

Draft Annual Work Plan

Robert Delaney handed out a draft annual work plan for FY 1991 (updated copy attached). A proposal in the House and Senate would appropriate 17 million for an EMP budget in FY 1990. This is above the 14.9 million included in the President's budget.

There is an immediate need for additions to the EMTC staff. EMTC is currently looking for a vegetation coordinator, biometrician, invertebrate coordinator, fisheries coordinator, and an editorial assistant to coordinate components, analyze data, and prepare reports for publication. Jim Davies, former vegetation-coordinator resigned in late July. We currently have Sara Rogers on board, pending permanent action this fall. Sara is rewriting the vegetation chapter of the Procedures Manual to incorporate quantitative measurements.

LTRMP Goals and Objectives

John Wetzel, Gail Carmody, and Mike Davis prepared a draft document summarizing references gleaned from previous documents concerning the LTRMP goals and objectives. It was noted by the Analysis Team that the EMTC is closely following the objectives as outlined in the summary, except for problem identification and analysis studies which was included in later recommendations. Analysis Team members were instructed to review the document and make recommendations to John Wetzel by August 20, 1990. Some discussion followed and there was concurrence that the role of the Analysis Team was to identify the goals of the program and to review tasks and a timetable to accomplish these goals.

LTRMP Products

Jerry Rasmussen presented a strategy to apply LTRMP products to achieve a system-wide model for the Upper Mississippi River. The first step, and of paramount importance, is to assemble the objectives of the individual agencies responsible for managing the river. An integration of these objectives into the LTRMP effort would enable the EMTC to evaluate or formulate models, utilizing the LTRMP database, to assist in meeting these goals and objectives. Although resource trend information is necessary to provide a baseline and track the evolution of the river, the team agreed the LTRMP database must be adaptable and answer a variety of needs.

A poll of the team members revealed that some states do not have detailed objectives established for managing the Mississippi River. The EMTC would like all states to list specific goals in their river management programs and provide input for a summation of river management objectives to help focus the LTRMP effort.

Norm Stucky felt that the UMRCC should be responsible for assembling a list of management objectives of individual agencies. After a brief discussion the team agreed to request that the UMRCC solicit river management objectives from all participating agencies.

CRIC UPDATE

Joe Wlosinski gave a brief update on the data set inventory. This project is nearly finished and a test application will be sent out for review shortly. A finalized data set inventory should be available by October 1990.

Barry Drazkowski then presented an update of CRIC activities. EPPL-7 has been purchased and a macro interface is being developed by Minnesota to provide GIS capabilities at the field stations. The macro should be ready for testing in September.

The COE Cold Region Research Lab has been contracted to test the feasibility of using radar technology to collect bathmetry data. This could potentially revolutionize bathmetry data collection. Using a helicopter or hovercraft, up to 1/3 of a pool could be completed in one day and accuracy would be in centimeters rather than feet. Actual testing will begin in September.

A multi-spectral scanner will be tested by the Corps to provide high resolution systemic data. Strategically placed markers will provide instantaneous ground truthing and georeferencing. This method will not be susceptible to problems with altitude fluctuations and plane attitude as are common with conventional aerial photography.

Initial GIS applications dealing with black terns, forest management, waterfowl, and Pool 8 islands are progressing. Most are in the data gathering or digitization phase. The Pool 8 island application is near completion. In addition, students from St. Mary's College are currently digitizing large mouth bass telemetry and sediment transport data.

Results of the CRIC strategic planning session were released. A comprehensive plan for CRIC is being prepared which will include various options for data acquisition. Joe Wlosinski also passed out a detailed listing of expenditures and proposed budget through the year 2002. These documents will be discussed at the next analysis team meeting.

Draft Science Review Committee Report

Robert Delaney reported on the first meeting of the Science Review Committee at Onalaska, WI. He stated that the meeting was very positive and the EMTC had received several preliminary suggestions. The committee felt that the program has a strong direction, but lacks the focus to tie together RTA, PIA, and other branches. The committee advised the EMTC to compile a conceptual

model of the Upper Mississippi Basin to help direct program activities. Additional preliminary suggestions from the committee were to publish material, to solicit peer review, incorporate the scientific community through universities, and differentiate human and natural factors affecting the river. A draft committee report is anticipated in August. The next meeting of the Science Review Committee is tentatively set for December or January.

HREP Monitoring

At this point the role of LTRMP in monitoring HREP projects remains uncertain. The EMTC is eager to cooperate on evaluating HREP projects, but current funding levels prohibit further involvement. Funding permitting a person will be hired at the EMTC to devote part-time coordinating HREP monitoring. All project DPR's will contain a schedule of monitoring activities and clearly define agency responsibilities for data collection.

EAT/CRICAT Meeting June 24, 1990

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