



# THE RHODE ISLAND BAYS, RIVERS, & WATERSHEDS COORDINATION TEAM

## **Bays, Rivers, and Watersheds Systems-Level Plan: 2009-2013**

### **Strategy Tables**

*(Revised February 2013)*

## Table 1: Waterfront and Coastal Development Strategies

**Vision:** *Rhode Island's shorelines and waterfronts will be characterized by balanced, well-designed development that accommodates marine-related industry, transportation, recreation, housing, and conservation.*

<b>Goals</b>	<b>Policies</b>	<b>Strategies</b>	<b>Agencies</b> lead agency in bold	<b>Time Frame</b>
<b>(1)</b> Sufficient quantity and quality of industrial waterfront lands to foster marine and waterfront economic development.	<b>(1.1)</b> Expand municipal government utilization of zoning tools such as performance standards to encourage appropriate development of industrial waterfront sites.	<b>(1.1.1)</b> Complete updating of the RI Industrial Land Use Plan and incorporate it into the update of the Div. of Planning's Economic Policies Plan.	<b>DOP</b> , EDC	1-2 years
		<b>(1.1.2)</b> Promote remediation of waterfront brownfield sites to help fulfill future demand for mixed-use redevelopment, and to support Rhode Island's maritime sector.	<b>DEM</b> , EDC	Ongoing
	<b>(1.2)</b> Develop clear policy statements regarding the state's interests and goals for marine transportation and the maintenance and development of key port facilities.	<b>(1.2.1)</b> Identify those activities which are determined to be of regional benefit and demonstrate how state legal authority will ensure that these activities are not unreasonably excluded by local government action from locating in the coastal area.	<b>DOP</b> , EDC, CRMC	Ongoing

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Goals	Policies	Strategies	Agencies lead agency in bold	Time Frame
	(1.3) Adapt current and design future waterfront infrastructure to accommodate sea-level rise.	(1.3.1) Communicate with municipalities and maritime companies on the need to adapt infrastructure to sea-level projections. Develop polices and regulations to ensure investments in current and future infrastructure made in accordance with official state sea-level rise projections.	<b>CRMC</b> , EDC, DOP	1-4 years
(2) Waterfront, riverine, and coastal developments that incorporate design standards sensitive to the environmental and cultural values of their surroundings.	(2.1) Support and advance Special Area Management Planning for critical coastal regions in accordance with the goals for SAMP development established in the 2006 Marine Resources Development Plan.	(2.1.1) Work with municipal and private sector stakeholders to update, revise, and implement the Metro Bay SAMP.	<b>CRMC</b> , DEM, DOP, EDC	Ongoing
		(2.1.2) Complete development of the Aquidneck Island SAMP.	<b>CRMC</b>	Ongoing
		(2.1.3) Spearhead revisions to the Greenwich Bay SAMP.	<b>CRMC</b>	1-2 years

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Goals	Policies	Strategies	Agencies lead agency in bold	Time Frame
		<b>(2.1.4)</b> Pursue development and implementation of the Ocean SAMP, linking it to planning and policy development for the terrestrial components of ocean renewable energy development.	<b>CRMC</b> , DOP, DEM, RI Office of Energy Resources	2-3 years
	<b>(2.2)</b> Ensure that SAMP goals and actions and DEM's water quality TMDL plan recommendations (see Water Quality section below) are adequately reflected in state and local planning, zoning and related by-laws.	<b>(2.2.1)</b> Update and enforce local development requirements in conformity with relevant SAMP and TMDL mandates.	<b>CRMC</b> , DEM, DOP	Ongoing
	<b>(2.3)</b> Promote revision of community development standards to ensure application of Low Impact Development (LID) standards and techniques in re-development and development projects along freshwater and estuarine waterfronts.	<b>(2.3.1)</b> Provide education, training, and assistance to local governments to adopt LID for coastal and waterfront sites.	<b>DOP</b> , DEM, CRMC	Ongoing
<p><b>Timeframes:</b> For many listed actions additional funding will be required for successful completion.</p> <p><u>Ongoing:</u> Action is currently being pursued by one or more agency. Additional funding may be required for completion.</p> <p><u>1-2 Years:</u> With adequate funding, action should be completed within 1-2 years.</p> <p><u>2-3 Years:</u> With adequate funding, action should be completed within 2-3 years</p>				

## Table 2: Watersheds Strategy

**Vision:** *Rhode Island's watershed ecosystems will be healthy and their natural functions maintained.*

<b>Goals</b>	<b>Policies</b>	<b>Strategies</b>	<b>Agencies</b> lead agency in bold	<b>Time Frame</b>
<b>(3)</b> Complete attainment of water quality standards and the prevention of water quality degradation for Rhode Island's rivers, streams, lakes and ponds.	<b>(3.1)</b> Work with local governments to establish their most important priorities for protecting natural resources with strategies such as participation in a regional green space protection strategy.	<b>(3.1.1)</b> Work with local governments to develop "community asset maps" that identify and prioritize natural, cultural, and recreational resources, including headwater tributaries and ground and surface water supplies.	<b>DEM, DOP, CRMC</b>	1-4 years
		<b>(3.1.2)</b> Use community asset maps to educate communities on developing planning processes that consider natural, cultural, and recreational resources in comprehensive plans and development reviews.	<b>DOP, DEM</b>	Ongoing
		<b>(3.1.3)</b> Integrate community asset maps into a single state GIS system.	<b>DOP</b>	1-5 years
	<b>(3.2)</b> Establish and promulgate green development standards and land use techniques to protect fresh and marine water quality.	<b>(3.2.1)</b> Expand technical assistance and seek additional financial support to help communities implement green development standards and land use techniques.	<b>DEM, DOP, CRMC, RIRC</b>	Ongoing

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<b>Goals</b>	<b>Policies</b>	<b>Strategies</b>	<b>Agencies</b> lead agency in bold	<b>Time Frame</b>
	<b>(3.3)</b> Expand local and state-wide protection of riparian buffers, freshwater wetlands, brackish wetlands, and salt marshes.	<b>(3.3.1)</b> Expand grants and technical assistance to protect and restore riparian buffers and wetlands, particularly in urban watersheds.	<b>DEM</b> , CRMC	Ongoing
	<b>(3.4)</b> Increase the capacity and emphasis of state, federal, and non-profit land acquisition programs to protect critical headwater parcels.	<b>(3.4.1)</b> Grant proposals should be assessed with greater consideration for land acquisitions that protect healthy headwater streams.	<b>DEM</b> , DOP	1-2 years
	<b>(3.5)</b> Minimize impervious cover to prevent stormwater runoff from impairing water quality and habitat.	<b>(3.5.1)</b> Work with municipalities to update zoning ordinances to allow for reductions in impervious cover.	<b>DOP</b>	1-4 years
<b>(4)</b> Future land-uses and development that fully protect and restore watershed resources, habitats, and freshwater resources.	<b>(4.1)</b> Develop incentives and requirements for local government permit reviews and land-use decision making to address cumulative impacts to water quality.	<b>(4.1.1)</b> Evaluate and expand as necessary state authorities relative to gaps in local land use authority to prevent cumulative water quality impacts from growth.	<b>DEM</b> , CRMC, DOP, WRB	1-4 years

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Goals	Policies	Strategies	Agencies lead agency in bold	Time Frame
	<b>(4.2)</b> Provide incentives for local governments to adopt compact growth techniques such as village centers and conservation development.	<b>(4.2.1)</b> Target applicable grant funds for infrastructure improvements, recreation and housing needed to support compact growth. Streamline permitting processes for projects that bolster growth centers or incorporate conservation development techniques	<b>DOP</b> , DEM, WRB, DOH	1-2 years
	<b>(4.3)</b> Maximize the utilization of existing infrastructure and developed sites in order to reduce development pressure on green fields and critical watershed areas.	<b>(4.3.1)</b> Evaluate the capacities of existing infrastructure systems to support the planned and/or anticipated build-out at local and regional levels. Target grant funds for infrastructure improvements to local growth centers.	<b>DOP</b> , DEM, WRB, RIRC	Ongoing
	<b>(4.4)</b> Ensure that future development occurs where there is adequate freshwater supply to support it.	<b>(4.4.1)</b> Develop appropriate development review requirements to link development with available water supplies and educate communities on their use.	<b>WRB</b>	1-2 years
<b>Timeframes:</b> For many listed actions additional funding will be required for successful completion.		<u>1-2 Years:</u> With adequate funding, action should be completed within 1-2 years.  <u>1-4 Years:</u> With adequate funding, significant progress on the action will require ongoing efforts over the next 4 years.		

### Table 3: Rhode Island’s Water-Reliant Economy Strategy

**Vision:** *Rhode Island businesses that rely upon aquatic resources and/or waterfronts will have the opportunity to thrive and grow.*

Goals	Policies	Strategies	Agencies <small>lead agency in bold</small>	Time Frame
<p><b>(5)</b> <u>Recreation and Tourism</u>: A thriving tourism industry based on world-class environmental and cultural assets. Diverse marine and freshwater recreational resources for RI’s citizens and visitors.</p>	<p><b>(5.1)</b> Implement the National Geographic Geotourism Charter Principles for Sustainable Tourism.</p>	<p><b>(5.1.1)</b> Implement Charter via programming under development by RI EDC Tourism Division.</p>	<p><b>EDC</b></p>	<p>Ongoing</p>
	<p><b>(5.2)</b> Position RI’s unique natural attributes and maritime history to attract national and international marine-related events and activities.</p>	<p><b>(5.2.1)</b> Inventory sites with sufficient dockage and moorings to support major boating events.</p>	<p><b>EDC</b>, CRMC</p>	<p>1-2 years</p>
	<p><b>(5.3)</b> Develop alternative transportation schemes for moving people to and between coastal and watershed destinations.</p>	<p><b>(5.3.1)</b> Implement planned expansion of RI bike path system.</p>	<p><b>DEM</b>, DOT, RIRC</p>	<p>1-4 years</p>
		<p><b>(5.3.2)</b> Promote the Blueways Alliance’s Blueways program.</p>	<p><b>DEM</b>, DOT</p>	

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Goals	Policies	Strategies	Agencies <small>lead agency in bold</small>	Time Frame
	<b>(5.4)</b> Maintain and expand public infrastructure for active and passive marine and freshwater recreational opportunities.	<b>(5.4.1)</b> Implement DEM's "Pier-a-Year" Program. Implement RIEDC/DEM's "Jewels of the Bay" Program. Invest in the maintenance and improvement of saltwater and freshwater beach facilities and infrastructure.	<b>DEM</b> , EDC	1-4 years
	<b>(5.5)</b> Compete nationally and internationally for large marine boating events. Promote such events as part of RI's Geotourism strategy.	<b>(5.5.1)</b> Assess RI's capacity to attract major marine events, particularly current infrastructure and future infrastructure needs, marketing strategies, and in-state logistical and planning capacity.	<b>EDC</b>	1-2 years
		<b>(5.5.2)</b> Connect major marine boating events to growth and well-being of boat-building, boat servicing, and boating related sectors.	<b>EDC</b>	1-4 years
		<b>(5.5.3)</b> Promote Civic tourism, especially with regard to urban waterfronts and river corridors such as the Blackstone River Valley.	<b>EDC</b>	1-4 years

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<b>(6) Boatbuilding, Shipbuilding, and Boating- Related Businesses:</b> Ensure that Rhode Island continues to be a world leader in marine trades.	<b>(6.1)</b> Ensure adequate and timely dredging in suitable areas key to shipbuilding interests and other marine interests.	<b>(6.1.1)</b> Begin planning for additional CAD cells in Rhode Island waters or other appropriate designated disposal sites to support dredge maintenance and improvement projects for Rhode Island’s ports and harbors and navigational channels not designated as Federal.	<b>CRMC</b> , RI Dredge Team	1-2 years
		<b>(6.1.2)</b> Review the need for CRMC water type revisions and related regulatory language.	<b>CRMC</b> , DEM, RIRC	1-2 years
	<b>(6.2)</b> Support the development of marine industry sites on portions of the surplus Navy land on the Westside of Aquidneck Island.	<b>(6.2.1)</b> Assist with the implementation of the Aquidneck Island West Side Master Plan.	<b>EDC</b> , DOP	Ongoing
	<b>(6.3)</b> Develop strategies to recruit new workers into marine related careers (ongoing)	<b>(6.3.1)</b> Implement workforce development strategies for all levels of employees to meet industry needs, utilizing EDC’s industry skill gap analysis completed in Feb. 2008. Increase industry awareness of training initiatives and the need to upgrade worker skills.	<b>EDC</b>	Ongoing
		<b>(6.4)</b> Facilitate expansion of boat storage and marina capacity.	<b>(6.4.1)</b> Support and facilitate the planning and permitting review of marina projects such as the Weaver Cover Marina Project.	<b>CRMC</b> , EDC

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Goals	Policies	Strategies	Agencies <small>lead agency in bold</small>	Time Frame
<p><b>(7) Water-based Transportation:</b> Expanded, competitive water-based transportation of people and goods to, from, and within Rhode Island.</p>	<p><b>(7.1)</b> Comprehensive, state-wide planning and development investments for marine transportation that addresses local, state, and regional imperatives.</p>	<p><b>(7.1.1)</b> Develop a long-term plan for the development and maintenance of RI’s marine transportation system.</p>	<p><b>DOP</b>, EDC, DOT</p>	<p>1-2 years</p>
		<p><b>(7.1.2)</b> Promote water-based transportation for commuters and tourists.</p>	<p>DOP, EDC, DOT</p>	<p>1-4 years</p>
<p><b>(8) Commercial Fisheries &amp; Aquaculture:</b> Ensure viable businesses in commercial and recreational fishing, and in aquaculture. (See Table 9: Fisheries and Aquaculture Strategy)</p>	<p><b>(8.1)</b> Develop creative uses for state ports and piers that provide commercial and recreational fishermen with needed infrastructure while maximizing complementary uses.</p>	<p><b>(8.1.1)</b> Assess present and future infrastructure needs for maintaining viable commercial fisheries.</p>	<p><b>DEM</b>, EDC, DOP</p>	<p>1-2 years</p>

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Goals	Policies	Strategies	Agencies <small>lead agency in bold</small>	Time Frame
	<b>(8.2)</b> Assess marketing needs of RI’s commercial fisheries and aquaculture industry.	<b>(8.2.1)</b> Promote Rhode Island wild harvest, aquaculture, and seafood products.	<b>DEM, CRMC</b>	1-4 years
<b>Timeframes:</b> For many listed actions additional funding will be required for successful completion.	<u>Ongoing:</u> Action is currently being pursued by one or more agency. Additional funding may be required for completion.	<u>1-2 Years:</u> With adequate funding, action should be completed within 1-2 years.  <u>1-4 Years:</u> With adequate funding, significant progress on the action will require ongoing efforts over the next 4 years.		

## Table 4: Natural Hazards Strategy

**Vision:** *Human life, property, infrastructure, and natural resources will be protected against the hazards of storms and floods.*

<b>Goals</b>	<b>Policies</b>	<b>Strategies</b>	<b>Agencies</b> lead agency in bold	<b>Time Frame</b>
<b>(9)</b> Significantly reduced natural hazard risks to coastal and riverfront residents, infrastructure, and development.	<b>(9.1)</b> Incorporate advancements in coastal hazards science into State and local policies.	<b>(9.1.1)</b> Generate regional Light Detection and Ranging (LIDAR) topographic surveys and high-resolution bathymetry databases to support floodplain mapping and sea-level rise and storm surge modeling.	<b>CRMC</b> , RIEMA	1-4 years
		<b>(9.1.2)</b> Develop accurate inundation models for Rhode Island coastal and riverine floodplains.	<b>CRMC</b> , RIEMA	1-4 years
	<b>(9.2)</b> Enhance the resilience of existing structures in flood zones.	<b>(9.2.1)</b> Adopt more stringent building standards, flood ordinances, permitting processes, and best practices that enhance the resilience of existing structures in coastal flood zones.	<b>CRMC</b> , DOP, RIEMA, DEM, RI State Building Commissioner	Ongoing
	<b>(9.3)</b> Develop local natural hazard mitigation plans (floods and coastal storms), increase the capacities required to implement them, and to improve local responses to coastal and inland flooding events.	<b>(9.3.1)</b> Ensure that where necessary BRWCT agencies develop and implement natural hazard mitigation plans for their facilities and assets under management.	<b>RIEMA</b> , DOP, CRMC, DEM	1-4 years

## Table 4: Natural Hazards Strategy

**Vision:** Human life, property, infrastructure, and natural resources will be protected against the hazards of storms and floods.

Goals	Policies	Strategies	Agencies lead agency in bold	Time Frame
	<b>(9.4)</b> Implement Section 145 of the RI Coastal Resources Management Program.	<b>(9.4.1)</b> Coordinate with RI Builders Association to update state building code freeboard requirements and design life standards.	<b>CRMC</b> , RI State Building Commissioner	Ongoing
	<b>(9.5)</b> Control and guide reconstruction after severe storm events to direct future development away from high hazard areas, and/or ensure that redevelopment minimizes future hazards.	<b>(9.5.1)</b> Develop a pre-disaster checklist for municipalities in order to facilitate federal disaster funding.	<b>CRMC</b> , DEM	Ongoing
	<b>(9.6)</b> Reduce dam hazards through increased inspection, enforcement, and the rebuilding of high hazard structure.	<b>(9.6.1)</b> Hire an additional dam safety inspector. Increase funding for dam reconstruction or removal.	<b>DEM</b> , RIRC	1-2 years
	<b>(9.7)</b> Reduce impervious cover and restore wetland and riparian buffers to decrease flooding along rivers	<b>(9.7.1)</b> Promote restoration of impaired/destroyed wetlands, buffers and greenspace along rivers and streams.	<b>DEM</b> , CRMC	Ongoing
<b>Timeframes:</b> For many listed actions additional funding will be required for successful completion.		<p><u>1-2 Years:</u> With adequate funding, action should be completed within 1-2 years.</p> <p><u>1-4 Years:</u> With adequate funding, significant progress on the action will require ongoing efforts over the next 4 years.</p>		

## Table 5: Freshwater Supply Strategy

**Vision:** *Rhode Island will have ample, reliable safe fresh water supplies for the future.*

Goals	Policies	Strategies	Agencies <small>lead agency in bold</small>	Time Frame
(10) Sustainable use and protection of the state's freshwater resources.	(10.1) Improve water data management.	(10.1.1) Collect, maintain, and distribute adequate scientific data on the quantity, quality and use of the State's freshwater resources.	<b>WRB</b> , DEM, USGS	Ongoing
		(10.1.2) Establish water use reporting requirements for all major water users.	<b>WRB</b>	Ongoing
		(10.1.3) Maintain the state's streamflow gage network, and expand as needed to fill critical data gaps as resources allow.	<b>WRB, DEM</b> , USGS	Ongoing
		(10.1.4) Develop and communicate overall water availability projections for individual watersheds	<b>WRB</b>	1-4 years
	(10.2) Promote and practice integrated (regional, state and local) water management.	(10.2.1) Develop Watershed-based Resource Protection and Water Management Plans.	<b>WRB</b> , DEM	1-4 years
		(10.2.2) Continue to provide examples and encourage that local development controls are consistent with watershed protection and regional management plans	<b>DOP</b> , DEM, RIRC	1-6 years

## Table 5: Freshwater Supply Strategy

**Vision:** *Rhode Island will have ample, reliable safe fresh water supplies for the future.*

<b>Goals</b>	<b>Policies</b>	<b>Strategies</b>	<b>Agencies</b> lead agency in bold	<b>Time Frame</b>
		<b>(10.2.3)</b> Establish stream flow standards and protocols	<b>DEM</b> , WRB, RIRC	1-2 years
		<b>(10.2.4)</b> Manage and monitor water withdrawals comprehensively on a watershed basis	<b>WRB</b> , DEM, RIRC	Ongoing
	<b>(10.3)</b> Upgrade the state and community information bases and technology systems to integrate land and water use data	<b>(10.3.1)</b> Continue to contribute to the Rhode Island Geographic Information System (RIGIS) for all aspects of natural and water resource data.	<b>DOP</b> , DEM, DOT, URI	1-4 years
<b>(11) Reliable Water Supplies.</b>	<b>(11.1)</b> Implement strategic water supply plan to ensure reliability of supply	<b>(11.1.1)</b> Consolidate and update State Water Supply Policies and Plan.	<b>DOP</b> , WRB Water suppliers, DOH, DEM	1-2 years
		<b>(11.1.2)</b> Develop Big River Groundwater Wells	<b>WRB</b>	1-4 years
		<b>(11.1.3)</b> Establish enterprise accounting for all major public water suppliers	Water Suppliers	1-4 years
		<b>(11.1.4)</b> Develop implementation plan for supplemental water projects and interconnections. Invest in redundant and backup supplies.	<b>WRB</b> , RI CWFA Water Suppliers	1-2 years  Ongoing
		<b>(11.1.5)</b> Regionalize small systems to improve overall system reliability.	WRB, Water Suppliers	1-4 years

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Goals	Policies	Strategies	Agencies lead agency in bold	Time Frame
(12) Efficient Water Use	(12.1) Integrate management of land use and water use	(12.1.1) Coordinate community comprehensive plans and water supply management plans to included guidance for watershed-based planning for municipalities.	<b>WRB</b> Municipalities DOP,DEM,DOH	1-4 years
	(12.2) Promote water use efficiency and conservation.	(12.2.1) Develop and Implement statewide water use efficiency and conservation plan and public outreach program, including major user water audits.	<b>WRB</b> , Water Suppliers	1-4 years
<p><b>Timeframes:</b> For many listed actions additional funding will be required for successful completion.</p> <p><u>Ongoing:</u> Action is currently being pursued by one or more agency. Additional funding may be required for completion.</p> <p><u>1-2 Years:</u> With adequate funding, action should be completed within 1-2 years.</p> <p><u>1-4 Years:</u> With adequate funding, significant progress on the action will require ongoing efforts over the next 4 years.</p> <p><u>1-6 Years:</u> With adequate funding, significant progress on the action will require ongoing efforts over the next 6 years.</p>				

## Table 6: Water Quality Strategy

**Vision:** *Rhode Island's fresh, estuarine, and marine waters will support aquatic habitats, biological diversity, and their traditional and emerging human uses.*

<b>Goals</b>	<b>Policies</b>	<b>Strategies</b>	<b>Agencies</b> lead agency in bold	<b>Time Frame</b>
<b>(13)</b> Significant progress toward meeting all water quality standards for RI waters, including attainment of fishable, swimmable water quality in upper Narragansett Bay and the Blackstone River by 2015.	<b>(13.1)</b> Fulfill 2004 State Mandate for 50% reduction in total nitrogen discharges (May to October) from WWTF's discharging into Narragansett Bay or its major tributaries.	<b>(13.1.1)</b> Oversee consent agreements that will implement nutrient reductions at RI WWTF's over the next six years (through 2014).	<b>DEM, NBC</b> , other WWTF's	On-going
		<b>(13.1.2)</b> Support issuance and implementation of revised EPA New England permits for nutrient controls at WWTF's located in the Blackstone River and Ten Mile River watersheds.	<b>DEM</b>	1-2 years
		<b>(13.1.3)</b> Ensure operator training in advanced plant operations associated with nutrient removal and biosolids management.	<b>DEM, NBC</b>	Ongoing

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Goals	Policies	Strategies	Agencies lead agency in bold	Time Frame
	<b>(13.2)</b> Implement NBC's CSO Abatement Project and monitor resulting reductions in pathogen concentrations.	<b>(13.2.1)</b> Complete Phase I of the NBC CSO Abatement Project. Comprehensively monitor the upper Bay for pathogens and other key water quality parameters related to CSO discharges.	<b>NBC, DEM</b>	October 2008  Ongoing
		<b>(13.2.2)</b> Complete planning and evaluation related to Phase II of NBC CSO abatement Project	<b>NBC, DEM</b>	1-4 years
	<b>(13.3)</b> Develop funding sources to meet the state's estimated \$1.36 billion worth of wastewater infrastructure needs.	<b>(13.3.1)</b> Increase federal and state support for Rhode Island's State Revolving Fund.	RI Congressional Delegation, RI General Assembly	Ongoing
	<b>(13.4)</b> Institute ecosystem-based management for federal and state water quality planning and management.	<b>(13.4.1)</b> Initiate incorporation of new tools including tiered-aquatic life use and the biological condition gradients into RI water quality standards.	<b>DEM</b>	2-5 years
		<b>(13.4.2)</b> Develop indices of biological integrity for fresh and estuarine waters.	<b>DEM, NBC, U.S. EPA, RIRC</b>	2-4 years
		<b>(13.4.3)</b> Develop and implement TMDL's which address multiple stressors on aquatic biological communities.	<b>DEM, U.S. EPA, RIRC</b>	1-4 years

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		<b>(13.4.4)</b> Update the state strategy for nutrient control and management for RI coastal waters, including Narragansett Bay, taking into consideration monitoring results and consideration of EBM	<b>DEM</b>	3-4 years
		<b>(13.4.5)</b> Evaluate ambient and watershed-scale water quality conditions to track consequences of WWTF's upgrades for biological nutrient removal.	<b>DEM, NBC</b>	Ongoing
	<b>(13.5)</b> Significantly reduce sewer system overflows.	<b>(13.5.1)</b> Promote and continue NBC's Asset Management Program as a model for other sewer authorities.	<b>DEM, NBC</b>	Ongoing
		<b>(13.5.2)</b> Ensure financial assistance is available to support necessary WWTF improvements and to address repair and replacement of aging infrastructure.	<b>DEM, RICWFA,</b> General Assembly, Congressional Delegation	Ongoing
	<b>(13.6)</b> Identify and implement pollution abatement actions necessary to restore water quality in RI's impaired waters	<b>(13.6.1)</b> Continue to development TMDL's consistent with schedule in the 2008 303(d) list.	<b>DEM</b>	Ongoing
		<b>(13.6.2)</b> Continue work with municipalities and others to implement TMDL recommendations.	<b>DEM,</b> local governments	Ongoing

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**Vision:** *Rhode Island's fresh, estuarine, and marine waters will support aquatic habitats, biological diversity, and their traditional and emerging human uses.*

<b>Goals</b>	<b>Policies</b>	<b>Strategies</b>	<b>Agencies</b> lead agency in bold	<b>Time Frame</b>
	<b>(13.7)</b> Comprehensive management of on-site wastewater systems in coastal and freshwater watersheds that lack public sewers.	<b>(13.7.1)</b> Develop capacity of local sewer authorities to meet the needs of residential and commercial users of on-site wastewater treatment systems (OWTS).	<b>DEM</b> , local governments	1-4 years
		<b>(13.7.2)</b> Improve how financial assistance programs meet local needs for OWTS.	<b>DEM</b> , local governments	1-4 years
		<b>(13.7.3)</b> Phase out cesspools in sensitive coastal regions via implementation of the 2007 cesspool phase-out law.	<b>DEM</b> , CRMC, local governments	Ongoing
		<b>(13.7.4)</b> Approve alternative OWTS technologies and promote their use. Periodically evaluate performance and level of maintenance of OWTS systems.	<b>DEM</b>	Ongoing  Ongoing
	<b>(13.8)</b> Significantly enhance stormwater control and management state-wide	<b>(13.8.1)</b> Adopt low impact development (LID) site permitting approaches for new construction and redevelopment designed to reduce stormwater pollution.	<b>DEM</b> , CRMC, DOP	1-4 years

## Table 6: Water Quality Strategy

**Vision:** *Rhode Island's fresh, estuarine, and marine waters will support aquatic habitats, biological diversity, and their traditional and emerging human uses.*

Goals	Policies	Strategies	Agencies lead agency in bold	Time Frame
		<b>(13.8.2)</b> When applicable, promote as a model for other municipal or sewer authorities the NBC's Stormwater Management Program that requires developers to incorporate LID technologies into construction plans as an element of its sewer connection permit process.	<b>DEM, NBC</b>	Ongoing
		<b>(13.8.3)</b> Promote as a model for other sewer authorities NBC's rain barrel distribution program. Develop LID technology demonstration sites.	<b>DEM, NBC</b>	Ongoing  1-2 years
		<b>(13.8.4)</b> Complete in 2008 the update of the DEM stormwater manual. Integrate manual guidance into permitting of state and municipal stormwater programs. Provide training to facilitate its use by municipalities, developers and others.	<b>DEM, CRMC</b> local governments	Fall 2008  1-4 years
		<b>(13.8.5)</b> Help local governments establish utility districts to provide a stable source of funding for stormwater management, including needed retrofits of existing systems.	<b>DEM, DOP</b>	1-4 years

## Table 6: Water Quality Strategy

**Vision:** *Rhode Island's fresh, estuarine, and marine waters will support aquatic habitats, biological diversity, and their traditional and emerging human uses.*

<b>Goals</b>	<b>Policies</b>	<b>Strategies</b>	<b>Agencies</b> lead agency in bold	<b>Time Frame</b>
		<b>(13.8.6)</b> Strengthen state requirements for retrofits of existing stormwater systems as part of TMDL implementation	<b>DEM</b>	1-4 years
		<b>(13.8.7)</b> Renew funding for the Narragansett Bays and Watersheds Restoration Fund to provide incentive grants to entities that need to retrofit stormwater systems to improve treatment. Continue to give priority to projects that implement TMDL's.	<b>General Assembly, DEM</b>	1-2 years
		<b>(13.8.8)</b> Ensure that state and quasi-state facilities demonstrate leadership in adopting effective stormwater management practices.	<b>DEM, NBC, DOT, DOA, URI, State colleges</b>	1-2 years
		<b>(13.8.9)</b> Increase the federal and state funding available at DOT to support construction of stormwater retrofits identified in TMDLs.	<b>DOT, General Assembly, Congressional Delegation</b>	1-4 years

## Table 6: Water Quality Strategy

**Vision:** *Rhode Island's fresh, estuarine, and marine waters will support aquatic habitats, biological diversity, and their traditional and emerging human uses.*

<b>Goals</b>	<b>Policies</b>	<b>Strategies</b>	<b>Agencies</b> lead agency in bold	<b>Time Frame</b>
<b>(14)</b> Significantly Improved water quality in sensitive coastal regions including the south shore coastal ponds, state beaches, and Greenwich Bay.	<b>(14.1)</b> Implement requirements for on-site wastewater treatment in sensitive coastal areas such as embayments and coastal lagoons.	<b>(14.1.1)</b> Implement revised DEM rules for on-site wastewater treatment that require de-nitrification in certain coastal areas.	<b>DEM, CRMC,</b> local governments	Ongoing
	<b>(14.2)</b> Promote and enforce no-discharge zone provisions in all Rhode Island's marine.	<b>(14.2.1)</b> Promote the network pump-out stations and services throughout state waters. Assess and work to increase boater compliance.	<b>DEM</b>	Ongoing
		<b>(14.2.2)</b> Promote the Clean Marina Program.	<b>DEM, CRMC</b>	Ongoing
		<b>(14.2.3)</b> Investigate and increase resources for resolving pollutant sources that diminish public beaches and bathing water quality, particularly stormwater sources of pathogens such as those at Scarborough Beach.	<b>DEM, DOH, DOT</b>	1-2 years

## Table 6: Water Quality Strategy

**Vision:** *Rhode Island's fresh, estuarine, and marine waters will support aquatic habitats, biological diversity, and their traditional and emerging human uses.*

Goals	Policies	Strategies	Agencies lead agency in bold	Time Frame
(15) Restoration of shellfish resources in historically closed areas throughout Rhode Island's estuarine and marine waters.	(15.1) Reduce pathogen loadings from sources other than CSO's.	(15.1.1) Shorten the time schedule if possible for completing any remaining pathogen TMDL's.	<b>DEM</b>	Ongoing
	(15.2) Implement priority pathogen discharge abatement actions.	(15.2.1) Renew funding to provide grants or other financial assistance to ensure timely implementation of priority control actions	<b>DEM</b> , RI Clean Water Finance Agency	Ongoing
	(15.3) Where warranted, extend or establish public sewer service to mitigate pollution problems resulting from continued reliance on septic systems in densely developed coastal areas.	(15.3.1) Prioritize design, and construction of sewers for Portsmouth (Island Park and Portsmouth Park), Greenwich Bay. Support financing for these projects.	<b>DEM</b> , Portsmouth, Warwick	1-4 years
<p><b>Timeframes:</b> For many listed actions additional funding will be required for successful completion.</p>	<p><u>Ongoing:</u> Action is currently being pursued by one or more agency. Additional funding may be required for completion.</p>	<p><u>1-4 Years:</u> With adequate funding, significant progress on the action will require ongoing efforts over the next 4 years.</p> <p><u>1-2 Years:</u> With adequate funding, action should be completed within 1-2 years.</p>		

## Table 7: Fisheries and Aquaculture Strategies

**Vision:** *Rhode Island will maintain sustainable and vital freshwater and marine fisheries, as well as a diverse, thriving aquaculture industry.*

<b>Goals</b>	<b>Policies</b>	<b>Strategies</b>	<b>Agencies</b> lead agency in bold	<b>Time Frame</b>
<b>(16)</b> Sustainable and profitable commercial fish harvests.	<b>(16.1)</b> Rebuild fishery stocks in conformity with state and federal law.	<b>(16.1.1)</b> Maintain fishing mortality rates and stock abundances to minimize the risk of stock depletions and recruitment failures.	<b>DEM</b> , Atlantic States Marine Fisheries Commission (ASMFC), NE Fisheries Management Council (FMC), Mid-Atlantic MFC	Ongoing
	<b>(16.2)</b> Institutionalize cooperative management regimes for commercial fisheries.	<b>(16.2.1)</b> Promote state-wide and regional mechanisms for cooperative management with industry that emphasize efficient fishery operations, consistent with biological objectives.	<b>DEM</b> , ASMFC, NE FMC	1-4 years
		<b>(16.2.2)</b> Incorporate adaptive management principles into fisheries regulations to improve management of unanticipated short-term events or circumstances.	<b>DEM</b>	1-4 years
		<b>(16.2.3)</b> Develop stakeholder process (fisheries roundtable) to explore and balance the interests of Rhode Island recreational and commercial fisheries in relation to shared fisheries such as menhaden.	<b>DEM</b>	1-2 years

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<b>Goals</b>	<b>Policies</b>	<b>Strategies</b>	<b>Agencies</b> lead agency in bold	<b>Time Frame</b>
<b>(17)</b> A flourishing aquaculture industry that respects traditional commercial fisheries and cultures.	<b>(17.1)</b> Support the development of innovative aquaculture businesses that take advantage of Rhode Island’s core strengths in aquaculture research and technology development.	<b>(17.1.1)</b> Consider offshore aquaculture opportunities in conjunction with future wind farm operations.	<b>CRMC</b>	1-2 years
		<b>(17.1.2)</b> Expand shallow water shellfish aquaculture in relation to CRMC/RI Marine Fisheries Council-endorsed strategic planning.	<b>CRMC, DEM</b>	1-4 years
<p><b>Timeframes:</b> For many listed actions additional funding will be required for successful completion.</p> <p><u>Ongoing:</u> Action is currently being pursued by one or more agency. Additional funding may be required for completion.</p> <p><u>1-4 Years:</u> With adequate funding, significant progress on the action will require ongoing efforts over the next 4 years.</p> <p><u>1-2 Years:</u> With adequate funding, action should be completed within 1-2 years.</p>				

## Table 8: Aquatic Habitats and Invasive Species Strategies

**Vision:** *Rhode Island's freshwater, coastal, and marine habitats will support healthy aquatic ecosystems for native fish and wildlife.*

<b>Goals</b>	<b>Policies</b>	<b>Strategies</b>	<b>Agencies</b> lead agency in bold	<b>Time Frame</b>	
<b>(18)</b> Enhanced aquatic biodiversity due to successful AIS control and habitat restoration and conservation.	<b>(18.1)</b> The control and prevention of marine and freshwater aquatic invasive species.	<b>(18.1.1)</b> Increase the capacity of Rhode Island, in partnership with NGO's and private interests, to implement the Rhode Island Aquatic Invasive Species Plan.	<b>CRMC, DEM</b>	Ongoing	
		<b>(18.1.2)</b> Establish a lake management program within DEM.	<b>DEM</b>	2-4 years	
		<b>(18.1.3)</b> Expand the partnership between the Northeast Aquatic Nuisance Species Panel and the Northeast Regional Ocean Council (NROC) to pursue shared goals relating to AIS and ocean ecosystem health.	<b>CRMC, DEM, BRWCT</b>	1-2 years	
	<b>(18.2)</b> Restore of a diverse array of fresh and marine aquatic habitats.		<b>(18.2.1)</b> Establish a statewide habitat restoration coordinator.	<b>BRWCT, Habitat Restoration Team</b>	1-2 years
			<b>(18.2.2)</b> Implement 2002 strategic plan for restoration of anadromous fisheries.	<b>DEM, RIRC, NBEP, NRCS, Habitat Restoration Work Group</b>	1-4 years

## Table 8: Aquatic Habitats and Invasive Species Strategies

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Goals	Policies	Strategies	Agencies lead agency in bold	Time Frame
		<b>(18.2.3)</b> Renew state funding to ensure matching funds availability for priority habitat restoration projects.	<b>DEM, CRMC, Habitat Restoration Team</b>	Ongoing
		<b>(18.2.4)</b> Establish a comprehensive set of status and trends indicators for coastal habitats program to assess habitat changes, impacts, and conservation and restoration progress.	<b>RI Environmental Monitoring Collaborative, Narragansett Bay Estuary Program</b>	1-2 years
		<b>(18.2.5)</b> Maintain and expand state-wide mapping for brackish and freshwater wetlands, salt marshes and seagrass beds. Use mapping to support wetlands and eelgrass restoration and conservation planning, and enhanced enforcement wetlands protection law.	<b>DEM, NBEP, CRMC</b>	1-4 years  Ongoing
		<b>(18.2.6)</b> Improve regulatory protections for riverine vegetated buffers.	<b>DEM, RIRC</b>	2-4 years

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Goals	Policies	Strategies	Agencies lead agency in bold	Time Frame
		<b>(18.2.7)</b> Identify, assess, and maintain up-to-date databases on future coastal and riparian buffer restoration sites and projects.	<b>DEM</b> , CRMC, Habitat Restoration Working Group	1-2 years
		<b>(18.2.8)</b> Develop incentives for private property owners to participate in habitat restoration projects.	<b>DEM</b> , CRMC	1-4 years
<p><b>Timeframes:</b> For many listed actions additional funding will be required for successful completion.</p> <p><u>Ongoing:</u> Action is currently being pursued by one or more agency. Additional funding may be required for completion.</p> <p><u>1-4 Years:</u> With adequate funding, significant progress on the action will require ongoing efforts over the next 4 years.</p> <p><u>1-2 Years:</u> With adequate funding, action should be completed within 1-2 years.</p>				