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NHEP Year 13 Work Plan

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NewHampshire EstuariesProject

2008

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Year 13 Work Plan

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OVERVIEW

The New Hampshire Estuaries Project (NHEP) is part of the U.S. Environmental Protection Agency's (EPA's) National Estuary Program which is a joint local/state/federal program established under the Clean Water Act with the goal of protecting and enhancing nationally significant estuaries.

The NHEP's *Comprehensive Conservation and Management Plan* (Management Plan) for New Hampshire's estuaries was completed in 2000 and updated in 2005. The Management Plan outlines key issues related to management of New Hampshire's estuaries and proposes strategies (Action Plans) to protect, enhance, and monitor the state's estuarine resources. Local stakeholders established the NHEP's priorities, which include water quality improvements, shellfish resource enhancements, land protection, habitat restoration, and outreach and education. Projects addressing these priorities are undertaken throughout the watershed areas for the Great Bay Estuary, Hampton-Seabrook Estuary, and the New Hampshire Atlantic coast. In addition, the NHEP implements a comprehensive monitoring program for the coastal watersheds. The NHEP collects, compiles, and analyzes data for a number of environmental indicators.

From its inception through 2007, the NHEP conducted its work in the New Hampshire portion of the watershed area only. In December 2007, the NHEP Management Committee supported expanding the NHEP focus area to the Maine portion of the Great Bay Estuary watershed. Integration of the Maine part of the watershed is expected to occur over a three year period (2008-2010).

Each year the NHEP prepares its work plan, which describes recent accomplishments and priority activities and projects to be undertaken in the next year to implement the Management Plan. The NHEP Management Committee reviews and approves the work plan each year. The current work plan represents the thirteenth year of the NHEP's activities and involvement in collaboratively protecting, enhancing, and monitoring New Hampshire's estuaries.

Section 1 of this document describes activities and priorities to be undertaken by the NHEP as part of the new EPA grant, beginning on October 1, 2008. It identifies the NHEP's implementation and program goals; describes specific activities to be undertaken by NHEP staff or partners with grant funds to implement the NHEP Management Plan and Monitoring Plan; describes the NHEP's administrative structure and costs; and presents the overall budget for the Year 13 grant.

Section 2 of this document is a report of the NHEP's ongoing projects and activities for the past year. A table of all ongoing projects supported by the NHEP is provided. The section describes actions undertaken by the NHEP to implement goals and activities identified in work plans from the two previous years (Year Eleven Work Plan: http://www.nhep.unh.edu/resources/pdf/nhep_year_eleven-nhep-06.pdf; and Year Twelve Work Plan: http://www.nhep.unh.edu/resources/pdf/nhep_year_12-nhep-07.pdf); describes how the NHEP's activities helped support Clean Water Act programs; summarizes meetings and milestones from the last year; and reports on last year's travel expenses, as required by EPA.

SECTION 1: 2009 WORK PLAN

I. Work Plan Goals

The activities and projects described in the 2009 (Year 13) Work Plan are designed to accomplish the following goals:

1. **Continue implementation of the NH Estuaries Project Management Plan**

   The NHEP will fund and manage projects and directly undertake activities to implement the Management Plan in 2009. Specific projects are identified in the following section.

2. **Continue implementation of the NHEP Monitoring Plan and ongoing environmental assessments**

   The NHEP will manage projects and undertake activities in support of its monitoring program. A key component of this goal involves finalizing recommendations for nutrient criteria for New Hampshire's estuaries, in coordination with the Technical Advisory Committee.

3. **Develop Environmental Indicator Reports and the 2009 State of the Estuaries Report and Convene a State of the Estuaries Conference**

   The NHEP will develop reports for indicators of water quality, shellfish resources, critical species and habitats, and land use. Twelve key indicators will be selected for the State of the Estuaries Report. A conference targeting up to 200 participants will include sessions on the environmental health of the estuaries, relevant research topics, watershed protection and restoration strategies, and management issues.

4. **Continue to integrate the Maine part of the watershed into the NHEP's initiatives and planning processes**

   The NHEP will meet with Maine organizations, municipalities, and agencies; expand NHEP programs to provide products and services to Maine stakeholders; and seek collaborative opportunities to advance watershed protection goals.

5. **Prepare for Management Plan update**

   The NHEP will conduct studies and assessments (as supplemental funding allows) and convene stakeholders to identify and prioritize management objectives and actions as part of the update process.

II. Proposed Implementation Activities and Priorities

EPA National Estuary Program funds primarily will be used to support what have become the NHEP's annual "core" programs. These programs that have been developed by the NHEP have produced environmental results, engaged a broad base of stakeholders, and are well-aligned with priority action plans from the Management Plan. Data from the monitoring projects allow the NHEP to develop environmental indicators and report on environmental trends and conditions of the estuaries.

Projects and activities described below will be initiated in 2009. All projects funded by the Year Thirteen grant award will be completed by December 31, 2010. For each work plan project or activity, an alphanumeric work plan code is generated for tracking in the NHEP database.

Activities that will be undertaken by the NHEP in 2009 using other grant funds are not included below; only those that are funded by the Year 13 grant or projects that provide matching funds for the grant are listed.

Projects and activities are listed in 3 sections: Management Plan Implementation, Monitoring Program Implementation, and Program Support/Administrative Activities & Initiatives.

MANAGEMENT PLAN IMPLEMENTATION

The projects and activities identified below will implement specific Action Plans from the Management Plan. Some activities will be completed by NHEP staff; some by partners and/or contractors with NHEP funding or other funding as noted. Unless otherwise noted, projects listed below are expected to be initiated on or around January 1, 2009 and completed by December 31, 2009. The work plan includes $119,500 to support projects and activities identified below (this does not include NHEP staff time to manage projects or implement staff-led initiatives).

09-A-1: Stormwater Workshops
NHEP funds ($1,500) will be used to pay workshop costs in 2009 for municipal board members and town employees to attend the UNH Stormwater Center demonstration facility that showcases various stormwater treatment systems, including low impact development (LID) and infiltration technologies. The workshop includes the field demonstration during which the technical, operational, and maintenance aspects of systems are discussed, followed by a working lunch where performance data are presented and discussed. Community board members and employees from Maine municipalities will be eligible for the NHEP sponsorship.

Output: Attendance of 30 target individuals at workshops
Outcome: Better knowledge of LID and innovative stormwater management systems (short-term); increased use of LID/innovative systems (long-term)

Clean Water Act (CWA) Relevance: Strengthening Stormwater Phase II Program implementation

Action Plans Implemented:
Action Plan WQ-18: Support and coordinate stormwater technical workshops

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09-A-2: Support for the Piscataqua River Cooperative
The NHEP will continue to collaborate with the Piscataqua River Cooperative (PRC) to support its efforts to prevent, respond to, and minimize impacts from oil and hazardous waste spills. The PRC is supported through contributions from energy companies in the amount of approximately $160,000 per year.

Output: Response training; response materials acquired
Outcome: Improved water quality and aquatic habitats as a result of fewer oil spills and/or better response to spills

Action Plan Implemented:
Action Plan WQ-12A: Acknowledge and support the oil spill prevention and response activities of the Piscataqua River Cooperative

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09-B-1: NHDES Shellfish Program Implementation
The NHDES Shellfish Program will conduct routine monitoring, shoreline surveys, classification studies, and red tide testing in 2009 in support of many action plans from the Management Plan. This is the third year that the Shellfish Program has operated with state funds (roughly $175,000 per year) secured for the program through NHEP legislative efforts. Program costs in the amount of $150,000 will be counted as matching funds for the NHEP.

Output: Water quality data, shellfish tissue data (bacteria and PSP), and completion of shoreline surveys
Outcome: Protection of human health, additional classified areas, increased shellfish harvest opportunities
CWA Relevance: Water quality monitoring

Action Plans Implemented:
- Action Plan SHL-1: Implement procedures in the National Shellfish Sanitation Program guidance to obtain certification by the FDA for a recreational and commercial shellfish program
- Action Plan SHL-4: Enhance the amount and reliability of funding for strategies and actions to maintain a comprehensive shellfish program
- Action Plan SHL-5: Collect and monitor water quality samples to identify sources and reduce or eliminate contaminants
- Action Plan SHL-6: Periodically collect and monitor shellfish tissue samples as appropriate for toxins and biotoxins

09-B-2: Hampton-Seabrook Harbor Soft-shell Clam Monitoring Program
FPL Energy Seabrook Station conducts annual monitoring of soft-shell clams in Hampton-Seabrook Harbor, using the services of Normandeau Associates, Inc. These data are provided to the NHEP and used to develop a number of the NHEP's environmental indicators and supporting variables. The value of this data collection effort (~$65,000) is used by the NHEP as matching funds.

Output: Data
Outcome: Updated environmental indicators that convey environmental status and trends leading to improved decision-making and/or improved planning

Action Plan/Work Plan Goal Implemented:
- Action Plan SHL-7: Maintain an ongoing shellfish resource assessment program (includes evaluating disease organisms)
- Work Plan Goal 2: Implement NHEP Monitoring Plan

09-C-1: NROC Support/Program Implementation
NHEP staff will participate in the Natural Resources Outreach Coalition (NROC), by participating in quarterly coordination meetings, serving on teams to prepare and deliver programs to communities and facilitate follow up, helping to develop work plans, and managing grants with participating communities. NHEP staff will work with two communities in 2009 (presumably a continuation of the 2008 project work in Raymond and a new community to be identified in December 2008). Funds previously allocated from the Year 12 grant will support community projects in early 2009.

Output: Commitment of 10% of one NHEP staff member's time to provide direct technical assistance on environmental planning issues with officials in the Town of Raymond and one other community
Outcome: Increased capacity of participating towns to protect wetlands, riparian areas, sensitive habitats, open space, and water quality; and improved regulatory and non-regulatory approaches to protecting these resources

Action Plan Implemented:
Action Plan LND-5: Support the NROC municipal decision-maker land-use planning outreach method

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09-C-2: Community Technical Assistance Program
The NHEP will provide $28,000 for continuation of the Community Technical Assistance Program in 2009 (Round 4 of the program). This funding should support four community projects. The program provides assistance to community conservation commissions and planning boards on various regulatory and nonregulatory approaches to natural resource protection, including land conservation planning, buffer protection, and

stormwater management. Communities apply to the NHEP for assistance with a specific eligible topic; communities are paired with "technical assistance providers" selected by the NHEP; project work plans are developed; and the NHEP oversees and funds the consultants' work with communities. In some cases, NHEP staff provide the assistance directly to communities. Projects are expected to begin between January 1 and July 1, 2009 and conclude by June 30, 2010.

Outputs and outcomes will be dependent on the communities' applications and projects developed in response to community requests.

CWA Relevance: Wetlands protection and/or strengthening Stormwater Phase II Program implementation

Action Plans Implemented (depending on community projects developed):
- Action Plans LND-15, LND-29, and LND-36 (land conservation planning)
- Action Plans LND-1, LND-2, LND-6E, WQ-9, & WQ-18 (storm water management/low impact development)
- Action Plan LND14, LND-20, & LND-25 (buffers and wetlands protections)

09-C-3: Land Protection Transaction Grant Program
The NHEP will provide $14,000 for continuation of Land Protection Transaction Grant Program in 2009. This program provides funding for transaction costs associated with the permanent protection of lands with high ecological value. Transaction costs include items such as surveys, deed and title research, legal fees, and appraisals in some cases. Units of government and 501(c)3 conservation organizations are eligible for the grant funding. Grant awards are up to $3,000 per project and an equivalent amount of matching funds is required.

Output: Five land conservation projects (estimated 250 acres of protected lands)
Outcome: Protection of wildlife habitat and water quality

Action Plans Implemented:
- Action Plan LND-15: Support land conservation efforts in shoreland areas
- Action Plan LND- 36 Encourage conservation easements

09-D-1: Estuary Restoration Partnership
NHEP staff will continue to participate in the Partnership to Restore New Hampshire's Estuaries in 2009 and assist with work plan development, project identification and planning, fund seeking, and project management.

Output: Commitment of 25-50% of one NHEP staff member's time to provide leadership and project management capacity in support of selecting and implementing priority restoration projects identified by the Partnership

Outcome: Organizational capacity to implement high priority restoration projects needed to restore improved ecosystem function to NH's estuaries

Action Plans Implemented:

- Action Plan SHL-8: Develop and implement a plan for shellfish resource enhancement and habitat restoration activities to achieve a sustainable resource contributing to a healthy environment
- Action Plan RST-2: Using the Coastal Method and other techniques, identify and restore tidal wetlands for aspects other than tidal restrictions
- Action Plan RST-4: Identify and implement habitat restoration projects in other important non-tidal habitat areas, such as uplands and freshwater wetlands

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09-D-2: Restoration Project

The NHEP will award $30,000 in support of a project identified as a high priority by the Restoration Partnership through a collective evaluation process. The project will be selected by the Partnership as a top priority multi-habitat restoration effort that draws on the collective strengths (technical knowledge, funding, permitting, public relations skills) of the partner organizations. As one of the first projects undertaken by the Partnership, this effort will be instrumental in demonstrating commitment of the partner organizations to achieving on-the-ground results. The project will be monitored and evaluated in order to document measurable improvements for top priority restoration target habitats/species (i.e. salt marsh, eelgrass, shellfish, and diadromous fish). The project will be initiated in early 2009 and completed by December 31, 2010.

Output: Investment of $30,000 of EPA Section 320 funds to leverage additional money for implementation of a top priority estuary restoration project
Outcome: Implementation of a top priority multi-faceted estuarine restoration project that demonstrates the commitment and capability of the Partnership

Action Plans Implemented (depends on project developed):

- Action Plan SHL-8: Develop and implement a plan for shellfish resource enhancement and habitat restoration activities to achieve a sustainable resource contributing to a healthy environment
- Action Plan RST-2: Using the Coastal Method and other techniques, identify and restore tidal wetlands for aspects other than tidal restrictions
- Action Plan RST-4: Identify and implement habitat restoration projects in other important non-tidal habitat areas, such as uplands and freshwater wetlands

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09-E-1: Local Grants Program in 2009

The NHEP will provide up to $45,000 for competitively selected projects in response to a request for proposals. The NHEP Management Plan places strong emphasis on empowering community partners to implement projects to improve natural resources protection. To this end, the NHEP will continue its Local Grants Program through 2009. Projects will be solicited through a Request for Proposals (RFP) issued by the NHEP in

summer of 2008. Applicants' projects can address any action plan from the NHEP Management Plan. To accommodate Maine projects, project criteria will include implementation of strategies identified in watershed protection/restoration plans with objectives consistent with those identified in the NHEP Management Plan. The maximum award per project is $8,000.

Outputs and outcomes will depend on the projects selected through the grant program. Projects are anticipated to begin January 1, 2009 and end December 31, 2009.

Action Plan Implemented:
Action Plan EDU-3: Establish and fund a Technical Assistance Grant Program to promote and fund projects that support the NHEP Management Plan

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09-E-2: 2009 Eye on Estuaries Newspaper Column
The NHEP, with input from the Public Outreach and Education Team, will continue to work with Fosters Daily Democrat (circulation of 22,000), and other newspapers as appropriate, to publish a monthly column titled "Eye on Estuaries," which highlights estuarine and other local natural resource issues. Topics relevant to Management Plan priorities will be addressed.

Output: Twelve articles, averaging 900 words addressing Management Plan priorities, reaching at least 22,000 readers
Outcome: Increased awareness of NHEP, coastal watershed issues, management activities, and the regional estuarine systems

Action Plans Implemented:
- Action Plan EDU-1: Utilize the media to enhance educational efforts
- Action Plan EDU-2: Work with the Seacoast Newspapers to establish a monthly newspaper column devoted to coastal natural resource issues

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09-E-3: V.I.P. Boat Tours
The NHEP will organize and conduct two boat tours of the Great Bay Estuary in 2009 geared for coastal watershed planning board members and conservation commissions, as well as other town board members. The NHEP will use $1,000 to support this activity, which is timed around National Estuaries Day. This will be the sixth year that the NHEP has organized these well-attended events for participants. Approximately 75 people are anticipated to participate, 45 of which will be municipal planning officials. Tours include presentations from NHEP staff on the State of the Estuaries Report and other NHEP efforts, researchers on current restoration and/or monitoring projects, and land planning professionals regarding a variety of watershed management issues. The boat tours are an opportunity to introduce community decision makers to the NHEP and its programs, help people connect to the area's estuarine resources, highlight information and projects of particular relevance, and encourage networking between communities. Participants from Maine communities will be invited.

Output: Two boat tours of the Great Bay Estuary involving approximately 75 people, 45 of which are municipal planning officials
Outcome: Greater understanding of NHEP programs, NHEP Management Plan, Partner activities, coastal watershed management activities, and estuary ecology and management

Action Plan Implemented:
Action Plan WQ-20: Conduct an Estuarine Field Day for municipal officials

MONITORING PROGRAM IMPLEMENTATION

Monitoring projects implement the NHEP's Monitoring Plan, which outlines the data and analytical methods for indicators that assess environmental objectives. Monitoring activities include annual programs and special projects for which data are collected less frequently. Quality Assurance Project Plans (QAPPs) are developed as necessary for monitoring projects.

The NHEP's Year 13 grant includes $61,500 to implement projects that support the NHEP's core monitoring program in 2009. The majority of the NHEP's contracted monitoring projects are conducted by the UNH Marine Program. In most cases, organizations receiving NHEP funds to conduct monitoring activities will provide matching funds. In addition, FPL Energy Seabrook Station conducts monitoring activities in Hampton-Seabrook Harbor that provide data used by the NHEP for its indicator reports and are counted as matching funds for the program.

All monitoring projects will be completed between January 1, 2009 and March 31, 2010, with the exception of GulfWatch sample analyses, which will be completed by December 31, 2010.

Outputs/products for all the monitoring projects include data that meet data quality standards established in project QAPPs. Outcomes include establishment of updated environmental indicators that convey environmental status and trends leading to improved decision-making and/or planning. Many of the monitoring projects supported by the NHEP are consistent with EPA's Clean Water Act priority of improving water quality monitoring.

Details on the 2009 monitoring projects to be supported by the NHEP are listed below. For UNH projects, the budget amount does not include indirect costs associated with the projects. Indirect costs assessed by UNH are calculated separately and included in the "Program Administration" section.

09-M-1: Oyster Disease Testing

The NHEP will use $2,200 to pay Rutgers University for analysis of oyster disease organisms MSX and Dermo. One hundred samples taken from four beds in the Great Bay Estuary will be analyzed. NH Fish and Game Department coordinates the collection and delivery of samples to the lab, and its boat and diver time are counted as in-kind matching funds for the project.

Action Plan/Work Plan Goal Implemented:

- Action Plan SHL-7: Maintain an ongoing shellfish resource assessment program (includes evaluating disease organisms)
- Work Plan Goal 2: Implement NHEP Monitoring Plan

09-M-2: GulfWatch Program – Lab Analysis for Supplemental Sites

The NHEP will use $7,600 ($6,330 direct, $1,270 indirect) to fund the Association of US Delegates to the Gulf of Maine Council to conduct contaminant analyses for eight samples of blue mussels collected from Dover Point and Hampton-Seabrook Harbor. These two NHEP-supported benchmark sites supplement the yearly monitoring conducted by the Gulf of Maine Council GulfWatch Program. The Association will subcontract with the Battelle Marine Sciences Laboratory in Sequim, Washington, and Environment Canada laboratory in Moncton, New Brunswick. The NHEP also organizes the field sampling and sample preparation for all the New Hampshire sites that are part of the GulfWatch Program.

Action Plan/Work Plan Goal Implemented:

- Action Plan SHL-6: Collect and monitor shellfish tissue samples for toxins and biotoxins
- Work Plan Goal 2: Implement NHEP Monitoring Plan

09-M-3: GulfWatch Program – Lab Support

The NHEP will use $830 to fund the UNH Marine Program Jackson Estuarine Lab to provide logistical support to assist the NHEP in coordinating the annual GulfWatch Program. Funds support use of UNH lab space, lab supplies, and staff time to store and ship samples.

Action Plan/Work Plan Goal Implemented:

- Action Plan SHL-6: Collect and monitor shellfish tissue samples for toxins and biotoxins
- Work Plan Goal 2: Implement NHEP Monitoring Plan

09-M-4: Tidal Tributary Monitoring Program

The NHEP will use $6,225 ($3,600 lab costs, $2,625 personnel) to fund the UNH Water Quality Analysis Lab to collect and analyze 90 water quality samples for total nitrogen, total dissolved nitrogen, total phosphorus, total suspended solids, and field parameters from the eight tributaries to the Great Bay Estuary. Samples are collected and field parameters are measured on a monthly basis from March 1 to December 31. Field and laboratory methods for this project are specified in an approved quality assurance project plan.

Work Plan Goal Implemented: Goal 2: Implement NHEP Monitoring Plan

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09-M-5: Eelgrass Mapping

The NHEP will use $9,600 to fund the UNH Marine Program to acquire imagery, conduct ground truthing, and perform data analysis to map eelgrass beds in Great Bay, Little Bay, Piscataqua River, and Portsmouth Harbor. The final product will be ground-truthed eelgrass habitat maps for 2009. The methods for this project are specified in an approved quality assurance project plan.

Work Plan Goal Implemented: Goal 2: Implement NHEP Monitoring Plan

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09-M-6: Datasonde Deployment and Monitoring
The NHEP will use $10,020 to fund the UNH Marine Program to supplement datasonde deployment and water quality monitoring conducted through the Great Bay NERR/UNH System-wide Monitoring Program. NHEP funds are used to operate and maintain datasondes to monitor water temperature, salinity, dissolved oxygen, turbidity, and pH at two locations in the Great Bay Estuary: Coastal Marine Laboratory (year round) and Salmon Falls River (summer only). These deployments complement the Great Bay NERR's deployment of datasondes in the Lamprey River, Squamscott River, Oyster River, and in the middle of Great Bay.

Work Plan Goal Implemented: Goal 2: Implement NHEP Monitoring Plan

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09-M-7: Water Quality Trend Monitoring in Tidal Waters
The NHEP will use $16,600 to fund the UNH Marine Program to conduct monthly monitoring of nutrients, particulates and bacteria at tidal trend stations in the Great Bay Estuary and Hampton-Seabrook Harbor between January 1 and December 31. The nine tidal trend stations are located in Great Bay, Squamscott River, Lamprey River, Oyster River, Upper Piscataqua River, and Portsmouth Harbor. In addition, the UNH Marine Program will collect samples for bacteria analysis from Hampton Harbor, Little Harbor, Bellamy River, Little Bay, and the Bellamy River during the summer index period.

Work Plan Goal Implemented: Goal 2: Implement NHEP Monitoring Plan

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09-M-8: NHEP National Coastal Assessment Monitoring
The NHEP will use $8,425 to fund the UNH Marine Program to continue annual probabilistic sampling of water quality in the Great Bay Estuary and Hampton-Seabrook Harbor consistent with the National Coastal Assessment Program. Probabilistic sampling provides unbiased estimates of the variability of water quality throughout the estuaries. The survey collects data on bacteria, nutrient, and particulate concentrations. Program operations for 2009 will be supplemented by at least $10,000 from NHDES.

Work Plan Goal Implemented: Goal 2: Implement NHEP Monitoring Plan

PROGRAM SUPPORT/ADMINISTRATIVE ACTIVITIES & INITIATIVES

The following activities will be initiated in 2009 to support overall Management Plan implementation and NHEP operations.

09-Admin-1: Preparation for Management Plan update
The NHEP will continue efforts in 2009 to update its Management Plan, aiming for completion in 2010. Funds from the Year 12 grant ($10,000) were previously budgeted to support activities to provide data or facilitation assistance. The NHEP will conduct studies and assessments (as supplemental funding allows) and convene stakeholders to identify and prioritize management objectives and actions as part of the update process.

Output: Identification of management priorities and objectives; participation by coastal watershed stakeholders in planning process
Outcome: Updated Management Plan (2010)

Work Plan Goal Implemented: Goal 5: Prepare for Management Plan update

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09-Admin-2: NHEP Outreach/Branding Materials
Following on the update of the NHEP Communications Plan (2008) and the decision to expand the program into Maine, the NHEP will continue to develop and update outreach and branding materials that reflect the change in focus area. Discussions on the program's name change may result in the need for additional design work to develop and integrate a new name and logo for NHEP materials. The NHEP will use $2,500 to design and/or produce outreach materials in 2009.

Output: NHEP brochure and/or factsheet; NHEP website redesign; possible new name and/or logo
Outcome: Better recognition and awareness of the NHEP

Work Plan Goal Implemented: Goal 4: Continue to integrate the Maine part of the watershed into the NHEP's initiatives and planning processes

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09-Admin-3: General Outreach/Communications Support in 2009
The NHEP will conduct general outreach activities (press releases, website updates, Estuaries Update email newsletter, participate in outreach events, etc.) in 2009. In addition, the NHEP will continue to develop and maintain an email list of coastal decision-makers so that information can best reach this target audience. These NHEP activities support general outreach and communication objectives and implement the Strategic Communication Plan and outreach components of the Management Plan.

Output: 12 press releases; 12 email newsletters; updated information on website
Outcome: Better recognition of the NHEP and improved awareness of its activities

Action Plans Implemented: These activities are intended to support general outreach objectives to increase awareness of the NHEP and its products and resources among target audiences, as well as increase overall awareness of important coastal issues.

09-Admin-4: Maine Outreach/integration
The NHEP will continue efforts to integrate the Maine portion of the Great Bay Estuary into the program's operations and planning processes. Staff will attend events and meetings to learn about Maine programs and organizations and to build awareness of the NHEP among Maine parties; seek funds to implement projects in Maine; and engage Maine stakeholders' participation in NHEP events and planning initiatives.

Output: Meetings, proposals developed, Maine stakeholder participation in NHEP initiatives
Outcome: Watershed approach implemented for management of the Great Bay Estuary

Work Plan Goal Implemented: Goal 4: Continue to integrate the Maine part of the watershed into the NHEP's initiatives and planning processes

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09-Admin-5: State of the Estuaries Report
NHEP staff will develop content for the State of the Estuaries Report, which includes data and information on key environmental indicators of coastal watershed health. The indicators are from the NHEP's Environmental Indicator reports that are developed in coordination with the NHEP's Technical Advisory Committee. Staff will also manage the design and production process, and distribute the report to a wide audience. Up to $6,500 of NHEP funds will support design and printing costs; additional sponsor support will be sought to fund the balance needed to produce the report.

Output: 2,500 State of the Estuaries Reports produced
Outcome: Better understanding of environmental health of New Hampshire's estuaries; application of data to management decisions

Work Plan Goal Implemented: Goal 3: Develop Environmental Indicator Reports and State of the Estuaries Report and Convene a State of the Estuaries Conference

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09-Admin-6: State of the Estuaries Conference
NHEP staff will organize a day-long State of the Estuaries conference that will showcase the State of the Estuaries Report and highlight important projects and management initiatives affecting New Hampshire's estuaries and coastal watersheds. Up to $6,000 of NHEP funds will be used to pay for conference costs (primarily venue); additional sponsor support will be sought to fund the balance needed to host the conference.

Output: Conference featuring sessions on multiple topics related to the protection, restoration, and monitoring of New Hampshire's estuaries; attendance by 200 participants; conference proceedings
Outcome: Improved knowledge of issues and programs related to habitat protection, restoration, and monitoring

Work Plan Goal Implemented: Goal 3: Develop Environmental Indicator Reports and State of the Estuaries Report and Convene a State of the Estuaries Conference

III. Program Administration

The University of New Hampshire administers the New Hampshire Estuaries Project. The Year 13 Work Plan includes $395,750 in costs for NHEP administration in 2009, including staff salary, benefits, supplies, office operations, travel, and indirect costs. UNH staff costs are programmed for the federal fiscal year 2009 (October 1, 2008 – September 30, 2009); all other costs are for calendar year 2009.

Staff Expenses in 2009

There are three NHEP staff employed by UNH (NHEP Director and two Project Coordinators). The NHEP Coastal Scientist is employed by the NH Department of Environmental Services. Benefits for UNH staff are calculated as 40.8% of the salary costs. The NHEP also will hire a work study student for 2009 for ~200 hours worth of effort to assist with special projects. There are no benefits calculated for the work study position. Costs for staff are identified below:

- UNH NHEP staff salary and benefits for ~95% of the year for 3 positions: **$228,096**, including $162,000 for salary and $66,096 for fringe (remaining funds budgeted for salary and benefits from the Year 12 grant will cover ~5% of the costs in FFY2009)
- NHEP Coastal Scientist position at the NH Department of Environmental Services, with the NHEP covering ~65% of all costs associated with the position and NHDES covering ~35% of the costs. NHEP funding for the Coastal Scientist position in 2009: **$60,000**
- Intern at UNH (work study program): **$696**

Specific roles of NHEP staff and others in administering the program are:

NHEP Director (UNH position): The Director is responsible for the overall administration of the program to carry out activities and priorities approved by the NHEP Management Committee in the annual work plan; meeting federal requirements of the program, including requisite program reporting; supervising program staff and contractors to implement work plans, projects, communications activities and technical assistance programs, including the Community Technical Assistance Program; coordinating with stakeholder and partner groups to set priorities and schedules for program implementation; developing annual work plans and budgets; securing and documenting non-federal matching funds for the program; implementing the fund development plan to secure additional financial resources; and representing the NHEP in local, regional, and national settings. Major undertakings for 2009 include oversight of the development of the State of the Estuaries Report and hosting the State of the Estuaries Conference, and continued efforts to integrate the Maine part of the Great Bay Estuary watershed.

NHEP Project Coordinator (Outreach/Communications focus) (UNH position): The Project Coordinator implements education and outreach actions from the Management Plan; develops and implements the NHEP's communication plan; oversees the annual Local Grants Program including evaluating proposals, developing scopes of work, and managing contracts with successful applicants; manages a subset of Community

Technical Assistance Program projects and implements other community outreach/assistance projects; performs project tracking and reporting activities; chairs the Public Outreach and Education Team and provides support to other NHEP project teams; and coordinates production of publications, manages the program website, prepares press releases, and produces stories for the program's ongoing monthly newspaper article series. A major undertaking for 2009 involves coordinating design and printing of the State of the Estuaries Report and coordinating the promotion and logistics of the State of the Estuaries Conference.

NHEP Project Coordinator (Watershed Restoration/Protection focus) (UNH position): The Project Coordinator implements actions from the Management Plan (focusing primarily on land use, habitat protection, and habitat restoration action plans); manages the Coastal Watershed Land Protection Transaction Grant Program; manages a subset of Community Technical Assistance Program projects; participates in the Natural Resources Outreach Coalition, assists communities, and manages grants for community projects; participates in the Partnership to Restore New Hampshire's Estuaries, identifies priority restoration initiatives, develops and manages restoration projects; performs project tracking and reporting activities; provides support to the NHEP Land Use/Habitat Protection Team; and assists with outreach activities for the program. A major undertaking for 2009 involves completing assessments that will be useful for the 2010 Management Plan update (e.g., municipal regulations assessment; identifying climate change impacts and possible adaptation strategies, etc.).

NHEP Coastal Scientist (NH Department of Environmental Services position, ~65% time on NHEP activities): The Coastal Scientist is responsible for overseeing and implementing the NHEP Monitoring Plan, including collection, analysis, and reporting of environmental indicator data, developing and managing projects related to the Monitoring Plan, and revising the plan as needed; managing the QAPP development and approval process for NHEP projects; providing support to the Technical Advisory Committee (TAC); leading the nutrient criteria development effort, in coordination with the TAC; and completing other projects assigned by the NHEP Director to address the program's monitoring and technical analysis needs. A major undertaking for 2009 involves developing updated Environmental Indicator reports and indicator information for the State of the Estuaries Report. Specific work tasks for the position are developed in an annual agreement with NHDES.

Intern/Work Study Student: The NHEP hires students through the work study program during the school year to complete work for the NHEP on an hourly, as-needed, basis. The intern assists with administrative work (database management, compiling mailings, etc.) and will complete other short-term special projects as needed. Funding for 2009 will support approximately 200 hours of work.

Other Program Support: Additional administrative program support is provided by the UNH Office of Sponsored Research, whose staff execute and manage contract agreements for the NHEP, and the Business Service Center, whose staff handle financial and administrative services for the NHEP including purchasing, payroll, and

personnel administration. Costs for services from these departments are covered, in part, by the indirect rate charged to the federal grant.

NHEP Management Committee: Members of the Management Committee provide valuable in-kind support for operation of the NHEP and implementation of the Management Plan. The Management Committee meets quarterly and periodically conducts work outside of meetings. In-kind support for 2009 is estimated at $4,775. This estimate is conservative; it does not represent travel time or time spent on NHEP activities outside of meetings, and it only represents time by about half of the committee members whose time can be counted toward the match requirement for the NHEP grant.

Administrative/Office Expenses for 2009

Supplies and Office Expenses – This includes phone and data lines, file space on the UNH server, postage, copying, printing, office supplies, meeting supplies, and hardware and software for four work stations (**$10,000**). The total includes ~$1,750 in supplies, postage, and copying/printing costs associated with the 2009 State of the Estuaries Conference and ~$250 in postage costs for mailing the 2009 State of the Estuaries Report.

Travel – Costs for NHEP staff to attend regional and national conferences in 2009 and for in-state travel to attend meetings or conduct site visits (**$5,000**).

Indirect (facilities and administrative costs) – The University's indirect costs (also known as facilities and administrative or F&A costs) are assessed at a rate of 20% for the NHEP grant, which is below UNH's standard rate of 34.2%. The indirect cost waiver granted by UNH allows the NHEP to commit more funds to project implementation. Indirect costs are calculated as 20% of all direct costs, including the first $25,000 of each subaward made by the University. The Year 13 grant includes **$91,958** for indirect charges. The waived portion of the indirect rate is estimated at $60,000 which is the University's contribution to matching funds for the grant.

IV. Year 13 Budget: Funding Allocation for 2009

Work Plan ID	Project/Activity	NEP Funding	Matching Funding	Total Funding
09-A-1	Stormwater Center Tours for Municipalities	$1,500	$0	$1,500
09-A-2	Support for Piscataqua River Cooperative	$0	$160,000	$160,000
09-B-1	NHDES Shellfish Program Implementation	$0	$150,000	$150,000
09-B-2	Hampton-Seabrook Harbor Clam Monitoring	$0	$65,000	$65,000
09-C-1	NROC Program Implementation*	$0	$0	$0
09-C-2	Community Technical Assistance Program	$28,000	$25,000	$53,000
09-C-3	Land Transaction Grant Program	$14,000	$14,000	$28,000
09-D-1	Estuary Restoration Partnership*	$0	$0	$0
09-D-2	Habitat Restoration Project	$30,000	$30,000	$60,000
09-E-1	Local Grants Program	$45,000	$22,500	$67,500
09-E-2	Eye on Estuaries Newspaper Column*	$0	$0	$0
09-E-3	VIP Boat Tours	$1,000	$0	$1,000
09-M-1	Oyster Disease Testing	$2,200	$3,000	$5,200
09-M-2	GulfWatch Program – Lab Analysis	$7,600	$0	$7,600
09-M-3	GulfWatch Program – Lab Support	$830	$830	$1,660
09-M-4	Tributary Monitoring Program	$6,225	$0	$6,225
09-M-5	Eelgrass Mapping	$9,600	$9,600	$19,200
09-M-6	Datasonde Deployment and Monitoring	$10,020	$10,020	$20,040
09-M-7	WQ Trend Monitoring (nutrients, particulates, bacteria)	$16,600	$16,600	$33,200
09-M-8	National Coastal Assessment WQ Monitoring	$8,425	$8,425	$16,850
09-Admin-1	Management Plan Update*	$0	$0	$0
09-Admin-2	NHEP Branding/Outreach Material	$2,500	$0	$2,500
09-Admin-3	General NHEP Outreach*	$0	$0	$0
09-Admin-4	Maine Outreach/Integration*	$0	$0	$0
09-Admin-5	State of the Estuaries Report	$6,500	$6,000	$12,500
09-Admin-6	State of the Estuaries Conference	$6,000	$6,000	$12,000
Mgmt/Admin	NHEP Management Committee	$0	$4,775	$4,775
Mgmt/Admin	NHEP/UNH Staff (3 staff, plus work study student)	$228,792	$0	$228,792
Mgmt/Admin	NHEP/NHDES Staff (Coastal Scientist)	$60,000	$0	$60,000
Mgmt/Admin	Office Supplies/Materials	$10,000	$0	$10,000
Mgmt/Admin	Travel	$5,000	$0	$5,000
Mgmt/Admin	Indirect	$91,958	$60,000	$151,958
TOTAL		**$591,750**	**$591,750**	**$1,183,500**

(*) No cost is indicated; however implementation of these activities will require NHEP Staff time and those costs are captured in Staff lines.

SECTION 2: ONGOING PROJECTS AND REPORT OF PAST YEAR'S ACTIVITIES

I. Ongoing Projects

Information on ongoing implementation projects is included in the following table. Implementation projects are funded by the currently open EPA grants, which include the Year 9, Year 10, Year 11, and Year 12 grants. The following table presents information for all ongoing projects (open as of 4/30/2008) and includes:

Work plan identification number

Project title/activity

Contractor/organization

Relevant CCMP Action Plan(s) and/or Work Plan goals

Project start and end dates

NHEP funds committed to the project

Matching funds committed to the project

Anticipated outputs and outcomes

Further descriptions of ongoing projects that were initiated over the last year are provided in the following section (Section 2. II.).

Specific information on the status of each project is provided to EPA quarterly, via transmission of the NHEP's project tracking database to EPA.

Ongoing Projects, as of 4/30/08

Work Plan ID	Project Title/Activity	Contractor/ Organization	CCMP Actions	Start	End	NHEP Funds	Match	Anticipated Outputs/Products	Anticipated Outcomes
05-C-14	Coastal Watershed Land Protection Transaction Grants	NHEP	LND-36	1/2/08	12/31/08	$30,675	$30,675	Completed land protection projects	Improved financial capacity to facilitate and implement permanent land protection projects; permanent protection of roughly 1200 acres of high priority conservation lands
05-D-3	Coastal Dam Fish Passage Projects: Lamprey, Oyster, Cocheco Rivers	NH Fish & Game Dept	RST-04	10/1/05	6/30/08	$25,000	$25,000	Repair fish ladders on three tidal rivers	Improve anadromous fish passage in the coastal watershed
05-M-12	Eelgrass Mapping - 2007 data	UNH (Fred Short)	Monitoring	11/1/07	6/30/08	$6,200	$0	Data	Improved decision-making and/or improved planning
05-M-13	2008 Probabilistic Monitoring/National Coastal Assessment	UNH (Steve Jones)	Monitoring	4/1/08	12/31/08	$10,000	$10,000	Data	Improved decision-making and/or improved planning
05-M-14	2008 WWTF Effluent Monitoring Program	NHEP	Monitoring	1/1/08	3/31/09	$2,200	$0	Data	Improved decision-making and/or improved planning
06-C-8	Hampton Falls Prime Wetlands Designation Outreach	West Environmental	LND-25 LND-25A	9/15/07	5/31/08	$4,980	$0	Prime wetland presentations at public meetings, final Prime Wetland Designation Report	Designation of 10 wetlands equaling 1270.8 acres; increase protection of high-functioning wetlands
06-M-6	Eelgrass Mapping - 1981 data	UNH (Fred Short)	Monitoring	4/1/08	6/30/08	$5,000	$0	Data	Improved decision-making and/or improved planning
07-C-2	NROC Community Grants (2007-2008)	TBA-NROC Community	LND-05	1/1/07	6/30/09	$5,000	$5,000	TBD-based on project funded	TBD-based on project funded
07-C-6	Increasing Capacity to Implement Community Land Conservation Efforts in the Coastal Watershed	Southeast Land Trust of New Hampshire	LND-15 LND-26 LND-36	1/25/07	6/30/08	$10,000	$19,928	Conduct outreach programs for targeted landowners, personally communicate with landowners, and manage conservation acquisition activities	Increase capacity to implement community land conservation efforts in the coastal watershed; Increased number of conservation easements.

Work Plan ID	Project Title/Activity	Contractor/ Organization	CCMP Actions	Start	End	NHEP Funds	Match	Anticipated Outputs/Products	Anticipated Outcomes
07-C-7	Natural Resources Inventory and Natural Resources Chapter of the City Master Plan	City of Rochester	LND-32	11/1/06	6/30/08	$5,000	$34,300	Completion of natural resources inventory and Master Plan chapter	Improved management of communities natural resources
07-C-8	Sandown Prime Wetlands Designation	West Environmental	LND-25	8/1/07	3/30/09	$7,040	$19,610	Wetlands evaluation, Prime Wetlands Designation report, press release, town vote	Town residents vote to approve Prime Wetlands designation of eligible wetlands; greater protection of community wetlands and Exeter River Watershed
07-C-9	Municipal Designation of Prime Wetlands	Brentwood	LND-25	4/1/07	6/30/08	$10,000	$16,254	Wetlands evaluation, Prime Wetlands Designation report, press release, town vote	Town residents vote to approve Prime Wetlands designation of eligible wetlands; greater protection of community wetlands and Exeter River Watershed
07-C-11	Hampton Conservation Land Inventory and Stewardship Plan	Kane & Ingraham	LND-29 LND-36	4/15/08	12/31/08	$8,495	$0	GIS database and map inventory of all town-owned conservation lands. Stewardship plan to guide long-term easement monitoring and evaluation. Recommendations for future land protection strategies.	Increased knowledge of location and condition of current town-owned protected areas; improved stewardship and enforcement of town-held conservation lands/easements; conservation lands added as part of coordinated Open Space Plan
07-D-1	Oyster Restoration Project - 2007-09	UNH (Ray Grizzle)	RST-01	1/1/07	6/30/09	$58,096	$50,991	Construct 12 small oyster reefs in Great Bay	Increase oyster reef habitat in Great Bay by 1.75 acres
07-D-4	Hampton Seabrook Estuary Restoration Compendium	UNH (Dave Burdick)	RST-04 RST-05	8/1/07	9/30/08	$1,906	$0	Identify areas with high restoration potential	Restoration of key habitats and species in Hampton-Seabrook Estuary
07-E-8	Outreach and education for community leaders and landowners	Moose Mountains Regional Greenways	EDU-05 LND-15 LND-36	1/17/07	6/30/08	$8,520	$7,058	Regional workshops, tours, presentations and press releases	Increase the amount of coastal lands in conservation
07-E-9	Volunteer Water Quality Monitoring of the Lamprey River Watershed	Nottingham	EDU-05	2/20/07	6/30/08	$1,250	$1,250	Water quality equipment and data	Improve monitoring data set for Lamprey River Watershed
08-A-1	Community Stormwater Assistance and Outreach	NHEP	WQ-18	1/1/08	12/31/08	$0	$0	workshop training	Improved knowledge of LID; improved application of LID technologies

Work Plan ID	Project Title/Activity	Contractor/ Organization	CCMP Actions	Start	End	NHEP Funds	Match	Anticipated Outputs/Products	Anticipated Outcomes
08-A-2	Support for the Piscataqua River Cooperative in 2008	Piscataqua River Cooperative	WQ-12A WQ-12B	1/1/08	12/31/08	$0	$160,000	Oil spill response training events; acquisition of response supplies	Cleaner water and improved aquatic habitat due to fewer spills and/or better response to spills
08-Admin-1	Activities in 2008 to support the CCMP update	TBD	Work Plan Goal	1/1/08	6/30/09	$10,000	$0	Meetings, information collected for plan	Engagement of stakeholders; implementation of highest priority actions to protect and restore estuaries
08-Admin-2	Communications Plan Update	NHEP	EDU-01 Work Plan Goal	1/1/08	6/30/09	$0	$0	Communication Plan	Enhanced implementation of the program and Management Plan
08-Admin-3	Implementation of Fund Development Plan	NHEP	Work Plan Goal	1/1/08	12/31/08	$0	$0	Meeting with potential funders, proposals developed	Additional funding to support Management Plan implementation
08-Admin-4	Maine Outreach in 2008	NHEP	Work Plan Goal	1/1/08	3/31/09	$0	$25,000	Maps, data products, meetings	Partnerships with Maine organizations; participation in development of Management Plan
08-B-1	NHDES Shellfish Program Implementation in 2008	NH Dept of Environmental Services	SHL-01 SHL-04 SHL-05 SHL-06	1/1/08	12/31/08	$0	$124,000	water quality data; psp data; shoreline surveys conducted	Improved health and safety due to closures when needed; increased harvest days
08-B-2	Shellfish Spotlight #2	NHEP	SHL-10 SHL-12 SHL-13 SHL-14	7/1/08	12/31/08	$3,500	$0	Outreach materials	Increase awareness and support for shellfish management practices
08-C-1	NROC Program Implementation	NHEP	LND-05	1/1/08	12/31/08	$0	$0	Participating in quarterly coordination meetings, programs delivered to communities	Raise awareness of environmental planning issues with town committee members and decision-makers; increase voluntary and regulatory protection of natural resources in participating communities
08-C-2	NROC Community Grants 2008	TBA - NROC Community	LND-05	1/1/08	12/31/08	$8,000	$8,000	TBD-based on project funded	TBD-based on project funded
08-C-3	Buffer Protection Outreach and Assistance	NHEP	LND-14 LND-16 LND-20 LND-25	1/1/08	12/31/08	$0	$0	Presentations on buffer protections	Improved ordinances/improved protection of stream and wetland buffers

Work Plan ID	Project Title/Activity	Contractor/ Organization	CCMP Actions	Start	End	NHEP Funds	Match	Anticipated Outputs/Products	Anticipated Outcomes
08-C-5	Milton Buffer Ordinance	Strafford Regional Planning Commission	LND-14 LND-15	4/15/08	12/30/08	$8,500	$0	Wetland and riparian buffer protection ordinance ready for adoption	Increased awareness among town decision-makers and citizens of importance of natural buffers to protect water resources; improved regulatory protection and stewardship of natural wetland and riparian buffers
08-C-6	Shoreland and Riparian Buffer Regulations for the Town of Raymond	Southern NH Planning Commission	LND-14 LND-16	1/1/08	12/31/08	$5,000	$5,000	2 community workshops, map of all remaining natural buffers on 1st, 2nd, 3rd order streams, riparian buffer ordinance, press release	Enhanced awareness among town decision-makers and citizens about the importance of protecting natural stream buffers; improved regulatory protection of riparian buffers
08-C-7	Isinglass River Conservation Corridor Project	Bear-Paw Regional Greenways	LND-15 LND-26 LND-28 LND-36	1/31/08	12/31/08	$9,075	$25,000	Protection of up to 800 acres of high conservation-value forestland in the Town of Strafford	Improved ecological function in the Isinglass River Watershed
08-C-8	Danville Forest Stewardship Plan	Ibis Wildlife Consulting	LND-29	4/1/08	12/1/08	$7,160	$0	Stewardship Plan with town input	Better managed land; improved water quality and wildlife habitat
08-C-9	Vernal Pool Inventory and Protection Plan	West Environmental	LND-25C LND-34	3/24/08	9/30/08	$8,500	$0	Maps of vernal pool areas; modifications to ordinance	Protection of vernal pools from impacts of development
08-C-11	Prioritized stormwater treatment technologies and shoreland buffer ordinance	Northwood	LND-14 WQ-08	3/1/08	12/31/08	$10,000	$5,000	Buffer ordinance and report recommending stormwater treatment technologies	Improved water quality protection and ecological function in the Lamprey River and Cocheco River Watersheds
08-D-1	Estuary Restoration Partnership 2008	NHEP	RST-03 RST-04 RST-06	1/1/08	12/31/08	$0	$0	Development of project proposals; funding secured for high priority restoration projects	Restoration of key habitats and species
08-E-2	Eye On Estuaries Column 2008	NHEP	EDU-02 EDU-02A	1/1/08	12/31/08	$0	$0	12 columns in local media	Increased awareness of coastal watershed issues
08-E-3	NHEP General Outreach	NHEP	EDU-01	1/1/08	12/31/08	$0	$0	Outreach materials, media stories	Increased awareness of NHEP programs and activities

Work Plan ID	Project Title/Activity	Contractor/ Organization	CCMP Actions	Start	End	NHEP Funds	Match	Anticipated Outputs/Products	Anticipated Outcomes
08-E-4	2008 VIP Boat Tours	NHEP	EDU-05 WQ-20	6/1/08	12/1/08	$1,000	$0	2 tours on Great Bay involving 75 participants	Increased involvement of municipal planning officials in NHEP Management Plan implementation
08-E-5	2008 Targeted Outreach Campaign	NHEP	EDU-01	4/1/08	6/30/09	$3,500	$0	Outreach materials	Increased NHEP ability to implement program and Management Plan
08-E-6	Buffer Analysis and Community Outreach in North Hampton	VHB Consultants & NHEP	LND-20	1/1/08	9/1/08	$8,000	$0	Buffer analysis technical memorandum and outreach brochure on the analysis sent to all households	Increased awareness of town buffer regulations and functions and values; increased projection of wetland buffers
08-E-7	Land Use Regulation Outreach in Brentwood	NHEP	LND-14 LND-16 LND-20	1/1/08	9/1/08	$5,000	$0	Outreach materials delivered to every household and distributed to new residents	Increased awareness and compliance with land use regulations
08-M-1	2008 JEL Monitoring Programs	UNH (Jon Pennock)	Monitoring	1/1/08	3/31/09	$42,500	$42,500	Data	Improved decision-making and/or improved planning
08-M-2	2008 Oyster Disease Monitoring	Rutgers & NHF&G	Monitoring SHL-07	7/1/08	3/31/09	$2,200	$4,000	Data	Improved decision-making and/or improved planning
08-M-3	2008 Gulf Watch Program	U.S. Association of the Gulf of Maine Council	Monitoring SHL-06	7/1/08	6/30/09	$7,000	$0	Data	Improved decision-making and/or improved planning
08-M-4	2008 Tidal Ambient Rivers Monitoring Program	UNH (Bill McDowell)	Monitoring	3/1/08	3/31/09	$7,500	$0	Data	Improved decision-making and/or improved planning

II. Accomplishments and Activities Initiated to Fulfill Goals from Previous Work Plans

This section describes activities and accomplishments of the New Hampshire Estuaries Project (NHEP) for the previous year, from July 2007 through April 2008.

The NHEP set the following implementation goals for 2007 and 2008 in the Year 11 and Year 12 Work Plans:

- **Continue implementation of the NH Estuaries Project Management Plan**
- **Continue implementation of the NHEP Monitoring Plan and ongoing environmental assessments**
- **Prepare 2007 Progress Report**
- **Review options for incorporating the Maine portion of watershed into the NHEP focus area**
- **Implement the Fund Development Plan to secure additional funding to implement Management Plan priorities**
- **Conduct a strategic planning process in 2007 to guide activities in 2008 and 2009**
- **Develop a new Communication Plan for the NHEP in 2008**

Progress toward each of these goals over the course of the year (July 2007-April 2008) is reported below.

>> GOAL: Continue implementation of the NH Estuaries Project Management Plan (Year 11 & Year 12 Work Plan Goal)

The NHEP successfully met this goal over the course of the year. In seven years of Management Plan implementation, the NHEP has initiated activities for all of its 44 highest priority action plans that are part of the Management Plan. Of these, 22 (50 percent) have been completed or fully implemented, in the case of ongoing action plans, and 37 show greater than 50 percent completion. Of all the 98 action plans contained in the Management Plan, 35 percent are considered fully implemented.

Specific implementation activities that were completed or initiated over the course of the year to meet the Management Plan implementation goal are listed below. Activities listed were conducted by the NHEP or by project partners with NHEP funding or input. Further details of all ongoing projects (as of April 30, 2008) are included in the table at the beginning of this section.

Water Quality Projects
The following project activities were completed or supported by the NHEP:

- The City of Portsmouth completed a project to extend the city sewer service to the Pleasant Point area which is adjacent to the Back Channel area of the Piscataqua River. Seventeen homes in the area had been using septic systems to treat wastewater. Several of these systems were failing and several more were

near failing and contributing to water quality problems. The project included the installation of a low pressure sewer in the Pleasant Point area connecting to an existing gravity sewer on New Castle Avenue. Homeowners were responsible for tying into the sewer services at the edge of their property line. This project was identified as a priority Action Item in the Total Maximum Daily Load Study for Bacteria in Little Harbor, New Hampshire. The project was funded in part by a grant from the NHEP, a State Revolving Fund loan, City sewer system revenues, and private participation. [NHEP funds in the amount of $30,000 were fully utilized]

- Three projects were completed through the municipal illicit detection and elimination grant program funded by NHEP and administered by NH Department of Environmental Services. The Town of Durham surveyed fifty-nine outfalls for illicit discharges - none were discovered. The City of Rochester eliminated a residential direct sewage discharge into the Salmon Falls River. The Town of Exeter, in coordination with the Seacoast Stormwater Coalition, developed and implemented a training program to assist municipal stormwater program supervisors with illicit discharge detection and remediation, and pollution prevention/good housekeeping practices. Two hundred forty seacoast area individuals (primarily public works staff) were trained through the project. (See http://www.nhep.unh.edu/resources/pdf/2006_coastal_illicit-nhdes-08.pdf.) [Projects utilized $20,330; remaining balance of $17,170 reallocated to the 2008 Coastal Watershed Land Transaction Grant Program (approved by NHEP Management Committee in October 2007)]

- The NHEP supported municipal officials' attendance at three of the workshops hosted by the UNH Stormwater Center in 2007.

- The NHEP's water pollution reporting guide was reprinted in fall 2007, with partial funding from the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET). The 1,000 copies were distributed to watershed groups, communities, and civic groups. (See http://www.nhep.unh.edu/resources/pdf/identify_and_report-nhep-07.pdf.)

Shellfish Projects
The following project activities were completed or supported by the NHEP:

- The NHEP funded the University of New Hampshire (Ray Grizzle) for a two year oyster restoration project in Great Bay. Between July 1, 2007, and April 30, 2008, UNH successfully created twelve "mini-reefs" with remotely set oyster spat. These mini-reefs are expected to add 1.75 acres of viable oyster reef to the Great Bay Estuary. UNH also received funding from the New Hampshire Charitable Foundation for one year of shell recycling and oyster conservationist programs. Oyster populations and beneficial use by other species will be monitored at the constructed reefs through the spring of 2009. [Ongoing project:

$58,096 NHEP funds budgeted, with additional funds in the amount of $33,906 from NH Coastal Program]

- Rutgers University completed testing of 100 oysters from 5 beds for the diseases MSX and Dermo in 2007. Samples were collected by the NH Fish and Game Department (NHFGD). NHFGD analyzed the data and produced a summary report (see http://www.nhep.unh.edu/resources/pdf/testing_of_great-nhf&g-08.pdf).

- The NH Department of Environmental Services (NHDES) prepared a final report for the 2006 Gulfwatch Program (see http://www.nhep.unh.edu/resources/pdf/shellfish_tissue_monitoring-nhdes-08.pdf). The report summarized the concentrations of toxic contaminants in the tissue of blue mussels from various locations in the estuary. NHDES completed the annual monitoring of mussel tissue for toxic contaminants as part of the Gulfwatch Program in 2007. Mussel samples were collected from five stations in October 2007. In addition soft-shell clams were collected from Hampton-Seabrook Harbor and Little Bay and oysters collected from Great Bay. The clam and oyster tissue will be analyzed for toxic contaminant using the Gulfwatch protocols. NHEP staff organized and participated in the field collection and laboratory preparation of samples.

- In November 2007, the NHEP provided comments in support of changes to the oyster harvesting regulations for NHFGD. The harvest limit was reduced from one bushel to one-half bushel. NHFGD also requested that harvesters voluntarily avoid the Nannie Island bed.

- The NHDES Shellfish Program implemented its program consistent with NSSP guidelines in 2007 and 2008. The program benefited from the NHEP-led efforts to secure non-federal funding ($175,000 of state general funds per year) beginning in state fiscal year 2007.

Land Use/Habitat Protection Projects
The following project activities were completed or supported by the NHEP:

- Support for the Natural Resources Outreach Coalition (NROC) continued in 2007 and early 2008. NHEP staff participated in NROC planning meetings and assisted with community outreach and project facilitation. NHEP staff are working directly with Raymond and will administer community grants for Milton and Hampton in 2008.

- The Community Technical Assistance Program continued in 2007 and 2008. Eleven projects were completed in Round 1 of the program: Brentwood, Durham, Fremont, Greenland, Kingston, Newfields, Newmarket, New Durham, North Hampton, Northwood, and Portsmouth (see http://www.nhep.unh.edu/resources/pdf/community_technical_assistance-nhep-

08.pdf for more information on each community project). The projects resulted in the following products and outcomes:

- Wetlands evaluations conducted in two communities and assistance provided for designating 53 wetlands as prime wetlands in those two communities
- Development of five new or revised ordinances/regulations improving wetlands protection, stream buffer protections, and/or stormwater management
- Conservation lands inventories, baseline documentation, and development of monitoring plans for town-held easements and/or stewardship plans for town-owned conservation lands in five communities
- Development of conservation/open space plans in two communities

Applications for Round 2 of CTAP were accepted through September 2007. Four applications were received and projects were initiated in Chester, Exeter, Hampton Falls, and Sandown. In November 2007 the NHEP reissued a request for qualifications for organizations to serve as Technical Assistance Providers for the program beginning with Round 3 of the program. Fourteen applications were received and all were accepted for the program. In January 2008, the NHEP released the community application for Round 3 of the program. Eight communities applied for assistance through the program between January 2008 and April 2008 and projects are underway.

- In 2007 the Center for Land Conservation Assistance completed its administration of the Coastal Watershed Land Protection Transaction Fund to reimburse municipalities and conservation organizations for 50 percent (up to $3,000) of the transaction costs associated with land protection projects (e.g., survey, deed research, legal fees, etc.) in the coastal watershed. Projects completed between May 2005 and April 2007 were eligible for funding. Through the program, 28 grants were made to assist with transaction costs for projects that ensured permanent protection of 2,220 acres in 15 different communities within the coastal watershed (see http://www.nhep.unh.edu/resources/pdf/land_conservation_transaction-clca-07.pdf for more information). [NHEP funds in the amount of $70,000 were fully utilized]

  In 2008, the Transaction Grant Fund was continued, although it is now administered by the NHEP directly. The program specifications, eligibility requirements, and application materials were developed by the NHEP and information was distributed to land trusts, municipalities, and other conservation organizations in the coastal watershed. [Ongoing project: ~$40,000 NHEP funds budgeted for 2008]

- The NHEP continued to assist a number of communities with prime wetlands designation. The NHEP previously funded wetlands inventories and evaluations in Hampton, Hampton Falls, Portsmouth, Brentwood, Newfields, and Fremont. The NHEP is supporting an ongoing wetlands evaluation project in Sandown. In

early 2008, four communities (Hampton Falls, Portsmouth, Brentwood, and Fremont) approved prime wetlands designation for their highest value wetlands. This included 63 wetlands (estimated at 5,213 acres). Newfields' residents voted down the designation. Hampton and Sandown should complete the designation process in 2009.

- The NHEP organized a workshop on buffer protection in the fall of 2007. The workshop provided information on the importance of riparian and wetland buffers and local options to improve regulatory protection. The workshop consisted of a 40-minute presentation on the functions and values of buffers and the importance of protecting lower order streams; a regulatory exercise that involved mapping buffers of different widths on a parcel slated for development; an assessment of towns' existing buffer protection regulations; and a discussion of actions community members could take to improve municipal buffer protections (see www.nhep.unh.edu/resources/pdf/workshop_on_protecting-nhep-08.pdf to report with workshop session materials). Several other organizations collaborated in the development and delivery of the workshops. The workshop was given three times, reaching over 75 people.

- The Strafford Regional Planning Commission (SRPC) worked with two towns to improve buffer protections and management. In the Town of Wakefield, SRPC worked with the Acton Wakefield Watersheds Alliance to develop a buffer evaluation form to assist property owners assess the condition of their riparian buffers and a buffer brochure describing the value of buffers. SRPC worked with the City of Somersworth planning staff and the conservation commission to develop a draft riparian and wetland buffer ordinance to replace an existing wetland conservation district ordinance. The draft ordinance proposed a 250-foot buffer for all surface waters, including a 25-foot naturally vegetated buffer area with no disturbance. [Projects utilized $2,396; remaining balance of $1,319 reallocated to the 2008 Coastal Watershed Land Transaction Grant Program (approved by NHEP Management Committee in October 2007)]

Habitat Restoration Projects
The following project activities were completed or supported by the NHEP:

- The Rockingham County Conservation District, in partnership with the University of New Hampshire, New Hampshire Estuaries Project, New Hampshire Coastal Program, U.S. Fish and Wildlife Service, New Hampshire Audubon, Town of Rye, Natural Resources Conservation Service, and Corporate Wetlands Restoration Partnership completed 24.1 acres of invasive plant species removal. [NHEP funds in the amount of $5,300 were fully utilized]

- The NHEP partially funded the New Hampshire Department of Transportation to develop a feasibility study for the Taylor River dam replacement. A draft study was produced in October 2007. This Feasibility Study proposes bridge, dam and fishway alternatives that address transportation, public safety, flood

management, water quality and fish passage issues for the Taylor River, impoundment, dam, and the existing I-95 bridge. The Feasibility Study reviews options to restore anadromous fish passage within the affected portion of the Taylor River; attain recommended measures for dam safety (through either dam removal or replacement with fish passage); and evaluate requirements for replacement of the I-95 structure. In March 2008, NHEP staff reviewed and commented on the draft Feasibility Study and proposed work plan for additional monitoring. [NHEP funds in the amount of $38,000 were fully utilized]

- The NH Fish and Game Department (NHFGD) plans for repairs to the fishways on tidal dams on the Lamprey, Cocheco, Oyster, and Exeter rivers were stalled in FY08. NHFGD was unable to execute a Memorandum of Agreement between NHFGD, the City of Dover and the NHDES Dam Bureau for the Cocheco River restoration work. The NHEP extended the deadline for use of NHEP funds until 6/30/08 to give NHFGD time to execute the necessary agreements and complete the restoration work. [Ongoing project: $25,000 NHEP funds budgeted]

- The NHEP is supporting the UNH Marine Program to develop a restoration compendium for the Hampton-Seabrook Estuary (HSE). The HSE plays a vital role in the life history of many marine and coastal resources. Habitats and species selected as restoration targets in the first phase of this project will include salt marshes, diadromous fishes, and sand dunes. Using the site selection model developed in the Great Bay Estuarine Restoration Compendium, the project will gather available data to identify multi-habitat restoration opportunities in the HSE. As of December 31, 2007, all of the data compilation tasks for this project were complete. UNH has started the change analyses for salt marsh, sand dune, and diadromous fish habitat. The final report, due in September 2008, will consist of a summary report, a series of maps and a database of all data and associated metadata to provide detailed information to help guide future restoration projects in the HSE. [Ongoing project: $1,906 NHEP funds budgeted, with additional funds in the amount of $26,094 from NH Coastal Program]

- The NHEP was part of a core group that initiated the Partnership to Restore New Hampshire's Estuaries in 2007. The Partnership consists of nine organizations with an interest in coastal habitat restoration in New Hampshire. Efforts in 2007 and early 2008 included convening stakeholder groups to identify barriers and opportunities to improve the pace and scale of restoration projects; developing a Memorandum of Understanding for participating agencies and organizations; and developing criteria to identify high priority projects for the Partnership to pursue. The NHEP will continue its participation in the Partnership in 2008.

Education/Outreach Projects and Activities

The following project activities were completed or supported by the NHEP:

- *Local Grants Program for 2008* – An RFP was issued on June 29, 2007 and four proposals were received by October 1, 2007. A review team of four Management Committee members and NHEP staff reviewed and ranked the proposals received. The top three ranked proposals were recommended for full funding. The proposal ranked fourth was not recommended for funding. The approved projects were funded at a total cost of $24,075. The Local Grants Program relates to Action Plan EDU-03, which funds activities that support Management Plan implementation. Grants were awarded to the support the following projects in 2008:
    - Isinglass River Conservation Corridor Project (Bear-Paw Regional Greenways) – Support for the administrative work associated with protection of 288 acres of high conservation value forestland along the Isinglass River in the Town of Strafford.
    - Water Resource Management: Shoreland Buffer Ordinance & Stormwater Treatment Technologies (Town of Northwood) – Research and recommend appropriate storm water management treatment technologies in the town of Northwood and create a municipal shoreland buffer ordinance to protect surface waters within the town.
    - Develop Shoreland Protection and Riparian Buffer Regulations for the Town of Raymond's Headwater and Lower Order Streams (Southern New Hampshire Planning Commission) – Implement a public outreach program and develop buffer regulations for the Town of Raymond to protect all buffers to surface waters.

- *VIP Boat Tours* – Two tours of the Great Bay Estuary aboard the UNH Gulf Challenger were offered to coastal watershed planning board and conservation commission members and guests. On September 19, 2007, the 3-hour tour included 36 participants. Presentations were given on NHEP programs, DES Volunteer Biological Assessment Program, GBNERR's Coastal Training Program, and eelgrass research. On September 29, 2007 (National Estuaries Day), the tour included 38 participants. Presentations were given on NHEP programs, stormwater management, NHDES monitoring programs, and research activities conducted by the Great Bay National Estuarine Research Reserve.

- *Be Part of the Solution: Water Pollution Identification and Reporting Campaign* – Distribution of the materials printed in May 2007 continued with guides and posters (guides/posters) being sent in July 2007 to Town of Seabrook (30/20), Oyster River Watershed Group (30/20), NHDES Volunteer River Assessment Program (30/20), Gundalow Company (25/25), Great Bay National Estuarine Research Reserve (25/50), Surfrider Foundation (21/5) and Advocates of North Mill Pond (20/0).

  A second edition of the guide was produced in November 2007 with funding assistance from the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET). One thousand copies were produced and a total of 560 have been distributed to 10 organizations, with the most going to

the Exeter River Local Advisory Committee (100), the NHDES Volunteer River Assessment Program (100), and Strafford County Conservation District (50). All of the coastal watershed groups received copies.

- *Be Part of the Solution: Designation Prime Wetlands Campaign* – The NHEP produced posters and bookmarks with information on the functions of wetlands and the process of prime wetlands designation to assist communities' efforts. Packets of three campaign posters and 50 campaign bookmarks were sent to the Conservation Commissions in 6 communities (Fremont, Brentwood, Newfields, Hampton, Hampton Falls, and Sandown). Approximately 50 posters were distributed to attendees at the UNH University Day on September 18, 2007. The NHEP designed an electronic announcement for a prime wetlands designation workshop for planning officials organized by the Rockingham Planning Commission on January 23, 2008 in Exeter, NH. Ten posters and 25 bookmarks were distributed at the workshop. Three hundred bookmarks were requested by the Town of Fremont for distribution. The NHEP designed and mailed a flyer to all residents of Newfields to encourage the passage of the prime wetlands designation at town vote in March 2008.

- *Marine Invasive Species Outreach Campaign* – The NHEP assisted a grantee conducting monitoring research with implementation of a marine invasive species (MIS) outreach effort. The NHEP designed and produced MIS outreach campaign materials to encourage commercial fishermen to report catches of the Chinese mitten crab (*Eriocheir sinensis).* The MIS materials include a wallet-sized waterproof container, identification stickers, and magnets that can easily adhere to fishing boat structures. The NHEP partnered with NH Sea Grant to distribute 500 packets of MIS information and to conduct a MIS seminar for local commercial fishermen. The campaign also was adopted by other organizations including Maine Coastal Program, Casco Bay Estuary Partnership, MIT Sea Grant, RI Coastal Resources Management, CT Sea Grant, and NY Sea Grant. Through this unique coordinated effort, 4,000 units were produced are being distributed throughout New England.

- *Eye On Estuaries* – Seven articles on estuarine issues related to NHEP Management Plan implementation were published from July 2007 to April 2008. Two were published in the Portsmouth Herald and five were published in the Fosters Daily Democrat. Topics included wetland ordinance development (July 07), data collection buoys (August 07), toxicity of lead in the estuary (Dec 07), horseshoe crab ecology (Jan 08), climate change (Feb 08), forested wetland conservation (Mar 08), and stormwater management by homeowners (April 08). Changes in the organizational structure were cited by Portsmouth Herald Editor when asked why three stories were not published in late 2007. In December 2007, the NHEP agreed to a verbal agreement with Foster's Daily Democrat to publish the monthly column in that paper's science section.

- *Septic System Outreach* – In January, 139 community representatives were emailed an offer for septic system maintenance folders. A total of 500 septic system maintenance folders were sent by request in January and February 2008 to six communities that responded: Sandown (100), Exeter (100), Madbury (100), Fremont (100), and Stratham (100).

- *Website* – Regular website updates were made by NHEP staff and the site continues to be a significant clearinghouse for NHEP program information and final project reports.

- *Estuaries Update* – Each month an electronic newsletter highlighting recent activities, new publications, and upcoming events was sent to an average of 614 email addresses.

- *Press Releases* – The NHEP produced nine press releases and required grantees to create and send at least one press release that highlighted their NHEP-funded project activities. From July 2007 to April 2008, eight stories ran in the Seacoast Newspapers, and four ran in the Foster's Daily Democrat that referenced the NHEP. Other publications that covered NHEP stories included The Wire, Union Leader, and Carriage Towne News.

Monitoring Projects
The following project activities were completed or supported by the NHEP:

- The NHEP funded water quality monitoring in the tributaries to the Great Bay Estuary. In 2007, the sampling was performed by the New Hampshire Department of Environmental Services. Samples were collected from ten river stations monthly from March 1 to December 31. The results were summarized in a final report on March 31, 2008 (see www.nhep.unh.edu/resources/pdf/ambient_rivers_monitoring_des-07.pdf). For the 2008 season, the tributary monitoring effort will be conducted by the UNH Water Quality Analysis Laboratory. Field data collection began in March 2008.

- The NHEP funded the UNH Marine Program for eelgrass habitat mapping. In the past year, UNH acquired aerial imagery in August 2007 and generated maps of eelgrass habitat for 2006 (final report pending). During the spring of 2008, UNH will prepare eelgrass maps for 2007.

- The NHEP partially funded the UNH Marine Program to maintain and operate a network of datasondes in the Great Bay Estuary to monitor water quality. In 2007, datasondes were installed in Great Bay, Squamscott River, Lamprey River, Oyster River, Portsmouth Harbor, and the Salmon Falls River. The NHEP is funding a similar effort in 2008. Equipment preparations and datalogger installations were completed during the spring of 2008.

- The NHEP funded the UNH Marine Program to collect water quality data on nutrients, particulates, bacteria, and water clarity at trend stations in the Great Bay Estuary. Monthly data were collected a nine trend stations. Summer bacteria samples were collected at another five stations. The NHEP is funding a similar effort in 2008. Field data collection began in January 2008 and will continue until December 2008.

- NHEP staff began to collect samples from ten coastal wastewater treatment facilities for total nitrogen analysis. Sampling began in February 2008 and will continue through December 2008. A total of ten samples will be collected from each facility at approximately monthly intervals.

- The NHEP coordinated with MIT Sea Grant, Massachusetts Bays NEP, and Casco Bay NEP to complete a rapid assessment survey for marine invasive species along the northern New England coast. The New Hampshire component of the survey occurred on July 27, 2007. NHEP staff assisted with logistics, sampling, and media.

- Throughout the year, the NHEP Coastal Scientist continued to manage the Quality Assurance Project Plan (QAPP) development and approval process for all relevant NHEP projects. QAPPs were prepared for the NHEP wastewater treatment facility monitoring and the UNH tributary monitoring programs. Both QAPPs were approved by EPA.

- In 2007, the NHEP prepared a proposal to EPA Region 1 in the amount of $70,000 to install light sensors on the Great Bay buoy and to collect hyperspectral imagery of the Great Bay Estuary. The proposal was funded and the project was implemented by the UNH Marine Program (Ru Morrison). Data collection occurred between July 1 and November 30, 2007. A final report is due on June 30, 2008.

- In 2008, the NHEP prepared a proposal to EPA Region 1 in the amount of $15,000 to use the hyperspectral imagery of the Great Bay Estuary to map eelgrass and macroalgae populations.

>> GOAL: Continue implementation of the Monitoring Plan and ongoing environmental assessments (Year 11 & Year 12 Work Plan Goal)

The NHEP achieved this goal by implementing its monitoring programs, completing assessments of estuarine condition, and participating in regional monitoring efforts (specific projects and initiatives are listed in the previous section – Monitoring Projects).

The NHEP continued to implement core monitoring programs for water quality in tributaries, eelgrass habitat, water quality in the estuary, oyster diseases, and toxic contaminants in shellfish tissue. All of these programs were successfully completed in

2007 and funded for 2008. Data quality for these projects is assured through a set of quality assurance project plans and an annual quality assurance audit by the NHEP Coastal Scientist. Valid water quality monitoring results are imported to the NHDES Environmental Measurement Database (EMD). The EMD is the central repository for water quality data used in the State of the Estuaries Report and the Section 305(B) Surface Water Quality Reports. The EMD is accessible by the public through the internet. Moreover, data from the EMD is uploaded to EPA's national water quality data repository, WQX. Geographic data for eelgrass habitat are tagged with FGDC metadata and uploaded to the state GIS repository, NH GRANIT.

The NHEP Coastal Scientist produced several assessments of estuarine conditions during the past year. A manuscript on water quality trends in the estuary as measured by the National Coastal Assessment probability-based surveys was accepted for publication in the Journal of Environmental Monitoring and Assessment. The NHEP published a summary report of hydrologic parameters for the estuaries (see http://www.nhep.unh.edu/resources/pdf/hydrologic_parameters_for-nhep-07.pdf). The NHEP Coastal Scientist presented data on water quality and eelgrass at the Estuarine Research Federation conference on November 8, 2007 and the New England Estuarine Research Society on May 1, 2008. Finally, the NHEP conducted research on economic valuation indicators which might be appropriate to add to the Monitoring Plan.

The NHEP Technical Advisory Committee (TAC) continued to play an integral role in the development and implementation of the Monitoring Plan. The TAC assists with analyzing and interpreting monitoring data, formulating recommendations for management strategies, evaluating and revising the Monitoring Plan and goals, and identifying data gaps and research needs. The TAC met on December 7, 2007, to discuss numeric nutrient criteria for the estuaries. This subject has been a focus area for the TAC since 2005 when the TAC was designated as the forum for discussions about development of nutrient criteria for NH's estuarine waters. The NHEP Coastal Scientist spent significant time acquiring and analyzing data that will be used in the development of recommendations for numeric nutrient criteria for New Hampshire's estuaries. Materials on this subject are available at:
http://www.nhep.unh.edu/programs/nutrient.htm

>> GOAL: Prepare 2007 Progress Report (Year 11 Work Plan Goal)

The NHEP achieved this goal in 2007. Published in September, the 2007 Progress Report describes progress made toward implementing the NHEP Management Plan. The report summarizes status of environmental and administrative indicators that correspond to previously defined management objectives and provides completion ratings assigned for each of the Action Plans contained in the Management Plan. The report was developed with input from the NHEP's project team members and the Management Committee. The report is available on-line:
http://www.nhep.unh.edu/resources/pdf/2007-nhep_progress-nhep-07.pdf

>> GOAL: Review options for incorporating the Maine portion of watershed into the NHEP focus area (Year 11 Work Plan Goal)

The NHEP achieved this goal in 2007. In January 2007, the NHEP Management Committee created a subcommittee to study the advantages and disadvantages of expanding the program's study area to include the Maine portion of the Great Bay Estuary watershed. NHEP staff conducted research and provided support to the subcommittee. The subcommittee met on February 20, 2007 and July 17, 2007 to guide and review research conducted by staff. NHEP staff prepared a draft white paper that the subcommittee reviewed in November 2007. The white paper was a comprehensive summary of research conducted by staff and comments provided by the subcommittee. Factors determined to be important in consideration of program expansion included geographic extent; potential partners; reciprocal interest; environmental justification; impacts to the Monitoring Program, Management Plan and management structure; potential financial losses or gains; name/branding; consistency with federal initiatives; and options for expansion. NHEP staff and the subcommittee recommended incorporating the Maine portion of the Great Bay Estuary watershed into the NHEP's study area using a 3-year phased approach.

The white paper and expansion recommendation was presented to the full Management Committee at its December 2007 meeting. The committee unanimously supported the program's expansion into the Maine portion of the watershed.

>> GOAL: Implement the Fund Development Plan to secure additional funding to implement Management Plan priorities (Year 12 Work Plan Goal)

The NHEP made progress on this goal in 2007 and early 2008. The Fund Development Plan, completed in May 2007, outlines a series of actions to be undertaken to diversify and grow the funding available to implement the NHEP Management Plan. NHEP staff completed the following actions to implement the Fund Development Plan:

- Met with UNH Foundation program staff to review support available through the UNH Foundation
- Met with UNH representatives to discuss the State budget and appropriations process, and prospects for pursuing state funding for the next budget cycle
- Initiated discussions with New Hampshire Charitable Foundation (NHCF) staff to review NHEP programs and cooperative funding opportunities. Meetings led to a $25,000 NHCF gift award to the NHEP in September 2007 to support the Community Technical Assistance Program. Subsequent targeted discussions resulted in a second $25,000 gift award to the NHEP in February 2008 to support initial efforts to integrate the Maine part of the Great Bay Estuary.
- Submitted four supplemental project proposals:
    - Proposal to EPA Region 1 Water Quality Program for $70,000 to install light sensors on the Great Bay buoy and to collect hyperspectral imagery of the Great Bay Estuary. The proposal was funded at the requested amount.

- Proposal to the New Hampshire Charitable Foundation for $19,000 to conduct a review and inventory of town-by-town natural resource protection measures (regulatory and non-regulatory). Awards have not been announced.
- Proposal to EPA Region 1 Water Quality Program for $15,000 to map eelgrass and macroalgae in the Great Bay Estuary using the hyperspectral imagery collected in fall 2007. Awards have not been announced.
- Proposal to EPA Headquarters for $50,000 plus technical assistance through its Climate Ready Estuaries Program to conduct an assessment of climate change impacts in the freshwater portion of the Oyster River watershed relative to increased storm events and flood conditions.

>> GOAL: Conduct a strategic planning process in 2007 to guide activities in 2008 and 2009 (Year 12 Work Plan Goal)

This goal was not met. The strategic planning process was not initiated in 2007. Plans are underway to complete it in 2008 with the assistance of a facilitator that has been selected by the NHEP.

>> GOAL: Develop a new Communication Plan for the NHEP in 2008 (Year 12 Work Plan Goal)

Progress toward completing this goal is underway. Preparations for another NHEP Communication Plan were initiated and included completion of a survey of Planning Board and Conservation Commission members in the NHEP study area communities by the University of New Hampshire Survey Center. Survey data on perceived credibility, awareness of NHEP assistance programs, preferred methods of receiving information, and demographics on this key audience will be used to design effective communication strategies that will improve program efficiency and Management Plan implementation.

The 2008 Communication Plan will be completed after the NHEP undertakes its strategic planning process.

Factors affecting accomplishment of previous year's goals

The major factor affecting project implementation between July 2007 and April 2008 was a five-month NHEP position vacancy (August through December). During that time, the NHEP Director assumed primary responsibility for administration of the Community Technical Assistance Program, Natural Resources Outreach Coalition projects, and development and implementation of a buffer workshop for municipal officials. As a result of the workload reallocation and time needed to initiate and complete the hiring process, certain activities were not completed as planned. Specifically, the strategic planning

process intended for late fall/early winter was not completed and was delayed until the summer of 2008. In addition, the NHEP Director was unable to participate in the fall National Estuary Program meeting in San Juan, Puerto Rico.

Another factor affecting implementation involved fluctuating funding levels and funding uncertainties. The threat of National Estuary Program funding at or near the President's budget request level for FY08, which would have equated to roughly $250,000 per program, made long-term planning difficult. In addition, many federally funded programs that have supported NHEP partners' work have had across-the-board reductions. This is affecting capacity of other partner organizations and the amount of funding available to implement monitoring, protection and restoration projects in New Hampshire's coastal watershed. To address some of these issues the NHEP is attempting to diversify some of its funding sources for its work.

III. Progress in Implementing EPA's Priority Clean Water Act Programs

The NHEP had a central role in implementing several of EPA's Clean Water Act programs including stormwater, wetlands protection, water quality monitoring, and water quality standards.

CWA Priority Program: Stormwater

The NHEP Management Plan includes seventeen Action Plans that relate to stormwater management issues. Approximately half of the 42 communities in the NHEP area are subject to Phase II Stormwater Program requirements, so the NHEP's assistance to communities in implementing the Management Plan also assists them with Phase II compliance. From 2001-2007, the NHEP funded municipal projects to map stormwater systems and detect and remediate illicit discharges to stormwater systems. The NH Department of Environmental Services (NHDES) managed the grant program for the NHEP and also provided technical support to municipalities in developing projects. Over the last year, three illicit discharge detection and elimination projects initiated from the 2006 grant program were completed. The program was not continued in 2007 because of reduced funding.

The NHEP also provided training opportunities and technical assistance to help communities with other aspects of stormwater management. UNH houses the Stormwater Center, a field testing facility that demonstrates the effectiveness of over a dozen stormwater management systems and best management practices. Periodically workshops are offered by the UNH Stormwater Center, where participants can view the facility and discuss the effectiveness of each system based on monitoring data collected for each rain event. The NHEP promoted the workshops to communities (planning boards, conservation commissions, and public works departments) and covered the costs for them to participate in the workshops in 2006-2008. In addition, the NHEP in partnership with NHDES funded a series of training programs in 2007 to assist municipal employees in removing illicit discharges and minimizing stormwater pollution from municipal operations. Eight good housekeeping/pollution prevention workshops were held for municipal employees (primarily public works staff), and over two hundred staff attended.

The NHEP Community Technical Assistance Program (CTAP) offers free consulting assistance to communities on a number of stormwater management topics, including development of town regulations and ordinances to limit stormwater runoff, training on stormwater management designs and calculations, development of community outreach programs on stormwater, and production of community build-out scenarios. Two community stormwater projects were completed through CTAP: (1) Durham: stormwater ordinance development and impervious surface build-out analysis, and (2) Chester: recommendations to strengthen existing ordinances to better address stormwater management.

CWA Priority Program: Wetlands Protection

Twenty-three Action Plans from the NHEP Management Plan directly address wetlands and/or buffer protections at the community level. The NHEP has undertaken many activities to address these Action Plans. In New Hampshire, communities can provide greater protection to important wetlands by designating them as Prime Wetlands. The Prime Wetlands Designation process was developed by the State, and it includes a comprehensive inventory and functional evaluation of towns' wetlands, public input, approval at town meeting, and approval by the state. Over the last year, the NHEP supported projects related to prime wetlands designation in seven communities (Portsmouth, Fremont, Brentwood, Newfields, Hampton Falls, and Sandown). For each, the NHEP provided funding for certified wetlands scientists to inventory towns' wetlands and evaluate them for 14 different wetland functions and provided outreach assistance and materials. Four of the communities designated their high quality wetlands as prime wetlands over the last year, resulting in additional regulatory protection for 63 high value wetlands totaling approximately 5,213 acres.

The NHEP organized a workshop on buffers in the fall of 2007. The workshop provided information on the importance of riparian and wetland buffers and local options to improve regulatory protection. The workshop was given three times, reaching over 75 people.

The NHEP provides technical assistance to communities on buffer protection projects, including wetland buffers. The NHEP Community Technical Assistance Project offers free consulting assistance to communities on a number of wetlands buffers projects, including development or amendment of buffer protection ordinances or subdivision and site plan regulations to improve buffer protections, prime wetlands designation, and development of town outreach programs on buffer maintenance and protection. In early 2008, three communities applied for assistance on buffer protection projects and projects are underway in Brentwood, North Hampton, and Milton.

CWA Priority Program: Monitoring

Each year, the NHEP funds a variety of monitoring programs. The programs provide information on water quality, shellfish resources, aquatic habitat, and land use in the coastal watershed. The NHEP monitoring programs were developed to complement existing monitoring programs of other agencies and fill critical data gaps. The major monitoring programs that were supported this past year by the NHEP are:

- Tributary monitoring – monthly monitoring of water quality at the seven major tributaries to Great Bay (conducted by UNH)
- Eelgrass mapping – annual aerial surveys and mapping of the eelgrass distribution in the Great Bay estuary (conducted by UNH)
- Gulfwatch – annual monitoring of toxic contaminants in shellfish tissue (conducted by NHDES and UNH)
- Datasonde program – support for the maintenance and deployment of datasondes with in-situ dissolved oxygen probes to monitor daily trends in dissolved oxygen at key locations in the estuary (conducted by UNH)
- Oyster disease monitoring – annual monitoring of the prevalence of oyster diseases at the major oyster beds (conducted by NH Fish and Game and

Rutgers University)
- Nutrient monitoring – testing for particulate nitrogen and phosphorus species to complement the dissolved nitrogen and phosphorus monitoring conducted by other programs (conducted by UNH)
- Probability-based monitoring – testing for water quality in New Hampshire's estuaries using the National Coastal Assessment protocols

In addition to data collection, the NHEP Monitoring Program contains a rigorous data analysis component. Data from the NHEP programs and data from other agencies are combined to calculate a suite of environmental indicators. The indicators are used to inform the NHEP Management Committee of the status and trends of environmental conditions in the estuary. The indicators are also used in the triennial State of the Estuaries Report, which is the NHEP's main outreach piece on environmental progress.

The NHEP Monitoring Program supports Clean Water Act core programs in many ways. The water quality data are imported to the NHDES Environmental Monitoring Database and used in Section 305(b)/303(d) assessments. The 305(b)/303(d) assessment process is the heart of the Clean Water Act. In addition, NHEP monitoring data have been used in two Total Maximum Daily Loads (TMDLs): Hampton Harbor TMDL and Little Harbor TMDL.

CWA Priority Program: Water Quality Standards/Numeric Nutrient Criteria Development

Starting in 2005, the NHEP has taken the lead role for establishing nutrient criteria for New Hampshire's estuaries. In 1998, the U.S. Environmental Protection Agency (EPA) published the Clean Water Action Plan to improve the water quality in the nation's lakes, rivers and estuaries. One component of this plan was the development of numeric criteria for nutrients in water bodies. National criteria were not considered appropriate due to the variety of water bodies across the country. Therefore, EPA asked each state to develop numeric nutrient criteria for its own water bodies. EPA provided the states with technical guidance for developing nutrient criteria for lakes, rivers and estuaries.

In New Hampshire, the NH Department of Environmental Services is responsible for developing nutrient criteria for NH's estuaries. In 2005, the NHEP Technical Advisory Committee agreed to take on this task. The NHEP workgroup adopted eelgrass survival as the water quality target for nutrient criteria development for NH's estuaries. Eelgrass survival is largely dependent on light availability. The NHEP Coastal Scientist has undertaken a review of the water clarity data for NH's estuaries. The NHEP applied for and received funds from EPA to install light sensors on an instrument buoy in the middle of Great Bay and to obtain hyper-spectral imagery for the estuary. The NHEP is in the process of analyzing these data and compiling water quality data from 2007 from its other monitoring programs. Information from the workgroup meetings is available at www.nhep.unh.edu/programs/nutrient.htm.

The NHEP will develop recommendations for nutrient criteria by December 31, 2008.

IV. Summary of Meetings, Milestones, and Events

July 2007-April 2008	• Estuaries Update emailed monthly • Community Technical Assistance Program: 11 projects completed through Round 1; 4 projects initiated through Round 2; 7 applications received for Round 3 • NHEP's Eye on Estuaries newspaper column runs seven times • Regular NHEP participation on three Legislative Study Commissions: Great Bay Estuary Commission (wastewater issues), Great Bay Siltation Commission, and Tidal Energy Study Commission • NHEP participates in a dozen planning meetings to form the Partnership to Restore New Hampshire's Estuaries
July 2007	• NHEP Hosts Marine Invasive Species Rapid Assessment Survey • Local Grants Program Request for Proposals issued (first emailed 6/29/07)
August 2007	• NHEP presentation of Great Bay environmental indicator data at a UNH Cooperative Extension Workshop hosted by Great Bay NERR • NHEP presentation at Moose Mountain Regional Greenways Woods, Water, and Wildlife Festival • NHEP Offices move from Hewitt Annex to Nesmith Hall on campus • Annual Governmental Performance and Results Act (GPRA) reporting to EPA
September 2007	• Two V.I.P. Tours of the Great Bay Estuary (one on National Estuaries Day) • NHEP 2007 Progress Report completed
October 2007	• Four Local Grants Program proposals received • Gulfwatch fieldwork and lab work completed • NHEP Management Committee Meeting • NHEP Public Outreach and Education Team Meeting • NHEP Buffer Workshop in Greenland, NH
November 2007	• NHEP Buffer Workshops in Rochester, NH and Manchester, NH • NHEP Nutrient Criteria Presentation at 2007 Estuarine Research Federation Conference • NHEP Survey Sent to Planning Board and Conservation Commission members • Three projects selected for 2008 Local Grants Program • NHEP launches Be Part of the Solution: Designate Prime Wetlands campaign • RFQ issued for Technical Assistance Providers
December 2007	• NHEP Technical Advisory Committee Meeting • Round 3 of Community Technical Assistance Program funding announced • NHEP Management Committee Meeting: NHEP Study Area expanded to include 10 Maine communities
January 2008	• 14 organizations respond to RFQ for Technical Assistance Providers • NHEP provides testimony in support of LID stormwater devices proposed at large commercial development in Greenland, NH
February 2008	• NHEP Coastal Land Protection Transaction Grant Program released • Proposal submitted to USEPA's Water Quality Program for funding support to map macroalgae and eelgrass • NHEP launches Marine Invasive Species Outreach Campaign • NHEP begins nitrogen field sampling of wastewater treatment facility effluent • NHEP attends annual National Estuary Program/USEPA Meeting in Wash, DC • Proposal submitted to NH Charitable Foundation to review municipal regulations and conservation strategies throughout the 52 watershed towns
March 2008	• NHEP gives nutrient criteria presentation at regional forum on eelgrass in Boston • NHEP Public Outreach and Education Team Meeting • NHEP submits proposal to EPA's "Climate Ready Estuaries" program
April 2008	• Draft Year 13 Work Plan circulated for review

V. Travel Report

Out-of-state travel costs supported by the NHEP over the last year are included in the following table.

Event	Location	Date	Traveler(s)	Cost
2007 Marine Invasive Species Rapid Assessment Survey	Sites in Maine, Massachusetts, and New Hampshire	July 2007	Research scientists from across the country	$5,170
Estuarine Research Federation Conference	Providence, RI	Oct. 2007	Phil Trowbridge	$1,060
Maine Marine Invasive Species Workgroup Meeting	Portland, ME	Oct. 2007	Dave Kellam	$63
National Estuary Program Annual Meeting	Washington, DC	Feb. 2008	Jennifer Hunter	$1,617
Annual Eelgrass Meeting	Boston, MA	Mar. 2008	Phil Trowbridge Derek Sowers	$60
Total Cost				**$7,970**

Additional travel costs anticipated for 2008 include travel support for the NHEP Director to attend an NEP strategic planning session in Boulder, CO; NHEP staff to attend the Restore America's Estuaries conference in Providence, RI; and NHEP staff to attend the fall NEP/ANEP meeting in New York City.