

## Appendix G Storm Water Management Plan & Project Criteria

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### Examples of Water Quality Restoration Actions From Prior Years

Water Quality Restoration Actions

Support restoration of waters impaired by NPS or hydromodification or to improve aquatic habitats degraded by NPS, with highest priority assigned to Group 1 waterbodies of the Rhode Island 303(d) list. (303(d) Group 1 waterbodies are waters not meeting Rhode Island Water Quality Standards where TMDL development is currently underway.)

<b>Sponsor Waterbody &amp; Map Location</b>	<b>Project Name</b>	<b>Impairment of Concern and Suspected Source</b>	<b>Project Plan</b>	<b>Award</b>
Glocester Chepachet River  map location: 2	Onsite Construction of Demonstration Wastewater Systems and Stormwater Management Planning	A recent study, commissioned by the Town of Glocester, indicates some pathogens and nutrients from wastewater and stormwater inputs to the Chepachet River and Chepachet River Aquifer	Design and build innovative septic systems as a demonstration project and develop a stormwater abatement plan	\$72,212
Providence Woonasquatucket River  map location: 3	Woonasquatucket/Lincoln, Lace and Braid Sluiceway Removal and Wetland Restoration	Biodiversity, pathogens, PCBs, dioxin and metals--this project will address VOCs, low Do, bacteria and habitat/wetland restoration	Remove the sluice and restore freshwater wetlands values in the area.	\$71,400
NRICD & Cranston Providence River (Still House Cove)  map location: 4	Still House Cove Stormwater BMP Feasibility	Hypoxia and nutrients (Providence River just above the Pawtuxet River)	Design a stormwater abatement BMP.	\$14,614
Warwick Greenwich Bay  map location: 5	Greenwich Bay Watershed Stormwater Treatment Feasibility and Implementation Project	Pathogens, nutrients and hypoxia-- Stormwater outfalls were previously identified in an Aqua Fund project or by URI in a TMDL study.	Design and install stormwater abatement BMPs at eight ourfalls.	\$240,000

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SRICD Greenwich Bay map location: 6	Brush Neck Cove Stormwater Abatement and Restoration Interim Measures	Pathogens, nutrients and hypoxia-- Stormwater outfalls were previously identified in an Aqua Fund project and by URI in a TMDL study.	Investigate retrofit potentials for 10 stormwater systems, identify a priority listing of stormwater systems for future work and conduct public outreach.	\$99,244
E. Greenwich Greenwich Cove map location: 6	Greenwich Cove Stormwater Feasibility	Hypoxia and nutrients--E. Greenwich has identified three stormwater outfalls, which are considered major contributors.	Develop conceptual engineering designs for stormwater BMPs at 8 locations.	\$15,000
Portsmouth Sakonnet River (Portsmouth Pk.) map location: 7	Facilities Plan Update and Feasibility Study for Portsmouth and Island Parks	Pathogens--In a recent DEM study failed septic systems and stormwater were identified as sources of impairment.	Develop engineering designs for stormwater and wastewater abatement throughout Portsmouth and Island Park.	\$60,000
North Kingstown & STB Wickford Harbor map location: 8	Wickford Harbor Stormwater BMP Feasibility and Smart Growth Implementation	Wickford Harbor is conditionally closed to shellfishing, primarily due to its proximity to marinas.	Develop engineering designs and smartgrowth BMPs for stormwater abatement.	\$59,384
Smithfield Stillwater Reservoir map location: 9	Smithfield Salt Storage Shed	Leachate from the uncovered municipal salt pile erodes into the watershed and possibly GW	Build a salt storage facility.	\$ 66,000
Providence York Pond/ Seekonk River map location: 10	York Pond Restoration	Sediment and other pollutant loading to York Pond.	Implement habitat improvements to York Pond.	\$161,762
Warren Warren Reservoir map location: 11	Warren Reservoir Fish Way	Loss of an anadromous fish run (including an Alewife run) due to an impoundment for a drinking water supply.	Design and build a fish way.	\$ 82,000

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Warren Kickemuit River map location: 12	Patterson Avenue Drainage Project	Stormwater runoff from the Patterson Avenue area containing TSS, metals, TPH, oil and grease.	Installation of a Vortech unit and oil separator.	\$ 72,000
Tiverton Unnamed wetland map location: 13	Tiverton Salt Storage Facility	Salt leachate from an uncovered salt pile erodes into a nearby wetland.	Build a salt storage facility.	\$ 63,600
Cranston Providence River map location: 14	Cranston BMP Implementation	Hydrocarbons, metals, sand, floating debris in 4 stormwater outfalls at the ends of Armington, Norwood, Arnold and Shaw Avenues.	Installation of 4 Vortech units and the purchase of a vacuum truck for maintenance of the Vortech units.	\$118,380
<b>Total</b>				<b>\$1,195,596</b>

Habitat projects that are unlikely to be required by TMDLs = \$389,160

Water quality projects that are not required by TMDLs, but might be if a TMDL was approved = \$676,836

Water quality projects that are unlikely to be required by TMDLs = \$129,600

1. Funds are for the development of a management plan, as described in Criterion 2. Upon completion of the plan, any remaining grant funds may be used for implementation expenses.
2. Municipalities must have or develop a stormwater management plan for compliance with Phase II of the Stormwater Regulations as describe in the *Federal Register*, Vol. 64, No. 235 (December 8, 1999). DEM recommends that municipalities consult the *Federal Register, Storm Water Phase II Compliance Assistance Guide* (EPA, March 2000) and other materials in developing their storm water management plans. Each plan will be subject to DEM review and approval.

Elements of the plan must, at a minimum, include:

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A. Public Education and Outreach. must include strategies for distribution of educational materials to the community regarding the impacts of storm water to local waterbodies. SWMPs should describe:

- How the municipality will utilize partnerships with governmental and nongovernmental entities.
- Strategies and list types of educational material that will be utilized. Such materials may include but are not limited to brochures and fact sheets, recreational guides, alternative information sources such as web sites and bumper stickers, library of educational materials for community and school groups, volunteer citizen educators, event participation with educational displays at home shows and community festivals, educational programs for school-age children, storm drain stenciling, etc.
- Describe strategies to involve diverse audiences including, but not limited to commercial, industrial and institutional entities.

B. Public Participation must describe how development of the SWMP will comply with all applicable state and local notice requirements. At a minimum the SWMP will be subject to a municipal public meeting, approval by town or city council and approval by DEM. SWMPs should discuss:

- Alternative advertising methods whenever practicable.
- Methods and strategies to engender public involvement.

C. Illicit Discharge Detection and Elimination must incorporated the following:

- Storm Sewer System Mapping: SWMPs must include a strategy to thoroughly map the storm sewer system. The strategy should incorporate review of municipal records, drainage mapping, storm drain mapping and field surveys to verify locations, as appropriate. To the extent practicable

municipalities should provide a:

- map of the storm sewer systems major pipes and outfalls.
- Legal Prohibition and Enforcement: SWMPs must include a strategy for adopting an ordinance, regulation or other enforceable prohibition against illicit discharges. The prohibition must include enforcement mechanisms. A draft of the prohibition should be included as part of the SWMP.
- Detect and Address Illicit Discharges: SWMPs must include four elements:
  1. Strategy for locating problem areas.
  2. Strategy for implementing comprehensive inspection of all properties with potential discharges in order to detect sources. Source detection may include such methods as smoke testing and dye-tracing.
  3. Strategy to implement legally enforceable corrective process for all illicit discharges.
  4. Strategy to implement a method to record and track all actions taken to detect and address illicit discharges. Ideally this should be a relational database or similar computerized information system.
- Education Outreach: SWMPs must include a strategy to educate the regulated community on methods to detect and eliminate illicit discharges. It should discuss ramifications of illicit discharges (legal and environmental). Examples of educational methods include, but are not limited to informative brochures, and guidance for specific audiences (e.g., carpet cleaning businesses) and school curricula; publicize and facilitate public reporting of illicit discharges; coordinating volunteers for locating, and visually inspecting, outfalls or stenciling storm drains; and initiating recycling programs for commonly dumped wastes, such as motor oil, antifreeze, and pesticides.

D. Construction Site Storm Water Runoff Control. Strategy to adopt an ordinance, regulation or other enforceable policy to regulate soil erosion and sediment control and waste management on construction sites where there will be land disturbance of greater than one acre. A strategy to adopt and implement an ordinance pursuant to Rhode Island Soil Erosion and Sediment Control Act is adequate for compliance with this measure provided that waste management is incorporated. Alternative approaches should particularly emphasize elements for site plan review, inspections, penalties and a process to receive and incorporate public inquiries and concerns.

E. Post-Construction Storm Water Management must include a strategy to adopt and implement an enforceable program to reduce pollutants in post-construction storm water runoff from development and redevelopment projects that create land disturbance of over one acre. A strategy to adopt and implement the draft Rhode Island storm water management ordinance is adequate for compliance with this measure. Alternative approaches should particularly emphasize elements describing appropriate BMPs (such as those described in the *Rhode Island Storm Water Design and Installation Standards Manual*, enforceable policy and methods to ensure appropriate long-term maintenance.

F. Pollution Prevention and Good Housekeeping for Municipal Operations SWMPs must include strategies to:

- Develop and implement and operation and maintenance program for municipal operations and to reduce pollutant runoff.
- Train municipal employees on pollution prevention and good housekeeping techniques for parks and open space, fleet and buildings, new construction, land disturbance and storm water system maintenance.

G. Evaluation and Assessment Reporting SWMPs must include a discussion of reporting format and content with the following elements:

- Status of compliance with permit conditions, including an assessment of the appropriateness of the selected BMPs and progress toward achieving the selected measurable goals for each minimum measure.
- Results of any information collected and analyzed, including monitoring data.
- Summary of the storm water activities planned for the next reporting cycle.
- Change in any identified best management practices or measurable goals for any minimum measure.
- Notice of relying on another governmental entity to satisfy some of the permit obligations.

H. Storm Water Abatement Opportunities (optional): SWMPs should discuss opportunities and recommended actions to abate storm water and negative impacts associated with stormwater. Examples of some such activities include:

- Watershed restoration actions.
- Hydromodification restoration.
- Habitat restoration.
- Wetlands/buffers enhancement.

In identifying opportunities and actions, SWMPs may reference TMDLs municipal field investigations or other watershed restoration strategies. Ideally this element should include a map and tabular summary with the following fields of information:

- Location (latitude, longitude and the name of the waterbody of concern).
- Project name.
- Estimated cost.
- Potential funding sources and amounts of funding to be used/requested.
- Impairment of concern and suspected source.
- Anticipated project duration and recommended calendar start time.
- Deliverables and anticipated resource improvements.

I. Recommendations for Storm Water Source Reduction and Advanced Management (optional) SWMPs may include recommendations for source reduction via appropriate land-use and environmental management such as:

- Establishment of buffer zones and vegetated drainage ways.
- Wetland protection.
- Maintenance or restoration of natural infiltration.
- Cluster zoning, transfer of development rights, etc.
- Overlay districts for sensitive areas.
- Wastewater management programs.

- Storm water utilities.
- J. State Revolving Fund (SRF) Facilities Planning Checklist (optional) In accordance with the facilities planning process for SRF loans, SWMPs should include a description of the:
- Planning area (see Item II-1)<sup>1</sup> and a map that shows the current and forecasted service area as well as natural, cultural, historic and archeological resources in consistency with the community comprehensive plan (see Item II-8).
  - Assessment of current conditions in the planning area including geophysical, land use and affected plant and animal communities (see Item IV-A).
  - Assessment of future conditions including land-use, economic and demographic forecasts (see Item V-A to C).
  - Environmental impacts and a public hearing (if a specific BMP is being proposed in the plan--see Item VI-K, N and X).
- K. Schedules, Measurable Goals, Costs and Financing SWMPs must include a realistic schedule for implementation of all strategies and elements. As part of this process municipalities must consider measurable goals, cost and financing mechanisms for implementation. SWMPs should focus on a four-year timeframe. DEM recognizes that some implementation may occur outside of this timeframe. Where this is to occur the municipality may discuss implementation schedule more generally with the express intent to update the plan and schedule at the end of its four-year cycle. DEM recognizes that some aspects of financing and budgeting may be uncertain. Municipalities are encouraged to discuss such issues frankly in order to facilitate addressing funding issues in a cooperative manner.
- L. Designated community official(s) to manage and administer the program and implement the plan SWMPs must list names titles, contact information (phone number, address, fax, email) and anticipated responsibility for each official overseeing implementation of the plan.

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<sup>1</sup> Parenthetical references are to the SRF Facilities Planning Checklist.