

September 19, 2001

PROPOSED

**WORK PLAN
for the**

**COOPERATIVE AGREEMENT BETWEEN
THE US ENVIRONMENTAL PROTECTION AGENCY
AND
NC DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES**

**ALBEMARLE-PAMLICO
NATIONAL ESTUARY PROGRAM**

**OCTOBER 1, 2001 THROUGH SEPTEMBER 30, 2002
(Federal Fiscal Year 2002)**

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INTRODUCTION

Purpose: The purpose of this agreement is to provide support to the NC Department of Environment and Natural Resources (DENR) for continuing demonstration of implementation of the unique management strategies recommended in the Albemarle-Pamlico National Estuary Program's Comprehensive Conservation and Management Plan (APNEP CCMP). This agreement represents a funding increase and time extension to Cooperative Agreement #CE994645-94-9.

Contents of this document: A progress report, detailing APNEP accomplishments and project updates for FY2001, is provided on pages 2 through 21. The FY2002 APNEP Work Plan and budget items are presented on pages 22 through 34.

Period of Performance and Principal Contacts:

The period of performance under this agreement is from October 1, 2001 through September 30, 2002.

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Background

The Albemarle-Pamlico Sounds represents the nation's second largest estuarine system – second only to the Chesapeake Bay. The system is composed of seven sounds and five major river basins draining over 30,000 square miles of watershed in northeastern North Carolina and southeastern Virginia. The sounds, rivers, creeks, wetlands and terrestrial areas provide habitat for an abundance of animal and plant species. People depend on the system for food, recreation, resort development, mining, forestry, agriculture, business and industry.

The Albemarle-Pamlico National Estuary Program (APNEP), a part of the US Environmental Protection Agency's National Estuary Program since 1987, developed a Comprehensive Conservation and Management Plan (CCMP). The CCMP, intended as a practical, cost-effective and equitable approach to managing the valuable resources of the Albemarle-Pamlico region, was ratified by the Governor of North Carolina and the USEPA in November 1994.

Since 1995, the APNEP has been located within the NC Department of Environment and Natural Resources, Division of Water Quality and has received annual funds from the USEPA to demonstrate implementation of the CCMP's management actions since 1994.

FY2001 OBJECTIVES AND ACCOMPLISHMENTS (Progress Report)

Objectives for FY2001 focused on further involvement by the Regional Councils and Coordinating Council in carrying out their responsibilities regarding CCMP implementation. As of May 2001, significant progress had been made in accomplishing these objectives. Key accomplishments (from May 1, 2000 through April 30, 2001) are summarized below:

Coordinating Council

The Coordinating Council met on April 25, 2001 in Raleigh, NC. Highlights from this meeting are summarized below:

- In July 2000, a major agreement was signed by the NC Attorney General's Office and Smithfield Foods, Inc., and its subsidiaries, the largest hog producing and pork processing companies in the world. It is a legally binding agreement that focuses on the elimination of open-air hog lagoons and sprayfields in North Carolina. A key element of the agreement states that the Smithfield companies will play a leadership role in enhancing the effectiveness of the Albemarle-Pamlico National Estuary Program. Representatives from Smithfield Foods and the NC Attorney General's Office discussed this agreement with members of the APNEP Coordinating Council. The Coordinating Council elected to form a five-member committee, along with representatives from the Attorney General's Office and Smithfield Foods, to determine what type of enhancements are necessary and feasible. This committee is expected to convene its first meeting during the summer 2001.
- Plans are underway for the signing of the MOA between DENR and the Virginia Department of Conservation and Recreation to better coordinate implementation of the CCMP in the Pasquotank, Chowan and Roanoke river basins. The MOA is scheduled to be signed by the appropriate entities on October 26, 2001.
- Developing a comprehensive monitoring strategy for the Albemarle-Pamlico region is the number one priority of the Coordinating Council as identified in the APNEP FY2001 work plan. The APNEP conducted a two-day monitoring workshop in December 2000 to initiate this activity. The Coordinating Council directed staff to solicit possible contractors for the purposes of writing/developing the monitoring strategy. A contractor will be identified and hired during the fall 2001.
- Developed primary components for consideration in the APNEP FY2002 work plan (presented on pages 22-31).

Regional Councils

Neuse River Basin Regional Council

Held regular meetings on May 25, July 28, September 22, 2000 and February 23, 2001.

Highlights include:

- Developed a brochure and compact disc titled “Best in the Basin 2000” which introduces the 20 top places to visit in the Neuse River Basin as determined by members of the Neuse Regional Council.
- Depletion of groundwater provided by Coastal Plain aquifers is a major concern. Many counties in eastern North Carolina depend on groundwater as their primary public water supply. This region is faced with a gradual reduction of groundwater withdrawal rates and will be reckoning with new methods of conserving water while simultaneously locating alternative water sources. A regional water supply system, using groundwater currently pumped by PCS Phosphate and discharged into the Tar-Pamlico Estuary (about 60 million gallons per day), is being considered for this region. The Neuse Regional Council will be sponsoring a meeting/workshop to discuss the region’s water supply issues during November 2001 (see Public Outreach Projects on pg 28).
- In June, co-sponsored public workshops conducted by DWQ regarding development of the 2002 Neuse River Basinwide Water Quality Plan.

Tar-Pamlico River Basin Regional Council

Held regular meetings on June 16, August 4, and November 3, 2000; and February 19 and April 27, 2001.

Highlights include:

- USGS presentation/discussion regarding 1999 hurricane impacts to eastern North Carolina
- Toured PCS Phosphate Company’s mining operation in Aurora
- Consideration of nutrient reduction strategies/rules being implemented in the Tar-Pamlico basin
- Toured the River Park North complex in Greenville to view aftermath of 1999 hurricanes
- Toured the Town of Louisburg’s water reclamation facility and nearby open space projects.
- Determined that sedimentation and erosion caused by increased development are a major concern in the Tar-Pamlico basin. Future meetings will focus on implementation of the NC Sedimentation and Erosion Control Rules and local efforts to control stormwater.

Roanoke River Basin Regional Council

Held regular meetings on June 2, August 18, November 17 and December 8, 2000; and January 19 and March 2, 2001.

Highlights include:

- Generated widespread local support for a resolution recommending Congressional funding for an Army Corps of Engineers Section 216 Scoping Study to evaluate flow modifications for the John H. Kerr Reservoir system and to evaluate operation of the project.
- Initiated cooperative action by DENR and the Department of Corrections to address cattle impacts (similar to those being addressed by their demonstration project) at the Caledonia Prison Farm in Halifax County and the Odom Prison in Northampton County.
- Met extensively with DWQ basin planner and provided comments regarding the 2001 Roanoke River Basinwide Water Quality Plan.
- Co-sponsored public workshops conducted by DWQ regarding development of the 2001 Roanoke River Basinwide Water Quality Plan.
- Met with DFI, Inc. representative regarding the potential siting of an ethanol plant on the banks of the Roanoke River in Martin County. Some Council members are concerned with potential industrialization of the Roanoke River.
- Examined historical impacts to local fishery populations and current strategies underway to enhance their sustainability.
- Highlighting the concerns of down-river interests, the Council issued a resolution recommending the long-term proper management of the basin's natural resources without compromising its economic viability.
- Conducted boat tour of sections of Roanoke River to view river bank impacts resulting from cattle access.

Chowan River Basin Regional Council

Held regular meetings on June 8 and October 12, 2000; and January 25 and May 3, 2001.

Highlights include:

- As was the case last year, major focus remains with the siting and operation of the Nucor steel recycling facility located on the banks of the Chowan River.
- Nucor representative named as a member of the Chowan Regional Council
- Toured the Nucor facility
- Presentation by Division of Marine Fisheries regarding development of Coastal Habitat Protection Plans (CHPPs) for the Chowan River Basin and the Coastal Ocean management units.
- Discussion with DWQ basin planner regarding development of the 2002 Chowan River Basinwide Water Quality Plan.

- Co-sponsored public workshops conducted by DWQ regarding development of the 2002 Chowan River Basinwide Water Quality Plan.
- With assistance from Noah Hill (APNEP/VADCR liaison), a directory of NC and VA agency contacts was updated.

Pasquotank River Basin Regional Council

Held regular meetings on May 4, July 6, September 20, and November 15, 2000; and February 15, 2001.

Highlights include:

- Instrumental in securing Congressional funding (\$100,000) for the Army Corps of Engineers to conduct a comprehensive study of Currituck Sound. The study proposes to address salinity increases which have adversely impacted freshwater fisheries and submerged aquatic vegetation (SAV).
- Toured the Tidewater On-site Wastewater Demonstration Center at the Vernon James Research Center in Plymouth to view current research/demonstration of alternative septic systems.
- Presentation by Fred McManus (EPA Region IV) regarding EPA's role in the Albemarle-Pamlico National Estuary Program.
- Presentation by Rodney Johnson (Albemarle RC&D) regarding constructed wetlands (major component of Council's demonstration project).
- Presentation by Council-member Cheryl Byrd regarding sustainable development in response to ever-increasing population pressures being applied to communities along the Outer Banks.
- Presentation by Bob Glennon (USFWS) pertaining to the development of comprehensive conservation and management plans for each of the wildlife refuges in North Carolina and Virginia.
- Discussion with DWQ basin planner regarding development of the 2002 Pasquotank River Basinwide Water Quality Plan.
- Co-sponsored public workshops conducted by DWQ regarding development of the 2002 Pasquotank River Basinwide Water Quality Plan.
- Updates from Noah Hill (APNEP/VADCR liaison) regarding Virginia's Watershed Roundtables, SWAMP (Southern Watersheds Area Management Plan), draft MOA between DENR and VADCR, Virginia's Adopt-A-Stream Program and Riverkeeper efforts in the Blackwater and Nottoway rivers.

APNEP Technical and Outreach Activities

APNEP staff (Guy Stefanski and Joan Giordano) spent a considerable amount of time supporting the numerous meetings and other activities of the Coordinating Council and Regional Councils. Much focus was on the implementation of the RCs' demonstration projects and subsequent contract management. Other noted accomplishments follow:

- In July 2000, APNEP staff exhibited at the annual Tar-Fest in Rocky Mount
- The Albemarle-Pamlico NEP was characterized in the August 2000 issue of Sea Technology magazine. The six-page article entitled “Coastal Regions: Ecosystems Facing Stress and Habitat Destruction” was the issue’s featured article.
- In August 2000, APNEP staff, along with Randall Arendt, renowned land-use planner, site designer and lecturer, conducted two open space design workshops in Plymouth and New Bern, NC. Mr. Arendt presented various strategies regarding conservation subdivision design as a tool for building community-wide open space networks. More than 80 people attended the workshops.
- In August 2000, Ms. Giordano designed and manned an APNEP exhibit at the NC Association of County Commissioners Annual Meeting in the Research Triangle Park.
- In September 2000, APNEP was awarded a \$75,000 grant from EPA to support a NPS restoration project in the Albemarle-Pamlico region. The identified effort, a stormwater management project, includes wetlands construction and shoreline restoration components along the Trent River in New Bern. This money, which supplements funding provided by the Clean Water Management Trust Fund and others, will be used specifically for the planting of a cord grass marshland along the river bank.
- In September 2000, APNEP staff exhibited at the Water Splash event held in Kinston, NC.
- In September-October 2000, APNEP staff coordinated with the NC Center for Geographic Information & Analysis to conduct five “BasinPro Workshops” in the Albemarle-Pamlico region. These workshops offered key local government representatives and planning staff with hands-on training utilizing the BasinPro CD – a desktop geographic information system. Participants received a free copy of the BasinPro CD, a \$285 value. These workshops were held at the computer labs located at the Roanoke-Chowan Community College in Ahoskie, Craven Community College in New Bern and Pitt Community College in Greenville. This action directly helps to implement Objective A, Management Action 2 of the CCMP’s Stewardship Plan: *“Provide to local governments affordable and accessible data from the state geographic information system for use in planning and public education within the region”*.
- In October 2000, APNEP staff met with representatives of the NC Attorney General’s Office and Smithfield Foods, Inc. to discuss “enhancements of the APNEP” as referred to in the Smithfield Foods Agreement signed in July 2000. Staff drafted options for “enhancements” which included a request for a portion of the annual funds offered by Smithfield Foods to support environmental restoration

projects. It was also agreed that the APNEP Coordinating Council, with input from the AG's office and Smithfield Foods, would be best suited to identify and determine possible "enhancements" to the APNEP. (Note: On April 25, 2001, the Coordinating Council, along with representatives from the Attorney General's Office and Smithfield Foods, formed an eight-member ad-hoc committee to accomplish this).

- The third edition of "The Beacon", APNEP's official newsletter, was mailed to over 2,000 people during October.
- Oversight of continued operation and maintenance of the APNEP website located at <http://h2o.enr.state.nc.us/nep>.
- In November 2000, APNEP staff attended and exhibited at "Virginia's 7th Annual Watershed Management Conference" in Williamsburg, VA. A newly formatted exhibit focused on the three river basins NC and VA hold in common (Roanoke, Chowan and Pasquotank) and the draft MOA between DENR and VADCR.
- In December 2000, APNEP staff, in coordination with EPA and Battelle, conducted a two-day monitoring workshop for the purpose of developing a comprehensive monitoring strategy for the Albemarle-Pamlico region. Developing a comprehensive monitoring strategy was determined by the APNEP Coordinating Council to be its highest priority during FY2001. Contractor to prepare/write the monitoring strategy will be hired this fall.
- In January-February 2001, APNEP staff provided extensive information to EPA and the Association of National Estuary Programs (ANEP) for the development of 1) an EPA environmental indicators project and 2) an ANEP tech transfer document.
- In January-February 2001, APNEP staff, in accordance with the Government Performance and Results Act (GPRA) which measures performance or progress towards established goals, provided extensive information to EPA regarding 1) the number of priority actions initiated across the NEP, and 2) the acres of habitat restored during 2000. These are the two measures chosen that all NEPs should be tracking in order to demonstrate implementation of the CCMP and environmental results.
- In February 2001, APNEP staff participated in the Roanoke Basinwide Planning Program workshops conducted by the Division of Water Quality. The Roanoke Regional Council served as co-sponsors of these workshops.
- In March 2001, 1000 river basin bookmarks (depicting the five major river basins located in the Albemarle-Pamlico region) were updated and reprinted based on current statistics and information.

- In March 2001, Mr. Stefanski gave a presentation titled “River Basin Demonstration Projects of the Albemarle-Pamlico National Estuary Program” at the Water Resources Research Institute’s Watersheds to Estuaries Conference in Raleigh, NC.
- In March 2001, APNEP staff participated in the Chowan and Pasquotank Basinwide Planning Program Workshops conducted by the Division of Water Quality. The Chowan and Pasquotank Regional Councils served as co-sponsors of these workshops.
- APNEP staff, with input from DWQ and EPA, developed its program letterhead.
- In May 2001, APNEP worked with EPA and its contractor, Horsley & Witten, to conduct a two-day workshop titled “Tools for Watershed Management: A Workshop for Local Government”. The workshop explored various tools and approaches that can be used by local governments to achieve a balance of economic prosperity and water resource protection.
- APNEP staff continued to work with representatives from the Virginia Department of Conservation and Recreation (VADCR) regarding the signing of the interstate MOA between DENR and VADCR that calls for enhanced coordination of CCMP implementation in the Roanoke, Chowan and Pasquotank river basins. Official signing ceremony is being planned for October 26, 2001.
- APNEP staff continued to provide support to the Citizens’ Water Quality Monitoring Program (CWQMP).
- Distributed numerous APNEP research documents, outreach products, and environmental education materials to those requesting them.

STATUS OF PROJECTS ONGOING FROM PREVIOUS YEAR

The Regional Councils’ demonstration projects, Air Deposition Project and Nutrient Reduction Accountability Project (described on the following pages) directly relate to the CCMP’s Water Quality Plan goal: “*Restore, maintain or enhance water quality in the Albemarle-Pamlico region so that it is fit for fish, wildlife and recreation*”.

I. REGIONAL COUNCILS’ DEMONSTRATION PROJECTS

A primary role of the Regional Councils is to establish local environmental priorities, based on those outlined in the APNEP CCMP and the Division of Water Quality’s basinwide management plan recommendations. The Regional Councils have been encouraged to develop and implement strategies which are

most amenable to local action. Funds from previous EPA grants have been dedicated to help support demonstration projects recommended by the Regional Councils. Total funds available for demonstration projects are approximately \$130,400 or about \$26,080 per Regional Council. Demonstration project guidelines were approved by the Coordinating Council in January 1999. As of August 2000, all Regional Council demonstration projects were underway. Much of the past year was devoted to managing contracts and working with contractors during various stages of their respective projects.

Neuse Regional Council

Project Title: "Selected Creek Monitoring Demonstration Project"

Description: Demonstrate feasibility and effectiveness of monitoring the mouth of two selected creeks to determine pollution contribution.

Lead Agency: Neuse River Foundation

Partners: Neuse RC, DENR, APNEP, EPA

Funding: \$25,000 from EPA/APNEP base funds

Time Period: April 1, 2000 through March 31, 2002.

Status: Under the supervision of the Neuse River Keeper, trained volunteers have been collecting water quality data once per week from the mouth of Beards Creek (Pamlico County) since May 2000 and Crabtree Creek (Wake County) since September 2000. Preliminary interpretation of the sample analysis (data) is underway.

Tar-Pamlico Regional Council

Project Title: "Alternative On-site Wastewater Treatment System Demonstration Project"

Description: Demonstrate the effectiveness of an advanced on-site wastewater treatment system in reducing pollutants to groundwater.

Lead Agency: NC State University

Partners: Tar-Pamlico RC, NC Cooperative Extension Service, Pitt County, Homeowner, DENR, APNEP and EPA

Funding: \$18,400 from EPA/APNEP base funds

Time Period: May 1, 2000 through April 30, 2002.

Status: Working with local health departments, a residence with a failing conventional septic system was identified in Pitt County. As a result of poor drainage, the current system has failed and is discharging sewage to the ground surface. Plans are to install a peat biofilter system that will treat the wastewater prior to subsurface disposal. The homeowner is agreeable to this solution, but is currently involved in a lawsuit against numerous parties alleging he is not responsible for the original system's failure. This lawsuit is attempting to cover costs of the repair system. The homeowner is willing to have the peat system installed at a 25% cost-share as soon as the lawsuit is settled. Consequently, the installation of the peat biofilter has been put on hold until the lawsuit is settled.

Roanoke Regional Council

Project Title: "Riparian Zone Rehabilitation Demonstration Project"

Description: Demonstrate the effectiveness of cattle fencing and restoration of riparian zone to reduce nonpoint source impacts.

Lead Agency: NRCS

Partners: Roanoke RC, USFWS, Fishing Creek SWCD, Landowner, NC Cooperative Extension Service, DENR, APNEP and EPA

Funding: \$41,000 (\$25,000 from EPA/APNEP base funds and \$16,000 from USFWS)

Time Period: April 20, 2000 through April 19, 2002.

Status: This project is nearing completion. To date: (1) two miles of fencing have been installed, (2) cattle crossing has been repaired, and (3) cattle troughs are almost finished with one functioning (additional troughs to be completed by mid-June). The final phase of this project, the planting of hardwoods in the buffer area and restoration of the river bank, will be done this fall and winter. When fully implemented, this project will restore approximately 36 acres of riparian habitat and benefit various species of anadromous fish and migratory birds that utilize this area.

Chowan Regional Council

Project Title: "Precision Agriculture Demonstration Project"

Description: Demonstrate the effectiveness of utilizing precision agriculture methodology to optimize agriculture production.

Lead Agency: NC Cooperative Extension Service – Bertie County

Partners: Chowan RC, Colerain Peanut & Supply Co., Landowners, DENR, APNEP, EPA

Funding: \$5,000 from EPA/APNEP base funds

Time Period: April 1, 2000 through March 31, 2001.

Status: Project completed. Draft report submitted by Bertie County Cooperative Extension Service in March 2001. Final report due in June. This demonstration project allowed farmers, who otherwise could not afford to, the opportunity to try this new methodology and make comparisons based on standard lime and fertilizer application rates. The demonstration was run on 457 acres of farmland in Bertie County. As a result, compared to standard application rates and prices, the project showed participating farmers a collective savings of: 2 tons of lime, 4 tons of phosphorus, 12 tons of potash and \$2800.

Chowan Regional Council

Project Title: "Subsoiler/Denitrification Barrier Demonstration Project"

Description: Demonstrate the effectiveness of utilizing subsoiler techniques to improve soil permeability and denitrification walls to remove/reduce nitrate from shallow groundwater .

Lead Agency: Mid-East Resource Conservation and Development Council

Partners: Chowan RC, Municipalities, Landowners, DENR, APNEP, EPA

Funding: \$22,000 from EPA/APNEP base funds

Time Period: May 1, 2000 through April 30, 2002.

Status: Participating municipalities own a subsoiler, but do not necessarily have a tractor of proper size to pull it, or know the proper techniques for operating it. Grant funds have been shifted from purchasing a subsoiler to tractor rental and project leaders are providing the technical assistance necessary for its operation. Construction of underground denitrification barriers (or walls) will serve to remove/reduce nitrate from shallow groundwater. Conceptually, the wall provides an ideal environment for denitrification and a net loss of nitrogen because nitrate is converted to nitrogen gases that are then released into the atmosphere. Municipalities have offered use of construction equipment and barrier carbon materials (such as sawdust, peanut hulls, and/or wood chips) as in-kind service to the project. Barrier sites need to be constructed during fairly dry periods to assure the seasonally low water table is reached. Therefore, the typical dry summer months appear to be the best time for this construction. Three municipalities and one animal operation have agreed to participate in this project. Construction of the first barrier wall and monitoring wells is scheduled to begin on June 4, 2001 at the Winton spray fields. Construction at the other sites (Aulander and Ahoskie) will follow soon thereafter.

Pasquotank Regional Council

Project Title: "Winfall Water Quality Demonstration Project"

Description: Demonstrate the effectiveness of a constructed wetland in treating backwash water from water treatment plant.

Lead Agency: Albemarle Resource Conservation and Development Council

Partners: Pasquotank RC, Town of Winfall, Perquimans SWCD, NRCS, Wooten Engineering, Royster Clark, Inc., DENR, APNEP, EPA

Funding: \$26,000 from EPA/APNEP base funds

Time Period: August 1, 2000 through July 31, 2002

Status: Negotiations between project officers and adjacent landowner occurred during March-August 2000. Area for the proposed constructed wetland was cleared in December 2000. Cross sections and final design completed by NRCS in February 2001. Final meetings with Army Corps of Engineers, Winfall Town Council and fertilizer distributor to review final

designs and begin bid packets for wetlands construction/excavation held in March 2001. 404 Permit was received in April. 401 Certification from DWQ is expected by early June. Bid packets were distributed in June. Once the bid is awarded and vendor identified, wetlands construction will take about three months to complete, followed by the planting of aquatic plants. Educational signage and brochure to be completed soon thereafter.

II. AIR DEPOSITION PROJECT

Project Title: “Comparison of atmospheric concentrations of ammonia and ammonium aerosols at three sites in eastern North Carolina”.

Description: The project’s main focus is to determine the contribution of atmospheric nitrogen deposition to the sounds, particularly as it pertains to ammonia from intensive livestock operations.

Lead Agency: Water Resources Research Institute (WRI)

Partners: NC State University, UNC-Institute of Marine Sciences, EPA, DENR and APNEP

Funding: \$65,000 from EPA add-on

Status: Contract expired on September 30, 2000. Draft report currently being peer reviewed through WRI for future publication. This study showed that a region in eastern North Carolina (particularly Sampson County) with a high density of large-scale animal operations is experiencing relatively high atmospheric concentrations of ammonia near the earth’s surface. Indirect evidence in the form of rainwater chemistry collected by the NADP program suggests that significant changes in atmospheric ammonia began to occur around 1990. Data from the study strongly suggests that the swine industry in this portion of eastern North Carolina has a strong influence on local atmospheric ammonia concentrations. The relatively high concentrations of atmospheric ammonia measured at the Sampson County site suggests a strong source term with a resultant dispersion of ammonia throughout the region, including possible transport to local estuaries.

III. NUTRIENT REDUCTION ACCOUNTABILITY PROJECT (Clean Water Action Plan Supplement – FY2000)

Project Title: “Sample Analysis: Comparison of Field-Scale and Aggregated Versions of NLEW”

Description: The nitrogen TMDL standard determined by DENR for the Neuse River has been set at 30% reduction in nitrogen. In order to meet this reduction, mandatory rules have been established in the Neuse River Basin. One of the regulations requires that the agricultural sector utilize a nitrogen accounting tool to track changes in nitrogen loading from the implementation of BMPs. The development of an accounting methodology will assist the Division

of Water Quality in verifying and adjusting the nutrient loading baseline from agricultural fields within the Neuse River Basin. This will help to ensure that the county nitrogen reduction goal is achieved in accordance with the Neuse River Basin Nutrient Sensitive Waters (NSW) Management Strategy being implemented in that basin. The tool developed for this purpose, Nitrogen Loss Estimation Worksheet (NLEW), has been developed at two different scales – a field-scale and an aggregated scale. The aggregated scale of NLEW was developed to allow for the historical baseline nitrogen loading determination from agricultural activities. It is necessary, however, to compare the results from the aggregated version of NLEW with the field-scale version of NLEW in order to ensure accuracy of the baseline results. To compare the two tools, statistically valid field-scale information must be collected, analyzed and compared.

Lead Agency: NC State University

Partners: NC Department of Agriculture & Consumer Service, DENR, USDA-NRCS, APNEP and EPA.

Funding: \$241,800 (\$30,000 from EPA CWAP supplemental funds, \$120,000 from Federal 319 Program and \$91,800 state in-kind match)

Time Period: July 1, 2000 through September 2, 2002.

Status: The field-scale information necessary to conduct this project has been collected and the data is being finalized. Data analysis is expected to begin shortly and conclude by early fall 2001.

IV. FY2000 PUBLIC OUTREACH PROJECTS

The FY2000 Public Outreach Projects directly relate to the CCMP's Stewardship Plan goal: *Promote responsible stewardship of the natural resources of the Albemarle-Pamlico region*". Funding to implement the remaining outreach projects (approximately \$45,000) is encumbered in the FY2000 EPA grant.

1. Coastal Counties Open Space Design Workshops (completed)

In August 2000, APNEP staff, along with Randall Arendt, renowned land-use planner, site designer and lecturer, conducted two open space design workshops in Plymouth and New Bern, NC. Mr. Arendt presented various strategies regarding conservation subdivision design as a tool for building community-wide open space networks. More than 80 people attended the workshops.

2. Fisheries Symposium

The NC Division of Marine Fisheries, a key entity in making this event happen, has indicated that, given current state budget constraints, they

cannot devote the resources necessary to conduct this event in the near future. Therefore, it has been determined that this event will not happen and should no longer be considered a part of this work plan.

3. NC/VA Shared Resources Forum
This will be included as part of the 3rd Albemarle-Pamlico Estuary Conference scheduled for December 12, 2001.
4. Boat Tour to promote environmental awareness
Scheduled for October 30, 2001.
5. Habitat Protection and Restoration Conference
Timing is dependent on status of Coastal Habitat Protection Plans (CHPPs) being developed by DENR and watershed restoration plans being developed by the NC Wetlands Restoration Program. Proposed for March 2002.
6. 3rd Albemarle-Pamlico Estuary Conference
Scheduled for December 12, 2001 in New Bern, NC.
7. Albemarle-Pamlico Resource Guide
Contract with professional writer was initiated on May 10, 2001 to produce non-technical document titled "The Albemarle-Pamlico ... North Carolina's Coastal Treasure". Text version of document due by November 2001. Next step will be to hire a layout/design specialist.

V. STAFF SUPPORT CONTRACTS

A contract supporting a key technical staff-person (Andy Coburn) will continue in FY2002 utilizing FY1997 funds budgeted specifically for program support. A new contract to hire an outreach assistant will be accomplished using FY2002 funds (see FY2002 Public Outreach Projects on page 28). Julie Indicott, who performed as outreach assistant during the past year, is no longer with the program. Her replacement is under consideration.

Technical Support Staff: Since August 1998, Andy Coburn has provided technical assistance to the APNEP for purposes of staffing the Regional Councils and Coordinating Council, and other tasks as necessary to support implementation of the CCMP. Among other things, Mr. Coburn was very instrumental in developing APNEP's GPRA and tech transfer documents during the past year.

During FY2002, Mr. Coburn will:

- continue development of a quarterly program newsletter,
- manage program mailing list database,
- maintain the program's website,

- assist in the development of reports, news articles, educational pieces, public presentations, etc., and
- assist with meeting preparations and relevant mailing distributions.

Administrative/Outreach Assistant: The search for a replacement for Julie Indicott is underway. This new person will provide much-needed administrative/outreach assistance to the APNEP for purposes of staffing the Regional Councils and Coordinating Council, and outreach activities necessary to support CCMP implementation.

During FY2002, the new outreach assistant will:

- assist with meeting preparation, including arrangement of meeting locations, identifying equipment needs, providing appropriate meeting materials, scheduling speakers, arranging refreshments, producing name tags and generally assisting with the Public Involvement Coordinator's administrative needs,
- assist with the development and distribution of mailing materials relevant to meetings, including agendas, minutes, mailing labels, and necessary enclosures, and
- assist with the development of reports, news articles, educational pieces, school presentations, etc. Assist with arrangements for educational/outreach/public information meetings, workshops, etc. as necessary.

STATUS OF FY2001 WORK PLAN COMPONENTS

I. APNEP WATERSHED FIELD COORDINATOR

Purpose: Provide coordination and support to APNEP, DENR and the Virginia Department of Conservation and Recreation (VADCR) to enhance implementation of the CCMP in the Roanoke, Chowan and Pasquotank river basins.

Status: In August 2000, Noah Hill was hired by VADCR to fulfill the duties of this position. The APNEP contract, which supports ½ of this position, was initiated in January 2001. Specific accomplishments include:

- Instrumental in raising the awareness of the Southern Watershed Area Management Program (SWAMP) relative to the APNEP and CCMP. SWAMP is a very active coalition of local governments, state agencies and other policy-making interests focusing on Virginia's southern watersheds of Virginia Beach and Chesapeake. Working with SWAMP representatives about the possibility of an information sharing agreement with the Pasquotank Regional Council.

- Involved in the formation of Virginia’s Chowan River Watershed Roundtable. The purpose of the Roundtables is to provide a watershed –based forum for stakeholders to participate in defining critical needs, targeting problems for solution, and providing input on potential management options.
- Attendance at three Pasquotank Regional Council meetings and two Chowan Regional Council meetings, as well as the Coordinating Council meeting held on April 25th.
- Attendance at the APNEP BasinPro and resource monitoring workshops held in October and December 2000 respectively.
- Arranged for speakers at two Pasquotank Regional Council meetings.
- Updated directory of North Carolina and Virginia environmental organizations and agencies.
- Researched population estimates for VA Chowan and Pasquotank regions for inclusion in DWQ basinwide plans.
- Participated in several public education events to promote NC-VA partnership and highlight specific goals of the CCMP.
- Compiled information about the Chowan and Pasquotank basins for promotional purposes in support of the CCMP.
- Assisted APNEP Coordinator and VA Albemarle, Chowan & Coastal Watersheds Manager in the development of a paper and presentation for the National Watersheds Conference. Presentation was made at this conference by VA’s Albemarle, Chowan & Coastal Watersheds Manager on May 21st. The focus of this presentation was to increase the awareness of NC and VA’s collaborative efforts to implement the CCMP.
- Worked closely with APNEP Outreach Coordinator to establish and facilitate the interstate MOA signing ceremony (planned for this summer).
- Worked as part of the planning team for the 8th Annual Virginia Watershed Management Conference held last November in Williamsburg, VA. to ensure that APNEP was a featured program on the agenda and as an exhibitor.

II. ALBEMARLE-PAMLICO CITIZENS’ WATER QUALITY MONITORING PROGRAM

The APNEP Citizens’ Water Quality Monitoring Program (CWQMP) is a network of private citizens who monitor surface water quality in the Albemarle-Pamlico estuary and its tributaries. The program began as an initiative of the Pamlico-Tar River Foundation in 1988, to protect, preserve and promote the water quality of the Tar-Pamlico River and its watershed. The CWQMP was expanded under the APNEP several years ago to include all waters located in the Albemarle-Pamlico region.

The CWQMP has three areas of activity, as its focus: 1) baseline monitoring, 2) targeted monitoring and surveys, and 3) water quality education. Program volunteers receive support in each of these areas through water quality education and training, QA/QC workshops, distribution of equipment and supplies, data management/analysis, and networking opportunities.

Participants primarily monitor "vital signs" of the estuary. Specifically, parameters tested include: dissolved oxygen, pH, salinity, air and water temperatures, and turbidity to gauge the general health or quality of water in the estuary. Occasionally, program volunteers gather water samples for specific pollutants such as bacteria and nutrients. Using basic, but accurate water quality test kits, citizen volunteers analyze their water samples, observe qualitative factors such as weather conditions and other visual indicators, and record the results.

All monitoring data collected are forwarded to the program office where staff compiles the information and enters the data into report form for citizen and government agency use. Often, these monitoring efforts serve as a useful supplement to existing governmental activities. For example, specific monitoring data was requested by the 1) Army Corps of Engineers during the scoping phase of a pending Currituck Sound Study, 2) Division of Marine Fisheries for consideration in the Chowan River Coastal Habitat Protection Plan, 3) Division of Water Quality for consideration in various basinwide management plans, and 4) Cypress Landing Group (grass-roots organization) for local use/information.

Status: In addition to the obvious benefits of public involvement (e.g. heightened understanding, greater appreciation for resources, stewardship ethic, etc.) tangible benefit is derived from water quality data collection through the CWQMP. Currently, there are 75 volunteers actively involved in the program who are monitoring 34 sites within the APNEP region. Selected FY2001 accomplishments include:

- development of trend analyses for specific sampling sites synthesized from existing and future data,
- continuation of a program newsletter,
- development of a program website located at www.ecu.edu/icmr/cwqmp/
- outreach activities and presentations made to area schools and civic groups
- contract with East Carolina University (program sponsor) was extended/amended through May 2002.

III. IMPLEMENTATION OF PRIORITY ACTIONS

Following is the status of the four priority actions as determined by the APNEP Coordinating Council for FY2001:

PRIORITY ACTION #1: Develop a comprehensive monitoring strategy through the synthesis and assessment of the existing environmental monitoring programs, specifically in the Albemarle-Pamlico estuarine system and associated watersheds.

Background: The Coordinating Council recognized the importance of collecting adequate high quality baseline monitoring data for both water and biological resources. Monitoring programs and data acquisition should be designed to ensure that: (1) data can detect and identify specific water quality and biological resource changes in the estuarine system and the rivers that drain into the estuaries; (2) sufficient data are available for use with existing and future water quality models; and (3) sufficient data are available to determine if management actions implemented are having the expected results.

Status: Working with representatives from EPA and Battelle, APNEP conducted a two-day monitoring workshop in December 2000. The purpose of the workshop was to bring together APNEP stakeholders and people presently performing monitoring, research and assessments in the Albemarle-Pamlico region, to discuss measurements being made and monitoring activities that should be included in development of an APNEP Comprehensive Monitoring Strategy. Results from the workshop indicated that a diverse set of ongoing monitoring activities exists in the Albemarle-Pamlico region – although gaps in monitoring were also identified, particularly in the estuaries and sounds. Overall, most participants believed that a comprehensive monitoring strategy is needed for this region.

The goals of the comprehensive environmental monitoring strategy are to:

- develop strategies to address identified monitoring gaps in the estuaries and sounds,
- prioritize these monitoring gaps and needs to enable optimum use of limited resources,
- identify potential funding sources to meet critical monitoring needs,
- recommend additional environmental monitoring programs, projects, and/or assessments where needed, and
- recommend strategies to enhance monitoring coordination, funding opportunities, data management/synthesis and reporting methods.

The Coordinating Council, at their April 25, 2001 meeting, directed APNEP staff to solicit possible contractors to write/prepare the comprehensive monitoring strategy. A contractor will be hired during the fall 2001.

PRIORITY ACTION #2. Improve effectiveness and member-participation with Regional Councils and Coordinating Council.

Background: The Coordinating Council recognized that to be truly effective in carrying out its responsibilities, it, as well as the Regional Councils, must have better participation from members. Led by APNEP's Outreach Coordinator, two working committees charged with devising innovative methods for ensuring increased participation and vacancy-related issues on both the Regional Councils and Coordinating Council were established.

Status: A committee meeting, chaired by the APNEP Public Outreach Coordinator, occurred on June 20, 2001. Recommendations to improve the effectiveness and member-participation of these councils have been made. The next step will be to refine the recommendations and devise/implement a formal strategy to achieve the desired outcome. Modification of the Governor's Executive Order, which created these councils, is being considered.

PRIORITY ACTION #3. Increase public outreach and education.

Background: The Coordinating Council considered this action item as being inherent in each of the other priority actions and will be a strong component of the strategies designed to implement them. APNEP staff view this action as being inherent to all program activities.

Status: Specific public outreach and education activities supported by APNEP during FY2001 include:

- Regional Council members and citizen-involvement in basinwide planning workshops
- Production of river basin bookmarks
- GIS-oriented BasinPro workshops targeted at key local government officials
- "Tools for Watershed Management Workshop" conducted by Horsley and Witten
- "Open Space Design Workshops" promoting conservation subdivision design as a tool for building community-wide open space networks
- APNEP newsletter titled "The Beacon" and the program's website
- Various presentations and exhibits made by APNEP staff and CWQMP

PRIORITY ACTION #4. Expand programs that facilitate restoration and acquisition of critical riparian areas on the mainstems and major tributaries of the five major rivers located in the Albemarle-Pamlico region.

Background: The Coordinating Council recognizes the importance of riparian buffers in controlling runoff and providing habitat for wildlife. Many of the agencies represented on the Coordinating Council are involved in programs that work to restore/acquire riparian habitats. A role for the Coordinating Council would be to help coordinate the various programs and initiatives underway to restore/acquire critical riparian areas. This action could help prioritize areas in need of restoration and develop strategies for acquisition.

Status: A preliminary meeting was held by APNEP's Program Coordinator and USFWS representatives in March 2001. They determined that a larger scoping meeting should be conducted to better assess current activities related to this action. The scoping meeting will involve agencies/stakeholders currently involved in riparian restoration and acquisition activities. Through this process, it is intended that a new strategy be devised to help achieve this action. The scoping meeting will occur during summer-fall 2001.

IV. FY2001 SUPPLEMENTAL FUNDING INITIATIVE

Background: EPA provided \$20,000 of supplemental funds to be used to assist APNEP in addressing challenges identified by EPA in the 1999 Biennial Review. In particular, these funds will assist APNEP with tracking and reporting on progress in implementing CCMP actions. Use of these supplemental funds in this manner can also strengthen the program's capacity to show and produce environmental results. It will also enhance EPA's ability to accurately measure APNEP's progress for reporting under the Government Performance and Results Act (GPRA).

The Coordinating Council elected to hire someone (via contract) to enhance APNEP's ability to measure/report environmental results and to develop a CCMP implementation tracking system.

Status: Contract with Andy Coburn is expected to commence in early-July. Though a contract is not yet in place, Mr. Coburn is setting up the database and has begun to accumulate some information regarding CCMP implementation activities. Preceding this, Mr. Coburn and the APNEP Program Coordinator met several times to plan for this project. Much of the discussion focused on the type of database to be used, strategies on ways to obtain information, what type of outcomes are expected, how the information should be presented, etc. Mr. Coburn has provided a draft monitoring and tracking report suggesting what type of information could be included and how it could be presented (formatted). This contract will also provide for the continued annual development of progress assessments regarding CCMP implementation.

V. USE OF FY2001 TRAVEL SUPPLEMENT

Travel funds during FY2001 were utilized by APNEP staff to attend a number of important meetings and conferences. Below is a summary:

<u>Personnel</u>	<u>Date</u>	<u>Purpose</u>	<u>Location</u>	<u>Cost</u>
Stefanski/Giordano	Oct. 2000	ANEP/EPA National Meeting	Sebasco, ME	\$2300
Stefanski/Giordano	Nov. 2000	Virginia Watershed Management Conf.	Williamsburg, VA	\$700
Stefanski/Giordano	Mar. 2001	ANEP/EPA National Meeting	Washington, DC	\$2600
Stefanski/Giordano	Apr. 2001	NEP Financing Workshop	New Orleans, LA	\$1800
Giordano	June 2001	NEP Outreach Workshop	Philadelphia, PA	\$850
TOTAL (approximate):				\$8250

Additional travel funds were expended by APNEP staff to attend a series of local meetings/conferences, including:

- APNEP GIS BasinPro Workshops held at several locations in eastern NC during September-October 2000;
- After the Perfect Storm: Managing Coastal Stormwater Conference in Wilmington, NC in October 2000;
- Coastal Plain Streams Restoration Workshop in Greenville, NC in February 2001;
- Roanoke Basinwide Public Meeting in Windsor, NC in February 2001;
- Impacts to Dam Removal Presentation in Raleigh, NC in April 2001;
- Chowan and Pasquotank Basinwide Public Workshops held at several locations in eastern NC during March 2001;
- Coordinating Council FY2002 Work Plan Development Meeting in Raleigh, NC in April 2001;
- Tools for Watershed Management Workshop in Greenville, NC in May 2001; and
- various Regional Council regularly scheduled meetings held throughout the Albemarle-Pamlico region.

ADDITIONAL TOTAL (approximate):\$1000

**FY2002 WORK PLAN
ALBEMARLE-PAMLICO NATIONAL ESTUARY PROGRAM**

GRANT FUNDING AMOUNT

The US Environmental Protection Agency has targeted \$340,000 of FY2002 federal funds to support a seventh year of post-CCMP implementation. The full base funding (\$300,000) and travel supplement (\$10,000) will be available. In addition, EPA is providing \$30,000 of supplemental funds which can be used to assist APNEP in a variety of ways. Use of FY2002 supplemental funds is presented on pages 29-31.

The NC Department of Environment and Natural Resources (DENR), as the grant recipient, intends to provide an additional \$340,000 (in the form of in-kind services) as part of the 1:1 non-federal match requirement, for a total budget of \$680,000.

SUMMARY OF FY2002 WORK PLAN COMPONENTS

The APNEP Coordinating Council met on April 25, 2001 to determine the main components to be included in the FY2002 APNEP Work Plan. The principal Program objective for FY2002 is to carry out the responsibilities and priority actions as determined by the APNEP Coordinating Council.

Below is a summary of the major initiatives/personnel to be included in the APNEP FY2002 work plan as approved by the Coordinating Council:

- Personnel:
 - Program Coordinator – coordinate program activities/implementation process
 - Public Involvement Coordinator – enhance public relations and coordinate outreach
 - Watershed Field Coordinator – provides coordination and support to DENR and VADCR to enhance CCMP implementation in three common river basins
- Citizens' Water Quality Monitoring Program – important public involvement effort
- Public Outreach Projects/Personnel – to promote a better understanding of the region's many issues and offer opportunities for public involvement
- With input from the Regional Councils and Coordinating Council, identify and implement a watershed demonstration project for environmental benefit

- Coordinate a large-scale, long-term SAV monitoring effort to assess the extent of SAV coverage in the Albemarle-Pamlico estuaries (FY2002 Supplemental Funding Initiative).
- Fully implement ongoing projects and staff support contracts from previous year as presented on pages 8 through 20.

SCOPE OF WORK

INITIATIVE 1: IMPLEMENTATION PLAN

- Continue to demonstrate the implementation strategy as outlined in the CCMP. This action directly supports the CCMP's Implementation Plan goal: *Implement the CCMP in a way that protects environmental quality while using the most cost-effective and equitable strategies.*

I. REGIONAL COUNCILS and COORDINATING COUNCIL:

Key elements of the CCMP's Implementation Plan are the operation of Regional Councils (RCs) representing local government and stakeholder interests in each of the five river basins in the Albemarle-Pamlico region, and a Coordinating Council (CC). The CC's role is to devise policy and provide continued opportunity for interagency coordination and local government input. This structure, which is mandated through a Governor's Executive Order, allows for the communication and coordination critical to successful CCMP implementation. All five Regional Councils have been meeting since September 1997 and the Coordinating Council has been meeting since March 1998.

In FY2002, the Coordinating Council will focus on the following:

- Establishment of Implementation Priorities: As identified in the 1999 Biennial Review, in order to ensure that progress is made on the most important CCMP activities first, APNEP and the Coordinating Council need to develop a list of ranked implementation priorities. Input from the Regional Councils is necessary. The outcome should be reflected in yearly work plans and the implementation tracking matrix. During FY2002, the Coordinating Council will conduct a strategic planning process to establish implementation priorities. This was a component of last year's work plan, but was not accomplished.
- Determine APNEP "enhancements" relating to Smithfield Foods Agreement: A key element of the Smithfield Foods Agreement states that the Smithfield companies will play a leadership role in enhancing the effectiveness of the APNEP. The Coordinating Council will be working with NC Attorney General and Smithfield representatives to determine what type of enhancements are necessary and feasible. (See page 2).

Budgetary Requirements: Two full-time APNEP personnel are essential in supporting the operational needs of the Regional Councils and Coordinating Council (\$138,000).

A Watershed Field Coordinator will provide coordination and support to APNEP, DENR and the Virginia Department of Conservation and Recreation to enhance CCMP implementation in the Roanoke, Chowan and Pasquotank basins (\$25,000 via contract).

II. APNEP PERSONNEL:

Program Coordinator: A Program Coordinator is necessary to coordinate the implementation process which involves interacting with numerous resource management agencies and interest groups, as well as the general public. This position manages the post-CCMP grant and associated contracts (including management of the Regional Councils' demonstration projects), provides staff support to the Regional Councils and Coordinating Council, and represents the APNEP at local and national meetings.

Guy Stefanski will continue in this role within the Division of Water Quality as he has since 1994. Grant funds will be used to support this position.

Public Outreach Coordinator: A Public Outreach Coordinator is necessary to enhance public relations and knowledge concerning issues relating to the CCMP; develop educational and outreach programs; promote dialogue between local government officials and private citizens and demonstrate oversight responsibility for the Citizens Water Quality Monitoring Program contract. This position also provides valuable staff support to the Regional Councils and Coordinating Council.

Joan Giordano will continue in this role within the Division of Water Quality as she has since 1987. Grant funds will be used to support this position. A portion of these grant funds (\$10,000) will be allocated for the purchase of a new computer, laptop and LCD projector to support an increase in outreach efforts.

Objectives: Much work remains to fully engage the Regional Councils and Coordinating Council to effectively carry out their roles in implementing the priority actions of the CCMP and to coordinate environmental management strategies in the Albemarle-Pamlico region. Primarily, APNEP staff will work to:

- implement components of FY2002 work plan;
- develop and implement recommendations to enhance effectiveness of Regional Councils and Coordinating Council;
- continue dialogue with the Commonwealth of Virginia in preparation and signing of the interstate MOA;
- work with contractors to fully implement the Regional Councils' demonstration projects;
- increase the level of program outreach to better inform the public of APNEP activities in the region through completion of the FY2000 outreach projects identified on pages 13-14;

- enhance coordination between the Regional Councils, Coordinating Council and DWQ's Basinwide Program as it relates to the development of this year's basinwide plans for the APNEP region (Neuse, Chowan and Pasquotank). Encourage participation at various public meetings and workshops necessary for the development of these plans;
- continue to develop annual progress assessments regarding CCMP implementation achieved through use of FY2001 Supplemental Funding Initiative (new contract with Andy Coburn; see page 19-20);
- increase level of coordination between APNEP and the state's 319 Program Coordinator which may lead to a project identified by the Coordinating Council that would be funded through the 319 Program; and
- work towards fulfillment of the FY2001 top four priority actions.

III. CONTRACT WITH THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION:

Watershed Field Coordinator: The headwaters for the Pasquotank, Chowan and Roanoke river basins contributing to the estuary system are located within Virginia. One of the most critical components to effectively implementing the CCMP within these basins is long-term, comprehensive coordination between North Carolina and Virginia.

As it did last year, APNEP will provide partial funding of \$25,000 to continue an existing contract with VADCR which supports a Watershed Field Coordinator (see page 15). This position will support VADCR's effort to implement the CCMP. The VADCR is providing an additional \$25,000 to support this position. The current contract period supporting this effort is from January through December 2001. This contract will be amended effective January 2002.

Specifically, APNEP funds will pay for ½ of a part-time employee. Approximately 20 hours per week will be dedicated to the APNEP CCMP efforts. This position will be working out of the VADCR Albemarle, Chowan and Coastal Watersheds Office in Suffolk, Virginia.

The VADCR Albemarle, Chowan and Coastal Watersheds Manager will supervise this employee, providing the following implementation support services:

- Provide coordination and support for Virginia's Watershed Conservation Roundtables (basin councils) being formed in the Albemarle, Chowan and Roanoke river basins. The Roundtables will play a critical role in providing regional forums for stakeholders to discuss and develop CCMP implementation protocols and efforts in Virginia.
- Facilitate and foster coordination and communication between Virginia's Watershed Roundtables and North Carolina's River Basin Regional Councils.

- Compile information from local jurisdictions that will aid in APNEP CCMP work plans and DWQ basin plans, targeting and monitoring of progress. Examples of information needed could include: demographics, current and projected land uses, nonpoint source pollution control programs, local GIS maps, BMPs implemented, etc.
- Assist with APNEP CCMP public relations by preparing material for regionally-targeted fact sheets, news releases, and other articles for publishing purposes.
- Assist VADCR Watershed Managers in the Albemarle, Chowan and Roanoke basins by preparing materials, presentations, and mailings on the APNEP CCMP implementation efforts for distribution to the 14 Soil & Water Conservation Districts in the basin. This activity will further VADCR's technical support for SWCDs and facilitate increased participation among the agricultural community in the implementation of the APNEP CCMP.
- Assist with event planning and facilitation as necessary.

IV. FY2002 TRAVEL SUPPLEMENT

As part of the FY2002 federal grant, EPA is providing APNEP with \$10,000 travel funds for outreach support. These funds are to: 1) cover travel for the APNEP Program Office, Management Conference members, or other associated stakeholders to appropriate national and regional conferences, workshops, or meetings; 2) provide peer-to-peer technical assistance to other National Estuary Programs (NEPs) or neighboring communities; and 3) bring in staff or stakeholders from other NEPs or watershed programs to assist APNEP. As a requirement of this agreement, APNEP staff are required to attend all national or regional meetings called on behalf of the NEPs. These funds cannot be used to pay for travel of Federal employees.

INITIATIVE 2: STEWARDSHIP PLAN

- Continue to demonstrate the utility of the Citizens' Water Quality Monitoring Program as an effective public involvement and education tool and expand the program's interaction with regulatory agencies. This action directly supports the CCMP's Stewardship Plan, Objective B, Management Action 4: *Expand involvement in the CWQMP and make the program more interactive with regulatory agencies.*
- Conduct Public Outreach Projects to promote a better understanding of the region's many issues and offer opportunities for public involvement. This action directly supports the CCMP's Stewardship Plan, Objective B: *Increase public understanding of environmental issues and citizen involvement in environmental policy-making.*

I. ALBEMARLE-PAMLICO CITIZENS' WATER QUALITY MONITORING PROGRAM

Since 1988, the APNEP Citizens' Water Quality Monitoring Program (CWQMP), supported by APNEP with EPA funds, has provided an opportunity for citizen involvement by monitoring specific sites in the estuary. Currently, the CWQMP resides at East Carolina University (ECU) in Greenville, North Carolina.

It should be noted that APNEP staff was successful in negotiating with ECU representatives in lowering their indirect cost rate from 39.5% to 15%. This rate is consistent with what other universities are charging to sponsor other DENR projects/contracts. With less indirect cost applied by ECU, the program will now have more operating funds.

Budgetary Requirements: A Regional Coordinator is required to continue operation of the A/P Citizens' Water Quality Monitoring Program (\$40,000 via contract with East Carolina University).

Allen Clark will continue in his role as Regional Coordinator. This position has been institutionalized at ECU, but long-term funding support is questionable.

Objectives: In addition to the obvious benefits of public involvement (e.g., heightened understanding, greater appreciation for resources, stewardship ethic, etc.) tangible benefit is derived from water quality data collection through the CWQMP. Information gathered by the CWQMP can be used by state biologists and the basinwide planning program. The CWQMP Regional Coordinator will continue to enhance program performance and status of this important effort.

During FY2002, the Regional Coordinator will focus on the following:

- continued development and presentation of trend analysis synthesized from existing and future data,
- continued production and distribution of a program newsletter,
- continued outreach/presentations to interested groups;
- maintenance of the program's web site;
- development of program brochure to increase its visibility and contact with interested groups; and
- planning and participation in APNEP Volunteer Monitoring Workshop being proposed for spring 2002. In June 2001, the Center for Marine Conservation contacted the APNEP Coordinator regarding a possible volunteer monitoring workshop in the Albemarle-Pamlico region. This workshop will be funded by EPA through its agreement with the Center for Marine Conservation. Details of the workshop will be worked out in the near future.

II. PUBLIC OUTREACH PROJECTS and PERSONNEL

The FY2002 Public Outreach Projects directly relate to the CCMP's Stewardship Plan goal: "*Promote responsible stewardship of the natural resources of the Albemarle-Pamlico region.*" Proposed activities, staffing requirements, and dates are arrayed below:

1. **One or two national campaigns**, featuring estuaries, which will be collectively produced by several of the NEPs around the nation. Identification and development of these efforts are to be the focus at the June 25-26, 2001 NEP Outreach/Education workshop in Philadelphia. National campaigns will be modified for regional NEP use. (\$15,000)

Examples might include collaboration with a national sponsor, such as McDonald's, to perhaps produce place mats featuring estuaries. The front side would explain what estuaries are, their importance/function, the location of regional/local sites; while the back could be devoted to a "puzzle page" for children to apply the information gleaned from the front.

Another example might be to engage in a national campaign to stencil storm drains while underscoring the importance of where storm drains lead. A brochure detailing this information can be developed and distributed. Each NEP would have the latitude to customize their stencil. The brochure would have generic information.

2. **A permanent exhibit**, featuring an aspect of estuarine life, will be developed by APNEP staff, and staff of the NC Estuarium. The exhibit will be displayed at the Estuarium in Washington, NC, which is part of the Partnership for the Sounds initiative. The Tar-Pamlico River Basin Regional Council could be involved in generating ideas for the exhibit or in offering comment on exhibit draft proposals. (\$12,000)
3. **A day-long seminar** dealing with the issue of water supply in general, and diminishing aquifer waters within the coastal plain of the APNEP region specifically, featuring university scientists, state agencies, local government officials, and APNEP Regional Council members. This event/issue is recognized as the highest priority of the Neuse Regional Council. (\$3,000)
4. **Outreach Assistant**. An assistant to the Outreach Coordinator is needed. This position would be responsible for administrative and outreach activities necessary to support CCMP implementation and to provide help with day-to-day requirements of staffing the APNEP Public Involvement Office in Washington, NC. This person will fill the vacancy made available by Julie Indicott's departure (see page 14). (\$25,000)
5. **Promotional Items**. The development of promotional items (e.g. tee-shirts, hats, mugs, refrigerator magnets, key rings, etc.) are useful in drawing attention to the APNEP and its purpose. These items (which have not been produced during the implementation phase of the APNEP) can be distributed at festivals, Regional

Council meetings, annual meetings and other "public" gatherings. Such items were very popular during the research and development phase of the program and aided in program identity. Cost would depend on items and quantities produced. (\$5,000)

TOTAL \$60,000

INITIATIVE 3: WATERSHED DEMONSTRATION PROJECT

- Identify and implement a watershed demonstration project for environmental benefit in the Albemarle-Pamlico region. Supports the CCMP's inherent goal to restore, maintain or enhance the region's natural resources.

According to the State's 2000 303(d) List, there are over 930 miles of impaired freshwater streams in the Albemarle-Pamlico watershed. There is a great need to target/prioritize these streams for restoration and to implement the measures necessary to achieve their viability. The APNEP, through its Regional Councils and Coordinating Council, will work to prioritize these streams for restoration and will target FY2002 funds to implement restoration activities. Results of the watershed demonstration project will be transferable to all river basins in the Albemarle-Pamlico region.

Budgetary Requirement: \$37,000 from this grant will be targeted (via contract) to support this initiative.

INITIATIVE 4: SUPPLEMENTAL FUNDING INITIATIVE

Last year, EPA provided supplemental funds to develop or enhance environmental indicators, produce an implementation tracking system, or produce an environmental progress report. These topics had been identified in the previous Implementation Reviews as areas where NEPs faced challenges, or areas that would assist in meeting Government Performance and Results Act (GPRA) goals.

After consideration of the many possible uses of these funds, EPA has determined that the categories outlined during the last fiscal year are still valid, and of a very high priority. However, EPA recognizes that invasive species is an area where an increasing number of NEPs are facing challenges.

Therefore, FY2002 supplemental funds (\$30,000) are to be targeted to one or more of the following criteria (supplemental funds can be used for staff or outside support to initiate or implement these activities):

- 1) develop or enhance a CCMP report card or environmental progress report on the estuary (provides information on environmental results achieved during CCMP implementation or from early action);
- 2) develop or enhance a CCMP implementation tracking system (indicates level of progress being made in implementing CCMP actions);

- 3) develop new or augment existing environmental indicators (including any necessary monitoring, modeling or data management activities, or to conduct workshops); or
- 4) conduct discrete projects or activities to address invasive species such as early detection/rapid response, monitoring, education or outreach, or management approaches.

At their April 25th meeting, the Coordinating Council elected to coordinate a large-scale, long-term submerged aquatic vegetation (SAV) monitoring effort to assess the extent of SAV coverage in the Albemarle-Pamlico estuaries. This action relates to item 3 above. Items 1 and 2 above are being accomplished using FY2001 supplemental funds (see page 20).

Submerged aquatic vegetation constitutes one of the most common estuarine habitats in North Carolina. The 1990 published estimate of area of SAV is 200,000 acres. In the contiguous 48 states, North Carolina is second only to Florida in acreage of SAV, and has twice the acreage reported for Chesapeake Bay. SAV provides food and cover for a great variety of commercially and recreationally important fauna and their prey. Thirteen species of SAV have been reported for the Albemarle-Pamlico estuary. SAV support many species of fish and shellfish and are major fishery habitats of the shallow sounds behind North Carolina's barrier islands and along the coastal fringes bordering the western side of these sounds.

Previous studies by NOAA and East Carolina University to delineate and quantify the location and extent of SAV, based on conventional color aerial photography and field sampling, were conducted in the late-1980s and early-1990s for major portions of the Albemarle-Pamlico estuary. This information, some of which has been digitized in GIS-format, has proven valuable to habitat managers in their review of dredge and fill related permit applications and help achieve the nomination of Core Sound, Back Sound and western Bogue Sound for designation as Outstanding Resource Waters.

Since that time, no major organized effort to map the location and extent of SAV coverage in the Albemarle-Pamlico estuary has been conducted. SAV is being used as a critical environmental indicator in several other estuarine systems (e.g., Indian River Lagoon, Sarasota Bay, Tampa Bay and Chesapeake Bay). Currently, North Carolina lacks the information necessary to determine reliable trends in SAV based on data generated almost 10 years ago.

For this reason, the Coordinating Council elected to provide FY2002 supplemental funds as seed money to initiate a large-scale, long-term submerged aquatic vegetation (SAV) monitoring effort to assess the extent of SAV coverage in the Albemarle-Pamlico estuaries. As a first step, APNEP will conduct a scoping meeting/workshop involving local and national experts in SAV research and monitoring to develop a SAV monitoring strategy for the Albemarle-Pamlico estuaries.

This action directly supports the CCMP's Water Quality Plan, Objective E: *Evaluate indicators of environmental stress in the estuary and develop new techniques to better assess water quality degradation*; and the Vital Habitats Plan, Objective C: *Maintain, restore, and enhance vital habitat functions to ensure the survival of wildlife and fisheries*.

SUMMARY OF FEDERAL BUDGET: The federal budget for FY2002 funding of \$340,000 is provided below:

INITIATIVE 1: IMPLEMENTATION PLAN

Program Coordinator	58,000
Includes salary, fringe benefits, indirect cost and office supplies	
Public Involvement Coordinator	80,000
Includes salary, fringe benefits, indirect cost, office supplies, and purchase of new computer, laptop and LCD projector	
Watershed Field Coordinator (contract with VADCR)	25,000
Travel	10,000

INITIATIVE 2: STEWARDSHIP PLAN

Citizens' Water Quality Monitoring Program (contract with ECU).....	40,000
Public Outreach Projects	60,000

INITIATIVE 3: WATERSHED DEMONSTRATION PROJECT37,000

Identify and implement a watershed demonstration project for environmental benefit in the Albemarle-Pamlico region.

INITIATIVE 4: SUPPLEMENTAL FUNDS INITIATIVE30,000

Coordinate a large-scale, long-term submerged aquatic vegetation (SAV) monitoring effort to assess the extent of SAV coverage in the Albemarle-Pamlico estuaries.

TOTAL FEDERAL BUDGET FOR FY2002\$340,000

* Fringe Benefits are based on Social Security (7.65%) & Retirement (10.83%) of position's annual salary and Medical Insurance Plan rate of (\$1,736). Indirect based on 15.9% of salary.

SUMMARY OF STATE MATCH REQUIREMENT

The NC Department of Environment and Natural Resources intends to provide \$340,000 as part of the 1:1 non-federal match for this agreement. The match will be provided through: 1) in-kind services provided by staff of the Division of Water Quality and 2) continued operation of monitoring platforms/stations strategically located in parts of the Albemarle-Pamlico estuaries. Below is a description of the intended state match:

<u>POSITION</u>	<u>SALARY</u>	<u>% EFFORT</u>	<u>SALARY (AS MATCH)</u>	<u>FRINGE</u>	<u>TOTAL</u>
<u>PLANNING BRANCH</u>					
Env. Spec III ^a	35,337	50	17,669	3,386	21,055
Env. Spec II	33,319	50	16,660	3,257	19,917
Env. Supvsr II	47,378	45	21,320	3,739	25,059
Env. Spec III ^b	44,777	50	22,389	3,989	26,378
<u>NEUSE RIVER RESPONSE TEAM</u>					
Env. Spec I	28,709	50	14,355	2,963	17,318
Env. Spec II	32,553	50	16,277	3,207	19,484
Env. Bio I	33,146	50	16,573	3,244	19,817
Env. Tech IV	28,195	50	14,098	2,928	17,026
<u>TAR-PAMLICO RESPONSE TEAM</u>					
Env. Spec I	29,242	50	14,621	2,996	17,617
Env. Spec II	33,185	50	16,593	3,248	19,841
Env. Bio I	32,514	50	16,257	3,204	19,461
Env. Tech IV	28,195	50	14,098	2,929	17,027
TOTAL:			\$200,910	\$39,090	\$240,000

Description

Environmental Specialist III^a and Environmental Specialist II – These positions work as basinwide planners in DWQ’s Basinwide & Estuary Planning Unit responsible for developing basinwide water quality management plans. During FY2002, developing plans for the Neuse, Chowan and Pasquotank river basins will be a major focus. *These positions support the CCMP’s Water Quality Plan, Objective A, Management Action 1: Develop and begin implementing basinwide plans to protect and restore water quality in each basin according to the schedule established by the Division of Water Quality.*

Environmental Supervisor II – This position supervises DWQ’s Basinwide & Estuary Planning Unit, which includes the APNEP.

Environmental Specialist III^b – This position works in DWQ’s Nonpoint Source Planning Unit and spends a considerable amount of time on the development and implementation of a nutrient control strategy in the Tar-Pamlico River Basin. *This position supports the CCMP’s Water Quality Plan, Objective B, Management Action 1: For each river basin,*

develop and implement a plan to control nonpoint source pollution as part of the basinwide management plans.

The Neuse and Tar-Pamlico Response Teams are located in DWQ's Environmental Sciences Branch. The response teams are equipped to respond to fish kills (and other water quality-related events) quickly in order to better determine causes and conditions. *These positions support the CCMP's Water Quality Plan, Objective E, Management Action 1: Continue to track and evaluate indicators of environmental stress, including algal blooms, fish kills, and fish and shellfish diseases.*

WATER QUALITY MONITORING

During FY2002, DWQ will be contributing more than \$100,000 to enhance monitoring efforts in parts of the Albemarle-Pamlico estuaries. Utilizing special appropriations from the General Assembly in response to fish kills and associated problems in the Neuse Estuary, DWQ will continue to support (via contract with USGS) the operation of monitoring platforms/stations located in the Neuse, Pamlico and Pungo estuaries.

DWQ intends for \$100,000 to be applied as match to this agreement. *This action supports the CCMP's Water Quality Plan, Objective A, Management Action 6: Continue long-term, comprehensive monitoring of water quality in the Albemarle-PamlicoNEP system, collecting data to assess general system health and target regional problems.*

SUMMARY OF STATE MATCH

In-kind Positions (salaries and fringe):	\$240,000
Water Quality Monitoring	<u>100,000</u>
TOTAL:	\$340,000