

Proceedings of
Albemarle Pamlico Estuarine Study
Policy Committee Meeting
June 1, 1987

Submitted to:
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Albemarle Pamlico Estuarine Study

Submitted by:
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SCI Data Systems, Inc.

June 4, 1987

Proceedings of Albemarle-Pamlico Estuarine Study (APES)
Policy Committee Meeting
June 1, 1987

I. Opening Remarks

The meeting began at 8:30 a.m., chaired by Secretary Tommy Rhodes, NRCD. The minutes from the March 17, 1987 Policy Committee (PC) were tabled for review. Dr. John Costlow, Duke University, moved to approve the minutes. Dr. Ford (Bud) Cross, NOAA, seconded the motion. The minutes were approved by unanimous aye vote.

II. Budget

Dr. Doug Rader, Program Coordinator, APES, was asked to present the overall budget for 1987-1988. Rader distributed the budget (Attachment A) for consideration. He stated that the categories for funding correspond to the percentages given as guidance by the Policy Committee. Costlow asked about the status of identifying matching money from other agencies, such as the Corps of Engineers. Costlow suggested that, as discussed at the previous meeting, a meeting be organized to help identify other funding sources. Mr. Jack Ravan, EPA Regional Administrator, stated that he will begin making calls next week to begin this process. Rader was asked to move forward in organizing such meeting by late summer. Ted Bisterfeld, EPA Region IV, pointed out that APES must certify to EPA that the proposed funded projects do not duplicate projects of other agencies and such meeting will help in this determination. Question then ensued on the possibility and legalities of acquiring money from non-government sources. Rader and Bisterfeld are to explore the alternatives and the handling of outside funding sources in terms of trust funds, etc.

III. Proposal Review Recommendations

Dr. Dirk Frankenberg, UNC, summarized the proposal review process of the proposal subcommittee. He stated it was comprised of two PC members (Frankenberg, Costlow) and three Technical Committee (TC) members (Carl, Turner, and Barrett--represented by Bisterfeld). The subcommittee sent out proposals to outside reviewers, to TC members, and assigned specific proposals to subcommittee members for taking the lead in the review process. All peer review comments were logged-in and considered in the review. The subcommittee met on May 11th and 12th to rank proposals. Proposals were reviewed by priority categories assigned in the workplan. The proposals were ranked on a scale of one to five ranging from poor to excellent.

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After ranking proposals, the subcommittee met again the morning of May 22nd, to determine if anything was omitted, and to prepare draft recommendations. These recommendations were presented to the TC, which met later that afternoon and approved the recommendations. They were presented for Policy Committee consideration. The recommendations are included as Attachment B. Frankenberg explained the rationale for each recommendation. For example, fish disease is an issue for funding pending with the N.C. Legislature. The subcommittee put this issue into a category requiring workshop discussion in order to coordinate efforts efficiently with State efforts. Public participation projects were also slated for review by the Citizen Advisory Committees before funding. Costlow added that one project approved for funding, but flagged for modification, is a mud pollutants study by ECU. Costlow pointed out the need to coordinate this project with other organizations and projects. Ravan asked if the pesticides issue is considered for study. Bud Cross and Mike Gantt, FWS, stated that their organizations are already doing some work in the pesticides area. Frankenberg stated that proposals received in this area did not warrant funding. Instead, the subcommittee chose to wait for the results of on-going projects and to determine what further work is required. Ravan stated that he wants to see pesticides added to the workshop or workgroup list recommended by the subcommittee.

Rader requested guidance on the overhead rates submitted by the principal investigators. He stated that some proposals are high in this area. Since he is to negotiate the overhead figure on some projects, he needs to know at what figure the rate should be set. Ravan directed Sally Turner, EPA Region IV, to talk to Tudor Davies, EPA headquarters, to determine if there is a standard rate. Frankenberg stated that it is worth negotiating the overhead rates, but cautioned the time frame of negotiating on a current proposal in keeping with the EPA funding approval deadline. Jack Ravan recommended that Rader explore the possibilities of setting the lowest but fairest overhead rates for proposals submitted in December.

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Motion: Ravan made a motion as follows: (1) Rader is to determine if the overhead liability to the program is \$100,000. If it is, then he is to move ahead in negotiating overhead rates for the December proposals; (2) Rader is empowered to negotiate the feasibility of an overhead rate of 30-33% If this is not a persuasive rate, then Rader is to inform the Policy Committee; (3) a letter should be composed explaining the APES rate policy; and (4) Rader is to contact the other programs to determine their overhead rate policy.

Costlow seconded the motion. The motion carried by unanimous aye vote.

Dirk summarized the five recommendations of the subcommittee contained in Attachment B.

Motion: Frankenberg motioned that the recommendations of the subcommittee on proposals be accepted as amended (with the addition of a pesticides working group).

Costlow seconded the motion. The motion carried by unanimous aye vote.

Costlow stated that some proposals will require negotiations with the principal investigators regarding the scope of work. In some cases the contracts may require modifications, thereby, causing a higher cost than originally submitted. Frankenberg said that negotiating should mean higher or lower costs and that Doug Rader should have negotiating authority. Ravan said that to protect Rader, that a limit needs to be set upon which Doug can negotiate plus or minus, i.e. 15%. Frankenberg explained that the level of money budgeted does not allow for negotiating at an unrealistic amount. Since the budget is firm there should be no problem. The negotiation should include substantive issues and not overhead. It was determined that Rader should have authority to negotiate contracts approved for funding. Negotiating shall include both plus or minus figures.

Costlow asked if APES will issue a formal announcement about proposal recommendations. Ravan stated that official announcement will be made upon final approval of the contracts by EPA Headquarters. If queried, the official policy of this committee should be that the Policy Committee has officially accepted the distribution of funded projects. The Executive Director has been empowered to negotiate future actions on the proposed projects and the proposal package is being marketed in Washington for approval.

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Ravan complemented those persons involved in the proposal subcommittee review.

Motion: Ravan motioned that he and Secretary Rhodes should co-sign a letter of thanks to those involved in the proposal review process (Costlow, Frankenberg, Bisterfeld, Carl, Turner, Rader).

Cross seconded the motion. The motion carried by unanimous aye vote.

Rader requested authority to use planning funds to begin the process of organizing workshops described in the subcommittee's recommendation. Specifically, Rader distributed a proposal from WRII totalling \$15,000 to conduct a series of workshops.

Motion: Frankenberg moved that the committee approve Rader's request to proceed with the WRII contract. Gantt seconded the action. The action carried by unanimous aye vote.

Rader presented a draft administrative budget for consideration along with the data management budget. Ted Bisterfeld presented a review of the data management issues. Bisterfeld stated that there was concern expressed by EPA and EPA's data management consultant that the level of funding proposed for the APES computer efforts were insufficient. He explained that while the consultants felt the LRIS concept was good that the level of effort proposed to support the approach was insufficient, particularly in the areas of data entry and analysis. Bisterfeld distributed a revised LRIS plan which incorporates the comments the EPA consultants addressed at their May 11th meeting. Bisterfeld said he feels Karen Siderelis did a good job in considering the comments and that he feels comfortable with the proposal. The proposal is included at Attachment C. Ravan stated that he is encouraged by the data management cooperation among agencies. Ravan stressed that he does not want another system developed that does not allow managers to talk to each other.

Costlow asked how the various data management subcommittees fit into the APES program. He requested that APES involve the key staff in various institutions in the data identification process. Rader stated that the subcommittees on data management should aid in this process. Rader explained that the LRIS proposal contains a training element to train the data management coordinator proposed for APES.

Motion: Ravan moved that the Policy Committee approve the administrative planning funds (Attachment A), the data management plan (Attachment C), the data management budget (Attachment D), the data management coordinator position, and the Memorandum of Understanding between LRIS and APES (Attachment E).

Gantt seconded the motion. The motion carried by unanimous aye vote.

IV. Public Participation

Doug Rader presented a status report of the public involvement program (Attachment F). Frankenberg requested guidance on the chairs of the Citizen's Advisory Committees (CAC). He asked where and how they will serve on committees. He asked if a Technical Committee member should also serve on the CAC to offer program guidance. (A CAC member is to serve on the TC.) Ted Bisterfeld pointed out that EPA extended the deadline for public participation proposal submission until June 15th to allow CAC input. The CACs will meet on June 8th and 9th.

Motion: Gantt made motions to: (1) delegate authority to the proposal review subcommittee for recommending public participation proposals, with the input/involvement of the Chairs of the CAC; and (2) to approve the initial meetings (June 8th & 9th) of the CACs.

Ravan seconded the motion. The motion carried by unanimous aye vote.

V. Cooperative Agreement

Doug Rader presented modifications to the existing cooperative agreement between EPA and DNRCD (Attachment G).

Motion: Costlow made a motion that the PC approve the modified existing cooperative agreement between EPA and DNRCD.

Cross seconded the motion. The ayes carried by unanimous aye vote.

VI. Planning Grant

Rader distributed a revised planning grant amendment (Attachment H) for consideration.

Motion: Frankenberg moved to approve the planning grant. Gantt seconded the motion. The motion carried by unanimous aye vote.

VII. Technical Committee Membership

Secretary Rhodes proposed that the Policy Committee fill the vacant position left by Bill Austin on the Technical Committee. Discussion then took place on the need to review the attendance record of various committee members and to remind them of their responsibility.

Motion: Rhodes made a motion to appoint David Sides, Chairman of the Soil and Water Commission, as a replacement for Bill Austin. The ayes carried.

VIII. Program Logo

Dr. Costlow brought up the issue of a program logo and suggested that a contest be coordinated by the CAC. Ravan suggested that APES offer a monetary award for school children in designing a logo. Ravan suggested putting a small amount of money into such a contest for schools, i.e. cash awards for the school, the teacher, and the student. Rader is to present the item to the CACs for consideration.

IX. New Business

Dirk Frankenberg requested adding an agenda item for the next PC meeting. Specifically, he requested that the PC consider goals and work needed for the next fiscal planning cycle. He stressed the importance of ensuring cooperative action and additional funding for on-going projects. Rader is to add this item for the next meeting.

X. Next Meeting

The next PC meeting is to be scheduled sometime during the period September 15 to 30, 1987.

The meeting adjourned at 11:45 a.m.

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List of Attendees

Policy Committee

Ford Cross
John D. Costlow
Dirk Frankenberg
Mike Gantt
Jack Ravan
Tommy Rhodes

Technical Committee

Ernie Carl
Tom Ellis
Bill Hogarth

Program Coordinator

Doug Rader

Other Attendees

Ted Bisterfeld
Marguerite Duffy
Walton Jones
Sally Turner

PROBABLE BUDGET*

ALBEMARLE-PAMLICO ESTUARINE STUDY
1987-88

TOTAL RECEIPTS: EPA (\$700,000) & STATE (\$500,000) = \$1,200,000
(PLUS USGS & OTHER FEDERAL MATCH)

BUDGETED BY PROGRAM AREA:

ADMINISTRATION	\$188,296
DATA MANAGEMENT	\$188,000
PUBLIC PARTICIPATION	\$100,000
INFORMATION ACQUISITION	\$723,681
TOTAL	\$1,199,977

*DEPENDING ON LEGISLATIVE ACTION

DRAFT
 ALBEMARLE-PAMLICO ESTUARINE STUDY
 ADMINISTRATIVE BUDGET - 1987/88

	\$
SALARIES	111,596
Project Director	36,414
Clerk/Steno IV	21,282
Public Involvement Coordinator	26,400
Data Management Coordinator	<u>27,500</u>
	111,596
FRINGE BENEFITS	23,200
LONGEVITY BONUS	<u>500</u>
TOTAL PERSONNL	135,296
OFFICE SUPPLIES & FILM	2,000
TRAVEL	16,000
Program Coordinator	8,000
Public Involvement Coordinator	5,000
Citizens' Advisory Committee Contingency Travel Fund	<u>3,000</u>
	16,000
OTHER SERVICES	11,800
Adverstising	500
Telephone	4,000
Postage	2,000
Printing	2,500
Photocopying	2,000
Express Freight	300
Other Services (Room Rental)	<u>500</u>
	11,800
CAPITAL	3,200
Equipment	3,100
(Projector, Screen, 2 Desks, 2 Chairs, 3 Bookcases, 3 File Cabinets)	
Books	<u>100</u>
	3,200
CONTRACTUAL SERVICES (Batelle, SCI, etc.)	20,000
GRAND TOTAL	188,296

(205)

**Albemarle Pamlico Estuarine Study
Data Management Budget**

ITEM	PLANNING	FY-87/88
Hardware	\$10,300	\$30,000
Software	\$ 4,500	\$30,000
Maintenance	\$ 1,500	\$21,000
Communications Fixed Costs	\$ 2,200	\$20,000
Communications Variable Costs	0	\$15,000
Design/Programming	\$60,000	\$50,000
Data Entry and Analysis	\$50,000	----->
Supplies	\$ 2,500	\$22,000
TOTAL	\$131,000	\$188,000

May 29, 1987

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DRAFT

RECOMMENDATIONS OF THE PEER REVIEW COMMITTEE

- I. Information acquisition proposals have been exhaustively reviewed (400+ reviews for 99 proposals). Eighteen projects are recommended for funding with only modest adjustments from original form. Those are listed in Attachment A. A meeting of principal investigators is required after projects are funded, to chart-out where sampling is taking place and to coordinate overall program direction.
- II. Several subject areas require further refinement before specific funding decisions can be made: fish diseases; land use/land cover and remote sensing; hydrologic and hydrodynamic modelling; and natural areas/NWI/endangered species habitat. The first three should be explored in workshops conducted by WRRI. ~~Three~~^{Four} working groups should also be convened; one to plan an approach to NWI/natural area evaluations; a second to evaluate the impact of larval recruitment processes on the functional role of nursery areas; ~~and~~, a third to assess data and hypotheses on striped bass declines in the Albemarle-Pamlico Sounds. These topics should be considered for December funding, depending on the outcome of the workshops, working groups, and proposals resulting therefrom. *and a fourth on pesticides*
- III. Other areas of program emphasis also need to be addressed for December funding. Some of these may result from modification of proposals received or newly solicited proposals. Those include:
- C. effects of land conversion on nursery habitats
 - D. procedures for management fecal contamination
- IV. Action on public involvement proposals should be deferred until the Citizens' Advisory Committees can be convened and presented with lists of possible program options. Staff should identify a funding pathway to reserve funds for later funding. However, a second public meeting should be held in the Albemarle region during the summer.
- V. All projects will furnish a short (1-3 pp) nontechnical summary of yearly results in addition to quarterly reports, draft summary reports and final summary report.

PROPOSED FUNDED PROJECTS
(By Program Area)

\$

I. RESOURCE CRITICAL AREAS

A. PNA Analyses	(Street, DMF)	\$ 34,934
B. NWI	(Pending workgroup)	(December)
C. Natural Areas	(Pending workgroup)	(December)
D. SAV Surveys	(Thayer, NMFS)	73,841*
	(Davis, ECU)	30,288*
E. Fringe Wooded swamps	(Brinson, ECU)	23,995
F. Wetland Protection	(Adams, NCSU)	6,952
G. Anadromous Obstructions	(Collier, FWS)	<u>32,059(-)*</u>
		= \$ 202,069 (27.9%)

II. WATER QUALITY & ESTUARINE RELATIONSHIPS

A. Land Use Map	(Pending workshop)	\$ (December)
B. Pt. Source Map	(To administration)	(December)
C. Hyde Co. Soil Survey	(Philen, DSWC)	10,000
D. WQ Data Evaluation	(Bales, USGS)	65,910
E. Flow Evaluation	(Bales, USGS)	(Pending match to 143,040)
F. N/P Removal in Swamps	(Kuenzler, UNC)	43,739
G. Sediment Dynamics	(Wells, UNC)	21,355
H. Algal Blooms	(Paerl, UNC)	34,119
I. Mud Pollutants	(Riggs, ECU)	34,968*
J. BMP's & WQ	(Bales, USGS)	<u>115,400</u>
		= \$ 325,491 (45.0%)

III. FISHERIES DYNAMICS

A. Stock Assessment	(Mercer, DMF)	\$ 11,356
B. Environmental Effects on Oysters	(Sutherland, DUML)	51,534
C. Excluder Devices	(Pearce, MM)	<u>66,361</u>
		= \$ 129,251 (17.9%)

IV. HUMAN ENVIRONMENT & PUBLIC PARTICIPATION

A. Demographic Trends	(Tschetter, ECU)	\$ 32,201
B. Resource Management	(Nichols, RTI)	(December)
C. Rec. Fishing Values	(Smith, NCSU)	<u>34,669</u>
		= \$ 66,870 (9.2%)
		= \$ 723,681

*July-December funding
-Adjust funding with Principal Investigator

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Albemarle/Pamlico Estuary Study

FY'87 Funding by Institution

DNRC

APES Program Administration	188,296
Data Management (LRIS)	188,000
Division of Marine Fisheries	
PNA Analyses (Street)	34,934
Stock Assessment (Mercer)	11,356
Division of Soil & Water Conservation	
Hyde County Soil Survey (Philen)	<u>10,000</u>
	432,586

USFWS

Anadromous Obstructions (Collier)	32,059
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NMFS

SAV Surveys (Thayer)	73,841
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East Carolina University

SAV Surveys (Davis)	30,288
Fringe Wooded Swamps (Brinson)	23,995
Mud Pollutants (Riggs)	34,968
Demographic Trends (Tschetter)	<u>32,201</u>
	121,452

UNC

N/P Removal in Swamps (Kuenzler)	43,739
Sediment Dynamics (Wells)	21,355
Algal Blooms (Paerl)	<u>34,119</u>
	99,213

Duke University Marine Laboratory

Environmental Requirements for Oysters (Sutherland)	51,534
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North Carolina State University

Wetland Protection Alternatives (Adams)	6,952
Recreational Fishing Values (Smith)	<u>34,669</u>
	41,621

Mariners Marine, Inc.

Trawl Excluder Device Evaluation (Pearce)	66,361	
Public Participation Program	<u>100,000</u>	
Sub Total	1,018,667	

USGS

WQ Data Evaluation (Bales)	65,910	
Flow Evaluation of Pamlico and Neuse (Bales)	(143,040)	Pending Match
BMP's and WQ (Bales)	<u>115,400</u>	
Sub Total	181,310	
GRAND TOTAL	1,199,977	

DATA MANAGEMENT PLAN
ALBEMARLE PAMLICO ESTUARINE STUDY

The goal of the data management program of the Albemarle Pamlico Estuarine Study is to provide management support for the objectives of the overall Study. In this regard, the program will furnish natural resource managers and researchers with information to directly aid in addressing the issues outlined in Chapter III and fill the information gaps identified in Chapter IV of the Study's work plan. This document describes the specific objectives of the data management program, the data to be managed, and the computer resources that will be utilized for the Albemarle Pamlico Estuarine Study.

OBJECTIVES

The objectives of the Albemarle Pamlico Estuarine Study data management program are:

1. to catalog and assess the literature and data about the region.
2. to establish institutional and electronic mechanisms for accessing, integrating, and analyzing pertinent automated data.
3. to provide resources for automating data developed by the Study or required by the Study.
4. to develop data reporting and tracking systems that regularly summarize the conditions of the estuarine area.

THE DATABASES

The data management program will utilize existing databases to the maximum extent possible. A specialized database for the Study will also be developed. The methods that will be used in developing the specialized database and in accessing existing databases for the Albemarle Pamlico Estuarine Study are described below.

Data Identification

While the APES data management program will attempt to catalog and assist users in acquiring any data about the region, the program will not necessarily attempt to collect,

integrate, and automate all of the data available. The approach of the program will be to evaluate data according to the following criteria before automation is considered.

1. the data must be directly relevant to the management and research needs of APES.
2. the data must be of good quality.
3. the data must be in a form that is usable by managers and scientists.

Additionally, the APES data management program will not attempt to identify all datasets that will be managed by the program prior to the beginning of the first year of the Study. Because the research efforts proposed for the first year are, to a large extent, scoping studies designed to identify data needs, preliminary determination of all datasets is not possible nor desirable.

However, it is possible to identify at the outset of the Study the major existing and required datasets that are pertinent to the Study. In general, these are datasets that are commonly used or needed by resource managers and scientists, and that are cross-cutting the issues and problems of the Albemarle Pamlico region. First year activities of the data management program will provide for evaluation and management of these data. The specific datasets will be discussed in a following section.

Role of Historic Data

The importance of historic data will not be underestimated by the Albemarle Pamlico Estuarine Study. The data will be cataloged and documented at a minimum. However, extensive efforts will not be made to automate and integrate historic data that does meet the minimum criteria specified above. Funding of research projects designed to collect and scrub historic data, and that are proposed by scientists who have knowledge of specific data, will receive high priority.

Database Design

A specialized database for APES will be designed during the first year of the Study. There are no plans to develop a database that fully duplicates all data stored in other systems, such as STORET and the PCS (Permit Compliance System). The database for the Study will consist of core data taken from these existing datasets and keys for relating to the detailed records of the large datasets. It may contain data from other existing small datasets and also new data developed by the Study. The database will reside

on the primary computer system identified for the Study and be implemented using the INFO relational database management system.

Software and procedures for accessing detailed records of datasets residing on host computers other than the APES primary system will be developed so that the core data can be updated and so that users needing to combine detailed data from different computer systems may do so. Where software exists to facilitate data transfer between systems, such as the software developed by the EPA Region IV, it will be acquired and implemented.

Database design will consist of the following: determining data elements to be stored and the relationships between data elements, resolving inconsistencies between datasets from diverse systems, specifying data formats, estimating level of data use, planning frequency with which the database will be refreshed, specifying access limitations to data elements, specifying data elements which must be available on-line and those which may be stored on tape, specifying formats for downloading data to other computer systems, and making provisions for adding data types as information needs are further identified. Additionally the design will evaluate different methods for incorporating data from existing databases. Alternatives to be considered will be the use of magnetic media such as tape or diskette, key entry, or transmission over data communications lines and networks. The design will also consider institutional constraints such as policies, costs, etc. that affect access to other databases. Formal agreements with other agencies will be developed where necessary. It is anticipated that database design and refinement will continue through the life of the Albemarle Pamlico Study.

The database will have three basic components: a catalog of literature and data, column-formatted data, and geographic data.

Literature and Data Catalog. The catalog will function as an index to all of the known literature and data about the Albemarle Pamlico. Cross references between research reports and data generated by the research will be provided. The catalog will conform to a format specified by the Dataset Identification and Interpretation Subcommittee of the APES Technical Committee and will contain sufficient information to permit incorporation into national catalogs such as NEDRES (National Environmental Data Referral System) of NOAA.

Funding for developing the catalog will be through the APES data management budget.

Column-formatted Data. As previously mentioned, the APES database will contain core data in tabular or columnar form from existing large datasets. Specifically the datasets include STORET, EPA's hazard waste database, the State's Permit Compliance System, U. S. Geological Survey's WATSTOR, and the N. C. Division of Marine Fisheries' database. The determination of data elements from these datasets to be incorporated in the APES database will be a first year activity. Other tabular data identified in the first year scoping studies may be included in the database also.

The funding for incorporating column-formatted data into the database will come from a combination of the data management budget and and research projects.

Geographic Data. Almost without exception, the tabular data described above can be considered geographic data in that each data element is associated with a location on the surface of the earth, such as a discharge location or sampling site. Most data also contain coordinate locations (e.g. latitude and longitude) for each site that can serve as the basis for geographic datasets. Therefore one of the first geographic data layers to be entered into the system will be the station locations from those datasets.

Digitized base map data for the region will be stored in the system. The official base for the Albemarle Pamlico Study will be the USGS 7.5 minute topographic quadrangle maps. It is anticipated that an existing cooperative agreement between USGS and the Department of Natural Resources and Community Development to digitize the transportation, hydrography, and political boundaries from the 7.5 minute quads will be accelerated in order to complete maps for the APES study area in two to three years.

Detailed soil surveys for the region will be entered into the system. Funding will consist of a variety of sources. Existing contracts and appropriations will be used to digitize soils in the Chowan River Basin and the Upper Neuse River Basin. Some digitizing of soils will be funded by APES research projects, and it is expected that some surveys will be funded through the APES data management budget.

The development of land use and land cover information for the region will be funded through APES research projects. A requirement of the project to develop the data will be that it is provided in a digital form that is readily acceptable by the primary system.

Maps of watershed boundaries (drainage basins) for the Albemarle Pamlico region will be developed and digitized. The source of funding for the mapping and digitizing will be the data management budget.

Geographic data about the marine fisheries of the state will be included in the APES database. Primary nursery areas, anadromous fish spawning and nursery areas, oyster producing sites, and biological monitoring sites are already digitized. Secondary, tertiary, and inland nursery areas, submerged aquatic vegetation, etc. will be added to the database as the information is developed during the course of the Study. The capture of these data will be funded by the data management budget.

Census boundary map data and associated population, housing, income and employment data will be incorporated in the APES database. The work will be funded through existing projects on-going in NRCD.

Other Databases

The Albemarle Pamlico data management program will assume responsibility for all data generated and funded by the Study. All of the data will not, however, necessarily be incorporated into the APES database described above. On a case by case basis, data developed through APES research projects will be evaluated and a permanent location for the data will be determined. It is anticipated that some data will be more appropriately stored in other existing databases such as STORET or WATSTOR that are interfaced to the APES database. An assessment of the costs and benefits of the alternatives will be considered before data is stored in a final location.

Data Standards

Standards will be developed for data stored in the APES database and in other databases. The working groups established by the Dataset Identification and Interpretation Subcommittee of the Technical Committee are developing data assessment procedures and criteria. These data standards will form the basis for quality control of data. Standards will also be developed for exchanging data between systems and for accuracy of digitized data.

THE COMPUTER SYSTEM

A computer system for managing data has been designed to serve the needs of the Albemarle Pamlico Estuarine Study. The following is a description of the computing resources that will be used for the Study.

System Design Objectives

In designing a system for the study, a number of design objectives were identified.

1. A geographic information system must be an integral part of the data system for the Study. The capability for compiling, storing, displaying, and analyzing geographic information is a requirement.
2. The system must minimize duplication of hardware, software, and data. Duplication will add unnecessary costs to the project, and can pose potential data integrity and consistency problems.
3. The system must support effective interfaces with existing computer systems.
4. The system must provide local and remote access to users. Managers and researchers from many different government agencies and universities, both within and outside the project area, must be able to use the data management system.
5. Flexibility is a system requirement. Because the identification of data needs will be an on-going activity of the Albemarle Pamlico Estuarine Study, the system must be flexible enough to manage both new and existing data, to permit ad hoc queries, and to facilitate database design adaptations. The system must also be flexible enough to permit and accommodate easy use by managers, technicians, and scientists.
6. The system must be developed in a cost effective manner.
7. The active utility of the system must extend beyond the life of the Albemarle Pamlico Estuarine Study. The system must be potentially self supporting at the conclusion of this Study.

System Description

The system for the Albemarle Pamlico Study will consist of a primary computer system which will be connected both to existing systems and to remote users. The systems will be used to maintain the APES database and for general data management, geographic data analysis, statistical analysis, and literature and data cataloging.

The primary system utilized for the Study will be the system operated by the Land Resources Information Service (LRIS) in the N. C. Department of Natural Resources and Community Development. Connections will be developed with EPA's National Computer Center (NCC), and the State's mainframe at State Information Processing Services (SIPS). If required, connections to the Triangle Universities Computation Center (TUCC) and the USGS computer systems will also be developed. Further, the primary system will be attached to established data communications networks to provide remote users with access.

System Components

The following section describes the components of the computer system currently available at LRIS and the enhancements proposed to meet the needs of the APES data management program.

Hardware. The main computer system installed at LRIS is a Data General MV8000-II super-minicomputer which currently has 6 megabytes of memory, approximately one gigabyte of disk storage, 16 asynchronous data ports, and a 1600/800 b.p.i. tape drive. Two other small computer systems are utilized to support the geographic data capture process. System peripherals include color graphics terminals, digitizing tables, drum/beltbed plotters, line printers, and alphanumeric terminals.

A DEC Microvax II with nine megabytes of memory and approximately 350 megabytes of disk storage is also installed at LRIS. This system is used primarily to support interactive multi-surface modeling. The system has a high resolution graphics terminal attached to a Matrix camera and film recorder.

The Data General system will be expanded to effectively support the Albemarle Pamlico Estuarine Study's data management requirements. The system hardware upgrade will include additional disk storage, synchronous and asynchronous data ports, memory, and a processor upgrade.

Communications. The LRIS system currently uses several types of data communications hardware and software. The system supports an intelligent synchronous controller and SNA/SDLC/RJE/3270 software to connect, via leased lines and modems, to the State's IBM 3090-400 mainframe and the State Data Communications Network. Another synchronous controller coupled with X.25 communications software is used to connect two Data General computers at LRIS. It is also anticipated that LRIS will become a node of the State's X.25 Data General network using these capabilities. BLAST (Blocked Asynchronous Transmissions) software is used to connect the Data General with the Microvax II and IBM PC's using asynchronous ports. One 1200 baud asynchronous data line is also provided for dial-in users.

The primary system will be networked and integrated with both the end users and other computer installations supporting major databases relevant to the project. Specialized communications hardware and software will be utilized for physically connecting the primary system at LRIS to other host computers. It is anticipated that most of the hardware and software needed already exists at LRIS. Priority will be given to interfacing the LRIS system with EPA's NCC and to refining and testing the interface to the State Computer.

An established data communications network will be used to provide remote users with access to the primary system. The system will utilize either a commercial network or the existing North Carolina State Data Communications Network.

Software. The software at LRIS consists of numerous geoprocessing and database management packages. The primary software that will be used for the Albemarle Pamlico Study includes INFO, ARC/INFO, and ISM (Interactive Surface Modeling). A data base management system (DBMS) currently installed at LRIS is INFO, a relational DBMS and fourth generation language marketed by Henco Software, Inc. ARC/INFO, a widely used geographic information system (GIS) from Environmental Systems Research Institute, which will be the standard GIS for the project, was recently installed by the State of North Carolina on the LRIS system. ISM is a multi-surface modeling software package with the capability to do contouring and surface and subsurface analysis such as viewsheds, cross-sections, fence diagrams, and three dimensional surface drawings.

SAS (Statistical Analysis System) will be installed on the LRIS system to facilitate data sharing. It is not anticipated that the LRIS system will be used to support high level statistical analysis.

A text management software package will also be installed on the system. The text management system will be used to develop and maintain the literature and data catalog.

A custom "front-end" software package will be designed and developed. The front-end system will provide a management oriented interface to the data and will pre-process and integrate disparate data from existing databases into INFO and ARC/INFO compatible formats. The software will also include programs for producing regular reports from the databases. It is anticipated that this software will utilize the software developed by EPA Region IV which interfaces ARC/INFO to STORET.

Other Computer Systems

It is expected that use of computer systems other than the primary system will occur frequently. Extensive use of NCC may be required for storing and retrieving water quality data in STORET and PCS. The State's mainframe computer will also be used as required. Any substantial statistical analyses requiring mainframe capabilities will be accomplished using either NCC or the SIPS computer.

User Access

Users with authorized accounts may access the APES database and the primary system in several ways. Terminal access will be supported for users desiring to dial-in and query the database. Users may also access the system through the use of PC-based workstations where subsets of the database are downloaded to the user's system. Users may also be provided with information from the system through projects with LRIS in which the LRIS staff produces a final product from the database.

Independent access to other host computers may be provided if the appropriate accounts and procedures are established.

DATA MANAGEMENT AGENCY

The North Carolina Department of Natural Resources and Community Development will assume the management responsibility for the Albemarle Pamlico data and systems. As the state agency with primary management responsibility for the natural resources of the region, NRCDC is most suited for continued operation of the data system and maintenance of the database.

The Department of Natural Resources and Community Development will utilize the computer and staff resources at the Land Resources Information Service (LRIS) to accomplish data management for the Study.

Land Resources Information Service

The computer system at Land Resources Information Service (LRIS), an agency of NRCDC, will be used as the primary computer system. The Albemarle Pamlico Estuarine Study will realize several benefits from this arrangement.

LRIS has an established "infrastructure" for computer system management i.e. staff, facilities, procedures, etc. By utilizing an existing computer installation, the Albemarle Pamlico Estuarine Study will avoid the costs of establishing a new system.

The basic computer hardware and software to support the system are already on line at LRIS. The GIS and database management software are installed and operational. LRIS also has communications hardware and software for connecting the system to other mainframe computers and to existing standard data communications networks, including the State Data Communications Network.

Also, LRIS already has a large database of geographic data for the Albemarle Pamlico study area and on-going agreements to collect additional data. The APES can build upon the existing data.

The availability of experienced staff will eliminate the expense, time, and inefficiency inherent in developing an entirely new system. LRIS has operated a GIS for ten years and has considerable experience in the technology and its application to natural and cultural resource management.

Finally, LRIS operates as a service agency and, as such, has no program commitment that would supersede the Albemarle Pamlico program requirements. That would not be the case with most existing computer systems.

Responsibilities

The lead agency responsibilities to be assumed by the Department of Natural Resources and Community Development include:

Staffing. NRCD will recruit, hire, train, and provide administrative support to the data management staff. This will include existing positions at LRIS as well as the APES data coordinator position.

Operations management. Staff of NRCD will be responsible for the traditional computer system operation tasks such as data backup and archival, security enforcement, equipment maintenance, software maintenance, system performance monitoring, and system tuning.

Database design. NRCD will prepare the initial design of the specialized database for APES as described in an earlier section of this chapter. Continued refinements to this database and the design of other small databases that may be required by the Study will be accomplished by NRCD.

Design of computer programs. Specifications for the "front-end" software described earlier will be designed by NRCD. Any other GIS programs or reporting systems also will be designed by NRCD.

Coding of computer programs. It is anticipated that the coding of the "front-end" software will be contracted. However, development and modification of other computer programs required by the Study may be accomplished by the NRCD programming staff.

Procurement. Procurement of computer hardware and software, data processing supplies, and contractual services for APES will be handled in NRCD. This includes development of specifications and Requests for Bids (RFB), bid evaluations, coordination of installations, and acceptance testing.

Vendor liaison. Liaison with vendors will include hardware, software, and services problem determination and resolution; scheduling of preventative maintenance; and negotiation and management of contractual arrangements for licenses, leases, and maintenance contracts.

Liaison with users. The APES data coordinator will serve as the primary liaison with users of the system. Other LRIS staff will also interface with users on matters such as special GIS projects.

Training. The data coordinator will train and assist users of the APES system. Topics will include the access and operation of the computer systems, "front-end" software, the database, and some GIS capabilities. If necessary, LRIS staff will train the data coordinator in the use of ARC/INFO and the LRIS system.

Documentation. NRCD will document any data management procedures, standards, or software that are developed as a requirement of the Study.

System use/cost accounting. The established time reporting and billing system at LRIS will be used to account for system use and costs associated with the Study. Any modifications necessary for APES special needs will be handled by NRCD.

Role of the Data Coordinator

A data coordinator for the Study will be hired as early as possible. This position will be critical to the overall success of the data management program. Specific responsibilities will include the development of a comprehensive data management plan, the development of documentation, coordination of the cataloging of data and literature, assistance in the APES database design and refinement, liaison with users on matters such as system operation and data availability, liaison with other computer installations and agencies managing data relevant to the Study, and the preparation of regular reports. The data coordinator will also perform data retrievals and special GIS projects for the Study as required.

SCHEDULE

The schedule of significant data management activities is as follows:

Planning Period

- Recruit, hire, and train data coordinator.
- Install asynchronous ports for dial-up users.
- Procure and install SAS.
- Review EPA's STORET/ARC/INFO integration programs.
- Design APES database.
- Design "front-end" software.
- Begin dataset identification and documentation.
- Develop data QA standards and procedures.
- Begin digitizing geographic data for database.
- Establish communications link between LRIS and NCC.
- Refine and test communications link with SIPS.

FY 87-88

- Upgrade Data General MV8000 computer.
- Install text management system for data cataloging.
- Prototype PC workstation.
- Connect LRIS to a data communications network.
- Contract for coding of "front-end" software.
- Begin data entry for data and literature catalog.
- Load available data into database.
- Continue digitizing geographic data.
- Produce regular reports from databases.

Subsequent Years

- Continue data entry (catalog, geographic and tabular)
- Refine APES database design as required.
- Refine "front-end" software as required.
- Produce regular reports from databases.

DATA MANAGEMENT AND SYSTEM COSTS

The costs to establish and operate the APES data management program are outlined in the chart on the following page. A description of the major cost categories is as follows:

Hardware

These are the costs to upgrade the LRIS computer hardware. The costs cover data ports, disk drives, memory, and a processor upgrade. It is anticipated that the hardware will be financed with a 48 month note from a commercial lending institution.

Software

Software costs include the purchase of SAS software using planning funds and a text management package with FY87-88 monies. A minimal annual figure is estimated to cover unforeseen software needs in subsequent years.

Maintenance

These costs cover the maintenance of both hardware and software.

Communications

The estimated data communications costs include the fixed fees for establishing and maintaining LRIS as a node on a data communications network and the variable costs of using the network.

Design/Programming

These are the estimated costs of designing the APES database, designing the "front-end" software, contracting for the programming of "front-end" software, and for other incidental computer programming required for the Study.

Data Entry and Analysis

These funds will cover the entry of data into the APES database and into other existing databases. Data entry will include the data and literature catalog, tabular data, and geographic data. Retrieval and analysis of data in the databases will also be supported.

Because the volume of data to be entered and the level of use of the data are unknown at this time, an annual allocation of these funds among the various activities and users is proposed.

Supplies

These costs cover the purchase of supplies required by the Study such as computer tapes and diskettes, specialized graphic supplies, etc. The purchase of mylar copies of the 7.5 minute quadrangle maps will be done with FY87-88 funds.

The cost estimates for hardware, software, maintenance, supplies, and communications are based upon vendor quotes and represent the best information available at the time. The costs for the "front-end" software development and for data entry and analysis are based upon less certain figures.

To avoid cost overruns on the development of the "front-end" software, a RFB (Request for Bids) will be developed specifying an amount of money that cannot be exceeded, and responses to the RFB will be evaluated accordingly. Cost overruns in the data entry and analysis line item can also be avoided. Each year the APES Program Coordinator, in conjunction with the data coordinator and LRIS, will allocate the portion of the line item to be applied to each major activity, task, or user. If the allocations are exceeded, activities will be ceased until the following year.

May 29, 1987

**Albemarle Pamlico Estuarine Study
Data Management Budget**

ITEM	PLANNING	FY-87/88	FY-88/89	FY-89/90	FY-90/91
Hardware	\$10,300	\$30,000	\$30,000	\$30,000	\$30,000
Software	\$ 4,500	\$30,000	\$10,000	\$10,000	\$10,000
Maintenance	\$ 1,500	\$21,000	\$22,000	\$23,000	\$24,000
Communications Fixed Costs	\$ 2,200	\$20,000	\$20,000	\$20,000	\$20,000
Communications Variable Costs	0	\$15,000	\$20,000	\$25,000	\$25,000
Design/Programming	\$60,000	\$50,000	\$10,000	\$ 5,000	\$ 5,000
Data Entry and Analysis	\$50,000	----->	\$50,000	\$50,000	\$50,000
Supplies	\$ 2,500	\$22,000	\$ 2,000	\$ 2,000	\$ 2,000
TOTAL	\$131,000	\$188,000	\$164,000	\$165,000	\$166,000

May 29, 1987

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MEMORANDUM OF AGREEMENT

Between

Program Coordinator
Albemarle Pamlico Estuarine Study

And

Land Resources Information Service
Department of Natural Resources and Community Development

The Land Resources Information Service (LRIS), a receipt funded state agency in the North Carolina Department of Natural Resources and Community Development (DNRCD), will serve as the primary computer system and provide data management support to the Albemarle Pamlico Estuarine Study (APES).

Scope of Work

The LRIS will provide support to the Albemarle Pamlico Estuarine Study under the direction of the APES Program Coordinator and in accordance with the Data Management Plan dated May 29, 1987.

The specific system and data management responsibilities of LRIS will include:

Staffing. LRIS will recruit, hire, train, and provide administrative support to the data management staff. This will include existing positions at LRIS as well as the APES data coordinator position.

Operations management. Staff of LRIS will be responsible for the traditional computer system operation tasks such as data backup and archival, security enforcement, equipment maintenance, software maintenance, system performance monitoring, and system tuning.

Database design. LRIS will prepare the initial design of the specialized database for APES as described in the APES Data Management Plan. Continued refinements to this database and the design of other small databases that may be required by the Study will be accomplished by LRIS.

Design of computer programs. Specifications for the "front-end" software described in the Data Management Plan will be designed by LRIS. Other GIS programs or reporting systems also will be designed by LRIS.

Coding of computer programs. It is anticipated that the coding of the "front-end" software will be contracted. However, development and modification of other computer programs required by the Study may be accomplished by the LRIS programming staff.

Procurement. Procurement of computer hardware and software, data processing supplies, and contractual services for APES will be handled by LRIS. This includes development of specifications and Requests for Bids (RFB), bid evaluations, coordination of installations, and acceptance testing.

Vendor liaison. Liaison with vendors will include hardware, software, and services problem determination and resolution; scheduling of preventative maintenance; and negotiation and management of contractual arrangements for licenses, leases, and maintenance contracts.

Liaison with users. The APES data coordinator will serve as the primary liaison with users of the system. Other LRIS staff will also interface with users on matters such as special GIS projects.

Training. The data coordinator will train and assist users of the APES system. Topics will include the access and operation of the computer systems, "front-end" software, the database, and some GIS capabilities. If necessary, LRIS staff will train the data coordinator in the use of ARC/INFO and the LRIS system.

Documentation. LRIS will document any data management procedures, standards, or software that are developed as a requirement of the Study.

System use/cost accounting. The established time reporting and billing system at LRIS will be used to account for system use and costs associated with the Study. Any modifications necessary for APES special needs will be handled by LRIS.

Funding and Compensation

The Albemarle Pamlico Estuarine Study will reimburse LRIS on a cost recovery basis according to the cost estimates provided on the attached chart entitled Albemarle Pamlico Estuarine Study Data Management Budget.

Charges for LRIS services will be based upon the prevailing rate schedule. The current schedule is attached.

Invoices for services will be issued monthly by LRIS.

The Albemarle Pamlico Study will transfer monies to LRIS for payment to firms for contractual services and for the procurement of software and hardware immediately after contracts are awarded.

The annual costs billed to the Albemarle Pamlico Estuarine Study by LRIS shall not exceed the total amount estimated for the given year.

Term of Agreement

The effective period of this agreement shall commence on June 1, 1987 and shall terminate on June 30, 1991.

Amendments

This agreement may be amended by mutual agreement between the Land Resources Information Service and the Albemarle Pamlico Estuarine Study.

Signatures

For the Albemarle Pamlico Estuarine Study:

_____ Date

For the Land Resources Information Service:

_____ Date

**Albemarle Pamlico Estuarine Study
Data Management Budget**

ITEM	PLANNING	FY-87/88	FY-88/89	FY-89/90	FY-90/91
Hardware	\$10,300	\$30,000	\$30,000	\$30,000	\$30,000
Software	\$ 4,500	\$30,000	\$10,000	\$10,000	\$10,000
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Communications Fixed Costs	\$ 2,200	\$20,000	\$20,000	\$20,000	\$20,000
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Data Entry and Analysis	\$50,000	----->	\$50,000	\$50,000	\$50,000
Supplies	\$ 2,500	\$22,000	\$ 2,000	\$ 2,000	\$ 2,000
TOTAL	\$131,000	\$188,000	\$164,000	\$165,000	\$166,000

May 29, 1987

STATUS REPORT
PUBLIC INVOLVEMENT PROGRAM

1. The two 30-member Citizens Advisory Committees are now virtually complete (lists attached).
2. Initial meetings are tentatively planned for June 8 in Washington and June 9 in Edenton (Pamlico and Albemarle, respectively). Agendas for those meetings will include:
 - 1) informational presentation on APES
 - 2) charge to CAC
 - 3) organizational activities
 - 4) consideration of available public involvement activities
3. The position description for the Public Involvement Coordinator is completed and is being processed by state personnel. Probable starting time will be July-August.
4. Public involvement activities will include both program directed and grant funded projects. A number of proposals were received to conduct such activities. The CAC's will review proposed activities and make recommendations.

Staff Recommendation: The Public Involvement Subcommittee should be given the task of final approval of public involvement projects for this fiscal year and should meet on June 10 to make final decisions.
5. A second public information workshop is warranted for late summer in the Albemarle region. Staff has approached ECSU about hosting such a conference on existing management programs and citizen opportunities.
6. An effective local government relations program will be critical to the long-term success of this program. The project director will begin immediately establishing single points of contact in all counties in the study area, to form a Local Government Liaison Network.

CITIZENS' ADVISORY COMMITTEE
PAMLICO REGION

Mr. Alton Ballance P. O. Box 510 Ocracoke, NC 27960	928-3251	Dr. Bill Jackson 509 W. 15th Street Washington, NC 27889	946-7725
Mr. Fred Bonner Box 11, Cleveland School Road Garner, NC 27529	779-9750	Mr. Ralph Jarvis P. O. Box 248 Swanquarter, NC 27885	926-3861
Ms. Grace Bonner P. O. Box 9 Aurora, NC 27806	322-4522	Ms. Susan King The Neuse River Foundation P. O. Box 5451 New Bern, NC 28560	633-4915
Mr. Ralph Buxton P. O. Box 340 Nags Head, NC 27959	441-4124	Mr. Ernie Larkin 224 Pineview Dr. Greenville, NC 27834	551-4212
Mr. Rann Carpenter Texasgulf P. O. Box 48 Aurora, NC 27806	322-4111	Mr. Dick Leach Route 5, Box 271 Washington, NC 27889	946-5497
Mr. Derb Carter, Jr. 2108 Dunnhill Drive Raleigh, NC 27608	833-4859	Mr. Neal Lewis Carteret Co. Chamber of Commerce P. O. Box 1198 Morehead City, NC 28557	726-6831
Mr. Rodney Calhoun South River Seafood Beaufort, NC 28516	728-2056	Mr. Todd Miller NC Coastal Federation Route 5, Box 603 [Ocean] Newport, NC 28570	393-8185
Ms. Carolyn Cooper-Ivey P. O. Box 21 Avon, NC 27915	995-5730	Ms. Katie Morris Star Route, Box 76J Atlantic, NC 28511	225-4261
Dr. Don Ensley School of Allied Health Sciences/ECU Greenville, NC	757-6961	Mr. Doug Nelson 2109 Neuse Cliff Drive New Bern, NC 28560	466-3631
Mr. Garvin Hardison Route 65, Box 48 Arapahoe, NC 28510	249-1225	Mr. David O'Neal Route 1 Swanquarter, NC 27885	926-5721

Pamlico Citizens's Advisory Committee

Page 2

Mr. Tim Hodges
Route 1, Box 199B
Swanquarter, NC 27885

926-3531

Mr. Bill Paul
P. O. Box 518
Bayboro, NC 28515

745-4337

Mr. Willy Phillips
Main Street
Bath, NC 27808

923-3151

Mr. Frank Sommercamp
Route 2, Box 170A
Aurora, NC 27806

322-5259

Dr. Thomas Quay
2720 Vanderbilt Avenue
Raleigh, NC 27607

828-9874

Mr. John Spagnola
Down East Institute Network
207 S. Summit Street
Greenville, NC 27834

757-3073

Dr. Clark Rodman
131 East Main Street
Washington, NC 27889

946-9282

Mr. Garland Strickland
Route 3, Box 94
Nashville, NC 27856

459-3579

Mr. Stuart Shinn
P. O. Box 4185
Greenville, NC 27836

757-0659

Mr. Buddy Swain
New Bern High School
New Bern, NC 28560

638-4991

CITIZENS' ADVISORY COMMITTEE
ALBEMARLE REGION

Mr. John Acree Route 1, Box 604 Nags Head, NC 27959	441-5731	Dr. Jimmy Jenkins Elizabeth City State University Campus Box 790 Elizabeth City, NC 27909	335-3227
Mr. Lloyd Ballance Town of Kill Devil Hills P. O. Box 719 Kill Devil Hills, NC 27948	441-2531	Mr. Chuck Little Route 2, Box 117 Creswell, NC 27928	797-4046
Mr. Yates Barber 901 West Church Street Elizabeth City, NC 27909	338-3557	Mr. William McGeorge P. O. Box 868 Virginia Beach, VA 23451	804/855-1328
Mr. Don Bryan Town of Nags Head P. O. Box 99 Nags Head, NC 27959	441-6486	Mr. Murry Nixon Route 1, Box 290 Edenton, NC 27932	221-4115
Mr. Ralph Calfee P. O. Box 177 Kitty Hawk, NC 27949	261-3025	Mr. Gerald Perry P. O. Box 31 Kitty Hawk, NC 27949	261-2757
Mr. Parker Chesson College of the Albemarle Elizabeth City, NC 27909	335-0821	Mr. William Piland Route 2, Box 93A Gates, NC 27937	804/569-4512
Mr. Mike Corcoran NC Wildlife Federation P. O. Box 1026 Raleigh, NC 27611	833-1923	Dr. Robert Powell 1142 N. Road Street Elizabeth City, NC 27909	335-7617
Mr. Michael Daniels P. O. Box 369 Wanchese, NC 27981	473-5001	Mr. Terry Pratt Route 1, Box 178A Merry Hill, NC 27957	356-2267
Mr. Don Flowers P. O. Box 646 Hertford, NC 27944	426-5753	Mr. Bill Richardson Route 1, Box 145 Popular Branch, NC 27965	804/473-1600
Ms. Mary Harrell Hertford Chamber of Commerce P. O. Box 127 Hertford, NC 27944	426-5657	Mr. Earl Roundtree Route 1, Box 203 Sunbury, NC 27979	465-8354
Ms. Carolyn Hess Box 349, Holiday Island Hertford, NC 27944	426-9563	Mr. John Stallings 1001 Stokes Street Windsor, NC 27983	794-2183
Capt. Alfred Howard 600 Sioux Trail Edenton, NC 27932	221-4977		

Mr. Joe Stutts
309 Holly Hill
Murfreesboro, NC 27855

398-3525

Mr. Glen Wood
Weyerhaeuser Company
Box 5623
Cary, NC 27511

851-7441

Mr. A. B. Whitley
P. O. Box 265
Winton, NC 27986

823-3234

Mr. John Gilliam Wood
Box 518
Edenton, NC 27932

482-2554

Mr. W. C. Witherspoon
1304 Highland Avenue
Elizabeth City, NC 27909

335-0865

Mr. J. A. Wright
P. O. Box 573
Edenton, NC 27932

335-6569



State of North Carolina
 Department of Natural Resources and Community Development
 512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor

June 1, 1987

S. Thomas Rhodes, Secretary

MEMORANDUM

TO: Mark Alderson
 U.S. Environmental Protection Agency

FROM: Doug Rader, Ph.D., Program Coordinator *DR*
 Albemarle-Pamlico Estuarine Study

SUBJECT: Proposed Grant Amendment

Please find enclosed the proposed grant amendment for the planning grant for the Albemarle-Pamlico Estuarine Study (APES), as we have discussed. All of the changes have been approved by the Policy Committee for the Study. This request supercedes the request transmitted on April 17, 1987: all changes are included in the current document.

I have enclosed the following:

- 1) memorandum from the Policy Committee authorizing these changes;
- 2) budget summary page from the existing grant;
- 3) proposed grant amendment; and
- 4) justification for the proposed grant amendment.

The "travel" and "other" changes will need to be retroactive to October, 1986, if possible, to cover the full range of minor bills incurred by the Policy Committee and department staff.

As before, action on this amendment is urgent -- State of North Carolina fiscal year 1986-1987 bills must be submitted by June 15. Thanks in advance for the speedy processing of this instrument!

DRN:kn

Enclosures

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State of North Carolina
 Department of Natural Resources and Community Development
 512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor

S. Thomas Rhodes, Secretary

June 1, 1987

M E M O R A N D U M

TO: Mark Alderson
 Office of Marine and Estuarine Protection
 U.S. Environmental Protection Agency

FROM: S. Thomas Rhodes Jack Ravan
 Co-Chairman Co-Chairman
 Albemarle-Pamlico Estuarine Study Policy Committee

SUBJECT: Planning Grant to North Carolina Department of
 Natural Resources and Community Development for the
 Albemarle-Pamlico Estuarine Study, No. 6BML87A000

The Policy Committee for the Albemarle-Pamlico Estuarine Study hereby requests a modification to the existing planning grant to NCDNRCD to facilitate completion of the program duties as outlined in the Cooperative Agreement dated July 1986. The proposed changes are listed on the attached page.

Please expedite this modification so that administrative deadlines can be met.

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PART III—BUDGET INFORMATION

SECTION A—BUDGET SUMMARY

GRANT PROGRAM, FUNCTION OR ACTIVITY (a)	FEDERAL CATALOG NO. (b)	ESTIMATED UNOBLIGATED FUNDS		NEW OR REVISED BUDGET		
		FEDERAL (c)	NON-FEDERAL (d)	FEDERAL (e)	NON-FEDERAL (f)	TOTAL (g)
1. Albanarle-Panlico Study		\$	\$	\$ 300,000.	\$ 16,000.	\$ 316,000.
2.						
3.						
4.						
5. TOTALS		\$	\$	\$ 300,000	\$ 16,000.	\$ 316,000.

SECTION B—SCHEDULE A BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				TOTAL (5)
	(1) Federal	(2) State In-kind	(3)	(4)	
a. Personnel	\$ 55,092.	\$ 5,949.	\$	\$	\$ 61,041.
b. Fringe Benefits	11,559.				11,559.
c. Travel	7,500.				7,500.
d. Equipment	2,500.				2,500.
e. Supplies	1,000.				1,000.
f. Contractual	216,000.				216,000.
g. Construction	0				
h. Other	6,349.				6,349.
i. Total Direct Charges	300,000.	5,949.			305,949.
j. Indirect Charges		10,051.			10,051.
k. TOTALS	\$ 300,000	\$ 16,000.	\$	\$	\$ 316,000.
7. Program Income	\$	\$	\$	\$	\$

PROPOSED GRANT AMENDMENT
ALBEMARLE-PAMLICO ESTUARINE STUDY

<u>ITEM</u>	<u>GRANT</u>	<u>CHANGES</u>	<u>AMENDED GRANT</u>
PERSONNEL	55,092	+ 7,700	62,792
FRINGES	11,559	+ 2,000	13,559
TRAVEL			
Coordinator	7,500	--	7,500
Other	--	+ 2,500	2,500
(Total Travel)	(7,500)	+ 2,500)	(10,000)
EQUIPMENT	2,500	+ 7,500	10,000
SUPPLIES	1,000	+ 500	1,500
CONTRACTUAL	216,000	-152,400	63,600
OTHER	6,349	+ 1,200	7,549
INTRADEPARTMENTAL TRANSFER TO LRIS	--	+131,000	131,000
TOTAL	300,000	0	300,000

PROPOSED GRANT BUDGET AMENDMENTS

The changes in the budget for the Albemarle-Pamlico Estuarine Study proposed below are intended to redirect funds allocated for administrative and contractual expenses to facilitate the primary functions of the program office, to initiate formation of the data management system for the program and to establish an office in the coastal plains dedicated to public involvement. In addition, a small augmentation of travel funds is proposed to accommodate a Policy Committee directive to reimburse actual travel expenses incurred in service to the program in certain limited cases spelled out in the Administrative Procedures for the study and to provide travel support for the Public Involvement Coordinator.

JUSTIFICATION FOR BUDGET MODIFICATIONS

1. Net Personnel and Fringe Benefits allocations are increased modestly to accommodate the following changes:
 - A. Projected unexpended funds for the Program Coordinator and secretary are redirected to equipment and travel (-\$9000).

Dr. Doug Rader did not begin work until November 1, 1986, while Ms. Kathy Norris did not begin work until January 1, 1987. Funds remaining in these categories are ample to accommodate the maximum proposed legislative raise for the year. Currently, staff is patching together available time on three separate computers in the Division of Environmental Management and the Division of Coastal Management. Our low priority on these machines guarantees that deadlines oftentimes cannot be met or are met only with herculean efforts at night and on weekends. These circumstances severely curtail the effectiveness of program staff. The only feasible solution is word/data processing autonomy, hence the request for the transfer of funds. This will in fact greatly facilitate the execution of primary program functions, including the development of workplans and other documents.

- B. The Policy Committee has requested that a Public Involvement Coordinator be hired at about State Pay Grade 70. The Division of Budget and Management estimates cost from June 1 - October 1 at about \$10,000 for salary and fringes. In addition, the Policy Committee has requested that a Data Management Coordinator be hired at about State Pay Grade 73. The Division of Budget and Management estimates the cost from July 1 - October 1 at about \$8,700.

The total proposed change in these line items then is +\$7700 in salaries and +\$2000 in fringes.

2. Travel

Travel funds are proposed to be augmented +\$2500 to cover in-state travel costs for the Public Involvement Coordinator and other emergency travel expenditures approved according to the Administrative Procedures by the Policy Committee. This modification was requested by the Program Coordinator on February 13 and March 17, 1987.

3. Equipment

An increase of \$7500 is proposed to cover the cost of the word/data processing equipment justified above. This request was approved by the Policy Committee on February 13, 1987.

4. Supplies

The modest increase requested allows the Public Involvement Coordinator to staff the Citizens' Advisory Committees adequately at satellite locations in the coastal region.

5. Contractual

A reduction of \$152,400 is proposed to balance this amendment request.

6. Other

A minor increase of \$500 is proposed to cover greater printing and photocopying costs than were anticipated. The enormous public response after the Beaufort County Conference on February 14 has contributed to this cost. An additional increase of \$700 is requested to cover computer expenses incurred to other state agencies during workplan preparation, for a total change of +\$1200. These changes were approved by the Policy Committee on February 13, 1987.

7. Intradepartmental Transfer to LRIS

The Land Resources Information System has been designated the data management agency for the APES. This transfer is designed to initiate the data management program according to the approved data management plan.

ALBEMARLE-PAMLICO ESTUARINE STUDY
POLICY COMMITTEE MEETING

AGENDA

8:30 A.M. June 1, 1987
14th Floor Conference Room
Archdale Building, Raleigh, N.C.

8:30	Call to Order	Rhodes/Ravan
8:35	Overall Budget*	Staff
8:45	Information Acquisition:	Frankenberg
	Recommendations of the Peer Review Committee*	
	Recommended Projects*	
	Funding by Institution	
	Workshops/workgroups*	
9:15	Program Administration	Staff
	Proposed Budget*	
9:30	Data Management	Staff
	Data Management Plan*	
	Proposed Budget*	
	Memorandum of Agreement*	
	Data Management Coordinator*	
9:45	Public Involvement	Staff
	Citizens Advisory Committees Final Lists Organizational Meetings	
	P.I. Coordinator	
	Project Funding Strategy*	
	Public Workshop #2*	

10:15 Funding Mechanisms Staff

 Draft Cooperative Agreement
 (Universities)

 Modifications to NRCD-EPA Cooperative
 Agreement*

 Draft Interagency Agreements

 Grant Amendment*

10:30 Other Business Ravan/Rhodes

10:45 Adjournment

* denotes action item

STATUS REPORT
PUBLIC INVOLVEMENT PROGRAM

1. The two 30-member Citizens Advisory Committees are now virtually complete (lists attached).
 2. Initial meetings are tentatively planned for June 8 in Washington and June 9 in Edenton (Pamlico and Albemarle, respectively). Agendas for those meetings will include:
 - 1) informational presentation on APES
 - 2) charge to CAC
 - 3) organizational activities
 - 4) consideration of available public involvement activities
 3. The position description for the Public Involvement Coordinator is completed and is being processed by state personnel. Probable starting time will be July-August.
 4. Public involvement activities will include both program directed and grant funded projects. A number of proposals were received to conduct such activities. The CAC's will review proposed activities and make recommendations.
- Staff Recommendation: The Public Involvement Subcommittee should be given the task of final approval of public involvement projects for this fiscal year and should meet on June 10 to make final decisions.
5. A second public information workshop is warranted for late summer in the Albemarle region. Staff has approached ECSU about hosting such a conference on existing management programs and citizen opportunities.
 6. An effective local government relations program will be critical to the long-term success of this program. The project director will begin immediately establishing single points of contact in all counties in the study area, to form a Local Government Liaison Network.

CITIZENS' ADVISORY COMMITTEE
PAMLICO REGION

Mr. Alton Ballance P. O. Box 510 Ocracoke, NC 27960	928-3251	Dr. Bill Jackson 509 W. 15th Street Washington, NC 27889	946-7725
Mr. Fred Bonner Box 11, Cleveland School Road Garner, NC 27529	779-9750	Mr. Ralph Jarvis P. O. Box 248 Swanquarter, NC 27885	926-3861
Ms. Grace Bonner P. O. Box 9 Aurora, NC 27806	322-4522	Ms. Susan King The Neuse River Foundation P. O. Box 5451 New Bern, NC 28560	633-4915
Mr. Ralph Buxton P. O. Box 340 Nags Head, NC 27959	441-4124	Mr. Ernie Larkin 224 Pineview Dr. Greenville, NC 27834	551-4212
Mr. Rann Carpenter Texasgulf P. O. Box 48 Aurora, NC 27806	322-4111	Mr. Dick Leach Route 5, Box 271 Washington, NC 27889	946-5497
Mr. Derb Carter, Jr. 2108 Dunnhill Drive Raleigh, NC 27608	833-4859	Mr. Neal Lewis Carteret Co. Chamber of Commerce P. O. Box 1198 Morehead City, NC 28557	726-6831
Mr. Rodney Calhoun South River Seafood Beaufort, NC 28516	728-2056	Mr. Todd Miller NC Coastal Federation Route 5, Box 603 [Ocean] Newport, NC 28570	393-8185
Ms. Carolyn Cooper-Ivey P. O. Box 21 Avon, NC 27915	995-5730	Ms. Katie Morris Star Route, Box 76J Atlantic, NC 28511	225-4261
Dr. Don Ensley School of Allied Health Sciences/ECU Greenville, NC	757-6961	Mr. Doug Nelson 2109 Neuse Cliff Drive New Bern, NC 28560	466-3631
Mr. Garvin Hardison Route 65, Box 48 Arapahoe, NC 28510	249-1225	Mr. David O'Neal Route 1 Swanquarter, NC 27885	926-5721

Mr. Tim Hodges Route 1, Box 199B Swanquarter, NC 27885	926-3531	Mr. Bill Paul P. O. Box 518 Bayboro, NC 28515	745-4337
Mr. Willy Phillips Main Street Bath, NC 27808	923-3151	Mr. Frank Sommercamp Route 2, Box 170A Aurora, NC 27806	322-5259
Dr. Thomas Quay 2720 Vanderbilt Avenue Raleigh, NC 27607	828-9874	Mr. John Spagnola Down East Institute Network 207 S. Summit Street Greenville, NC 27834	757-3073
Dr. Clark Rodman 131 East Main Street Washington, NC 27889	946-9282	Mr. Garland Strickland Route 3, Box 94 Nashville, NC 27856	459-3579
Mr. Stuart Shinn P. O. Box 4185 Greenville, NC 27836	757-0659	Mr. Buddy Swain New Bern High School New Bern, NC 28560	638-4991

CITIZENS' ADVISORY COMMITTEE
ALBEMARLE REGION

Mr. John Acree Route 1, Box 604 Nags Head, NC 27959	441-5731	Dr. Jimmy Jenkins Elizabeth City State University Campus Box 790 Elizabeth City, NC 27909	335-3227
Mr. Lloyd Ballance Town of Kill Devil Hills P. O. Box 719 Kill Devil Hills, NC 27948	441-2531	Mr. Chuck Little Route 2, Box 117 Creswell, NC 27928	797-4046
Mr. Yates Barber 901 West Church Street Elizabeth City, NC 27909	338-3557	Mr. William McGeorge P. O. Box 868 Virginia Beach, VA 23451	804/855-1328
Mr. Don Bryan Town of Nags Head P. O. Box 99 Nags Head, NC 27959	441-6486	Mr. Murry Nixon Route 1, Box 290 Edenton, NC 27932	221-4115
Mr. Ralph Calfee P. O. Box 177 Kitty Hawk, NC 27949	261-3025	Mr. Gerald Perry P. O. Box 31 Kitty Hawk, NC 27949	261-2757
Mr. Parker Chesson College of the Albemarle Elizabeth City, NC 27909	335-0821	Mr. William Piland Route 2, Box 93A Gates, NC 27937	804/569-4512
Mr. Mike Corcoran NC Wildlife Federation P. O. Box 1026 Raleigh, NC 27611	833-1923	Dr. Robert Powell 1142 N. Road Street Elizabeth City, NC 27909	335-7617
Mr. Michael Daniels P. O. Box 369 Wanchese, NC 27981	473-5001	Mr. Terry Pratt Route 1, Box 178A Merry Hill, NC 27957	356-2267
Mr. Don Flowers P. O. Box 646 Hertford, NC 27944	426-5753	Mr. Bill Richardson Route 1, Box 145 Popular Branch, NC 27965	804/473-1600
Ms. Mary Harrell Hertford Chamber of Commerce P. O. Box 127 Hertford, NC 27944	426-5657	Mr. Earl Roundtree Route 1, Box 203 Sunbury, NC 27979	465-8354
Ms. Carolyn Hess Box 349, Holiday Island Hertford, NC 27944	426-9563	Mr. John Stallings 1001 Stokes Street Windsor, NC 27983	794-2183
Capt. Alfred Howard 600 Sioux Trail Edenton, NC 27932	221-4977		

Albemarle Citizens' Advisory Committee

Page 2

Mr. Joe Stutts
309 Holly Hill
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Mr. Glen Wood
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Mr. A. B. Whitley
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823-3234

Mr. John Gilliam Wood
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482-2554

Mr. W. C. Witherspoon
1304 Highland Avenue
Elizabeth City, NC 27909

335-0865

Mr. J. A. Wright
P. O. Box 573
Edenton, NC 27932

335-6569

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DRAFT

RECOMMENDATIONS OF THE PEER REVIEW COMMITTEE

- I. Information acquisition proposals have been exhaustively reviewed (400+ reviews for 99 proposals). Eighteen projects are recommended for funding with only modest adjustments from original form. Those are listed in Attachment A. A meeting of principal investigators is required after projects are funded, to chart-out where sampling is taking place and to coordinate overall program direction.
- II. Several subject areas require further refinement before specific funding decisions can be made: fish diseases; land use/land cover and remote sensing; hydrologic and hydrodynamic modelling; and natural areas/NWI/endangered species habitat. The first three should be explored in workshops conducted by WRRRI. Three working groups should also be convened; one to plan an approach to NWI/natural area evaluations; a second to evaluate the impact of larval recruitment processes on the functional role of nursery areas; and, a third to assess data and hypotheses on striped bass declines in the Albemarle-Pamlico Sounds. These topics should be considered for December funding, depending on the outcome of the workshops, working groups, and proposals resulting therefrom.
- III. Other areas of program emphasis also need to be addressed for December funding. Some of these may result from modification of proposals received or newly solicited proposals. Those include:
 - C. effects of land conversion on nursery habitats
 - D. procedures for management fecal contamination
- IV. Action on public involvement proposals should be deferred until the Citizens' Advisory Committees can be convened and presented with lists of possible program options. Staff should identify a funding pathway to reserve funds for later funding. However, a second public meeting should be held in the Albemarle region during the summer.
- V. All projects will furnish a short (1-3 pp) nontechnical summary of yearly results in addition to quarterly reports, draft summary reports and final summary report.

PROPOSED FUNDED PROJECTS
(By Program Area)

\$

I. RESOURCE CRITICAL AREAS

A. PNA Analyses	(Street, DMF)	\$ 34,934
B. NWI	(Pending workgroup)	(December)
C. Natural Areas	(Pending workgroup)	(December)
D. SAV Surveys	(Thayer, NMFS)	73,841*
	(Davis, ECU)	30,288*
E. Fringe Wooded swamps	(Brinson, ECU)	23,995
F. Wetland Protection	(Adams, NCSU)	6,952
G. Anadromous Obstructions	(Collier, FWS)	<u>32,059(-)*</u>
		= \$ 202,069 (27.9%)

II. WATER QUALITY & ESTUARINE RELATIONSHIPS

A. Land Use Map	(Pending workshop)	\$ (December)
B. Pt. Source Map	(To administration)	(December)
C. Hyde Co. Soil Survey	(Philen, DSWC)	10,000
D. WQ Data Evaluation	(Bales, USGS)	65,910
E. Flow Evaluation	(Bales, USGS)	(Pending match to 143,040)
F. N/P Removal in Swamps	(Kuenzler, UNC)	43,739
G. Sediment Dynamics	(Wells, UNC)	21,355
H. Algal Blooms	(Paerl, UNC)	34,119
I. Mud Pollutants	(Riggs, ECU)	34,968*
J. BMP's & WQ	(Bales, USGS)	<u>115,400</u>
		= \$ 325,491 (45.0%)

III. FISHERIES DYNAMICS

A. Stock Assessment	(Mercer, DMF)	\$ 11,356
B. Environmental Effects on Oysters	(Sutherland, DUML)	51,534
C. Excluder Devices	(Pearce, MM)	<u>66,361</u>
		= \$ 129,251 (17.9%)

IV. HUMAN ENVIRONMENT & PUBLIC PARTICIPATION

A. Demographic Trends	(Tschetter, ECU)	\$ 32,201
B. Resource Management	(Nichols, RTI)	(December)
C. Rec. Fishing Values	(Smith, NCSU)	<u>34,669</u>
		= \$ 66,870 (9.2%)
		= \$ 723,681

*July-December funding
-Adjust funding with Principal Investigator

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Albemarle/Pamlico Estuary Study

FY'87 Funding by Institution

DNRC

APES Program Administration	188,296
Data Management (LRIS)	188,000
Division of Marine Fisheries	
PNA Analyses (Street)	34,934
Stock Assessment (Mercer)	11,356
Division of Soil & Water Conservation	
Hyde County Soil Survey (Philen)	<u>10,000</u>
	432,586

USFWS

Anadromous Obstructions (Collier)	32,059
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NMFS

SAV Surveys (Thayer)	73,841
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East Carolina University

SAV Surveys (Davis)	30,288
Fringe Wooded Swamps (Brinson)	23,995
Mud Pollutants (Riggs)	34,968
Demographic Trends (Tschetter)	<u>32,201</u>
	121,452

UNC

N/P Removal in Swamps (Kuenzler)	43,739
Sediment Dynamics (Wells)	21,355
Algal Blooms (Paerl)	<u>34,119</u>
	99,213

Duke University Marine Laboratory

Environmental Requirements for Oysters (Sutherland)	51,534
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North Carolina State University

Wetland Protection Alternatives (Adams)	6,952
Recreational Fishing Values (Smith)	<u>34,669</u>
	41,621

Mariners Marine, Inc.

Trawl Excluder Device Evaluation (Pearce)	66,361
Public Participation Program	<u>100,000</u>
Sub Total	1,018,667

USGS

WQ Data Evaluation (Bales)	65,910	
Flow Evaluation of Pamlico and Neuse (Bales)	(143,040)	Pending Match
BMP's and WQ (Bales)	<u>115,400</u>	
Sub Total	181,310	
GRAND TOTAL	1,199,977	

A Proposal to the
Albemarle-Pamlico Estuarine Study

titled

DEVELOPMENT AND ADMINISTRATION OF A SERIES OF TECHNICAL WORKSHOPS

Submitted by the
Water Resources Research Institute
of
The University of North Carolina

Covering the Period from July 1, 1987 - June 30, 1988

Requesting Support in the Amount of \$15,750

Submitted by

David H. Moreau, Director
Water Resources Research Institute
of The University of North Carolina

F. D. Hart
Vice Chancellor for Research
North Carolina State University

DR
Signed copy
coming thru
channels JS

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