The Rhode Island Department of Environmental Management

Work Plan for 2000-2001

EXECUTIVE SUMMARY

Our commitment to the people of Rhode Island,
And to the natural environment that sustains us.

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Introduction

This Executive Summary provides an introduction to, and overview of, the Work Plan developed by the Department of Environmental Management for the fiscal years 2000 and 2001. The full version of the Work Plan consists of complete work plans for each Bureau and Division within the Department. In addition, there are two Watershed Work Plans that cut across Divisions and programs to implement the Department's multi-media, and multi-disciplinary Watershed Approach in two pilot areas -- the South County Watershed region and the Woonasquatucket watershed. Copies of the full Work Plan or any of its component work plans are available by calling 222-3434 or 1-800-CLEANRI, Extension 4430, or by visiting our website at www.state.ri.us/dem.

The development of the Work Plan was driven by several factors, including:

- The need to respond to issues and concerns raised publicly about the Department's performance in such areas as accountability, efficiency, effectiveness, responsiveness and customer-friendliness;

- The need to become more result-oriented, i.e. to design and implement programs that produce actual environmental improvements, and then, as much as possible, to evaluate and report on our performance in terms of such environmental results instead of the traditional "bean-counting;"

- The need to translate policy concepts such as pollution prevention, permit streamlining, watershed management and smart growth into more specific strategies and program activities;

- The need to prioritize the Department's activities and use of limited resources; and

- The need to improve staff morale, motivation and productivity, and to hold managers accountable for producing measurable results.

The Work Plan overlaps in part with the draft Performance Partnership Agreement (PPA) for the federal fiscal years 2000 and 2001. This Agreement governs DEM's use of federal grants provided by the Environmental Protection Agency (EPA) for certain Air, Water, Waste Management, and Pesticide programs. Previous versions of the PPA consisted of separate, one-year grant agreements for the four program areas. Both DEM and EPA have agreed to change to one agreement covering two years to achieve better integration of programs as well as greater flexibility for DEM. Both agencies have also agreed to include specific environmental indicators and performance measures to ensure that we produce real results. The joint work by DEM and EPA has been another driving force behind the decision to develop a Work Plan for the entire Department that uses a consistent framework of goals, strategies, environmental indicators and performance measures.

The Work Plan is in many ways far from complete or perfect. First, many DEM programs are still adjusting to this new strategic approach, and therefore have not yet fully oriented programmatic activities within the new strategic framework. Second, although environmental indicators and performance measures are no longer new in concept, organizations across the country are still struggling to come up with real-life indicators and measures that actually work.

The Department has held public meetings to present the work plans and to solicit comments. The comments that relate to the work plans have been incorporated into the work plans as the Performance Partnership Agreement with EPA was finalized. At the same time, recognizing that, as work in progress, adjustments and updates will have to be made, the Department has begun implementing the Work Plan.

The mission of Rhode Island Department of Environmental Management is to:

- *Enhance the high quality of life for this and future generations by protecting, managing, and restoring the natural resources of the state; enhancing outdoor recreation opportunities; protecting public health; and preventing environmental degradation.*
- *Guide the use of the state's natural resources to provide for sustainable economic opportunity while sustaining our natural environment.*
- *Motivate the citizens of the state to practice an environmental ethic based upon an understanding of their environment, their dependence on it, and the ways in which their actions affect it.*

Definitions:

Mission *– our mandate and purpose as an agency.*

Goals *– the long term results we are working to achieve.*

Strategic Priorities *– shorter term goals and methods to achieve goals.*

Objectives – *more specific targets that support our goals and reflect our strategic priorities.*

Indicators – *public health or environmental outcomes, the type of environmental improvements we hope to see, consistent with our long term goals.*

Strategies *– methods and actions (combined or separate) that are necessary to meet our goals and objectives, and that reflect our strategic priorities as well as environmental indicators. In this Work Plan, strategies are defined to meet objectives within a relatively short time frame. Some strategies are media- or program-specific; others will appear in more than one program area.*

Performance Measure*– specific target or measure to verify that our work results in actual progress towards our goals and objectives, where possible in terms of actual environmental improvements.*

Strategic Directions

Continuing our Mission

The effort to define clear goals, objectives and strategies goes back to DEM's Strategic Assessment in 1996. The Department believes that the mission statement and goals adopted at that time are still appropriate today, and many of the objectives and strategies defined at that time are reflected in this Work Plan. For example, we recognized back then that we needed to add **nonregulatory, incentive-based, and partnership approaches** to the tools that we use to protect the environment and public health. We also made **promoting sustainable economic activity** part of our agenda, because it is in many ways critical to our ability to maintain and enhance quality.

Updating our Focus and Strategies

While the Work Plan continues DEM's mission, it is also meant to lay out an effective process reflecting national and regional trends in environmental management and regulation, as well as issues raised about our performance in Rhode Island. For example, it is appropriate to place greater emphasis on **pollution prevention** as a top policy priority, because preventing waste and contamination from being generated to begin with will more often that not produce greater environmental health benfits more quickly and more cost-effectively. Pollution prevention can work over a broad range, from cleaner manufacturing technologies to "smart growth."

Similarly, **community-based management** should be a top goal as well as a key strategy. It brings environmental protection to a level where people can understand it and become involved. It uses the knowledge and expertise of local citizens, businesses, governments, and institutions to develop solutions for their local and regional problems, and thus also builds support for the sometimes difficult decisions that must be made, especially on how to balance growth with **protection of critical resources**. This approach includes **ecosystem and watershed-management** strategies, based on **sound science**, and also offer more efficient and equitable solutions to, for example, water quality and water supply problems that are difficult if not impossible to solve if we deal with them on a discharge-by-discharge, withdrawal-by-withdrawal, or site-by-site basis. The Work Plan includes plans for the South County watershed region and the Woonasquatucket watershed. These plans serve as tools to **better coordinate and integrate among divisions and programs**, and to make our contribution to the watershed partnerships that are developing as effective as possible.

We must recognize that certain environmental conditions still present potentially serious **public health risks.** A particularly serious problem is the presence of **lead in older housing stock,** and the lack of a well-coordinated strategy to remove it or at least minimize exposure, especially for children. **Bacterial and chemical contamination of ground and surface waters**, especially drinking water supplies, is another concern high on our list of priorities.

Open space preservation, notwithstanding the great accomplishments of the past, is becoming a more urgent issue as development pressure and patterns increasingly threaten remaining open space, including resource areas that are important to biodiversity, wildlife, drinking water supplies, recreation, and our scenic and working landscapes (farms and forests). We must step up our effort to preserve these environmental and economic resources before they disappear or the price of acquisition and conservation becomes unaffordable. This effort has to involve **partnerships** with local and federal, public and private sector conservation advocates. In addition, we must provide meaningful support to our agriculture, fishing and forestry industries as stewards of our common resources.

The Department is also serious about **improving service delivery** and addressing complaints regarding unnecessarily lengthy and burdensome permit processes. The Work Plan calls for a serious **permit streamlining** analysis for each major permit program. It also responds to concerns about DEM's inspection and enforcement practices by prioritizing the development of an **inspection and enforcement protocol**, to be completed by March 2000.

Work Plan Summary

Organization:

We have organized this summary in a way that we hope best reflects our ongoing commitment to our mission and the strategic directions the Department needs to take in response to environmental conditions and public concerns. The information is presented under seven broad policy themes rather than by Bureau or Division. After a brief explanation of these seven **Goals**, the summary discusses **Conditions and Trends** for each one, followed by a matrix-format presentation of **Objectives, Indicators, Strategies and Performance Measures**. A similar breakdown is provided for the two watershed pilot projects. For complete program-specific information, please refer to the work plan for the relevant Division.

Goals

Clean Air

The air throughout the state will be healthy to breathe, and air pollutants will not damage our forests, land and water bodies.

Clean and Plentiful Water

Rhode Island's rivers, lakes and coastal waters will be fishable, swimmable, and support healthy ecosystems. Surface and ground water will be clean sources of water. Adequate quantities of surface and ground water will be available for present and future uses, provided they are sustainable practices.

Livable Communities

Rhode Island's communities will be free from unacceptable human health and ecological risks from exposure to hazardous substances and other potentially harmful agents. Natural resources will be managed to protect the public from floods and fires. Communities will increase their capacity to plan for growth in a way that minimizes negative impacts on the environment and community character, and contributes to a sustainable economy.

Healthy Ecosystems

The health, diversity and integrity of Rhode Island's ecosystems will be restored, protected, enhanced and sustained.

Viable Natural Resource Based Industries

Agriculture, fisheries, forestry and tourism will be affordable and sustainable activities, will employ best management practices to protect common resources, and will be supported as resource stewards and key sectors of the state economy.

Abundant Open Space and Recreational Opportunities

Natural and scenic landscapes will be preserved and all citizens will have easy access to well-maintained parks, forests, wildlife

areas and historic sites. Open space and recreational opportunities will be improved in both rural and urban settings.

Open and Effective Government

The Department will fulfill its mission and achieve its goals with the involvement and support of citizens and stakeholders, and will sustain these partnerships by

- being accessible and responsive to inquiries and requests,
- being proactive about sharing information, outreach and public education,
- providing meaningful assistance and incentives,
- using common sense, understandable standards and procedures
- eliminating unnecessary or unproductive requirements and process, and
- accounting for the results of its work.

Goal: Clean Air

The air throughout the state will be healthy to breathe, and air pollutants will not damage our forests, land and water bodies.

Conditions and Trends

National outdoor air quality standards have been set for six of the worst air pollutants that damage the respiratory system and other organs: carbon monoxide, sulfur dioxide, nitrogen oxides, lead, particulate matter, and ozone.

Levels of carbon monoxide, nitrogen oxides, sulfur dioxide and lead in Rhode Island's air are controlled well below national standards, largely as a result of controls on factories and power plants, and the removal of lead from gasoline. Rhode Island's air quality is rated as good for over 80% of the year; However, despite vigorous efforts to reduce emissions of the volatile organic compounds and nitrogen oxides that lead to the formation of ground-level ozone, high ozone concentrations still threaten the health of Rhode Islanders during the warmer months.

Ozone inhalation can cause coughing, chest pain, and throat irritation in healthy people and it can trigger asthmatic reactions in sensitive individuals. The USEPA set new standards for ozone and fine particles in 1997. The new ozone standard is based on data showing health effects at lower levels and over longer periods than the previous standard. The particulate standard is based on epidemiological data that suggest that increased illnesses and deaths are associated with exposure to the tiny particles that result primarily from combustion.

Because air is not confined by state borders, the air pollution problems in Rhode Island are regional, national, or even international in scope. Some pollutants like ozone (and the pollutants that form ozone) are carried by wind from other parts of the country. Greenhouse gas emissions from fuel combustion in everything from power plants to vehicles to lawn mower engines contribute to global warming and other forms of global climate change. Carbon dioxide is by far the largest component of the state's greenhouse gas emissions, although methane also contributes.

Key Objectives and Strategies

Such problems require a two-part strategy: (1) to reduce emissions within the state as much as feasible; and (2) to work with other states to reduce upwind emissions. The Department will focus efforts in the next two years on the reduction of ozone, particulates, air toxics, and greenhouse gases in our state.

Ozone

- Develop an alternative fuel strategy and assist the Division of Motor Vehicles in implementing the vehicle maintenance and inspection program.
- Reduce emissions in the northeast, but even more so in the "upwind" states.

Through these strategies, the Department hopes to meet the more stringent federal ozone standard by 2007.

Fine Particulates
The Department is also working to meet the new fine particle standard well in advance of the statutory deadline by expanding and improving the recently installed particle network and developing legislation to reduce fine particle emissions from diesel trucks.

Greenhouse Gas Emissions
The Department will convene a greenhouse gas stakeholder group to review options that would reduce toxic and other regulated air emissions while at the same time reducing greenhouse gas emissions.

Air Toxics
The Department will incorporate new federal standards for toxic air pollutants into DEM regulations as EPA promulgates them.

The tables that follow outline key objectives, along with the indicators, strategies and performance measures that the Department will focus on to ensure that Rhode Islanders breathe clean air and that the air does not damage our natural resources

Clean Air

Objective	
By 2007, meet federal ozone and particulate matter standards and maintain standards For carbon monoxide, nitrogen oxides, sulfur dioxide, and lead.	
Indicators	
Number of days RI meets federal standards	
Strategies	**Performance Measures**
Assist the Division of Motor Vehicles in implementing Inspection and Maintenance program for automobiles	• Adopt regulations by December 1999 • Adopt vehicle emissions test by January 2000
Promote alternative, less polluting fuels	• Develop action plan for public review by March 2000; final recommendations by June 2000
Ensure that gasoline recovery systems are working properly	• Inspect 500 systems by June 2000
Continue work with regional partners to reduce ozone precursor emissions upwind of RI	• Achieve commitment or enforceable mandate to reduce emissions of nitrogen oxide by 955,000 tons per year by 2003 in 22 northeast states.
Expand and enhance monitoring systems for fine particulates to determine whether RI meets new federal standards	• Make determination by 2003
Develop legislation to reduce fine particulates from heavy duty diesel trucks	• Draft legislation by December 1999

Clean Air

Objective	
By 2005, reduce emissions of selected air toxics	
Indicators	
Emissions of chlorinated solvents; ambient concentrations of benzene 1,3 butadiene and formaldehyde	
Strategies	**Performance Measures**
Emphasize pollution prevention in all permitting, compliance and inspection activities	• Recommend pollution prevention activities to comply with air toxics regulations • Allow additional time to implement pollution prevention measures. • Train air staff in pollution prevention
Amend Air Toxics Pollutant Regulations to add federally designated hazardous air pollutants & update limits for 40 air toxics	• Adopt amended regulations by June 2000
Work with partners to identify toxic hot spots in the Olneyville section of the Woonasquatucket River Watershed and conduct outreach to inform sources and residents of the dangers of air toxics.	• Obtain grant funding by April 2000 • Establish teams to identify hot spots by 2000 • Design outreach program by December 2000
Promulgate medical waste incinerator regulations to reduce mercury and other air toxics emissions from incinerators	• Adopt regulations by January 2001
Target risk management and accidental release programs to minimize exposure of the public to air pollution from large users of toxic materials	• Finalize regulations and request delegation from EPA by May 2000
Implement Mercury Task Force strategies to reduce exposure to mercury; strategy will also reduce PVCs • Revise medical waste incinerator regulations • Implement voluntary Mercury Challenge	• Advertise regulations for public notice by December 1999 • Achieve mercury-free emissions by 2003, EPA goal is 50% ; Reduce PVCs in the waste stream by 50% by 2003 • Bring four medical waste incinerators into compliance 6 months after promulgation-

Goal: Clean and Plentiful Water:

Rhode Island's rivers, lakes and coastal waters will be fishable, swimmable, and support healthy ecosystems. Surface and groundwater will be clean sources of water. Every person in Rhode Island will have safe drinking water. Adequate quantities of surface and groundwater will be available for all uses.

Conditions and Trends

Rhode Island has abundant water resources that support uses such as drinking, recreation, habitat, industry, and commerce. The state has approximately 1,392 miles of rivers, 21,299 acres of lakes and ponds, 88,055 acres of freshwater swamps, marshes, bogs and fens, approximately 72,000 acres of which are forested. Estuaries, including Narragansett Bay and the coastal ponds, cover 152 square miles. Underlying the state are 22 major sand and gravel aquifers (groundwater reservoirs) as well as usable quantities of groundwater in almost all other locations.

Although control of some more obvious pollution sources has paid off in improved water quality in the last 20 years, the state's rivers, lakes and coastal waters still suffer from past mistakes and from largely uncontrolled "nonpoint" sources of pollution such as road runoff and septic system pollution that are released from widely dispersed sites rather than from a few large pipes.

Surface Waters

Most lakes and rivers that have been assessed, support their designated uses, that is, that they are safe for drinking or for swimming and sustaining aquatic life. However, some are impaired—too contaminated to support their designated use — and nearly half of river and lake waters and nearly a third of coastal waters are threatened, meaning that they may in time no longer support their designated uses. Also, 46 percent of river miles and 25 percent of lake acres have not been assessed yet. We need data on these waters so we can prioritize our work and make informed decisions in these watersheds.

Bacterial contamination from combined sewer overflows and nonpoint source pollution (e.g. failed septic systems, and uncontrolled stormwater) is the biggest water quality problem, especially in marine waters and freshwater lakes, leading to shellfish and beach restrictions. About 25 percent of shellfishable waters are closed, either permanently or intermittently. Several public beaches, both freshwater and salt water, are periodically closed during the summer due to elevated levels of bacteria.

Excess nutrient enrichment from septic systems, storm water and other sources is the main problem in lakes and a priority concern in the salt ponds. Excess nutrient enrichment upsets the balance of nature, leading to excessive growth of algae and other aquatic plants that eventually die and decompose, taking too much oxygen out of the water, and eventually killing fish. Wastewater treatment facilities also contribute to nutrient problems in some rivers and portions of the Bay.

Industrial pretreatment has greatly reduced **toxics** in surface waters, but vigilance is needed. Although the extent of toxic contamination in sediments is not fully known, there is concern about urban rivers and the Upper Bay. Of the limited waters assessed for toxics, three percent of lake acres, nine percent of river miles, and seven percent of coastal waters do not meet standards for toxic contamination.

Another challenge in managing water resources is ensuring adequate quantities to support desired uses, such as drinking water, habitat and irrigation. **Low flows** are already a concern in the Blackstone and Wood-Pawcatuck Watersheds. The long term trend is for more demands to be made on all water supplies.

Groundwater

Approximately two-thirds of Rhode Island communities use groundwater for all or a significant portion of their water needs. DEM has designated the areas around the more than 600 public wells in the state as wellhead protection areas to safeguard these drinking water sources.

There has been a sharp rise in the number of known contaminated sites in the last decade due to better reporting, more stringent site assessments and other factors. The leading causes of contamination, found in 15-20 percent of public wells tested in the last decade, are volatile organic compounds **(VOCs)**, associated with gasoline and solvents from leaking underground storage tanks, accidental releases, and past waste disposal. Pollution from VOCs is projected to decline in the future due to preventive measures for storage tanks and landfills. However, spills of hazardous materials, and pollution from nonpoint sources such as fertilizers and septic systems continue to be a concern. The full extent of **nitrate** contamination in groundwater from fertilizers and other sources is not known, but merits further attention. Nitrates in wellwater are a public health risk, particularly to infants.

Key objectives and strategies

The Department will focus over the next two years on **watershed based initiatives** to resource protection and restoration. DEM will implement Department-wide watershed pilot projects, in collaboration with partners, to more effectively accomplish environmental goals. In addition to the watershed approach, other water-related priority initiatives include:

- **Licensing of Septic System Designers**

In the next two years the Department will complete the final phases of licensing for septic system designers including instituting soil-based siting requirements and issuing Class IV-Soil Evaluator Licenses. In October 1999, preparation of septic system applications and oversight of installations by Class I-III designers, became mandatory.

- **Permit Streamlining**

Additional streamlining initiatives are planned for septic systems, wetlands, underground injection control (UIC), and groundwater programs as well as for Site Remediation, Underground Storage Tanks (USTs), and Waste Facility Permitting, all of which have a significant focus on protecting and restoring groundwater. The Department is designing and plans to implement an integrated permit tracking and data management system.

- **Watershed Restoration – TMDLs**

The Department has begun to assess priority polluted surface waters and develop watershed restoration strategies, known as TMDLs (Total Maximum Daily Loads) targeting 83 waterbodies over the next 12 years. The TMDLs provide the technical basis for public investments in pollution abatement. DEM will continue to provide water pollution abatement grants and loans. This year DEM allocated $885,854 from federal and state sources. The Department expects to see improvement in water quality conditions over the long term as TMDLs are implemented.

- **Greenspace Protection Strategy**

Develop a greenspace strategy that will protect wetlands, forestland, and other features such as forested riparian buffers that serve to protect watershed health (i.e., ground and surface water quality) and to provide habitat for fish and wildlife.

- **Wetlands Conservation Strategy**

In 2000, DEM will begin to develop Rhode Island's first statewide wetlands conservation strategy for protection and restoration activities. One goal of the strategy will be to improve coordination of such activities to maximize effectiveness. Additionally, with stakeholder collaboration, DEM will develop recommendations for improving the effectiveness of state activities with respect to federal, local or private efforts to protect and restore freshwater wetlands resources. This effort will promote partnerships, seek new incentives for protection, and enhance non-regulatory programs as a complement to regulatory protections. Wetlands protection will be integrated with watershed planning efforts.

- **Local Wastewater Management**

In FY99, major progress was made toward establishing local wastewater management programs in the 28 communities that rely significantly on septic systems. The programs allow municipalities to access the Community Septic System Loan Program (CSSLP), available through the Clean Water Finance Agency (CWFA), to target financial assistance to homeowners for septic system upgrades.

Grants to establish programs in eight communities brought the percentage participating up from 21% to 50% statewide. The Department hopes to increase the level of communities developing or implementing active programs to at least 70% by the end of FY2001.

- **Habitat Restoration**

Responding to increased public interest, the Department will take several important steps to encourage restoration of freshwater and coastal wetland habitat. *Freshwater Wetlands:* The freshwater wetlands program will develop rule changes to facilitate approval of beneficial restoration projects. The Department will also collaborate with URI to develop technical criteria to support a new freshwater wetlands restoration strategy. *Coastal Wetlands:* DEM will continue to provide leadership in the collaborative effort to complete mapping and photointerpretative projects to provide a strong technical basis for pursuing coastal habitat restoration projects. Working with partners, including the Coastal Resource Management Council, United States Fish and Wildlife Service, and Army Corps of Engineers, as well as with non-governmental groups, DEM will develop a State Habitat Restoration Strategy that will prioritize projects, focus resources and seek to establish reliable funding mechanisms for coastal habitat restoration.

Clean and Plentiful Water

Objective	
Reduce pollutant loadings to surface waterbodies to meet water quality goals and all designated uses	
Indicators	
Impaired surface waters restored following implementation of TMDLs (based on long-term monitoring); Reduced bacterial, nutrient, and toxic discharges from CSOs; Reduced nutrient discharges from WWTFs; Reduced toxic discharges to WWTFs (and surface waters) from commercial and industrial sewer users	
Strategies	**Performance Measures**
Work with watershed groups to resolve issues identified by local stakeholders, such as nonpoint source pollution; and sustainable environmental & economic strategies for Narragansett Bay	• Create an inclusive process to work toward consensus on strategies for the Bay by June 2000; and the South County and Woonasquatucket Watersheds. Ongoing. • Hold Bay Summit in April 2000
Complete statewide assessment of water quality using available data; seek funding & collaborate with partners to increase baseline monitoring	• Publish State of the States Waters 305B Report in Fall 2000 • Prepare strategy to assess data gaps - river miles (46%) and lakes acres (25%) by September 2000
Target assessments and plans to restore water quality (TMDLs) in polluted drinking water supply areas, closed shellfishing areas and priority watersheds	• Complete restoration strategies (TMDLs)for 6 waterbodies and their associated tributaries by September 2000. • Complete restoration strategies (TMDLs) for an additional 6 waterbodies and their associated tributaries by September 2001.
Review Narragansett Bay Commission Phase 1 design for facilities to abate combined sewer overflows (CSOs)	• Complete review of 100% design for NBC CSO Control Program, Phase 1 by September 2001 • Implementation of Phase I CSO Control Program will reduce: annual + BOD loading by 30% ; fecal coliform by 40%

Provide grants to support development of local wastewater management plans that will leverage funds for grants to communities for homeowners to upgrade septic systems; seek bond funding to continue pollution prevention and abatement, and to provide water quality and habitat restoration grants to localities	• Provide grants for four or more communities per year to develop local wastewater management programs through FY2001 • Provide financial and technical support for water pollution control and water-quality improvement projects to local entities • Pass bond referendum in November 2000 • Conduct 4-6 septic system maintenance policy forum meetings; publish septic system checks; publish municipal standards and programs manual

Clean and Plentiful Water

Objective	
Reduce pollutant loadings to surface waterbodies to meet water quality goals and all designated uses (cont.)	
Indicators	
Impaired surface waters restored following implementation of TMDLs (based on long-term monitoring); Bacterial, nutrient, and toxic discharges from CSOs; Nutrient discharges from WWTFs; Toxic discharges to WWTFs (and surface waters) from commercial and industrial sewer users; ; impaired surface waters restored following implementation of TMDL's (reported via 305B)	
Strategies	**Performance Measures**
Help wastewater treatment facility staffs to develop cost-effective strategies to reduce nutrient discharges; Provide WWTF operator training on reducing total nitrogen; Conduct Total Maximum Daily Load (TMDL) studies to determine needed reduction in nutrient loadings	• Set more stringent WWTF permit limitations for nutrients
Reissue wastewater discharge permits to incorporate water quality based effluent limits, where needed	• Eliminate RIPDES permit backlogs by September 2001
Evaluate new strategies to prevent and abate NPS pollution	• Revise Non-Point Source Pollution Management Plan by Sept. 2001 • Obtain final approval of Coastal Nonpoint Source Pollution Control Plan (CNPCP); publish stormwater ordinance; publish construction site chemical control handbook. • Reissue nonpoint source request for proposals; fund 5-10 grants; oversee 17 grant projects
Ensure that all dredge disposal projects are designed to avoid adverse environmental impacts	• Continue to provide technical reviews of all dredge projects and coordinate with CRMC on long-term dredge disposal plan
Continue oversight of pretreatment programs and revise regulations to prevent release of toxics	• Revise pretreatment regulations for federal consistency by September 2001
Collaborate with state and local agencies and water users to manage water use to ensure adequate quantities for drinking water, habitat, irrigation, commerce, industry, and recreation	• See South County Watershed Section

Clean and Plentiful Water

Objective	
Prevent or reduce pollutant loadings to groundwater	
Indicators	
Long-term decrease in number of public wells with detections of contaminants in raw water	
Strategies	**Performance Measures**
Promote wellhead protection • Assist communities in implementing wellhead protection plans • Coordinate with the Department of Health on the Source Water Assessment Program • Collaborate on watershed projects addressing groundwater systems • Continue wellhead protection enforcement • Distribute wellhead protection grants	• Increase the number of communities adopting wellhead protection areas plans (WHPAs) and implementing protection measures from 8 to 13 • All communities will implement 1 or more protection measures by September 2001 • The number of communities implementing 3 or more WHP measures will increase to ten by September 2001 • Close twenty-five abandoned or unauthorized disposal wells per year • Number of violations in WHPAs eliminated
Revise Groundwater and Underground Injection Control (UIC) rules to provide for a comprehensive discharge program	• Revise Groundwater/UIC regulations by September 2000
Evaluate and update with stakeholder input the state groundwater protection strategy	• Update groundwater protection strategy by September 2001
Privatize ISDS design and construction oversight to allow DEM staff to concentrate on resolving problems with failed systems and siting of new systems	• Fully implement ISDS licensing of designers (Class I-III – October 1999; Class IV – winter 2001) • Approve new systems using soils-based siting standard • Increase number of repairs to failed systems

Goal: Livable Communities

Rhode Island's communities will be free from unacceptable human health and ecological risks from exposure to hazardous substances and other potentially harmful agents. Natural resources will be managed to protect the public from floods and fires. Communities will increase their capacity to plan for growth in a way that minimizes negative impacts on the environment and community character and that contributes to a sustainable economy.

Conditions and Trends

Sprawl

After World War II, Rhode Islanders, like many in the nation, began moving out of compact urban neighborhoods to seek good schools, more space and lower crime rates in rural and suburban areas. For a time they realized their dream, but as development moved farther out, residents of older suburbs began to encounter the same problems found in urban areas, and residents of newer suburbs became mired in traffic.

Haphazard development patterns, disinvestment in older communities, and deteriorating quality of life can be summed up by the term "sprawl." Sprawl challenges rural communities to add infrastructure to accommodate growth, while older areas are left with aging, expensive to maintain, and underused infrastructure such as schools, parks, water and sewage treatment plants, and transit systems. As commuting time grows, air pollution increases, and open spaces disappear under subdivisions and shopping malls. As a result, many cities and towns are seeking assistance to plan for population shifts in order to protect community character, natural resources and economic well being. In addition to acquiring and preserving open space through easements, the Department works in partnerships to provide technical assistance to communities wishing to adopt local growth planning methods.

Environmental Equity

EPA's definition of environmental justice is: the fair treatment and meaningful involvement for people of all races, color, cultures and income regarding environmental laws, regulations, and policies. Concern that minority populations may bear a disproportionate burden from adverse health and environmental effects led to Executive order 12898 directing federal agencies to address these issues. EPA's interim Title VI Guidance Policy focuses on the Agency's efforts to address these concerns. RIDEM's environmental equity goal seeks to insure equal access to environmental benefits such as open spaces and natural resources as well as to address potential disproportionate impacts on certain communities or populations.

Urban Issues

Although the ten Rhode Island cities identified in the 1998 RIPEC report, *Strengthening Cities*, have many strong points, they face daunting economic, social and environmental problems, including having 64.1 percent of Rhode Island's housing stock with lead-based paint. Childhood lead poisoning, degraded water quality, lack of trees and other vegetation and open space, air and soil contaminated with toxic

substances, and multiple exposures to toxic materials are among the problems faced by residents of urban areas. Exposure over time to toxic substances can cause serious health problems as the cumulative effects of multiple exposures to low levels of toxins builds up in blood and tissues.

In addition to programs to prevent and regulate air emissions and the transport, storage and disposal of wastes, the Department has many projects to restore water quality and habitat in urban areas including the TMDL program to restore impaired waters. The Department also participates in the **Urban Rivers Team**, comprised of representatives from Providence, North Providence, Johnston, neighborhood organizations, DEM, the Departments of Health and Transportation, and EPA. The team which was formed about two years ago, recently reaffirmed its mission to address all urban rivers issues, while continuing to focus on the Woonasquatucket River until priority issues such as dioxins are under control.

Statewide Health and Safety Issues

Solid and Hazardous Waste

There are 43 facilities in Rhode Island for managing **solid and hazardous** waste materials; and 2300 facilities store oil or hazardous materials in underground storage tanks. Over 980 properties are contaminated through leaks or spills of oil or chemicals. Problems at many of these sites could threaten Narragansett Bay, rivers, and ponds, since over 35 percent of regulated sites lie within 500 feet of a surface water body. Spills and leaks almost always threaten groundwater resources, over 80 percent of which are classified as suitable for use as drinking water sources. Furthermore, Rhode Island is a small state with over 67 percent of the regulated waste management sites located in densely populated urban and suburban neighborhoods. The Department operates a wide range of pollution prevention, compliance assistance, regulatory, emergency response and restoration programs to address solid and hazardous waste issues.

Zoonotic and Vector-Borne Diseases

Diseases transmitted from animals and insects to humans are a perennial threat, necessitating constant vigilance. The incidence of **rabies** increased over the past two years. In July, 58 animals (raccoon and skunks in nearly equal numbers, as well as 2 bats and 1 fox) tested positive. **Eastern Equine Encephalitis** and the West Nile virus can be transmitted to humans by mosquitos, and **Lyme disease** can be transmitted by ticks**.** The Department is working with a regional collaborative to prepare for an expected increase in the incidence of West Nile virus.

Pesticides and Agricultural Chemicals

Pesticides (insecticides, herbicides, fungicides, etc.),and other agricultural chemicals in air, water and soil can can adversely affect humans health and safety if used improperly. Advances in technology and regulation have led to replacement of the more persistent bio-accumulative chemicals such as DDT and methyl parathion with pesticides that are less toxic and shorter lived in the environment. DEM receives thousands of calls from the public regarding the use, health issues, and hazards associated with pesticides and responds to complaints to determine if pesticides are being used properly. In cooperation with URI, the Department trains and licenses pesticide applicators. There are approximately 1,000 commercial applicator licenses and 250 licenses for applying pesticides to agricultural products.

Physical Hazards
The Department helps communities protect citizens from fire and flooding through several programs. Wildland fires have been controlled in recent years to no loss of life and no more than two acres burned. The Davis tire pile in North Smithfield poses the possibility of an enormous fire that could burn for years, constantly emitting air and water pollution. Rhode Island's dams include 44 that are designated high hazard that would threaten a large number of people and many properties if breached. The Department inventories dams, inspects high hazard dams and is prioritizing DEM owned high hazard dams in its Capital Asset Plan.

Pollution Prevention
Pollution prevention, the first choice in environmental protection methods, seeks to **reduce the use of hazardous and other polluting materials**, and to **reuse and recycle** when reduction is not possible. **Best management practices** for pesticides and agricultural chemicals stress reliance on non-chemical ways to control pests and increase productivity. These include organic farming and gardening, integrated pest management, natural landscaping, and other methods to avoid chemicals and hazardous materials where feasible and to promote safe handling otherwise.

The Toxic Release Inventory (TRI) lists hundreds of chemicals that companies use or manufacture. In response to a petition from RIDEM and the other five New England states, EPA lowered the threshold reporting limits for mercury early this year from 10,000 pounds of mercury for users and 25,000 pounds for manufacturers to 10 pounds. In Rhode Island the major source of mercury emissions is medical facilities.

The over 400 autobody operations widely distributed throughout the state pose a health threat through the sanding process which emits fine particles of body compound, paints and other materials, that can be inhaled or ingested. The Department operates many programs to prevent pollution including initiatives to improve pesticide safety, eliminate anthropogenic mercury and reduce fine particle emissions including lead containing paint particles in auto body shops.

Issues and management strategies regarding livable communities are discussed in many sections of this Executive Summary and the Department work plans, such as the sections on clean air and water, healthy ecosystems, and natural resource based industries. Work plans for the Policy and Planning Office and for the South County watersheds pilot contain details on the Department's approach to helping communities with growth issues. For examples of the issues and action plans of the Urban Rivers Team, see the Woonasquatucket River Watershed Work Plan. For details of Department programs to address solid and hazardous waste see the work plans for the Offices of Waste Management, Customer and Technical Assistance, and Compliance and Inspection.

Key Objectives and Strategies

- Enhance quality of life and environmental quality by:
  - helping communities plan for growth
  - promoting community forestry
  - controlling or minimizing exposure to health risks from substances such as lead paint, mercury and vehicle emissions

- minimizing or eliminating impacts to human health and environment from contaminated sites and supporting restoration of sites to uses desired by the community
- implementing a comprehensive program to protect the public from diseases that may be transmitted to humans from animal populations
- training and licensing pesticide applicators to reduce use of pesticides and to ensure that pesticides are used properly
- protecting human life, property and the environment from dam failures, woodland fires and tire pile fires
- working with urban administrations and the EPA to abate environmental threats in minority and low-income areas
- reducing production and use of hazardous materials through pollution prevention
- continuing efforts with the New England Governors and Eastern Canadian Premiers to eliminate mercury emissions in the region through source reduction, recycling and stringent emission controls.
- beginning an Auto Body Certification Program to ensure compliance with environmental and occupational health standards
- applying for an EPA Environmental Justice grant to address disproportionate impacts on low income and minority communities by integrating environmental equity into department policies and programs

Goal: Livable Communities

Objective	
Minimize or eliminate the impacts and risks from inappropriate waste disposal and restore contaminated or otherwise impacted sites to levels supportive of use desired by the surrounding community	
Indicator	
Number of acres returned to a safe condition suitable to beneficial reuse Pollution, environmental degradation, health risks reduced or minimized	
Strategies	**Performance Measures**
Evaluate and prioritize contaminated properties	• Identify & manage sites in Pawtuxet Valley communities through June 2000 • Develop regional strategy for 35 sites bordering the Providence and Seekonk River by June 2001
Assess, plan and implement cleanups of sites that present the greatest risk to human health Continue increased state/federal coordination and continue oversight at "watch list" sites	• Acres of land remediated and re-used • Total assessed value • Number of new jobs • Taxes assessed ($)
Assess, plan and implement cleanups at high priority sites in the Providence Brownfields Showcase Community	• Continue remediation of the Riverside Mills, Lincoln Lace and Braid, and Buttonhole Golf Course sites in the Woonasquatucket River watershed • Continue to work with federal and local officials to address contamination at the Centredale Manor
Develop a comprehensive urban environmental strategy Work with state, federal, local agencies to develop a coordinated lead abatement policy Continue to coordinate waste disposal and site restoration issues with the Urban Rivers Team	• Identify priorities and research funding by April 2000 • Adopt policy by June 2000 • Generate preliminary list of priorities at October 1999 Urban Rivers Team meeting

Partner with DOH to target lead paint hotspots that threaten public health for intensive compliance monitoring	• Stop 100 percent of non-compliant lead paint removal operations that represent significant threats to public health or release of lead paint to the environment until remediation completed
Partner with local, state or federal agencies to respond to immediate threats to public health or the environment from releases or spills of hazardous material or petroleum product	• Remove 100 percent of all known releases of hazardous materials/petroleum product spilled or released to environment

Objective	
Reduce exposure to health risk from vector-borne and zoonotic disease	
Indicator	
Exposure to health risks will be controlled	
Strategies	**Performance Measures**
Maintain a comprehensive surveillance and control program for Eastern Equine Encephalitis, West Nile virus, Rabies, and other vector-borne and zoonotic diseases	• Number and accuracy of mosquito tests. Effectiveness of mosquito control activities. Effectiveness of response to outbreaks. Incidence of EEE, rabies, etc.
Develop enhanced strategy for training, licensing, inspection and compliance activities of agricultural and commercial applicators to ensure proper use and handling of pesticides and reduce overall use of pesticides	• Conduct 15-20 agricultural pesticide use inspections, 40 non-agricultural inspections and 40 market inspections annually. Provide training to all applicators by June 2001
Revise Integrated Pest Management (IPM) program grant procedures and requirements to ensure that grants maximize the development of practical alternatives to chemical pesticides, and expand environmental monitoring	• Grant projects incorporate requirements for alternatives to chemical pesticides • Decreased use of chemical pesticides
See also Clean Air and Clean Water sections	

Objective	
Reduce the production and use of hazardous materials through pollution prevention assistance	
Indicator	
Pollutants reduced or eliminated at the source	
Strategies	**Performance Measures**
Provide Pollution Prevention technical assistance to business and industry	• Number of onsite visits performed • Multimedia pollutants/waste streams. Percent reduction in pollutants
Reduce persistent bioaccumulative toxic (PBTs) pollutants in the environment to improve public health • Implement Mercury Task Force voluntary strategies to reduce exposure to mercury • Seek resources to develop an inventory and reduction strategy for PBT concerns in RI • Develop more effective methods of preventing releases of lead	 • Achieve mercury-free emissions by 2003 • Strategy developed by June 2000 • Work with Dept. of Health, along with Compliance and Inspection, Waste Management, and Technical and Customer Assistance to develop strategy by June 2001
Develop plan to integrate pollution prevention into media programs. Train DEM permit writers and inspectors in pollution prevention techniques	• Number of permits that include pollution prevention measures
Encourage Integrated Pest Management (IPM) in agriculture Train pesticide applicators in IPM	• Practicality and effectiveness of IPM grants • Number of applicators trained in IPM • Number of operators using IPM
Pursue the use of pollution prevention techniques, particularly IPM, in maintaining state recreation areas, particularly golf courses	• Reduced use of toxic chemicals in maintaining state recreation areas
Develop a model multi-media, occupational and environmental health autobody self-certification program by 2002	• Percent decrease in use of hazardous materials by autobody industry

Objective	
Protect life, property, and the environment from woodland fires, tire pile fires and floods due to dam failure	
Indicator	
No loss of life, significant loss of property or damage to the environment due to dam failure, forest fire or tire pile fires	
Strategies	**Performance Measures**
Implement a comprehensive, dam safety strategy	• Conduct visual inspection of 44 significant dams in RI in FY 2000; low hazard dams in FY 2001
Coordinate training and equipment supply with local fire departments to aggressively fight forest fires	• No homes lost to forest fires • Each forest fire contained to less than 2 acres
Continue monitoring Davis tire site in Smithfield and overseeing removal of tires	• No fires at Davis tire site • Remove at least 250,000 tires in FY 2000

Objective	
Coordinate effective land use management through community-based planning and implementation Help communities to plan for growth	
Indicators	
Alternative land use techniques adopted and implemented Environmental impact of new growth minimized	
Strategies	**Performance Indicators**
Provide financial and planning assistance to help towns develop more creative land use techniques to more effectively plan for and manage growth to minimize impacts to the environmental and community character	• Statewide as needed. See South County Watershed Work Plans for illustrative details • See also Pilot Watershed Projects for South County and Woonasquatucket Watershed Work Plans in this Executive Summary

Objective	
Enhance quality of life and environmental quality by promoting community forestry	
Indicator	
Percent increase in the number and extent of community tree plantings	
Strategies	**Performance Measures**
Provide technical and financial aid for community tree planting and adoption of tree ordinances	• Provide $90,000 in urban forestry grants in FY 2000 • Number of trees planted on streets and in public areas in cities and towns • Number of healthy trees maintained on streets and in public areas in cities and towns
Provide technical assistance for Community Forestry to increase the number and distribution of healthy trees	• Workshops and field tours on tree planting and urban forestry • Number of attendees • Number of communities increasing planting and maintenance programs

Objective	
Increased access to recreational areas for urban populations	
Indicator	
More urban residents using public recreational facilities	
Strategies	**Performance Measures**
Assure protection of the resource while increasing access for urban residents	• Work with other state agencies and non-profits to increase public transportation to state-owned facilities such as Lincoln Woods, Snake Den Park, and State beaches • Increase hiking, nature study, and swimming opportunities at freshwater sites near cities

Goal: Healthy Ecosystems

The health, diversity, and integrity of Rhode Island's ecosystems will be restored, protected, enhanced and sustained.

Conditions and Trends

Rhode Island's ecosystems, which include forests, lakes, rivers, freshwater wetlands, and coastal estuaries, are susceptible to disturbance, pollution, degradation, and destruction as a result of human activity. The cumulative impacts of many individual small changes can significantly diminish the capacity of an ecosystem to sustain itself.

Degradation of coastal estuaries such as Narragansett Bay and the southern Rhode Island coastal ponds is a major concern in Rhode Island. Approximately 4,000 acres of Narragansett Bay have been filled in over the past 300 years. Eelgrass beds, valuable nursery and feeding grounds for important commercial and recreational fish species, have been reduced from hundreds of acres to about 100 acres. Industrial waste dumped into rivers and the bay has caused a buildup of toxic chemicals in sediments that can harm shellfish and other organisms that live in sediments or render them unsafe for consumption. Bacterial contamination and excess nutrients from combined sewer overflows, wastewater treatment plants and nonpoint sources, and sedimentation from construction activities have also contributed to the decline of fish and plant species in the Bay.

About 23 percent of the approximately 1300 known native plant species in RI are species of concern that are becoming increasingly rare, threatened, or endangered. About 28 percent of the state's 284 known native vertebrate species, including a variety of mammals, reptiles, fish and birds, are rare or endangered. Among the more important habitats for threatened and endangered species are freshwater wetlands. Aside from the stormwater retention and filtration value that wetlands serve, their contribution to fostering biodiversity is important to maintaining healthy ecosystems.

Rhode Island has lost a significant portion of its wetlands. As much as 50% of the state's coastal marshes have been lost. We know that there has been a significant loss of freshwater wetlands as well, but we do not have accurate information on the extent of that loss. Filling, fragmenting and draining wetlands makes them less capable of supporting the biological communities that depend on them for existence. Water volume to maintain aquatic life is also of concern in the Blackstone and Pawcatuck Rivers because of competing demands for water withdrawals for irrigation, industrial cooling, and drinking water.

Ecosystem - interacting populations of plants, animals, and microorganisms occupying an area , plus their physical environment.

Key Objective and Strategies

Watersheds, the areas of land that drain into lakes, rivers or coastal waters, are natural geographic regions that will be used to focus environmental protection and restoration efforts. The Department is joining with many partners in pilot projects to protect and restore the watersheds of the Woonasquatucket River and South County. These partnerships will address the following issues:

- Developing new strategies to promote and facilitate wetland protection and restoration such as a comprehensive conservation strategy to enhance protection through non-regulatory programs.

- A collaborative effort to develop a statewide coastal habitat restoration strategy is well underway, as work also continues to reverse the impacts of ditching, impounding, filling and restricting tidal flow to coastal wetlands.

- Integrating. the Natural Heritage Program species data, that is focused on land areas away from the coast, with the Narragansett Bay Estuary Program data, that is focused on coastal and marine areas, through the Freshwater Wetlands Restoration Strategy and the Army Corps of Engineers restoration studies on the Narragansett Bay watershed within Rhode Island.

- Assessing the status of and developing management plans for selected fish and wildlife species, and habitats.

- Developing and implementing community-based management strategies for all of Rhode Island's watersheds, beginning with the two pilot projects.

Healthy Ecosystems

Objective	
By 2010, there will be a net increase in the acreage and quality of critical habitat	
Indicators	
Acres of critical habitat permanently protected; acres of critical habitat restored	
Strategies	**Performance Measures**
Permanently protect critical habitat by purchase or conservation easement	Protect 2200 acres per year
Coordinate assessments and plans; prepare updates and management plans for selected habitat types:	
Collaborate with partners to develop a Statewide Habitat Restoration Strategy	• Complete analyses of coastal wetlands restoration and coastal wetland loss trend; seek funding to develop strategy
Coastal: Coordinate assessments and plans for the Bay and coastal habitats	• Hold Bay Summit in Spring 2000; publish report by August 2000
• Present Bay status and trends and solicit stakeholder input	• Develop monitoring plan by June 2001
• With EPA lab, develop plan for Coastal Monitoring 2000 Project	
• Seek funding for invasive species study and conduct forum presenting results of study	• Conduct forum by June 2001
• Map south shore coastal ponds eelgrass beds	• Map south shore coastal ponds eelgrass beds by June 2001
• Initiate communit-based watershed management project and ecological assessment at Mill Pond, Bristol in collaboration with partners	• Initiate by June 2000
Freshwater	
• Develop a statewide wetland conservation plan	• Complete research September 2000; complete plan September 2001
• Collaborate with EPA & NE states to develop a regional biological assessment project for forested wetlands	• Project schedule to be determined
• Revise wetland rules to facilitate wetlands restoration and water quality improvements projects	• Promulgate revised regulations Spring 2000
• Survey freshwater wetland restoration projects	• Produce list of potential projects by Sept. 2000 (Phase 1 ofstrategy development)
• Complete modeling and pollutant load allocations (TMDL's) for six waterbodies	• TMDL's completed: 6 by September 2000; 6 by September 2001
• Provide technical assistance to local groups to support progressive land use decisions and protect local habitat	• See watershed pilot plans
• Prepare updates and management plans for grasslands, pine barrens and shrublands	• Plans complete by June 2000

Healthy Ecosystems

Objective	
By 2010, the state's fish and wildlife populations will be stable or have an improved status	
Indicators	
Stable populations of rare, threatened, endangered, or species of concern Spread of nuisance species controlled	
Strategies	**Performance Measures**
Conduct population assessments, prepare management plans	• Prepare local and regional update, management plans for: winter flounder, and bluefish by June 2000 • And for: horseshoe crabs, blue crab, eel, winter flounder, and weakfish by June 2001 • Complete management plans for shellfish areas by June 2000
Cooperate with watershed partnerships to evaluate instream flow regulations and the impact of drought on fisheries resources	• Ongoing
Enforce fish and wildlife laws	• Ongoing
Inventory and evaluate impacts of invasive species; control spread of invasive species	• Conduct controlled burn of 200 acres of Narragansett Bay Estuarine Research Reserve by June 2000
Prepare updates and management plans for State and Federal endangered animals, and plants including: • Northern Harrier, Upland Sandpiper, Diamondback Terrapin, American Burying Beetle • Sand Plain Gerardia, Creeping St. John's Wort, New England Boneset	• Prepare by June 2000 • Prepare by June 2001

Healthy Ecosystems

Objective	
Through watershed approach, develop and implement community-based management strategies for all of Rhode Island's watersheds	
Indicators	
See watershed sections	
Strategies	**Performance Measures**
Work with partners in Woonasquatucket and South County Watershed regions to: • develop fully integrated watershed plans for the Woonasquatucket and South County Watersheds • implement key remedial and restoration strategies set forth by plans • coordinate with other state and federal agencies to acquire funding to create and enhance wetlands	• See watershed sections

Goal: Viable Natural Resource-Based Industries

Conditions and Trends

Agriculture, fisheries, forestry and tourism will be affordable and sustainable activities, will employ best management practices to protect common resources, and will be supported as resource stewards and key sectors of the state economy.

Fishing and Hunting

Commercial fishing for finfish and shellfish in Rhode Island brings in approximately $750 million per year which, in turn, generates more than $3 billion in related economic activities. Shellfish from Narragansett Bay accounts for 35 to 40 percent of all shellfish consumed in this country. Galilee is the seventh most productive fishing port in the country in terms of income. Although some species, such as striped bass have rebounded in recent years, several commercial fish stocks (notably winter flounder and cod) have been in serious decline for years. The lobster fishery must have a management plan that is part of regional plan with our neighboring states to protect this valuable fishery. Overfishing is partly responsible for the declines, but habitat destruction and pollution contribute to lower populations of some species.

Freshwater fisheries surveys indicate healthy distributions of gamefish and other freshwater species throughout the state. The recent increase in alewives in small coastal streams may be related to broodstock enhancement in the early 90s. Hunting and fishing are two of the largest participatory recreational activities in the state, with approximately 27,000 hunting licenses and 39,000 fishing licenses issued each year. Hunting opportunities for wild turkey, white-tailed deer, and Canadian geese are increasing. Hunters have spent over $240 thousand on hunting licenses in 1999.

Agriculture and Forestry

Farming contributes $84 million a year to the Rhode Island economy. Consumers of our agriculture food products are mostly within the state, and buyers pay more for locally grown produce, appreciating the freshness and quality. However, the state's agricultural base continues to erode due to development pressure, narrow profit margins and other factors, including taxes and estate issues. There are significantly fewer acres under cultivation now then at the beginning the century, with many acres lost each year.

Rhode Island's nursery and sod businesses have customers distributed throughout the northeast, and represent the largest segment of agriculture in Rhode Island. An adequate water supply is integral to the viability of these and other agricultural operations. One of the challenges the Department is facing is water use, with demands increasing due to residential and commercial development in rural areas.

Although there is more forestland today than when Rhode Island was largely farmland, development pressures threaten to reduce and fragment forested land in RI. The forest industry in Rhode Island employs over 2,000 workers and produces shipments worth more than $263 million.

Tourism

Tourism is the leading industry in the state, generating $2.5 billion in 1998. Much of Rhode Island's tourism industry is tied to the Bay, although inland activities are a growing sector. Bay-related activities include recreational fishing, boating, swimming, and diving. Tourists also enjoy our farm stands and our abundant hunting, hiking, biking, bird watching, and golfing opportunities, many of which are associated with our state parks and management areas.

Key Objectives and Strategies

- The Department will continue to work with the Rhode Island and New England Marine Fisheries Councils to restore marine species that have been depleted. One of the specific actions is to seek adoption of new legislation for lobster management.

- The Department will work to develop better support for farmers, especially in responding to their pressing need for access to reliable sources of water.

- While state, local, and private non-profit efforts to preserve farm forest and open space resources are expanding, it is increasingly clear that acquisition itself cannot reverse the process of converting open space to development. The Department will work with partners toward more far-sighted and progressive approaches to land use management at all levels of government.

- In support of the commercial fishing industry, Department will continue the recent progress in rehabilitating the deteriorated infrastructure at the Port of Galilee and at Pier 9 in Newport. Additionally, we will address the chronic seasonal parking shortage at Galilee, and work with EDC, the Town of Narragansett, and the port tenants to revitalize fish processing and related support industries through measures such as developing small-business incubators.

Viable Natural Resource-Based Industries

Objective	
Promote fish and wildlife resources as a key element in the Rhode Island economy	
Indicators	
Sustainable levels of commercial fish stocks; fish and wildlife populations restored Number of acres of critical habitat restored; adequate facilities to support fishing industry	
Strategies	**Performance Measures**
Work with New England Marine Fisheries Council to restore depleted marine species & maintain those species	• Seek adoption of legislative reform relating to lobster management
Partner with other state & federal agencies, universities, & nonprofits to restore critical habitat, e.g., eelgrass beds, fresh water & coastal wetlands, & habitat for many species of fish, shellfish, & wildlife	• Continue coordinating the RI Coastal Habitat Restoration Technical Advisory Committee; see Work Plans for Fish and Wildlife, Forestry, and Water; see Healthy Ecosystems section of Executive Summary
Abate sources of pollution to Narragansett Bay to allow re-opening of closed shellfish beds	• See Water Work Plan
Provide upgraded port facilities for the commercial fishing fleet at Galilee and Newport	• Port upgrade plan 1999 - 2003 Galilee - Rebuild 3 piers by June 2000; Rebuild south facing bulkhead in dragger section by June 2000; Repave parking lot by June 2000 Newport Start construction of bulkhead, repave commercial fishing parking lot, construct drainage by June 2000
Continue to increase angler access and hatchery operations (Continue to stock trout, continue large mouth bass pilot project -stock bass and survey results)	Complete largemouth bass pilot project by June 2000
Improve hunting opportunities: work with owners of large properties to allow special permission hunting; schedule more frequent hunter education classes	• Number of acres of private property voluntarily opened to hunters • Number of additional hunter education classes scheduled annually

Viable Natural Resource-Based Industries

Objective	
Sustainable agriculture industry in Rhode Island	
Indicators	
Number of farms, and land in farmland; viability of farming operations; level and diversity of production; reduced farmland losses	
Strategies	**Performance Measures**
• Coordinate with DEM divisions and partners to improve our ability to assist farmers • Prepare plan, seek funding sources, help farmers to optimize farming for the resources they have available	• Develop drought response management plan by April 2000 • Prepare internal draft of RI Farm Viability program by July 2000 • Seek funding by July 2001
• Continue efforts to preserve farmland	• Increase the number of farms and acreage protected by conservation easements -see Planning & Development Work Plan • Establish partnerships with cities and towns and land trusts for farmland preservation • By mid 2000, develop a draft resource based tax assessment method for farmland and develop technical assistance material for the Purchase of Development Rights Program
Continue to promote aquaculture, develop partnership with Economic Development Council (EDC) • Coordinate activities with the Northeast Agricultural Forum of the Council of State Governments to provide regional support for agriculture • Further develop partnerships with the USDA, Conservation Districts, State Conservation Committee, DEM Agricultural Advisory Committee, RI Farm Bureau, and other advocacy groups	• Prepare marketing proposal by December 31, 2000 • Initiate discussions with EDC by January 1, 2000 • Ongoing • Initiate agriculture roundtable and develop coordination plan by March 2000
• Increase marketing initiatives to promote RI grown farm products	• Evaluate feasibility of statewide central market by March 2000 • Develop new promotional material by December 2000

Viable Natural Resource-Based Industries

Objective	
Sustainable forestry industry	
Indicators	
Percent of forest cover	
Strategies	**Performance Measures**
Purchase development rights to forested land and purchase targeted open space habitat, ensuring that biodiversity is a key consideration in acquisition	See Open Space and Healthy Ecosystems sections
Work with owners of large tracts of forested land, such as the RI Water Resources Board, to implement management plans for silviculture on their properties	• Acquire 753 Forest Legacy acres by June 2001 • File 8 Forest Legacy applications with the U. S. Forest service Fall 1999 • Number of forested acres permanently protected
Develop forest management plans to assist landowners	• Assist 250 landowners by June 2001 • Add 1,000 acres under new stewardship plans by 2001
Encourage landowners to implement alternative forest uses to replace or augment traditional forest use and to encourage owners to retain forest land	
• Develop alternative business uses for forest lands to encourage preservation of these lands	• Develop 5 alternative forest based business opportunites by June 2000
• Develop educational materials to promote alternative forest business to landowners	• Produce 16 publications by December 1999
• Hold workshops to showcase successful RI operations	• Conduct 3 workshops for 150 participants by June 2000
• Establish web site to disseminate latest news regarding alternative forest uses, provide a forum for marketing and a link to cooperating agencies	• Establish web site by June 2000

Viable Natural Resource-Based Industries

Objective	
Provide facilities and activities that support tourism	
Indicators	
Increased use of state facilities and increased attendance and participation in DEM-sponsored activities by Rhode Islanders and tourists	
Strategies	**Performance Measures**
Increase biking opportunities by constructing new bikeways	• See Planning and Development Work Plan & Open Space section of Executive Summary
Ensure public safety on the water through boating safety courses and marine safety patrols	• More compliance, fewer mishaps
Increase public access for boaters by adding or upgrading boat ramps	• Construct new parking areas for Colt Park and complete Westerly ramps by Fall 1999 • Rebuild Stone Bridge ramp, Tiverton by Spring 2000 • Develop new access sites at Barberville Dam, Wood River, and Black Point by Spring 2000 • Build handicap accessible docks at Little Round Top and Carolina Trout Ponds by Fall 1999
Continue to invest in infrastructure in parks and add facilities	• Complete facility improvement projects in state parks by June 2001
Increase officer presence in parks to meet public need	• Number of officers per park and number of officers in problem areas increased
Maintain and patrol areas that are dedicated to recreational diving	• Ongoing
Sponsor special events and work with other state agencies to provide special events at state parks (Governor's Bay Day, Bike Safety Day, the Jazz and Folk Festivals at Fort Adams, road races, charitable events)	• Continued partnership with the Governor's Office, state agencies, businesses, community organizations, and host communities for 9 special events per year
Publish guides to Rhode Island's parks, trails, and greenways and greenspaces	• Produce and distribute guides for the public by June 2001 • Coordinate with EDC to promote RI natural areas

Goal: Abundant Open Space and Recreational Opportunities

Natural and scenic landscapes will be preserved and all citizens will have easy access to well-maintained parks, forests, wildlife areas and historic sites. Open space and recreational opportunities will be improved in both rural and urban settings.

Conditions and Trends

The loss of open space and degradation of important natural and historic resources continue at a rapid pace in Rhode Island. Though the state's population has not increased significantly in recent years, many suburban and rural communities are continuing to experience the pressures of sprawl. In 56% of the state, (the urban residential corridor) the population averages 3100 people per square mile. Most of the land in this corridor is already developed and open spaces are extremely limited.

In the western and southeastern areas of the state, there are many acres of open land; there are forests, wetlands, farms and some land is protected as open space. In these parts of the state (44% of the state's land area) the population averages 210 people per square mile. However, only 6% of the open lands in Rhode Island are protected. Whether farmland or forest lands, more acres are developed into other uses each year than are set aside for open space preservation. Many of the state's historic resources also continue to be lost due to lack of adequate resources to protect and preserve them.

The preservation of open space protects land from future development, but far more importantly provides the foundation for maintaining healthy ecosystems and livable communities for the use and enjoyment of all Rhode Islanders and visitors to the state. In urban settings, parks are vital to the quality of life.

The strength of Rhode Island's tourist industry, which generates $2.5 billion per year, depends in large part upon Rhode Island's unique and beautiful natural and historic resources. The Department strives to both protect and interpret these natural and historic resources and to provide outdoor recreation opportunities, facilities, public access to state lands and waters, and education programs in a variety of settings. It is of particular importance that we restore wild areas to the urban parks of the State. These needs which have not been adequately addressed over the last decade, must be met in order for the public to receive the full benefits of open space and historic resource preservation.

Key Objectives and Strategies

- Accelerating our land protection efforts, consistent with Governor Almond's call for protecting at least 35,000 additional acres by the year 2010, is a major objective of the Work Plan. Since it is not possible for the state to purchase sufficient development rights or land outright to accommodate the need for open space preservation, we will be working with local land trusts and other nonprofit organizations and using state monies to leverage both local and federal fundings as much as possible.

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- The first order of business is to secure passage of a $50 million bond issue.
- The second is to prepare for implementation of this ambitious initiative, through appropriate staffing and coordination internally as well as by expanding and strengthening partnerships with local land trusts and nonprofit organizations.
- The Department will also develop a long-term capital asset management plan that will focus on restoring and maintaining existing properties and developing new facilities as needed.

The East Coast Greenway is a planned pedestrian and bike path that will run from Maine to Florida when complete. Some segments of the Rhode Island portion of this corridor are complete and other sections will soon be constructed. The portions that pose significant challenges in their design and construction are the sections that will run through Providence and other urban areas.

Abundant and Accessible Open Space

Objective	
By 2010, 35 thousand more acres of open space will be protected	
Indicators	
Annual increase in protected open space	
Strategies	**Performance Measures**
Work with the Legislature, local governments and nonprofit land conservation groups to accelerate land preservation efforts:	
• Identify large (over 50 acres) tracts of land contiguous to other protected lands for preservation opportunities and pursue acquisition of those parcels	• $50 million open space bond approved by public in November, 2000
• Continue to expand and fill in existing management areas drawing connections via greenway corridors to link important open spaces	• In FY 2001 increase past performance of 1200 to 1500 acres per year in acquisitions to 2000 to 2500 acres annually to achieve objective by 2010
• Maintain GIS mapping of conservation lands	• GIS map of conservation lands is continually updated with information as it is made available
• Provide technical expertise and assistance to local communities, public agencies, private organizations and nonprofit groups for natural and historic resource stewardship on private properties	• Ongoing
• Work with partnerships to develop business plans for preservation of farming and forestry resources; and develop public recreational partnerships to enhance recreational opportunities	• Ongoing
• Develop a model Transfer of Development Rights (TDR) program to transfer growth away from farm, forest and open space lands to community growth areas.	• By August 2000

Abundant and Accessible Open Space

Objective	
By 2003, the backlog of capital projects for the state's recreation lands and facilities will be eliminated	
Indicators	
No backlog exists for capital projects	
Strategies	**Performance Measures**
Improve facilities, routine maintenance procedures, and capital reinvestment	• Capital projects will provide better facilities on schedule and within the budget
Enhance constituent service over the next four years in state parks, forests, and recreation areas	• Constituent satisfaction with facilities and services as shown on surveys
Upgrade facilities to improve handicapped access as well as access to under-served populations	• Constituent satisfaction with facilities and services as shown on surveys
Work with local government and nonprofit groups to develop open space and recreational facilities, particularly in urban areas	• Complete construction of recreational facilities in urban areas, such as Buttonhole Golf Training Center; renovation of World War II Park by close of FY2001
Develop a strategy for long term capital development and capital maintenance	• Establish a Long Range Capital Development Committee of departmental representatives, stakeholders and other experts to recommend long term strategies and methods for the proper maintenance and financing of departmental recreational assets

Abundant and Accessible Open Space

Objective	
Establish an integrated statewide system of greenways, trails and bikeways for transportation and public recreation use	
Indicators	
Greenways, trails,and bikeways are connected for ease of travel throughout the state	
Strategies	**Performance Measures**
Work with state, federal and local partners to complete the three regional bikeways of Blackstone, South County and West Bay/Washington Secondary over the next three-four years	• Construct 7 additional miles of the Blackstone Bikepath in FY 2001 and FY 2002 (DEM/DOT)
Work with local land trusts, communities and environmental organizations to acquire and develop local greenways, trails and bike paths consistent with the State's Plan – Greenspace 2000	• Complete design on 10 mile western segment of the Washington Secondary Bikepath (The Trestle Trail segment) by Spring of 2000 (DEM)
Work with RIDOT and State Greenways Council to seek expanded state funding to match federal funding for bikeway projects over next three years. Target - $7 million additional state funding for a total program of $33 million	• Award $2 million in state greenways grants to local sponsors October 1999 (DEM)
Redesign and develop the closed northbound Rest Area on Interstate 295 into a regional park entrance and visitors center for the Blackstone Bike path	• Complete design of the I295 Park and Visitors Center by Winter 2001. Start construction Summer 2001

Goal: Open and Effective Government

The Department will carry out its mission and achieve its goals with involvement and support of citizens and stakeholders, and to that end will improve its accountability, responsiveness, and service delivery.

Conditions and Trends

Despite efforts made in recent years to improve its performance and public perception thereof, the Department continues to receive complaints, in particular about lengthy and otherwise burdensome regulatory requirements and processes, but also about lack of accountability, accessibility, responsiveness and appreciation for the needs of its customers.

Key Objectives and Strategies

- Improve accountability through work plans that allow constituents to track use of resources as well as environmental results. Establish clear, consistent data quality standards and data management systems (Sound Science). Continue to develop more targeted indicators and performance measures.

- Improve accessibility and responsiveness by promoting and strengthening the Office of Technical and Customer Assistance, appointing an independent Ombudsperson, continuing quarterly Business and Environmental Roundtables, developing internal policies and protocols for responding to inquiries, and integrating these elements into a professional development review system for management and staff., and continously improve both access to and content of the Department's web page.

- Streamline permitting, i.e. (1) establish a state-of-the-art electronic information management infrastructure to improve internal coordination and consistency, expedite the processing of applications, and track the output of permitting and other programs; and (2) conduct or update analyses of all major permitting programs to eliminate unproductive requirements and procedures, to coordinate and consolidate permit processes where possible; and explore alternatives to individual permits, such as general permits and self-certification.

- Coordinate enforcement activities and develop a department-wide protocol for preparing and executing enforcement actions that include compliance assistance. Also develop a protocol for all inspections and other instances in which employees represent the Department in the field. The protocols will balance the need to take timely and decisive action when necessary to protect public health and public resources with the need to respect private property and reasonable privacy expectations.

Goal: Open and Effective Government

Objective	
Improve accountability	
Indicators	
Public understanding of, and support for, the Department's programs	
Strategies	**Performance Measures**
Work plans for Divisions and multi-program initiatives that prioritize the work to be done by each program in accordance with the Department's goals and strategic priorities, and that propose measures by which progress and results can be verified	• Work plans completed fall 1999 • Protocol for tracking and evaluating performance on quarterly and annual basis completed November 1999 • Annual report with progress indicators and performance measures published by March 2000
Establish clear, consistent data quality standards and data management systems (Sound Science)	• In partnership with EPA, develop and institute a Quality Management Plan for the Bureau of Environmental Protection by June 2001 • Develop and implement an environmental data monitoring module for the Permit Streamlining computer system • Develop and implement a computer system to track the receipt and response to citizen complaints on environmental issues

Goal: Open and Effective Government

Objective	
Improve accessibility and responsiveness	
Indicators	
Customer satisfaction	
Strategies	**Performance Measures**
Promote and strengthen the Office of Technical and Customer Assistance (OTCA) as "single point of contact" for routine inquiries and requests for assistance Strengthen customer service Department-wide	• Update brochure about OTCA services and contacts for customer assistance by December 1999, distribute to constituencies and media by January 2000 • Develop department-wide policy and system to solicit customer feedback by March 2000.
Provide for independent review of external and internal complaints.	• Appoint Ombudsperson and establish policy for independent review by November 1999
Continue quarterly roundtable meetings with business and environmental communities	• Attendance at meetings. Participation in working groups and legislative initiatives. Initiatives developed and implemented.
Develop customer service orientation among management and staff .	• Include accessibility and responsiveness elements in Professional Development Review System, to begin by January 2000. • Develop employee training program by January 2000
Continuously improve the accessibility and content of the Department web page	• Web page redesigned • Web page content updated regularly

Goal: Open and Effective Government

Objective	
Make regulatory process less burdensome, more streamlined and productive	
Indicators	
More compliance with fewer complaints	
Strategies	**Performance Measures**
Implement permit streamlining project to provide adequate infrastructure and staffing for effective information management, including application processing and tracking	• Start of air permit module in December 1999, waste permit module in FY2000 • Achieve full start-up in FY2001
Update permit streamlining analyses for all major permit programs (building on earlier KPMG and Kyran recommendations)	• Establish internal permit streamlining taskforce October 1999. Reconvene streamlining working group(s) no later than November 1999 • Publish reports for public comment by January 2000 for wetlands; March 2000 for Water Quality Certification, RIPDES, and ISDS; May 2000 for Air and Solid and Hazardous Waste and others. Reports will identify requirements and processes to be consolidated, shortened, modified or eliminated, alternatives to individual permitting, and opportunities for privatization

Goal: Open and Effective Government

Objective	
Effective and fair enforcement	
Indicators	
More compliance with fewer complaints	
Strategies	**Performance Measures**
Develop department-wide enforcement policy and protocol to ensure and optimize internal and external coordination in preparing and executing enforcement actions.	• Finalize policy and protocol to take effect by March 2000, with public acceptance that procedures allow for effective enforcement while respecting reasonable privacy expectations through appropriate notice and other procedures; include compliance assistance component • By December 2000, companies will be notified in writing of serious problems within 10 business days of discovery • Reduce backlog in complaints by 50% in 2000
Develop department-wide protocol for all inspections and other field activities.	• As above, by March 2000
Revise the Rules and Regulations for the Assessment of Administrative Penalties to ensure that the assessment of appropriate penalties is fair and effective in all cases.	• Finalize revised Rules and Regulations for public comment by January 2000, effective by June 2000
Resume a mediation program to provide a less costly and less adversarial method to resolve permitting and enforcement appeals.	• Start mediation program for freshwater wetlands and ISDS enforcement cases by December 2000
Target strategies and inspection protocols to identify significant non-compliers and apply enforcement actions that deter further non-compliance	• Fewer significant non-compliance cases • Cases resolved in less time
Expand multi-media inspections through greater internal coordination between regulatory programs and with the sister EPA programs	• More timely and complete resolution of violations

Pilot Watershed Project – South County Watershed

Conditions and Trends

The South County Watersheds Region of Rhode Island includes the hydrological basins and coastal drainage within the nine towns of Washington County, in addition to the western portion of West Greenwich (Kent County). The following major watersheds fall within this region: Pawcatuck River, Pettaquamscutt River, Annaquatucket River, Saugatucket River and the south shore coastal ponds.

The Rhode Island Watershed Approach Writing Group defined the South County Watersheds region through a collaborative effort that culminated in the draft 'RI Watershed Approach Framework' in June 1999. For the purpose of this action program, the regional boundaries extend beyond the actual watershed boundaries to the town boundaries because a principal locally-developed management objective is to more *effectively plan for growth in order to minimize impacts to the environment and community character.* Effective land use planning in this region should be done using political boundaries. In addition, there is a regional planning effort being spearheaded by the Washington County Regional Planning Council, which is comprised of town council representatives from each of the Washington County municipalities.

Key Objectives and Strategies

The primary purpose of DEM's action program for the South County Watersheds is to define the Department's contribution to a broader partnership effort to establish an integrated watershed approach and in particular, to ensure that DEM responds to, empowers and works in partnership with watershed stakeholders to address locally based management objectives.

The DEM's management objectives reflect several that have already been identified as high priorities by local officials in the watershed and others that are consistent with major stakeholder interests in the area:

- Coordinate effective watershed resource management through community based planning and implementation;
- Protect and restore surface and groundwater quality;
- Promote development of a comprehensive water use plan for the region;
- Plan for growth;
- Maintain and restore fish and wildlife habitat;
- Protect and sustain farms, forests, and open space;
- Enhance management of estuarine waters;
- Maximize quality and accessibility of recreational opportunities.

South County Watersheds

Objective(s)	
Coordinate effective watershed resource management through community-based planning and implementation; protect and restore surface and groundwater quality; assist communities to plan for growth; maintain and restore fish and wildlife populations and habitat; protect and sustain farms, forests and open space; enhance management of estuarine waters; maximize quality and accessibility of recreational opportunities	
Indicators	
Effective local partnerships and community based watershed action plans; restoration of impaired waters and habitats; protection of high quality surface and groundwater; minimized environmental impacts stemming from growth; increased acreage of protected farmland, forestland, and open space; restored coastal habitats; enhanced management of recreational use group conflicts	
Strategies	**Performance Measures**
Facilitate and encourage the development of Strategic Plans and action programs to address community-based objectives	• Develop model formats for plans & programs by November 1999; create watershed stakeholder team & watershed community council by November 1999; complete watershed plans & action programs by October 2000
Conduct studies of surface and groundwater to identify specific actions to protect or restore water quality and to assess quantity	• Develop water quality restoration plans (i. e., TMDLs) for Narrow River, Saugatucket River and Ninigret and Greenhill ponds by 2001
Prepare & distribute educational materials increase awareness of the impacts of unplanned growth to the environment & community character	• Prepare materials and distributee by end 1999
Support planning assistance to help towns develop creative landuse techniques to minimize growth impacts to the environment and community character	• Develop model creative land use techniques for towns by August 2000
Preserve, protect, and restore game and non-game wildlife populations and habitat	• Complete freshwater fisheries survey in Pawcatuck Watershed by 2002; revise andromous fish restoration plan for Pawcatuck by 2001
Target existing funding to purchase development rights for farmland, forestland, and open space in region	• Develop Regional Greenspace Plan by January 2001; identify sites for protection under Forest Legacy Program by June 2000; protect between 500-1000 acres in watershed by 2001
Develop action plan to address recreational and commercial user group conflicts on coastal ponds	• To be developed by June 2001
Acquire new, or expand or improve existing recreational facilities to meet public demand	• Improve fishing access areas at Wood River and Black Point by Summer 2000; distribute grants to communities to help them purchase priority local recreational sites greenways by end 2000
Support partnerships of public agencies and non-governmental organizations	• South County Watershed Coordinator Position Funded

Pilot Watershed Project – Woonasquatucket Watershed

Conditions and Trends

The Woonasquatucket River watershed is a diverse geographic area that originates in the rural lands of Glocester, North Smithfield and Smithfield and flows into the urbanized communities of Johnston, North Providence, and ultimately Providence. As the river flows downstream, the degree of urbanization in the surrounding communities progressively increases. As the geography changes, the challenges facing the watershed change as well.

Over the past few years, many organizations and individuals have invested considerable effort and resources into the recognition, revitalization and promotion of the river. However, most of that effort has been in the urban stretch of the river that flows through Olneyville into downtown Providence. In discussions about the approaches and tasks outlined in this work plan, we have found that the vast majority of the people involved in those discussions thought of the Woonasquatucket River watershed as a very limited, urban stretch of river in Providence.

Major projects to revitalize the river in Providence include: the youth golf course under construction on the Providence-Johnston line down, the Greenway-related projects in Olneyville, and massive urban revitalization projects in downtown Providence, including the Capital Center project, the construction of Waterplace Park and the development of the Providence Place Mall. The watershed is much more than that, however, and a major goal of this pilot is to educate all the communities in the watershed on their potential roles and interconnectedness with respect to environmental protection.

Despite the improvements that have been made, many challenges still remain. As evident through the recent discovery of dioxin-contaminated sediment in North Providence, there is much more to be investigated and learned from this river and the surrounding communities, with particular focus on the upstream communities.

DEM and EPA have selected the Woonasquatucket River as a pilot to develop a multi-program, collaborative watershed approach to environmental protection. This river was selected due to the past investments made by various stakeholders, including DEM and EPA, the community interest in the river, and the myriad of challenges to be met.

Key Objectives & Strategies

The watershed approach will be implemented in the Woonasquatucket River Watershed by pursuing the following actions:

- Establishing a watershed team;
- Identifying community-based watershed priorities;
- Developing a watershed plan that addresses the priorities;
- Undertaking recommended restoration and protection activities.
- Take a coordinating role and by targeting applicable resources and programs to priority watershed issues.

Pilot Watershed Project – Woonasquatucket Watershed

Objective	
Work with our partners and, including the American Heritage Rivers Steering Committee, the Urban Rivers Team, and the River Navigator to represent local community groups to plan on a watershed basis and provide local leadership on environmental issues; protect the Woonasquatucket River and watershed communities from further environmental degradation and restore the River	
Indicators	
River miles restored; water quality improved; hazardous and solid waste sites remediated; miles of greenway and access to open space restored or preserved	
Strategies	**Performance Measures**
Conduct comprehensive water quality assessments, develop restoration plans (TMDLs)	• Complete comprehensive water quality assessment study by June 2000 • Develop supplemental monitoring plan by June 2000 • Begin supplemental monitoring by summer 2000
Work with Narragansett Bay Commission and others to continue the combined sewer overflow (CSO) project	• See Water Work Plan for dates
Work with partners on Urban Rivers Team and American Heritage Rivers Steering Committee (AHRSC) to prioritize projects, develop watershed plans & solicit local leadership on environmental issues	• Establish Woonasquatucket River Watershed Team by January 2000 • Review list of projects for immediate start February 2000
Start high priority restoration projects identified by the EPA River Navigator; AHRSC localities	• Confirm list of projects by June 2000
Work with the Urban Rivers Team, the American Heritage Rivers Steering Committee, and the EPA River Navigator to produce a readable, graphic State of the Watershed report that highlights the unique qualities of the watershed and sets a strong positive vision for protection and restoration	• Produce draft report by May 2000 • Publish final report by June 2000
With DOT & the cities and towns, establish a bike path & greenway along the river, build support for protection and restoration, leverage bike path funds for restoration projects	• Although parts of the bikeway will be on existing roads, at least 80 percent will be off-road and free of automobiles
Facilitate revitalization of brownfields sites	• Continue cleanup of Lincoln Lace & Braid & Riverside Mill sites, including habitat restoration • Generate list of additional sites at October 1999 AHRSC meeting • Complete assessments of 2 additional sites by May 2000

Work with EPA to complete the investigation and assessment of the Centredale Manor site & other related dioxin suspected sites	• Review draft listing package by October 1999 • Review final listing package by February 2000 • Begin remedial scope of work by June 2000