7.0 IMPLEMENTATION PROGRAM

Five components constitute the implementation program for this plan: *Organizational Structure, Information and Education, Schedule, Financial Strategy and Monitoring Program.* These components are necessary to take action and implement the suggested management measures. Much of this information comes from the Draft USEPA *Handbook for Developing Watershed Plans to Restore and Protect Our Waters* (October 2005) and the USEPA *Getting in Step: A Guide for Conducting Watershed Outreach Campaigns* (December 2003).

7.1 Organizational Structure

Section 5.0 of this plan discussed the organizational issues associated with implementing this watershed plan. It also made recommendations on how to overcome some of the institutional barriers to executing a watershed approach for managing nonpoint source pollution in the Niantic Watershed. Above and beyond the default option that each of the four municipalities must act independently to implement the recommended management measures of this plan, there must be a point person or group of people responsible for monitoring plan implementation. There are several possible approaches to meeting this need, two popular ones are listed here:

- Hire or appoint a "watershed coordinator" for the Niantic River Watershed. This position (equal to 1 full-time employee) would be dedicated to implementing this plan, *i.e.* conducting the inter-jurisdictional coordination, grant-writing and evaluation of plan implementation.
- Maintain the current project steering committee, but shift its responsibilities from planning to implementation. Its focus would be to refine the recommendations of this plan and implement them. This group may eventually be the core of a watershed partnership or coalition.

7.2 Information and Education Component

Developing and executing strategies to reach out to the variety of watershed stakeholders and raise their level of understanding about the *Niantic River Watershed Protection Plan* constitute the first component of implementation. All the management measures in this plan rely on certain groups of individuals that must be included in the watershed management process. Inclusion of these people begins by educating them about watershed issues and the proposed measures to address them.

When possible, outreach activities should build off existing efforts. Because a considerable amount of watershed educational research and development on national, state and local levels exists, there is little need to "start from scratch". For more information and additional help on I/E activities, visit http://www.epa.gov/owow/watershed/outreach/documents/getnstep.pdf.

Informational materials about the Niantic River, coastal watershed management in Connecticut and stormwater management are readily available, current and applicable to the Niantic River. Several of these resources are listed in here:

- *"The Niantic River…and what you can do to protect it"* – An educational brochure published by the Waterford – East Lyme Shellfish Commission in 2001.
- *Save the River, Save the Hills* holds regular information meetings and invites researchers and managers to come and speak about the Niantic. It also holds an annual kayak regatta.
- *Jordan Cove Watershed Demonstration Project* – This nationally-recognized project generated abundant press and educational materials that could be modified for the Niantic River Watershed.
- *Town of Waterford Stormwater Management Program Plan* – documents several current and proposed stormwater education efforts. Other towns adopt similar efforts or share the costs of implementation with Waterford.

Building off these important milestones to educate people in the Niantic River region, this plan, as recommended by the USEPA (USEPA, 2005a) proposes an Information and Education program consisting of six steps:

1. Define Information and Education goals and objectives.
2. Identify and analyze the target audiences.
3. Create the messages for each audience.
4. Package the message to various audiences.
5. Deliver the messages.
6. Evaluate the Information and Education program.

For each step, the plan proposes elements that may be considered a starting point for implementation. These are proposed elements; however it is expected that municipal staff, working along with other watershed partners, will have to customize these elements for implementation.

Step 1: Information and Education Goals and Objectives

The overarching goal of this Information and Education component is:

To increase the involvement of individuals and organizations in the protection of the Niantic River and its watershed.

Specific Information and Education goals and objectives are listed below. Some of these goals and objectives are broader than the others, some overlap, and in some cases, it may be necessary to raise awareness about a specific water quality issue. In other cases, a water quality issue may be commonly understood; therefore, the goal may be to educate people about what to do to reduce the issue. As plan implementation proceeds and Information and Education objectives are met, they will have to be updated to reflect progress and new challenges.

GOAL: Increase stakeholder awareness about the link between shellfish closures and sources of bacterial pollution in the Niantic River.

Objective 1: Within six months, complete a public outreach campaign for shoreline neighborhoods in East Lyme and Waterford about potential sources of bacterial pollution.

Objective 2: Every year implement stormwater management education and outreach measures throughout the watershed. For reference, towns could copy components of Waterford's Stormwater Management Program Plan. These components include good housekeeping tips for homeowners (*e.g.* lawn care, pet waste, wildlife), stormdrain stenciling, and household hazardous waste cleanups

Objective 3: In the Winter of 2006, hold a workshop for town elected officials and department staff to learn about the formation and implementation of a stormwater utility district.

GOAL: Increase stakeholders' level of knowledge about nutrient loading and the health of the Niantic River Estuary

Objective 1: Within six months, complete a training for relevant municipal staff and the development community about the fate and transport of nitrogen in the watershed and how best to control it through the development process in order to promote the management of nitrogen-loading in the watershed.

Objective 2: Before Spring 2007, arrange a training session for municipal staff, interested volunteers and other watershed stakeholders about monitoring water quality for nitrogen in order to create interest and knowledge for a citizen - based water quality monitoring program.

GOAL: Educate stakeholders about the watershed management approach and the Niantic River watershed.

Objective 1: Within two months of due completion, publish an executive summary of the watershed protection plan in local papers and municipal communications in order to raise awareness about the plan.

Objective 2: Within six months, hold town meetings to endorse the watershed protection plan as an advisory document to guide future land use decisions in all four watershed communities.

GOAL: Educate land use decision makers about the value of vegetated riparian buffers in the protection of water quality.

Objective 1: Within one year (included with other workshops/trainings) promote the protection of riparian buffers for the benefit of water quality and habitat protection.

Step 2: Target Audiences

Part of the Committee's or Partnership's challenge in implementing an Information and Education campaign is to identify the target audiences. Table 7.2-1 presents examples of target audiences based on watershed issues and/or management objectives.

Table 7.2-1. Watershed Issues/Objectives and I/E Target Audience

Issue / Management Objective	Potential Target Audience
General watershed education	Schoolchildren and their parents; garden clubs, neighborhood associations; fair and festival audiences
Stormwater management	Local DPW and engineering staff; planning and zoning officials; local and state transportation staff; developers/homebuilders
Proper fertilizer and home chemical use	Homeowners; garden clubs
Riparian corridor protection	Local DPW and engineering staff; planning and zoning officials; local and state transportation staff; developers/homebuilders

Step 3: Create the Messages for each Audience

Message for Bacterial Pollution/Shellfish Closures

Message for Nutrient Loading

Message for Watershed Approach

Message for Riparian Buffers

Step 4: Package the Message to Various Audiences

Once the message has been agreed upon, it is important to package it appropriately for different audiences. There are four obvious ways to package a message for watershed-related information: 1) work with the media to package, 2) develop effective print materials, 3) hold events and presentations, 4) leverage existing resources by sharing materials and cooperative efforts.

Step 5: Deliver the Message

Delivery of the message demands that the actual "messenger" be considered and appropriately selected. Below is a list of common delivery mechanism used for information and education campaigns:

- Mailing lists
- Phone calls
- Interviews
- Focus groups
- Presentations to boards, commissions, trade groups, neighborhood associations, library groups, garden clubs, *etc.*

Step 6: Evaluation of Information and Education Component

Before embarking on any facet of an information and education campaign it is critical to define the "measures of success" the group will use to determine if it

has met its Information and Education goals. Indicators, or milestones, are an excellent way to establish how success will be measured from the beginning. Indicators must be clear, realistic, and practical. For an outreach campaign, a group may consider *programmatic* or *social* indicators (Table 7.2-2):

Table 7.2-2. I/E Indicators of Success

Type of Indicator	Example Indicator	Method of Measurement
Programmatic	Number of brochures mailed	Mailing lists
Programmatic	Number of participants	Attendance lists
Social	Number of follow-up phone calls	Phone records
Social	Increased awareness of watershed issues	Pre- and post- surveys, interviews, focus groups
Social	Number of landowners requesting assistance for management practice installation	Phone records, site visits
Social	Number of landowners aware of technical and financial assistance for watershed management measures	Pre- and post- surveys, interviews

7.3 Schedule

The implementation schedule (Table 7.3-1) provides a timeframe for taking action on the plan's recommendations. For each measure, a responsible entity is identified and a presentation of the relative cost of implementation.

Table 7.3-1. Implementation Schedule

Measures	Responsible Entity	Relative Cost/Effort
Year 1		
Stormwater Management		
1. Stormwater Utility Establishment (ordinance adoption) and Administration	Board of Selectmen; Municipal departments: Planning, Zoning, DPW and Engineering	Staff time (1/2 FTE) funded by utility for SW coordinator
2. SWMPP Implementation	Municipal DPW and Engineering	$3.75 - $6.00 per citizen per year (Reese, --)
3. Stormwater Retrofits	Municipal departments: DPW and Engineering	$30 – 45K per retrofit
4. Low impact development/stormwater management alternatives	Municipal departments: Planning, Zoning, and Engineering	
Riparian Buffers		
5. Adopt a riparian buffer overlay zoning district based on delineation of perennial and associated wetlands (100 feet for larger streams; 50 feet for smaller, head water streams)	Municipalities (Selectmen, planning and zoning)	Begin with WVA maps, hire consultant or work with UCONN Cooperative Extension
6. Restore degraded riparian buffers including regarding and revegetation	Municipalities, CTDEP, NRCS, NOAA	Staff time, $5 – 100K per project, size dependent
7. Adopt management standards for existing buffers near developments, roadways and other developed areas, including demarcation	State and local transportation staff, DPWs, engineering.	Signage, training, educational materials
8. Incorporate buffer education into other watershed and NEMO training and workshops	NEMO, municipal boards and commissions	Gathering materials
Year 1		
Watershed and Land Use Planning		
9. Use drainage maps (impervious surface, priority indices) in the development review process	Planning and zoning boards and commissions	Policy change – plan adoption
10. Limit rezoning that will result in more impervious surface and/or less wetlands in critical drainage bases.	Planning and zoning staff, boards, and commissions	Ordinance change, staff time
11. Cluster and/or conservation subdivision ordinances	Montville - Planning and zoning staff, boards, and commissions	Ordinance change, staff time

Measures	Responsible Entity	Relative Cost/Effort
12. Include riparian protections and low impervious surface requirement in all development zones	Planning and zoning staff, boards, and commissions	Ordinance change, staff time
13. Hire a watershed planner/coordinator	CTDEP, SCCOG, municipalities	1 FTE ($35 – 50K annual salary)
Low Impact Development/Better Site Design		
14. LID techniques in priority areas	Planning and zoning staff, boards, and commissions	Ordinance change, staff time
15. Zoning ordinance changes to include LID techniques	Planning and zoning staff, boards, and commissions	Ordinance change, staff time
16. Hold a follow-up contractors/builders workshop	Contractors, builders, engineers	Staff time, workshop expenses
Watershed Education		
17. Continue homeowner education and outreach through presentations, events and mailings	CTDEP, NEMO, municipalities, Save the River, Save the Hills	Program funding, volunteer time, staff time
18. Expand NEMO offerings throughout watershed building over past and recent efforts	NEMO, municipalities	Staff time, workshop funding
Land Conservation		
19. Set watershed land preservation goals and targets based on available (undeveloped) land and priority watershed areas	CTDEP OLISP, municipal land trusts, private land trusts, TPL, TNC, Friends of Oswegatchie	Staff time, GIS work
20. Protect acres of priority watershed areas every year (based on goals/targets)	Municipal land trusts, private land trusts, TPL, TNC	$750,000 to $1.5 million per year
Year 1		
Stream Restoration		
21. Conduct assessments of tributaries to establish stream restoration priority locations and needs	CTDEP WPLR Fish and Wildlife, USDA NRCS, NOAA Fisheries, NOAA Restoration Program, landowners	Staff time, GIS analysis (begin with WVA analysis)
22. Recruit landowners to participate in stream restoration projects (perhaps begin on publicly-owned land)	NRCS, NOAA, landowners	Staff time, cost-share project ($25 – $200K per project, size dependent)

Measures	Responsible Entity	Relative Cost/Effort
Long-term Water Quality and Biological Monitoring		
23. Develop monitoring plan and quality assurance program plan	USEPA; CTDEP; Save the River, Save the Hills; UCONN	Staff time, start-up funds
Years 2-6		
Stormwater Management		
1. Stormwater Retrofits	Municipal departments: DPW and Engineering	$30 – 45K per retrofit
Riparian Buffers		
2. Continue restoration and educational efforts		
3. Continue educational efforts		
Watershed/Land Use Planning		
4. Continue zoning revisions and plan updates based on ordinance amendments	Municipal planning and zoning	Staff time
5. Continue support for watershed planner/coordinator	State, regional, and/or local support	Salary
Better Site Design		
6. Additional workshops and trainings	NEMO, private sector	Staff time, expenses
Watershed Education		
7. Continue homeowner education	NEMO, Save the River, Save the Hills, CTDEP	Staff time, expenses
Years 2-6		
Land Conservation		
8. Protect acres of priority watershed areas every year (based on goals/targets)	Municipal land trusts, private land trusts, TPL, TNC	$750,000 to $1.5 million per year
Stream Restoration		
9. Continue working with landowners to participate in stream restoration projects	NRCS, NOAA, landowners	Staff time, cost-share project ($25 – $200K per project, size dependent)

7.4 Financial Strategy

Securing funding to support the implementation of the recommendations made in this watershed management plan may be the most challenging task to the individuals and organizations responsible for moving the plan forward. However, to effectively protect the Niantic River Watershed, funding must be generated to support management activities. There are many diverse sources of funding available for watershed management and protection activities. There are several important factors to consider prior to searching for and acquiring funding:

- *Strength in numbers* – Coalitions and partnerships stand a better chance in locating funding sources and acquiring funding. Several groups standing behind common goals are more powerful and more influential. Representatives from East Lyme, Montville, Salem, and Waterford teaming with members of *Save the River, Save the Hills*, and staff from CTDEP, USGS, UCONN make a powerful coalition for discussing issues pertaining to the Niantic and seeking funding from diverse sources to address them.

- *Prepare for competition* – Most funding sources require an application to participate in a competitive award process. It is critical that watershed stakeholders be careful and strategic about where and how they apply for financial assistance. For example, it is advantageous to approach a funding source that has specific interests in the watershed or region.

- *Be multi-talented* – The watershed coalition or partnership should have members with a variety of backgrounds, interests and professional experiences. To acquire funding, it is important to show that the coalition/partnership has the vision, capacity and technical capability to get the project done.

- *Start somewhere* – It is easy for watershed groups, especially newly-formed ones, to be overwhelmed by the amount of work it takes to acquire funding. However, there is a beginning to the process and it usually takes shape by pursuing one or two funding opportunities.

- *Use what you already have* – With a little creative thinking, watershed groups can identify and contact locally-based financial and technical resources. These

"homegrown" resources can be used as leverage for more funding and support. For example, county officials and department staff (*e.g.* public works, planning, transportation) have knowledge and access to information related to environmental management. Local business and organizations (*e.g.* churches, Boys and Girls Clubs, Girl Scouts of America) are usually willing to support projects that will benefit their community. In both instances, local politicians and businesses usually have the "political capital" to get projects moving.

- *Ask for free advice and in-kind services* – If you need a video, ask the local television station for script and production assistance. If you need monitoring assistance, work with your local water department and your local school system. Do not forget that saying thank you in public, it will go a long way towards getting additional help next time.

Tip: no one gives money to a group without a plan for how to use it. Financial assistance can come from unusual places and innovative sources once the group has a solid plan.[19]

The Internet has made it possible to search for, contact and apply to hundreds of funding sources to implement this watershed management plan. These sources include funding opportunities from federal, state, local and private sources. To start the process, identify as many as four or five potential sources. Make sure that they are different types of sources so that you diversify your opportunities (*e.g.* find one federal, two state, and two private grant sources to apply to).

In order to identify these initial opportunities in an efficient manner, the USEPA has developed *Guidebook of Financial Tools: Paying for Sustainable Environmental Systems*, which is available for download at www.epa.gov/efinpage/guidbkpdf.htm. It was developed by USEPA's Environmental Financial Advisory Board and the Agency's network of university-based Environmental Finance Centers. It should be a helpful guide along the road to acquiring funding for environmental projects (USEPA, 2005a).

[19] This tip comes from a 1999 edition of Know Your Watershed, an information clearinghouse for watershed coordinators. Know Your Watershed is now available online at http://www.ctic.purdue.edu/KYW/.

The USEPA and other federal government agencies offer several, easily-accessible guides to funding sources that can be accessed through the Internet. A good place to start is USEPA's website for funding nonpoint source pollution management projects (http://www.epa.gov/owow/nps/funding.html). USEPA has also produced the *Catalog of Federal Funding Sources for Watershed Protection.* This catalog is an interactive website that helps match watershed project needs with funding sources. See the website for more information: www.epa.gov/watershedfunding. For a far-reaching funding search, the federal government maintains a large database of the expansive list of federal funding sources. The Catalog of Federal Domestic Assistance (www.cfda.gov) provides access to the database of all federal programs available (USEPA, 2005a).

Another online resource that watershed groups and stakeholders may access is available through the River Network. This membership organization serves the watershed organizations of the United States with technical and organizational assistance so they can achieve their goals. One of the many services they offer is a directory of organizations that fund watershed management projects. The *Directory of Funding Sources for Grassroots River and Watershed Conservation Groups* lists private, corporate, and federal funding sources (www.rivernetwork.org).

Some of the more popular sources of watershed funding are listed in Table 7.4-1. It is important to keep in mind that funding levels and application opportunities are subject to change. Therefore, it is important to contact a representative from each agency or organization early in the process in order to better understand current opportunities and guidance for accessing them.

Table 7.4-1. Watershed Management Funding Organizations and Opportunities*

FUNDING SOURCE	PROGRAM DESCRIPTION	MATCH REQUIREMENT	ELIGIBILITY	CONTACT INFORMATION
FEDERAL/STATE				
SECTION 319	The CTDEP provides financial support to regional and municipal government and non-government organizations. CTDEP administers a competitive 319 grant program that receives approximately 30-40 applications annually for new projects, and typically funds 20-25 projects targeting both priority watersheds and statewide issues.	40% non-federal match	Phase I and II permitted areas and confined animal feeding operations generally not eligible.	CT Nonpoint Source Management http://dep.state.ct.us/wtr/nps/index.htm Stan Zaremba at 860-424-3730 stanley.zaremba@po.state.ct.us
SECTION 6217	Section 6217 of the CZARA of 1990 requires the State of Connecticut to implement specific management measures to control NPS pollution in coastal waters. Management measures are economically achievable measures that reflect the best available technology for reducing pollutants.	NA	Technical assistance is available to all CT communities within the coastal zone.	CT CNP http://dep.state.ct.us/olisp/coastalnonpoint/index.htm
CT CLEAN WATER FUND	Provides grants and low-interest loans for the construction of municipal wastewater facilities and implementation of nonpoint source pollution control, river restoration, estuary protection and public access projects.	NA – 20% or 50% grant + remainder on loan.	Municipalities and water pollution control authorities	http://dep.state.ct.us/wtr/cwa/cwfund.htm
HAZARD MITIGATION GRANT PROGRAM	Provides financial assistance to state and local governments for projects that reduce or eliminate the long-term risk to human life and property from the effects of natural hazards.	75% Federal 25% Local	State and Local Governments	CT BWPLR http://dep.state.ct.us/wtr/index.htm

FUNDING SOURCE	PROGRAM DESCRIPTION	MATCH REQUIREMENT	ELIGIBILITY	CONTACT INFORMATION
SAFETEA-LU	SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009. It provides funding for transportation enhancements including; wetland mitigation, highway runoff pollution control, and roadside landscaping.	80% Federal 20% Local	Local Governments, profit and non-profit entities, and colleges and universities	USDOT Federal Highway Administration http://www.fhwa.dot.gov/safetealu/
ENVIRONMENTAL QUALITY INCENTIVE PROGRAM (EQIP)	Provides technical assistance, cost-sharing, financial incentives, and producer education related to soil, water, air, wildlife and other related natural resource concerns.	40% property owner cost share	CT Landowners	NRCS – Connecticut http://www.nrcs.usda.gov/programs/
SECTION 206 - AQUATIC ECOSYSTEM RESTORATION	Provides funding to improve, protect, and restore aquatic ecosystems including streambank restoration and planning and construction activities.	35% non-federal match	Local governments	http://www.sam.usace.army.mil
CONGRESSIONAL APPROPRIATION - DIRECT FEDERAL FUNDING	Supports projects of national significance.	Congressman Rob Simmons (860-886-0139) Sen. Chris Dodd (800-334-5341) Sen. Joseph Lieberman (800-225-5605)		
STATE APPROPRIATION - DIRECT STATE FUNDING	Supports projects of state significance.	Rep. Ed Jutila (Ed.Jutila@cga.ct.gov) - 37th District – East Lyme & Salem, Rep. Elizabeth Ritter (Elizabeth.Ritter@cga.ct.gov) – 38th District – Montville & Waterford Sen. Andrea Stillman (Stillman@senatedems.ct.gov) – 20th Senate District		

GRANT PROGRAMS			
NATIONAL FISH AND WILDLIFE FOUNDATION (NFWF)	Awards challenge grants for natural resource conservation projects.		NFWF http:/www.nfwf.org
ENVIRONMENTAL EDUCATION GRANTS	Supports environmental education projects that enhance the public's awareness, knowledge, and skills to make informed decisions that affect environmental quality.		http://www.epa.gov/enviroed/grants.html
WATERSHED PROTECTION AND FLOOD PREVENTION PROGRAM	Program provides technical and financial assistance to address resource and related economic problems on a watershed basis.		CT BWPLR Flood Management Section (860) 424-3706
WATER QUALITY COOPERATIVE AGREEMENTS	Support the creation of unique and new approaches to meeting sanitary sewer, and combined sewer outflows, biosolids, and pretreatment requirements, as well as enhancing state capabilities.		http://www.epa.gov/owm/cwfinance/waterquality.htm
WATERSHED ASSISTANCE GRANTS	Supports organizational development and capacity building for watershed partnerships with diverse membership.		http://www.epa.gov/owow/watershed/funding.html
NOAA AND NATIONAL FISH AND WILDLIFE: FIVE-STAR RESTORATION PROGRAM	Competitive projects will have a strong on-the-ground habitat restoration component that provides long-term ecological, educational, and/or socioeconomic benefits to the people and their community.		http://www.nmfs.noaa.gov/habitat/restoration/projects_programs/crp/partners/nfwf.html
U.S. FISH AND WILDLIFE SERVICE (USFWS) COOPERATIVE ENDANGERED SPECIES CONSERVATION FUND	Assists in the development of programs for the conservation of endangered and threatened species. There are four program areas; Conservation Grants, Habitat Conservation Planning Assistance Grants, Habitat Conservation Plan Land Acquisition Grants, and Recovery Land Acquisition Grants.	States and territories that have entered into cooperative agreements with the USFWS	http://www.fws.gov/endangered/grants/index.html
URBAN AND COMMUNITY FORESTRY CHALLENGE COST-SHARE GRANT PROGRAM	Grant awards are based on recommendations by The National Urban and Community Forestry Advisory Council.		http://www.treelink.org/nucfac/ccs_info.htm
PRIVATE FOUNDATION GRANTS AND AWARDS	Private foundations are potential sources of funding to support watershed management activities. Many private foundations post grant guidelines on websites. Two online resources for researching sources of potential funding are provided in the contact information.		www.rivernetwork.org

OTHER	
MEMBERSHIP DRIVES	Membership drives can provide a stable source of income to support watershed management programs.
DONATIONS	Donations can be a major source of revenue for supporting watershed activities, and can be received in a variety of ways including: individual donations, family foundations, community foundations, corporations, federated funds, and church and civic groups.
USER FEES, TAXES, AND ASSESSMENTS	Taxes are used to fund activities that do not provide a specific benefit, but provide a more general benefit to the community; the user may not be able to avoid paying the tax. Assessments must show a benefit to the property owned by the user. There are various forms of taxes and assessments. It is important to note that, while taxes can create a solid funding base that can be used to fund annual capital and operating costs, there is often political pressure to keep taxes low and intensify competition for these resources.
RATES AND CHARGES	Alabama law authorizes some public utilities to collect rates and charges for the services they provide. Because watershed management programs provide benefits to water and wastewater systems by protecting water supply sources and providing receiving water for wastewater effluent, water and wastewater utility systems often provide funding for watershed management programs.
STORMWATER UTILITY DISTRICTS	A stormwater utility district is a legal construction that allows municipalities to designated management districts where storm sewers are maintained in order to the quality of local waters. Once the district is established, the municipality may assess a fee to all property owners within the district to maintain the storm sewer system.
IMPACT FEES	Impact fees, which also are known as capital contribution or facilities fees or system development charges, among other names, typically are collected from developers or property owners at the time of building permit issuance to pay for capital improvements that provide capacity to serve new growth.
SPECIAL ASSESSMENTS	Special assessments are created for the specific purpose of financing capital improvements, such as provisions, to serve a specific area. Once the special assessment has been created, special assessment bonds can be issued, which are secured by liens on the properties benefited by the improvements.
SALES TAX/LOCAL OPTION SALES TAX	Local governments, both cities and counties, have the authority to add additional taxes. Local governments can use tax revenues to provide funding for a variety of projects and activities.

PROPERTY TAX	These taxes generally support a significant portion of a county's or municipality's non-public enterprise activities. However, the revenues from property taxes also can be used for public enterprise projects, and to pay debt service on general obligation bonds issued to finance system improvements.
EXCISE TAXES	These taxes require special legislation, and the funds generated through the tax are limited to specific uses. Examples include the lodging, food, and beverage tax, which generate funds for promotion of tourism; and the gas tax, which generates revenues for transportation–related activities.
Bonds and Loans	Bonds and loans can be used to finance capital improvements. These programs are appropriate for local governments and utilities that need to make improvements to improve and protect water resources. The cost of the improvements is borrowed through the issuance of bonds or a loan. Associated with the issuance of a bond or loan must be a source of funding for the payment of the resulting debt service on the loan or bonds.
Investment Income	Some organizations have elected to establish their own foundations or endowment funds to provide long-term funding stability. Endowment funds can be established and managed by a single organization-specific foundation or an organization may elect to have a community foundation to hold and administer its endowment. With an endowment fund, the principal or actual cash raised is invested. The organization may elect to tap into the principal under certain established circumstances.
EMERGING OPPORTUNITIES FOR PROGRAM SUPPORT	
Water Quality Trading	Trading allows regulated entities to purchase credits for pollutant reductions in the watershed or a specified part of the watershed to meet or exceed regulatory or voluntary goals. There are a number of variations for water quality credit trading frameworks. Credits can be traded, or bought and sold, between point sources only, between NPSs only, or between point sources and NPSs.
PowerTree Carbon Company, LLC	Consortium of conservation groups and electric power generators in the southeast whose goal is to restore strategically located tracts of hardwood forests to increase carbon sequestration and other ecological functions. Power generators are credited for the carbon storage of the restored forests and conservation groups gain large tracts of protected forests which provide additional benefits such as; increased value for passive human use, wildlife habitat, maintenance of native species diversity, soil conservation and water quality buffering functions. Additional program and contact information is available online at: http://www.powertreecarboncompany.com/

Mitigation and Conservation Banking	Mitigation and Conservation banks are created by property owners who restore and/or preserve their land in its natural condition. Such banks have been developed by public, nonprofit, and private entities. In exchange for preserving the land, the "bankers" get permission from appropriate state and federal agencies to sell mitigation banking credits to developers wanting to mitigate the impacts of proposed development. By purchasing the mitigation bank credits, the developer avoids having to mitigate the impacts of their development on site. Public and nonprofit mitigation banks may use the funds generated from the sale of the credits to fund the purchase of additional land for preservation and/or for the restoration of the lands to a natural state.
OPTIONS OFTEN OVERLOOKED OR UNNOTICED	
Public and Private Partnerships	Having both public and private stakeholders at the table when pursuing funding for the implementation of management strategies is vital. Public entities have advantages associated with public financing, and the involvement of these entities can bring key decision-makers to the table. Private entities sometimes can contribute significant financial support, needed expertise, and voluntary labor.
Redirection of Existing Programs and Funding	For priority projects, one way to fund programs is to change the priorities or focus of existing activities to help achieve the objectives of the watershed management plan. This could entail reducing funding for other activities and making such resources available to fund the watershed management program.

One of the key questions to arise when pursuing funding for watershed projects is: *how much money will we need to make this project happen?* For some watershed groups, this question can be a real challenge. If the group has members who are technically and financially savvy they may be able to develop a project cost estimate on their own, with very little outside help. If the group does not have members who can provide this critical service they must search outside of the group for help. This type of assistance is available from several sources, online and through environmental agencies.

The Environmental Finance Center (EFC) at Boise State University in Idaho is an excellent resource for watershed organizations of all sizes and missions. They perform direct financial services (*e.g.* training) and have developed financial tools that can help stakeholders figure out what level of funding they may need and where to search for it. Some of the tools they developed are limited in scope to the Pacific Northwest. However, the *Plan2Fund*™ and *A Guidebook of Financial Tools* are readily accessible on-line.

Plan2Fund™ is a software package that can be downloaded from the EFC and installed (for free) on a local computer. The program helps organizations determine the amount of outside funding necessary to achieve the goals and objectives of their watershed management plan. The computer program asks the user to estimate implementation costs for their goals and objectives, evaluate local funding options and identify gaps in funding. With the output from *Plan2Fund*™, users can then search EFC's Directory of Watershed Resources database for federal, state and private funding sources based on identified funding needs. For more information, visit the EFC's "Tools & Services" Website at: http://sspa.boisestate.edu/efc/services.htm (Accessed on May 11, 2006).

It is also important to keep in mind that many of the public and private agencies have other resources besides money to offer. All of the federal and state agencies mentioned in this section and throughout the plan have experts on staff who can assist watershed groups with technical questions that will help scope a project. Private organizations are also valuable resources for financial and project management advice.

When creating a budget for a watershed project ask questions of agency or organization staff to refine your funding request or application.

7.5 Monitoring

- Of utmost important to a monitoring strategy for the Niantic River Watershed is the establishment of a repository for baseline water quality data for the river and its tributaries. Next, track the implementation of the management strategies. Monitoring must provide useful data that measures the performance of the prescribed activity. This information ultimately functions as a report of progress (or lack thereof) and should inform future planning and management decisions.

7.5.1 Existing Monitoring

There are several ongoing water quality and biological monitoring efforts concerning the Niantic River and its tributaries (Table 7.5-1). These efforts are integrated into several different studies and programs, of which several are associated with regulatory requirements (*i.e.* conditions of a permit). There is no central repository for this data, although there is a considerable degree of data-sharing between agencies and organizations.

Table 7.5-1. Existing Monitoring Activities

Program/Agency/Organization	Monitoring Scope	Monitoring Frequency
CT DA/BA Sanitary Surveys for East Lyme and Waterford	Water quality – bacteria	Triennially, 12-year rotation
CTDEP Rapid Bioassessment in Wadeable Streams and Rivers by Volunteer Monitors Program (RBV)	Macroinvertebrates, physical data	Annually in the fall
Millstone Environmental Laboratory Studies	Physical, chemical, biological	Weekly
USGS investigations on the Niantic	Physical, chemical	Research-specific
UCONN Avery Point Marine Sciences Research	Physical, chemical, biological	Research-specific

Program/Agency/Organization	Monitoring Scope	Monitoring Frequency
Save the River, Save the Hills Volunteer Monitoring	Physical, chemical	Seasonally
Stormwater Best Management Practices Performance Monitoring – Private entities	Physical, chemical	Permit-specific
Southeastern Connecticut Water Authority Source Water Monitoring	Physical, chemical, biological	Daily, weekly
Municipal Environmental Planning/Wetlands Monitoring	Physical, chemical, biological	Unknown

7.5.2 Monitoring Objectives

A monitoring program in the watershed should be developed according to objectives that will satisfy watershed management needs. These objectives can be as broad or specific as they need to be so long as they identify the underlying purpose for conducting a monitoring program. Some possible monitoring objectives for the watershed coalition or partnership are:

- Develop a baseline of water quality and biological integrity of the tributaries of the Niantic River.
- Build future monitoring efforts from current efforts.
- Continue monitoring and assessment of water quality and aquatic integrity of the Niantic River.
- Evaluate monitoring data against performance measures (*e.g.* indicators, targets) to evaluate the effectiveness of the watershed protection plan.
- Monitor impervious surface cover/land use on watershed and local basin basis.
- Monitor net loss of wetlands and riparian corridors/streamside forests.

7.5.3 Proposed Monitoring Approach

A monitoring plan should be developed to meet each of the objectives listed in Section 7.7, outlining the monitoring locations, types of monitoring, and parameters. The monitoring plan should also be reviewed periodically to determine if it is meeting the objectives. In addition, watershed objectives may change over time as additional information is learned about the health of the watershed. Thus, the monitoring plan also should be reviewed in light of new information and any changed watershed plan objectives.

Monitoring efforts should track the effectiveness of the management measures, when implemented, to improve (or protect) water quality (Table 7.5-2). The Niantic River is in need of water quality *restoration* at present. Levels of indicator bacteria and nitrogen should be tracked to measure management performance. These measures would hold true for the mainstem of the Niantic as well as its freshwater tributaries. More importantly to the tributaries and low order streams are the buffer and stream channel condition targets.

Table 7.5-2. Management Objective and Indicator Measures

Management Objective	Indicator/Target	Measure
Reduce bacterial loads from stormwater outfalls and runoff.	Fecal coliform: Geometric Mean less than 14/100ml; 90% of Samples less than 43/100ml (CTDEP, 2002c)	Decrease in fecal coliform counts in samples
	Enterococci: Geometric Mean less than 35/100ml; Single Sample Maximum 500/100ml	Decrease of enterococci counts in samples
Reduce nutrients loading from stormwater outfalls and runoff.	Total Nitrogen: Maximum of 30% annual N loading to the Niantic River OR Inorganic Nitrogen: minimize loadings to below recommended eelgrass threshold (0.3 mg/l) (USEPA, 2000).	Decrease in total nitrogen loadings
Minimize flooding impacts by improving peak and volume [stormwater] controls from impervious surfaces.	Peak flow volume and velocity: Minimized peak velocity for 1-yr, 24-hr storm events (CTDEP, 2004a).	Peak flow volume of outfalls to tributaries less than 400 cfs.