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NA170Z0497-01

TASK 21

Maryland Coastal Zone Management Program

Grant No. NA170Z0497-01

Final Report

Task 21

Critical Area Project Tracking

(4th and 5th Quarterly Reports and Sample Program Output)

*attached to other copy*

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1992

January 14, 1993

MEMORANDUM

TO: Suzanne Aucella

FROM: O'wole Alade *AO*

SUBJ: Quarterly Progress Report (October - December, 1992)

During the quarter, the Commission staff had the opportunity to review the Integrated Program and Project Evaluation System (IPPEs). The purpose of the review was to assess the functioning of the changes or modifications that have been made to the program. In view of the changes, there was a consensus that the program, in its present form, is user-friendly, operational and functional in the automation of the tasks of tracking development, reviewing local Programs, and evaluating proposed projects.

The system was put through a rigorous evaluation for bugs, consistency and capability by our new Systems Analyst/Programmer. A number of computer programming anomalies were detected and request for rectification was initiated. Corrections have been made and the task of maintaining the system will be carried out by our Systems Analyst/Programmer as recommended by the CRD Project Manager.

The consultant continues to encode the local Critical Area Programs into the system. This task will be taken over by our Systems Analyst/Programmer for the remaining local Programs at the end of this funding period (September). Because of the transfer of the encoding task from the outside consultant to in-house, the Systems Analyst/Programmer started training during this quarter. Further training on the programming or encoding may be required as needed.

Projects information are continuously entered into the system as required in the contract with CRD.

The Commission is committed to using the system and the intensity of use will grow as more of the staff have easier access to the program through the network.

/jjd

cc: Dr. Sarah Taylor  
Veronica Nicholls

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STATE OF MARYLAND  
CHESAPEAKE BAY CRITICAL AREA COMMISSION

October 29, 1992

MEMORANDUM

TO: Susan Aucella  
FROM: O'wole Alade A-C.  
SUBJ: Progress Report

Efforts have been made to enter as many project data into the Integrated Project and Program Evaluation System (IPPES) in order to generate meaningful statistical reports. These efforts have been successful to provide the Commission with vital summary information about the types of projects that have been submitted for evaluation; the cumulation of the approval types, development types and the land use designations where these proposed projects are occurring (see the attached).

In addition to the above, the IPPES can now provide summary information about the changes that are occurring in the wetlands, forested areas, and on agricultural lands as the result of approved projects. More importantly, the automatic calculation of the amount of land that is disturbed due to development activities; the amount of impervious surface created; the amount of forested areas removed and replanted; and the proportion of the total projects submitted in each county to the total number of projects submitted Critical Area-wide. These capabilities have been tested based on the amount of information that has been entered into the system. The actual effects of the approved projects can be assessed more realistically as the Commission builds the project database.

Because of our past efforts to enter all of the project information that has been submitted in Anne Arundel and Cecil Counties, the statistical reports for both counties reflect the changes that have occurred. The same effort has been expended on other counties so as to provide a better test sampler.

With regard to the encoding of the Critical Area Programs and the related ordinances, Dorchester and Somerset Counties have been completed.

The position of the data processing programmer/analyst has finally been filled.

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NA170Z0497-01

TASK 22

Maryland Coastal Zone Management Program

Grant No. NA170Z0497-01

Final Report

Task 22

Somerset County

Watershed Management Survey

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1992

FINAL REPORT  
NON-TIDAL WETLANDS WATERSHED MANAGEMENT SURVEY  
DECEMBER 30, 1992

An initial draft report was prepared in July 1992 for this project. However, an extension was received on the contract, adding an additional three month period. The purpose of this extension was to provide time for the Maryland Department of Natural Resources to complete orthophoto wetland delineation maps of the watershed. These maps should provide a far superior data base than was originally anticipated. Receipts of these maps by the Coastal and Watershed Resources Division is expected to have occurred at this time.

The watershed management survey was begun in FY92 in order to help to identify and develop protective measures for a significant resource in Somerset County. Also of serious concern was the issue of how to direct land use decisions while allowing economic development to continue in the area.

As originally outlined, the main objectives of a watershed plan would be to protect the resource; to determine areas suitable for development; to identify possible mitigation sites; and to determine any related flood management and water supply concerns.

A scope of work was developed which would be in accordance with DNR guidelines and included the selection of a pilot study area based on written criteria to be developed by the County; maps indicating potential non-tidal wetlands in the selected area; and a concept plan and data files which would meet DNR requirements.

The criteria for selection were developed by the staff planner, Joan Kean with comment from Marguerite Whilden of the Watershed Management Division, WRA. The criteria are as follows:

1. Location: if possible, the watershed should be completely within the County.
2. Presence of non-tidal wetlands: all watersheds in Somerset County are presumed to have this feature. However, wetlands depicted on NWI and State Guidance maps should be well represented. Types of wetlands, as shown on maps, should also be noted.
3. Development pressures: the watershed should be undergoing development, but not heavily urbanized. If possible, growth centers shown in the new Comprehensive Plan should be included; available sewer and water should also be checked.
4. Size: the watershed should be a manageable size for purposes of a prototype survey. If too large an area, or too urbanized area is selected, resources will be too limited to complete the project and proceed to the next step.

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NOAA Coastal Services Center Library  
2234 South Hobson Avenue  
Charleston, SC 29405-2413**

5. Area outside the CBCA: given the configuration of the County, all prominent watersheds will be at least partially within the Critical Area. However, the selected watershed should have significant areas outside the CBCA which are expected to experience development.
6. Mitigation sites should be available. Given the rural nature of the County and prevalence of prior converted hydric soils, this is not anticipated as a major difficulty. However, availability of open space and public lands contiguous to existing wetlands should be noted.
7. DNR approval: The County is seeking the input of DNR WRA/Non-tidal Wetlands on this project. DNR should be contact to review the criteria and selection.

Information on watershed designations were procured from the Flood Management Division and potential subbasins were then depicted on a 1:62,500 map. Following this, a preliminary review of potential survey areas was begun. Activities during this period included telephone conversations with WRA and CWRD and meetings with office staff for in-house comment.

The criteria was then answered point by point and a more detailed map was drawn up for the Big Annessex watershed segment. This information was forwarded to the Watershed Management section of the Water Resources Administration. The agency concurred with the selection and suggested the County include water supply and flood hazard zone issues as applicable.

Progress on the project continued during the Spring quarter. Preliminary maps based on NWI maps and interpretation of infrared aeriels and soil maps were started by the planner and an intern and were then provided to other Department staff members for review. These maps were to be redrawn at a scale useful to the project. However, efforts were curtailed when the possibility arose that DNR could procure additional non-tidal wetlands mappings for the project.

CWRD has a fully executed contract with WRA to provide orthophoto mapping by the end of 1992. For this reason, CWRD requested an extension of the FY92 contract on our behalf.

Considerable progress was made on the concept document from late spring through mid-summer. After some discussion with Marguerite Whilden of Wetlands Division, it was decided that the conceptual framework need not be tied explicitly to the draft DNR guidelines as long as essential elements were addressed. Since planning agencies such as the Department of Technical and Community Services could already establish much of the framework as a "given", many of the steps were unnecessary and redundant.

Contact was also made with Calvert County Planning Office to review their document/outline since that County had been funded a year advance of Somerset's project. On review, Calvert's outline and the direction of its study appeared to be in line with Somerset's. However, Calvert appears to be involved at this time with hydrologic and hydraulic components. Also, topography is not of great concern in Somerset as the coastal plan lacks significant definition.

A draft concept document was completed and provided to participating staff members for review and comment. The revised concept plan was provided to CWRD and Non-Tidal Wetlands in July. It is included in an appendix to this report.

Information was also gathered on functional assessment techniques. The State has been actively seeking alternative methodology to WET. Conversations with Kevin Smith of the State's Non-Tidal Wetlands Division indicated that several methods were being explored: a landscape level functional assessment and two versions of the Ammann method, the New Hampshire method and the Connecticut method.

On November 30, Joan Kean accompanied the DNR to the Isle of Wight to study use of the New Hampshire method on wetlands on State-owned land. The methodology would have to be revised to allow for tidal wetlands as well as non-tidals. Although this methodology appears promising for watershed management purposes, development will probably extend for a year or more and would not be available for the currently funded work. At this time, we have been advised by Denise Clearwater of the Non-Tidal Wetlands that WET 2.0 should be used.

In keeping with final task of the Scope of Work, three files have been prepared for Technical Information, Issues and participation.

The Technical Information file contains an annotated list of studies and plans on a local level; Submerged aquatic vegetation map; mitigation information; information on takings; information on the Ammann method including the manual for evaluation of non-tidal wetlands in New Hampshire.

The issues file contains preliminary issues identified and reviewed by staff members.

The participation file contains a list of thirty-five contacts in Federal, State and local government and other interested parties.

In early October, Joan Kean attended a Wetlands workshop at the Aspen Institute in Wye Woods. Cosponsored by various Federal and State agencies, it focused on developing relationships with private landowners and available programs to conserve and manage wetlands.

Valuable information was offered on "marketing" wetlands protection to property owners and available easements/grants from Federal, State and non-profit groups. This may prove useful in public hearings and in working with the citizen participation portion of Watershed Plan development.

On October 1, 1992, Somerset County began a new contract to develop a watershed plan under 309 funding, in accordance with standards established by the Water Resources Administration of the Department of Natural Resources.

For this quarter, the no-cost extension runs concurrently with the new 309 Grant and activities assigned under the latter contract have been pursued under the extension as far as funding allowed.

Required work on the development of a project schedule and benchmarks was completed, as was a Request For Proposals. The RFP was completed in early November and sent to the Coastal and Watershed Resources Division for comment.

Extensive comment was received from Denise Clearwater of the Non-Tidal Wetlands Division who would ultimately certify the watershed management plan. As some of the comments addressed areas not within the FY93 contract and would involve additional costs, we requested further discussion between CWRD and the Non-Tidal Wetlands Division.

Other changes, based on Ms. Clearwater's comments, were made to the RFP and the revised paper was once again sent to CWRD. This revision is included as an appendix to this report.

An advertisement for request for proposals was placed in the Washington Post on Sunday, December 13. It has been our experience that this yields the best response for projects requiring multi-discipline or scientific approaches that may not be available locally.

The present schedule calls for response and bids from consultants by January 12, 1993; interviews on January 20 and 21, as necessary and; recommendation to the County Commissioners by January 26, 1993.

As the objective of the FY92 special project was to begin to develop a watershed management plan for Somerset, the County has met its goal. The present FY92 funding brings the project into the next phase. Should DNR - Non-Tidal Wetlands decide additional studies are required, additional funding can be sought by the agency. At this time, however, the County believes water supply and flood management concerns within this particular watershed segment will not necessitate extensive additional survey.

## APPENDIX "A"

### CONCEPT PLAN

#### 1. Purpose

The purpose of developing a watershed management plan for Somerset County is to protect valuable non-tidal wetlands and habitat for threatened and endangered species; to provide a measure of economic and social stability by offering a guide to where development can occur; to direct mitigation to suitable sites; to address issues of flood management and water supply as applicable and; to protect the water quality of the watershed.

As ecologists and planners try to form a holistic approach to growth and environmental protection, watershed planning has emerged as the appropriate vehicle for assessing where and how development should occur. While protecting wetland resources, a watershed management plan also relates directly to nonpoint source pollution and its effect on water quality in the Bay, its tributaries and groundwater supplies.

Somerset County falls into two watersheds: the Nanticoke to the North and the Pocomoke to the South. Within these watersheds are subbasins or segments, one of which would serve as a survey area in the development of a watershed management plan.

The Big Annemessex River watershed segment was selected as best meeting the criteria necessary for such a prototype study. These criteria had been developed as a first step in this process. An analysis of how these criteria are met follows:

- a) Location: if possible, the watershed should be completely within the County. The Big Annemessex is located off the Tangier Sound, to the northeast of the City of Crisfield. It is entirely within Somerset. [See map on following page].
- b) Presence of non-tidal wetlands. Palustrine forested non-tidal wetlands predominate in the watershed, with a number of estuarine non-tidal wetlands, as well as seasonally tidal wetlands, near the river. The most common designation is PFOIR. State guidance and NWI mappings indicate scattered palustrine non-tidal wetlands throughout the area outside the Critical Area boundaries, with significant groupings north of Marion, near Fairmount and near Westover on MD Rt. 413.
- c) Development pressures: the watershed should be undergoing development, but not heavily urbanized. If possible, growth centers shown in the new Comprehensive Plan should be included; available sewer and water should also be considered. The watershed segment is experiencing development pressures, but is not heavily urbanized. It includes growth areas designated in the County's Comprehensive Plan for Marion, Westover and northern Crisfield, as well as the Crisfield Airport. Water front subdivision has occurred around Jones Creek and Colbourn Creek.

d) Size: the watershed should be manageable size for purposes of a prototype survey. The size of the watershed lends itself to such a study. Neither too large or urbanized, it is a manageable size with which to work and should not strain financial resources.

The other two watershed segments considered were deemed too large and complex in one case, and lacking development pressures in the second instance.

e) The selected watershed should have significant areas outside the Critical Area which are expected to experience development. Considerable portions of the watershed are outside the Chesapeake Bay Critical Area and includes the Fairmount area south of Rt. 361; from MD Rt. 413 to US Rt. 13 south of Westover; areas along 413 from Kingston to Hopewell.

f) Mitigation sites should be available; availability of open space and public lands contiguous to existing wetlands should be noted. The area included in this watershed includes privately owned farmland and timbered parcels and property belonging to the County Commissioners and the Board of Education in the vicinity of Westover.

g) Known flood prone areas should be included, if possible. A sizeable portion of the Big Annessex River watershed segment is within the 100 year floodplain and is managed under a floodplain ordinance. There are no floodways designated in the County as flooding is usually the result of tidal influence.

h) Water supply information should be considered in the selection. The County's water supply is drawn from wells; a number of "Carolina Bays", depressions in the form of oval basins occur within the Big Annessex area and are important in storage and recharge of groundwater. Also the intake belt for the Pocomoke aquifer runs from Crisfield northeast through the area in a 1.5 to 4 mile strip.

i) DNR approval; DNR should be contacted to review the criteria and selection. A letter concurring with the selection of the Big Annessex River watershed segment was received February 26, 1992 from the Watershed Management Division of the Water Resources Administration, DNR.

## 2. Scope of the Watershed Plan

The Plan will address the following areas:

a) Watershed characteristics and land uses must be analyzed as a first step. Included in this analysis is the identification of wetlands, based on NWI and other sources, as well as random ground truthing to provide the extent and classification of the resource. Existing land use and potential use in keeping with the Comprehensive Plan will be examined.

b) Non-tidal wetlands protection, creation and restoration. The plan must evaluate wetlands based on function. Functional assessment should follow approved DNR guidelines.

Once this is complete, wetlands requiring priority protection can be designated, as well as areas suitable for restoration and creation (including mitigation sites) of wetlands.

c) Cumulative Impact. The Land use information obtained in a) will be used in determining impact. Although the watershed may not have reached a point where impact is easily documented, the degree of past wetland loss and the viability of habitat and biotic characteristics of streams should aid in the initial assessment.

d) Flood Protection Issues. Although Somerset has no floodways, substantial flood plain exists. Issues should be addressed, including adverse affects on adjacent land from the filling of non-tidal wetlands.

e) Water Supply Issues. The County draws on groundwater supplies for almost all water uses. Any issues should be identified in the plan such as drawdown and well head protection.

f) The plan will list other significant issues that may arise in the course of plan development.

g) Implementation Plan. Authority for implementation must be planned as well as the manner in which levels of government will interact.

### 3. Work Approach

The Scope of Work describes the essential elements of the plan. The Scope will be accomplished through a series of planning tasks, beginning in a preliminary phase and culminating in a completed and fully implemented Watershed Management Plan. These planning tasks form the "process", or work approach which guides the survey toward this final goal.

#### Phase I

The first phase of the Scope of Work is the Preliminary Phase which is currently funded by a CZM grant for FY92. This includes the development of the concept document to establish what the goals of the Watershed Management Plan will be and by what means these goals will be reached.

Also entailed in this phase is the establishment of appropriate data files to store relevant information. A technical file will include a list of known resources which can contribute to plan development as well as available information on the non-tidal wetlands resource within the Watershed.

A second file pertains to Government and Public Participation. A contact list should be developed to include all local, State and Federal agencies that may offer valuable input and those agencies directly involved in the planning and/or implementation process. Assessment of which agencies will play a direct role in the planning process will also be made from this list, so information on roles and legal mandates should be included. The listing for possible participants in the private sector is an important element if public support and acceptance of the completed Plan is to be achieved. Effort must be made to define all interested parties. In Somerset County, where organized interest groups are not often a dominant feature, outreach will be necessary outside of standard environmental or community groups.

The third data file is an Issues file. To begin, this will be a set of preliminary issues deduced at the staff level, but it should evolve throughout the process as new issues arise and public input is received. This file will need to be updated regularly and divided into issues most relevant to the Plan and secondary issues.

The final effort of this phase is the preparation of preliminary Watershed maps showing the extent of non-tidal wetlands. These maps will be drawn at 1"-600' but may also be reduced to a suitable display size for general discussion.

The mapping will rely on national wetlands inventory maps and a combination of soil overlay and infrared aerial interpretation. In the Critical Area, overlays have been completed as part of the Chesapeake Bay Critical Area Program, showing known wetlands, but the aerial interpretation process will be added to this. The resulting mapping should provide a starting place for the phases to follow.

Should additional non-tidal wetlands mappings become available from the State or Federal government, they may be substituted as deemed appropriate.

#### Phase II

The second phase includes those tasks required for the selection of a consultant for the actual development of the Plan. A Request for Proposals will be written based on the concept document and will be checked for completeness with appropriate State agencies. Responding consultants will then be subject to the County's standard interview bid process.

The final task of this phase will be an initial meeting between the County planning staff and the consultant.

Phase III

The third phase is the development of the Plan by the consultant with the County Planner acting as liaison for the project.

The consultant will follow the outline below, with modifications that may come out of the effort.

A. Define Program Goals

1. Protection of non-tidal wetlands resources/sensitive areas
2. Provide a measure of stability by offering a guide to where development can occur/facilitate development in designated growth areas
3. Direct mitigation to appropriate sites
4. Address flood management issues
5. Address water supply issues
6. Protect water quality in the watershed both as water supply as and as an extension of the Chesapeake Bay initiatives.

B. Identification of the Resource

1. Wetlands mapped based on review of preliminary maps provided by County; ground truthing as allowed by budget
2. Functional assessment
  - a. establish method preferred by DNR (MWet, New Hampshire method, etc.)
  - b. evaluate alternative approaches
  - c. complete assessment.
3. Prioritize wetlands based on functional assessment
4. Assess cumulative impact of existing development, as possible, and impact of future growth.
5. Identification and evaluation of potential mitigation sites

C. Protection Measures

1. Evaluate existing and possible measures
  - a. habitat protection areas - inside and outside CBCA
  - b. buffering - stream and non-tidal wetland
  - c. easements
  - d. Stormwater management/erosion control
  - e. additional requirements for septic systems
  - f. management of forested land
  - g. use of CRS credit in floodplain management
  - h. prohibition of high impact activities.

D. Cumulative Impact

1. available information on function and extent of resource and current development level
2. recommended methods and procedures for assessment - water quality assessment
3. ultimate development scenario
4. State and Federal input
5. development objectives for watershed assessed in light of impact.

E. Floodplain Management

1. effect of filling on adjacent properties/wetlands
2. review of floodplain maps
3. sufficiency of ordinance as protection for NTWS
4. issues.

F. Water Supply

1. supply; aquifer recharge areas
2. quality problems
3. need for well head protection.

G. Other Issues identified in course of plan development

H. Implementation

1. identification of authorities
2. process to be followed
3. schedule for implementation.

I. Technical data and addenda

Phase IV

Phase IV of the Scope of Work requires State and Federal Review of the Plan and approvals by the appropriate authorities. During the course of plan development, agencies directly concerned with the plan, as well as agencies with informational input, will be contacted. This involvement should make final review a more simplified process.

#### Phase V

During Phase V, local ordinances must be reviewed in order to determine what changes will be necessary to implement the program. Zoning, subdivision, Floodplain, stormwater may all be affected. Also, the Land Preservation and Open Space Plan and Comprehensive Plan should be reviewed.

Necessary amendments should be written at this time and prepared for Public Hearing.

#### Phase VI

This Phase covers public hearings required under the law, both for the Plan itself and for any ordinance changes. Ordinances and the plan must then be filed with the Court as a final step to implement action.

#### Phase VII

The final phase in the development of the Plan is actual implementation of the program. A method of monitoring the process should be set up at this time to ensure the plan is accomplishing the established goals. These goals include both environmental aspects of protecting the resource and economic factors affecting landowners, including efficiency of the process itself. A schedule should also be set for reevaluation of the Plan.

#### 4. Expected Final Work Products

Should funding be received from CZM under FY93 309 Grants, Phases I - IV should be completed by September 30, 1993. The work products from this effort will be:

- a. Watershed (segment) map
- b. detailed maps at 1"-600' or 7.5 quad
- c. a draft watershed management plan for the Big Annemessex River basin which will include all components as required by DNR and which will meet certification requirements and include functional assessment of non-tidal wetlands in the watershed.

APPENDIX "B"  
SOMERSET COUNTY BIG ANNEMESSEX RIVER  
WETLANDS WATERSHED MANAGEMENT PLAN  
REQUEST FOR PROPOSALS

I. Contact Person: Joan S. Kean, Planner  
Department of Technical and Community Services  
11916 Somerset Avenue  
Princess Anne, Maryland 21853  
(410) 651-1424 FAX (410) 651-2597

II. Introduction and Project Description

Somerset County has received a grant to develop a non-tidal wetlands watershed management plan for the Big Annemessex River watershed. Under a previous grant, the County has developed a concept plan for the management plan, in conformance with Maryland DNR guidelines.

The purpose of such a plan is to protect valuable non-tidal wetlands and habitat; to provide a guide to where development should occur; to direct mitigation to suitable sites; to address any issues of flood management and water supply; and to protect water quality in the watershed.

The Big Annemessex is a small segment of the Pocomoke watershed and is located off Tangier Sound to the northeast of the City of Crisfield. It is bounded by Janes Island to the south, Maryland Route 413 to U.S. Route 13 on the east and Maryland Route 361, through the villages of Westover and Fairmount on the north.

Palustrine forested non-tidal wetlands predominate in the watershed, along with estuarine non-tidal wetlands and tidal wetlands near the river..

III. Response Time

Proposals must be received by 4:30 P.M., January 12, 1993 for consideration. Proposals with three (3) copies must be submitted in a sealed envelope, clearly marked "Somerset County Watershed Management Plan" to the Department of Technical and Community Services, 11916 Somerset Avenue, Princess Anne, Maryland 21853.

The County reserves the right to reject any or all proposals and may elect to interview applicants.

IV. Project Duration

The project will commence immediately upon written notice to proceed from the County. This will not occur until the contract has been signed by all parties, with the County Commissioners being the final signatory.

## Appendix "B"

The following benchmarks must be met and will be reviewed by the County and the Department of Natural Resources. An extension of three (3) months may be possible with NOAA approval.

March 1, 1993 Report outlining the definition of goals; description of field work accomplished.

June 1, 1993 Report outlining work completed, including identification of the resources; functional assessment of wetlands; potential impacts to wetlands; and potential mitigation sites.

July 1, 1993 Report outlining the completed evaluation of existing and potential protection measures; examination of cumulative impacts, including any effects on floodplain management and water supply.

August 1, 1993 A draft report of the watershed plan will be required, along with three (3) copies for distribution to local State and Federal agencies.

September 15, 1993 A final report of the watershed plan will be required, along with seven (7) copies for distribution to local, State and Federal agencies.

### V. Proposal Evaluation

Selection will be based on the following criteria:

- \* Bid amount
- \* Demonstrated knowledge of the resource by the firm and project team
- \* Experience with the 1987 and 1989 Federal Manual
- \* Proficiency with wetland assessment techniques (ex. Wet 2.0); a description of personnel's experience including the number of times they have completed such assessments is desirable.
- \* Technical approach
- \* Familiarity with the Coastal Plain
- \* Timeliness of the work effort and/or demonstrated ability to work within State and Federal deadlines
- \* Demonstrated mapping skills

### VI. Meetings

The proposal shall specify a meeting schedule. Citizen participation is a requirement of Maryland DNR guidelines for plan development and will be coordinated by the County with scheduled meetings of local government/consultant.

The consultant will be expected to participate in at least one meeting with State and Federal agencies and one presentation to the general public and/or local officials.

## Appendix "B"

### VII. Timetable

The consultant shall provide a timetable reflecting the required benchmarks and report deadlines as indicated in Section IV, Project Duration.

### VIII. Work Approach

The consultant should identify the project team. This should include defining specific responsibilities of each member, the tasks to be accomplished and the organizational scheme.

### IX. Bids

Proposals should include an itemized bid sheet.

### X. General Information

This effort is funded by the Coastal and Watershed Division, Maryland DNR, through a Coastal Zone Management grant, administered by the Office of Ocean and Coastal Resource Management, NOAA. The local government liaison will be Joan Kean, Planner, Department of Technical and Community Services. The Department of Natural Resources may provide a technical review team for the purpose of reviewing tasks.

### XI. Work Products

The final product will be a wetlands watershed management plan following January 1991 DNR guidelines for the Big Annessex River watershed. The Plan shall include the elements listed in the Project Outline (XIII) and further explained in the Concept Plan. Expected work products also include a watershed map, and detailed 1" = 600' maps.

### XII. Local Data Base

1. Somerset County Concept Plan - Watershed Management Survey, 1992.
2. Orthophoto wetland delineation maps to be provided by Maryland DNR
3. FEMA maps for Somerset County
4. Soil overlays to Somerset County tax maps/Soil Survey of Somerset County
5. NWI quad sheets
6. Owens and Denny Geological Map of Somerset County
7. Chesapeake Bay Critical Area Program, 1988
8. Comprehensive Plan, 1991
9. Groundwater Protection Report, 1988
10. Land Preservation and Recreation Plan for Somerset County, Maryland, 1988
11. Management Plans for Significant Plant and Wildlife Habitat Areas of Maryland's Eastern Shore: Somerset County, 1987

Appendix "B"

12. Somerset County Critical Area Survey for Rare, Threatened and Endangered Species, 1990
13. Distribution of Submerged Aquatic Vegetation in the Chesapeake Bay, 1990
14. Water Resources of Somerset, Wicomico and Worcester Counties
15. Additional information, such as stream surveys, may be available from Fisheries, Department of Natural Resources

XIII. Project Outline of Consultant's Tasks

1. Identification and assessment of the Resource
  - a. review orthophoto wetland delineation maps
  - b. select wetlands to be assessed and submit to DNR for approval. Representative wetlands from each mapped tributary system should be assessed.
  - c. conduct a functional assessment of the watershed's non-tidal wetlands using methodology acceptable to DNR (currently WET 2.0).
  - d. limitations of the assessment model should be clearly identified in the report.

2. Cumulative Impact Analysis

Conduct cumulative impact analysis of existing land use and maximum buildout potential based on the current Comprehensive Plan, Critical Area and related ordinances to determine potential impact on wetlands, water supply and flood management issues.

- a. wetlands - evaluate impact on wetlands within the watershed resulting from:
  1. roads, road improvements, utilities, sanitary facilities and other major public infrastructure
  2. subdivisions and site development
  3. major rezoning
- b. floodplain management
  1. effect of filling on adjacent properties/wetlands
  2. examine relationship between floodplain ordinance and non-tidal wetlands protection

Appendix "B"

- c. water supply - evaluate cumulative impact on:
  - 1. water quantity; aquifer recharge areas; water budget based on available information from the State
  - 2. quality of water supply
  - 3. need for wellhead protection
- 3. Protection Measures and Mitigation Sites
  - a. Propose development objectives for the watershed based on the impact analysis. Review existing regulations and recommend revisions to local land use and government activities.
  - b. identify wetlands of high functional value and develop a strategy for their protection.
  - c. identify potential wetland mitigation sites throughout the watershed based on DNR criteria.
- 4. Address special watershed issues identified by Citizen Task Force
- 5. Prepare a wetlands watershed management plan and map for the Big Annemessex River watershed based upon the results of the above tasks.

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