

Due to anticipated adverse weather conditions the Stormwater Manual Amendments Hearing scheduled for this evening will be rescheduled to **Thursday, January 29, 2015 at 5pm**. The Hearing will take place at the following location:

**Room 280
235 Promenade Street
Providence, RI 02908**

Please note that the deadline for submitting written comments on the proposed updates has also been extended to **4:00 pm on Friday, January 30th, 2015**.

Sorry for any inconvenience this change may have caused.

Sincerely,

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State of Rhode Island and Providence Plantations
Department of Environmental Management

**NOTICE OF PROPOSED UPDATES TO RHODE ISLAND STORMWATER
DESIGN AND INSTALLATION STANDARDS MANUAL – MINIMUM
STANDARD 10 AND APPENDIX A CHECKLIST**

Background

On December 1, 2009, the Environmental Protection Agency (EPA) published in the Federal Register (74 FR 62995) effluent limitation guidelines (ELGs) and New Source Performance Standards (NSPSs) for the Construction and Development Point Source Category. These requirements are referred to as “the C&D rule” and control the discharge of pollutants from construction sites and require construction site owners and operators to implement a range of erosion and sediment control measures and pollution prevention practices to control pollutants in discharges from construction sites. The Rhode Island Department of Environmental Management is the federally delegated state authority for the NPDES program. States, including Rhode Island, are required to incorporate permit requirements consistent with the C&D rule requirements, or narrative standards, into any reissued NPDES construction stormwater permits. The C&D rule requirements have been incorporated into the recently reissued 2013 Rhode Island Pollutant Discharge Elimination System Stormwater General Permit Associated with Construction Activity (“RIPDES Construction GP”). The required narrative standards contained in the C&D rule have been incorporated into the RIPDES Construction GP either directly in the form of specific permit requirements or by referencing relevant design and guidance documents already in existence. A specific permit requirement also requires stormwater control measures to be designed, implemented, and maintained in accordance with the 2010 RI Stormwater Design and Installation Standards Manual (the “RISDISM”) and the 2014 RI Soil Erosion and Sediment Control Handbook (the “RI SESC Handbook”). In August of 2014 the Rhode Island State Conservation Committee (RISCC) adopted updates to the 1989 RI SESC Handbook to meet the needs of RI practitioners, and to contain the most up-to-date technical information. The updates included the incorporation of Performance Criteria for SESC Measures that were consistent with the EPA C&D Rule and the RIPDES Construction GP. The RISCC established a Technical Review Committee that met from 2012 to 2014 to develop the RI SESC Handbook updates. The updated RI SESC Handbook was made available for a 60-day public review and comment period (March – May 2014) and a Public Workshop was held in April of 2014.

Proposed Changes

Minimum Standard 10 of the RISDISM is being revised to be consistent with the Performance Criteria for Soil Erosion and Sedimentation Control Measures already adopted into the 2013 RIPDES Construction GP and the 2014 RI SESC Handbook. The proposed revisions focus solely on changes to Minimum Standard 10 of the RISDISM which addresses erosion and sedimentation control practices that must be utilized during the construction phase as well as during any land disturbing activities for those projects

subject to the requirements of the RISDISM. In order to accomplish this goal the proposed changes include the addition of new performance criteria. The addition of these criteria will align the RISDISM with the 2013 RIPDES Construction GP, the 2014 RI SESC Handbook, and assist the state in achieving compliance with the C&D Rule. All new permit applications submitted to the DEM and the CRMC will be required to comply with the proposed performance criteria sixty (60) days from the date of filing of this amendment with the Secretary of State's office.

In addition to modifying Minimum Standard 10, the application checklist in Appendix A of the RISDISM is being deleted from the regulation. The removal of the Appendix A checklist from the RISDISM will enable it to be modified as needed to assist the public in complying with the RISDISM when applying for land development permits within the State of Rhode Island.

DEM has complied with the requirements of RIGL §42-35-3 by considering alternative approaches to the proposed regulations and has determined that there is no alternative approach that would be as effective and less burdensome. DEM has also determined that the proposed regulations do not overlap or duplicate any other state regulation. DEM has complied with the requirements of RIGL §42-35-3.3 by determining that the proposed regulations will not result in a significant adverse economic impact on small business or any city or town, and by submitting copies of the proposed regulations to the Small Business Ombudsman, Office of Regulatory Reform, Governor's Office, and Department of Administration Budget Office.

Where to View All Proposed Changes and How to Obtain Additional Information:

The proposed revisions to Minimum Standard 10 of the RISDISM can be viewed on the RI DEM website at:

<http://www.dem.ri.gov/programs/benviron/water/permits/swcoord/index.htm>

A copy of the proposed Handbook and proposed revisions to Minimum Standard 10 of the RISDISM can also be viewed at the RI DEM offices by contacting Brian Lafaille, PE, Senior Sanitary Engineer at:

Office of Water Resources
RI Department of Environmental Management
235 Promenade Street
Providence, RI 02908
Phone: 401-222-4700 x 7731
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Public Comment and Request For Public Hearing Information Regarding Proposed Changes to RISDISM – Minimum Standard 10

A Public Hearing has been scheduled to consider the proposed changes to Minimum Standard 10 of the RISDISM. The public hearing will be held at the following time and

place:

January 26, 2015 at 5pm
Room 280
235 Promenade Street
Providence, Rhode Island 02908

A stenographer will be present to record any oral comments and include those comments in the public record. All commenters are welcome to attend the public hearing, however this will strictly be a forum for making comments, no discussion or response to comments will be provided during the public hearing.

The building at 235 Promenade Street is accessible to the handicapped. Individuals requesting communication assistance (assistive listening devices/readers/interpreters/captions) must notify the RIDEM at the telephone number listed above or at 831-5508 (T.D.D.) 72 hours in advance of the hearing date.

Where to Submit Written Comments and Deadlines for Submission:

The public comment period is from December 22, 2014 to January 27, 2015. Commenters may request a longer comment period if necessary to provide a reasonable opportunity to comply with these requirements.

All interested parties are invited to submit written comments on the proposed updates to the RISDISM - Minimum Standard 10 by **4:00 p.m. on Tuesday, January 27, 2015**. Written comments may be directed to:

Brian Lafaille, PE, Senior Sanitary Engineer
Office of Water Resources
RI Department of Environmental Management
235 Promenade Street
Providence, RI 02908

or by e-mail to Brian.Lafaille@dem.ri.gov

Brian Moore, PE
Chief of Groundwater Protection Section
Office of Water Resources
Rhode Island Department of Environmental Management

Date

State of Rhode Island and Providence Plantations
Department of Environmental Management
Office of Water Resources
December 1, 2014

CONCISE SUMMARY OF PROPOSED:

AMENDMENT OF RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL TO BE CONSISTENT WITH FEDERAL REQUIREMENTS;

In 2010 the Department of Environmental Management (DEM) and the Coastal Resources Management Council (CRMC) amended the 1993 version of the Rhode Island Stormwater Manual pursuant to the “Smart Development for a Cleaner Bay Act of 2007” (the Act) (RIGL § 23-45-61.2-1, *et seq.*). The DEM and CRMC incorporated the amended Rhode Island Stormwater Manual into existing regulatory programs that include the review of stormwater impacts through reference in the associated Regulations.

In 2013, the DEM re-issued the Rhode Island Pollutant Discharge Elimination System (RIPDES) General Permit For Storm Water Discharges Associated with Construction Activity (Construction GP) to incorporate the 2009 federal EPA effluent limitation guidelines (ELGs) and new source performance standards (NSPS) established for the Construction and Development Point Source category. These requirements are referred to as “the C&D rule”. DEM was federally mandated to incorporate requirements consistent with the EPA requirements, or narrative standards, into the reissued RIPDES Construction GP. The required narrative standards contained in the C&D rule were incorporated into the Construction GP either directly as specific permit requirements or by reference to relevant design and guidance documents already in existence such as the Rhode Island Stormwater Design and Installation Manual (RISDISM) and the Rhode Island Soil Erosion and Sediment Control (RISESC) Handbook.

In August of 2014 the Rhode Island State Conservation Committee (RISCC) adopted updates to the 1989 RI SESC Handbook to meet the needs of RI practitioners, to contain the most up-to-date technical information and to be consistent with the RIPDES Construction GP. The updates included the incorporation of Performance Criteria for SESC Measures that were consistent with the EPA C&D Rule and the RIPDES Construction GP. The RISCC established a Technical Review Committee that met from 2012 to 2014 and implemented a Peer Review process to develop the updates. The updated Handbook was made available for a 60-day public review and comment period (March – May 2014) and a Public Workshop was held in April of 2014.

Minimum Standard 10 of the RISDISM is being revised to be consistent with the Performance Criteria established for Soil Erosion and Sedimentation Control Measures contained in the 2013 RIPDES Construction GP and the 2014 RI SESC Handbook.

In addition to modifying Minimum Standard 10, the application checklist in Appendix A of the RISDISM is being deleted from the regulation. The removal of the Appendix A checklist from the RISDISM will enable it to be modified as needed to assist the public in complying with the RISDISM when applying for land development permits within the State of Rhode Island.

RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL

DECEMBER 2010

DECEMBER 2014 – PROPOSED AMENDMENT



RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL
MANAGEMENT AND



COASTAL RESOURCES MANAGEMENT COUNCIL



RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL

DECEMBER 2010

Written, Compiled, Designed and Illustrated

by

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Acknowledgements

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3.2.9 Minimum Standard 9: Illicit Discharges

All illicit discharges to stormwater management systems are prohibited, including discharges from OWTS, and sub-drains and French drains near OWTSs that do not meet the State's OWTS Rules (setbacks vary depending on the capacity of the OWTS, the type of conveyance system, and the sensitivity of the receiving waters). The stormwater management system is the system for conveying, treating, and infiltrating stormwater on site, including stormwater best management practices and any pipes intended to transport stormwater to ground water, surface water, or municipal separate storm sewer system (MS4). Illicit discharges to the stormwater management system, i.e., illicit connections, are discharges not entirely comprised of stormwater that are not specifically authorized by a National Pollutant Discharge Elimination System (NPDES) or RIPDES permit. The objective of this standard is to prevent pollutants from being discharged into MS4s and Waters of the State, and to safeguard the environment and public health, safety, and welfare.

~~3.2.10 Minimum Standard 10: Construction Erosion and Sedimentation Control~~

~~Erosion and sedimentation control (ESC) practices must be utilized during the construction phase as well as during any land disturbing activities. ESC practices must meet the following minimum design criteria: temporary sediment trapping practices must be sized to store 1 inch of runoff from the contributing area or per the sediment volume method (Rhode Island Soil Erosion and Sediment Control Handbook), whichever is greater; and temporary conveyance practices must be sized to handle the peak flow from the 10-year, 24-hour Type III design storm. ESC practices must be designed according to the guidelines in the most recent edition of the "Rhode Island Soil Erosion and Sediment Control Handbook," published by the USDA NRCS, RIDEM, and the Rhode Island Conservation Committee. The objective of this standard is to prevent erosion and sedimentation from construction site runoff.~~

3.2.10 Minimum Standard 10: Construction Activity Soil Erosion, Runoff, Sedimentation, and Pollution Prevention Control Measure Requirements

Soil Erosion and Sedimentation Control (SESC) measures must be utilized during the construction phase as well as during any land disturbing activities. The objective of this standard is to reduce mobilization, transport and discharge of pollutants associated with erosion and sedimentation from construction site runoff through implementation of SESC measures that 1) avoid and protect sensitive areas and natural features, 2) minimize disturbances and preserve top soil 3) protect structures, conveyances, receiving waters, and 4) control overland and concentrated stormwater flows.

All soil erosion, runoff, sedimentation, and construction activity pollution prevention control measures must be designed and implemented in accordance with the Soil Erosion and Sediment Control (SESC) Plan requirements outlined in the Performance Criteria in Section 3.3.7 and the most recent edition of the Rhode Island Soil Erosion

and Sediment Control Handbook (as amended). The component of the Stormwater Management Plan that addresses this standard is referred to as a Soil Erosion and Sediment Control (SESC) Plan.

For all land disturbance activities that require a permit from the RI DEM or the CRMC, a qualified SESC Plan preparer shall be a Rhode Island Registered Professional Engineer, a Certified Professional in Erosion and Sediment Control (CPESC), a Certified Professional in Storm Water Quality (CPSWQ), or a Rhode Island Registered Landscape Architect who certifies that the SESC Plan meets the Performance Criteria in 3.3.7 and requirements of the Rhode Island Soil Erosion and Sediment Control Handbook (as amended). The Preparer shall have the specific credentials and experience needed to select the appropriate practices for the application. If the project involves significant land grading or requires an engineered site design, then the SESC Plan must be prepared by a Professional Engineer licensed in the State of RI.

For activities that do not require a permit from the RI DEM or the CRMC and are subject to only local ordinances or Municipal Separate Storm Sewer System (MS4) requirements (e.g. site disturbing < 1 acre that is not part of a larger common plan and not subject to CRMC, Freshwater Wetlands, Water Quality, and Groundwater Discharge Regulations) the preparer should consult local ordinances or MS4 requirements as part of developing a stormwater management plan for their project.

3.2.11 Minimum Standard 11: Stormwater Management System Operation and Maintenance

The stormwater management system, including all structural stormwater controls and conveyances, must have an operation and maintenance plan to ensure that it continues to function as designed.

The long-term Operation and Maintenance Plan shall at a minimum include:

1. Stormwater management system(s) owners;
2. The party or parties responsible for operation and maintenance, including how future property owners will be notified of the presence of the stormwater management system and the requirement for proper operation and maintenance;
3. The routine and non-routine maintenance tasks for each BMP to be undertaken after construction is complete and a schedule for implementing those tasks;
4. A plan that is drawn to scale and shows the location of all stormwater BMPs in each treatment train along with the discharge point;
5. A description and delineation of public safety features;
6. An estimated operation and maintenance budget; and
7. Funding source for operation and maintenance activities and equipment.

Criteria	Description	Post-Development Storm Magnitude
Overbank Flood Protection	<p><i>Peak Runoff Attenuation (Q_p)*</i> Control the post-development peak discharge rates from the 10- and 100-year storms to the corresponding pre-development peak discharge rates. Calculations must be provided that show how runoff from the 10- and 100-year storms reaches the proposed facilities.</p>	10- and 100-year, 24-hour Type III rainfall
	<p><i>Emergency Outlet Sizing</i> Size the emergency outlet to safely pass the post-development peak runoff from, at a minimum, the 100-year storm in a controlled manner without eroding the outlet works and downstream drainages.</p>	100-year, 24-hour Type III rainfall
	<p><i>Downstream Analysis</i> Downstream analysis of the overbank and extreme flood (10-year and 100-year, respectively) shall be conducted to identify potential detrimental effects of proposed stormwater treatment practices and detention facilities on downstream areas (for applicability, see section 3.3.6).</p>	10 and 100-year, 24-hour Type III rainfall

*Note that the Rational Formula is not allowed for determining required volumes to meet the stormwater criteria. The Rational Formula is appropriate for calculating peak discharge rates, and thus for sizing pipes, but not for volume-based requirements.

3.3.7 Soil Erosion, Runoff, and Sedimentation Control Measures

Soil Erosion and Sedimentation Control (SESC) measures must be utilized during the construction phase as well as during any land disturbing activities. Owners and operators must design, install, and maintain effective soil erosion, runoff, and sediment controls. SESC Plans must document how the proposed activities are consistent with the following Performance Criteria:

1. Avoid and Protect Sensitive Areas and Natural Features

Areas of existing and remaining vegetation and areas that are to be protected during construction must be clearly marked on the plans. Throughout planning, design, and construction the Applicant must demonstrate that the activities are consistent with Minimum Standard 1, Low Impact Development (LID) Site Planning and Design Strategies designed to maximize the protection of natural drainage areas, streams, surface waters, and jurisdictional wetland buffers. Section 4.5 LID Site Planning and Design Criteria requires that Applicants avoid the impacts, requiring the preservation of buffers and floodplains by delineating and preserving

naturally vegetated riparian buffers and floodplains and implementing measures to ensure that buffers and native vegetation are protected.

2. Minimize Area of Disturbance

Limits of Disturbance (LOD) shall be clearly marked on all SESC plans. The amount of land area disturbed should be minimized. Existing vegetation should be left in place as far as practical. The SESC Plan must identify how the Applicant has minimized the area of disturbance by locating sites in less sensitive areas in accordance with Minimum Standard 1, Low Impact Development Site Planning and Design Strategies, Section 3.3.1.3., Appendix A Checklist 1.D. and Chapter Four – LID Site Planning and Design Strategies, Section 4.5.1.

The total amount of land area disturbed at one time should be minimized. Construction activity shall be phased to minimize the amount of area that is being actively disturbed. Activities disturbing less than one acre or activities that will be completed within six months should consider phasing if located in sensitive or problematic areas. Activities disturbing greater than five acres must include phasing in combination with other controls.

The designer should consider the changes in the type of surface cover as the site is developed. For new development projects that involve the conversion of woods or meadow in good condition to a roof, a road, or a parking lot, it may be important to evaluate the temporary changes in runoff as the site is developed. This is especially important if the development is completed in large phases or is located in a sensitive or problematic area.

Adequate temporary controls must be installed on previous phases prior to initiating the land disturbance in subsequent phases until final site stabilization is achieved and post-construction control measures are brought on-line. Phasing should take into account the requirements to manage temporary changes to runoff volume and peak runoff rates due to changes to runoff characteristics caused by the construction activity.

3. Minimize the Disturbance of Steep Slopes

Construction activities should be avoided on steep slopes (e.g. >15%) to the Maximum Extent Practicable (MEP) to comply with Minimum Standard 1, Low Impact Development Site Planning and Design Strategies, Section 3.3.1.3 and Appendix A Checklist 1.D. Locating Sites in Less Sensitive Areas, and Chapter Four – LID Site Planning and Design Strategies, Section 4.5.1 Avoid the Impacts.

4. Preserve Topsoil

Site owners and operators must preserve existing topsoil on the construction site to the maximum extent feasible and as necessary to support healthy vegetation. If it is determined that preserving native topsoil is infeasible, the reasons why this was determined must be addressed in the SESC Plan.

5. Stabilize Soils

Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating or other earth disturbance activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding fourteen (14) calendar days. Stabilization must be completed using vegetative stabilization measures or using alternative measures whenever vegetative measures are deemed impracticable or during periods of drought. All disturbed soils exposed prior to October 15th shall be seeded by that date. Any such areas which do not have adequate vegetative stabilization by November 15th must be stabilized through the use of non-vegetative erosion control measures. If work continues within any of these areas during the period from October 15th through April 15th, care must be taken to ensure that only the area required for that day's work is exposed, and all erodible soil must be restabilized within 5 working days. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed (i.e. construction of a motocross track).

6. Protect Storm Drain Inlets

If there is a stormwater discharge from the construction site to a storm drain inlet under the project's control, the site owner and operator must install inlet protection measures that remove sediment from discharge prior to entry into the storm drain inlet.

The operator must clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Accumulated sediment adjacent to the inlet protection measures must be removed by the end of the same work day in which it is found or by the end of the following work day if removal by the same work day is not feasible.

7. Protect Storm Drain Outlets

Outfall protection must be used to prevent scour and erosion at discharge points through the protection of the soil surface, reduction of discharge velocity, and the promotion of infiltration.

8. Establish Temporary Controls for the Protection of Post-Construction Stormwater Control Measures

Temporary measures shall be installed to protect permanent or long-term stormwater control and treatment measures as they are installed and throughout the construction phase of the project so that they will function properly when they are brought online. The plan shall identify areas where infiltration measures are proposed and provide measures to restrict construction activity to prevent compaction of the area. In cases where this is not possible to avoid the area the Plan must include methods to restore the infiltration capacity of the soils.

9. Establish Perimeter Controls and Sediment Barriers

Sediment control measures must be installed along the perimeter areas of the site that will receive stormwater from earth disturbing activities. Maintenance of perimeter control measures and sediment barriers must be completed in accordance with the maintenance requirements specified by the product manufacturer or the Rhode Island Soil Erosion and Sediment Control Handbook (as amended).

10. Divert or Manage Run-on from Up-gradient Areas

Structural control measures must be used to limit stormwater flow from coming onto the project area, and to divert and slow on-site stormwater flow from exposed soils to limit erosion, runoff, and the discharge of pollutants from the site.

11. Properly Design Constructed Stormwater Conveyance Channels

Temporary conveyance practices must be sized to handle the peak flow from the 10-year, 24-hour Type III design storm. Temporary conveyance measures may be required to be sized to handle the peak flow from larger design storms as determined on a case-by-case basis.

12. Retain Sediment On-Site

The SESC Plan shall contain a combination of practices that control erosion, control run-off, and control sediment. The combination of practices must be designed to prevent discharges of sediment. All plans shall include inlet protection, construction entrances, and containment of stockpiled materials. The designer should consider if conditions warrant the use of sediment traps, sediment basins, or sediment barriers.

For Disturbed Areas <1 Acre – Those areas with a common drainage location that serves an area with less than one (1) acre disturbed at one time, a combination of phasing, stabilization and conveyances that provide run-off control will be sufficient. In some cases, additional controls may be required where site conditions warrant or a specific requirement exists in State regulations or Local ordinances.

For Disturbed Areas 1 to 5 Acres – Those areas with a common drainage location that serves an area between one (1) and five (5) acres disturbed at one time, a temporary sediment trap must be provided where attainable and where the sediment trap is only intended to be used for a period of six (6) months or less. For longer term projects with a common drainage location that serves between one (1) and five (5) acres disturbed at one time, a temporary sediment basin must be provided where attainable. Temporary sediment trapping practices must be designed in accordance with the Rhode Island Soil Erosion and Sediment Control Handbook (as amended) and must be sized to have a total storage volume capable of storing one (1) inch of runoff from the contributing area or one hundred and thirty four (134) cubic yards per acre of drainage area. A minimum of fifty percent (50%) of the total volume shall be storage below the outlet (wet storage).

For Disturbed Areas > 5 Acres – Those areas with a common drainage location that serves an area with greater than five (5) acres disturbed at one time, a temporary (or permanent) sediment basin must be provided where attainable until final stabilization of the site is complete. Temporary sediment basins must be designed in accordance with the Rhode Island Soil Erosion and Sediment Control Handbook (as amended). The volume of wet storage shall be at least twice the sediment storage volume and shall have a minimum depth of two (2) feet. Sediment storage volume must accommodate a minimum of one year of predicted sediment load as calculated using the sediment volume formula in the Rhode Island Soil Erosion and Sediment Control Handbook (as amended). In addition to sediment storage volume and wet storage volume, the sediment basin shall provide adequate residence storage volume to provide a minimum 10 hours residence time for a ten (10) -year frequency, twenty four (24) hour duration, Type III distribution storm. To the maximum extent practicable, outlet structures must be utilized that withdraw water from the surface of temporary sedimentation basins, if required or specified by the designer, for the purpose of minimizing the discharge of pollutants. Exceptions may include periods of extended cold weather, where alternative outlets are required during frozen periods. If such a device is infeasible for portions of or the entire construction period justification must be made in the SESC Plan.

13. Control Temporary Increases in Stormwater Velocity, Volume, and Peak Flows

The Plan must identify all discharge points and propose a combination of practices to ensure control of both peak flow rates and total runoff volume to minimize flooding, channel erosion, and stream bank erosion in the immediate vicinity of discharge points. The plan must identify if discharge points from the site discharge directly to a surface water or to an off-site conveyance. The designer must ensure that the proposed combination of practices are adequate to protect the receiving waters and downstream conveyances from the excessive velocities that would cause scouring or channel erosion.

In most cases, the combination of practices that control erosion, control run-off, and control sediment used to retain sediment on-site will be adequate to control temporary increases in volume and peak flows. However, the designer must evaluate if conditions warrant the use additional retention/detention practices beyond those required to address 3.3.7.12. The evaluation must include a description of site conditions and proposed on-site controls and conveyances for all discharge points. For those projects proposing a common drainage location that serves an area with greater than five (5) acres disturbed at one time, the permitting agency may require peak flow control on a case-by-case basis.

14. Construction Activity Pollution Prevention Control Measures

The SESC Plan must describe the pollution prevention measures that will be implemented to control pollutants in stormwater. The owner and operator must design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants in accordance with the SESC Plan requirements outlined in the Rhode Island Soil Erosion and Sediment Control Handbook (as amended).

15. Control Measure Installation, Inspections, Maintenance, and Corrective Actions

The installation of temporary erosion, runoff, sediment, and pollution prevention control measures must be completed by the time each phase of earth-disturbance has begun.

Construction sites must be inspected by or under the supervision of the owner and operator at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff.

If an inspection reveals a problem, the operator must initiate work to fix the problem immediately after discovering the problem, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.

When installation of a new control or a significant repair is needed, site owners and operators must ensure that the new or modified control measure is installed and made operational by no later than seven (7) calendar days from the time of discovery where feasible. If it is infeasible to complete the installation or repair within seven (7) calendar days, the reasons why it is infeasible must be documented in the SESC Plan along with the schedule for installing the stormwater control measure(s) and making it operational as soon as practicable after the 7-day timeframe.

If corrective actions are required, the site owner and operator must ensure that all corrective actions are documented on the inspection report in which the problem was first discovered. Corrective actions shall be documented, signed, and dated by the site operator once all necessary repairs have been completed.

4.0 LOW IMPACT DEVELOPMENT (LID) SITE PLANNING AND DESIGN STRATEGIES

This chapter presents a suite of LID methods that designers and developers can choose from to treat, infiltrate, and reduce the stormwater runoff at a site. The LID site planning process is required to meet Minimum Standard 1, and an LID Credit is available that helps project applicants meet the recharge and treatment requirements of Minimum Standards 2 and 3.

4.1 THE PROBLEM WITH CONVENTIONAL STORMWATER MANAGEMENT

Traditionally, stormwater has been managed using large, structural practices installed at the downstream end of development sites - often as an afterthought - on land segments leftover after developing property. Stormwater is typically conveyed from rooftop to driveway to street, where it is then quickly conveyed via a drainage system to a downstream structural practice such as a dry detention pond. This approach, sometimes referred to as end-of-pipe management, yields the apparent advantages of centralizing control and limiting expenditure of land. These structural drainage systems are designed to be hydraulically efficient for removing stormwater from a site as fast as possible. However, in doing so, these systems limit groundwater recharge, can degrade water quality of receiving waters, and increase runoff volumes, peak discharges, and flow velocities, as described in detail in Chapter Two.

As research, technology, and information transfer have improved over recent years, alternative approaches are being sought by the public and regulators to reduce the environmental impacts from new development and redevelopment. Developers and designers are also seeking alternatives to expedite permitting processes, reduce construction costs, reduce long-term operation and maintenance costs, and increase property values. LID has emerged as an effective way to address these issues by combining a site planning and design process with runoff reduction and treatment practices, resulting in benefits that far surpass the end-of-pipe approach.

Use of LID strategies does not necessarily completely supplant the use of end-of-pipe technology. Hybrid approaches that incorporate both can work effectively. However, the Smart Development for a Cleaner Bay Act (RIGL 45-61.2) and this manual require that permit applicants exhaust all opportunities to use such practices prior to exploring end-of-pipe management, in accordance with Minimum Standard 1. Developers must use site planning and design strategies as their first-line approach and are required to recharge stormwater in accordance with Minimum Standard 2, the groundwater recharge requirement (Re_v).

4.2 DEFINITION OF LID

LID is quite different from conventional treatment (pipe-to-pond stormwater management). It is a comprehensive approach to managing stormwater that is integrated into a project design to minimize the hydrologic impacts of development. In

APPENDIX A: STORMWATER MANAGEMENT CHECKLIST

[\(THE MOST RECENT VERSION OF THE CHECKLIST IS PUBLISHED ON THE RIDEM WEBSITE\)](#)

The first thing that applicants and designers must do before beginning a project is to make sure they are familiar with the 11 minimum standards listed in Manual Chapter Three, as projects must meet all 11 standards. Next, designers should review the available LID site planning and design strategies and BMPs in Manual Chapters Four through Seven to determine which would work best at their site. This checklist serves as a guide for engineers and designers to refer to during all stages of a project to ensure that they are meeting all applicable requirements. In addition, designers must include a completed checklist with their final stormwater management plan.

A.1 CHECKLIST FOR STORMWATER MANAGEMENT PLAN PREPARATION AND REVIEW

A.1.1 General Information

- Applicant name, mailing address, and telephone number
- Contact information for the licensed professional(s) responsible for site plans and stormwater management plan
- Common address and legal description of project site
- Vicinity map
- Existing zoning and land use at the project site
- Proposed land use — indicate if land use meets definition of a LUHPPL (see Manual Table 3-2)
- General Project Narrative
- Project type (new development or redevelopment)

A.1.2 Existing and Proposed Mapping and Plans

- Existing and proposed mapping and plans (scale not greater than 1" = 40') with North arrow that illustrate at a minimum:
 - Existing and proposed site topography (2-foot contours required). 10-foot contours accepted for off-site areas.
 - Existing and proposed drainage area delineations and drainage flow paths, mapped according to the DEM *Guidance for Preparation of Drainage Area Maps* (included in Appendix K). Drainage area boundaries need to be complete; include off-site areas in both mapping and analyses, as applicable.

- ~~Perennial and intermittent streams, in addition to areas subject to storm flowage (ASSFs)~~
- ~~Mapping of predominant soils from USDA soil surveys, especially hydric soil groups as well as location of site-specific borings and/or test pits (on drainage area maps only—not site plans)~~
- ~~Boundaries of existing predominant vegetation and proposed limits of clearing~~
- ~~Location and field-verified boundaries of resource protection areas such as freshwater and coastal wetlands, lakes, ponds, coastal shoreline features and required setbacks (e.g., buffers, water supply wells, septic systems)~~
- ~~Location of floodplain and, if applicable, floodway limits and relationship of site to upstream and downstream properties and drainages~~
- ~~Location of existing and proposed roads, buildings, and other structures including limits of disturbance~~
- ~~Existing and proposed utilities (e.g., water, sewer, gas, electric) and easements~~
- ~~Location of existing and proposed conveyance systems such as grass channels, swales, and storm drains~~
- ~~Location and dimensions of channel modifications, such as bridge or culvert crossings~~
- ~~Location, size, and limits of proposed LID planning and site design techniques (type of practice, depth, area). LID techniques should be labeled clearly on the plan and a key should be provided that corresponds to a tabular description.~~
- ~~Location, size, and limits of disturbance of proposed stormwater treatment practices (type of practice, depth, area). Stormwater treatment practices (BMPs) should be labeled with numbers that correspond to the table in Section A.1.5.~~
- ~~Soils information from test pits or borings at the location of proposed stormwater management facilities, including but not limited to soil descriptions, depth to seasonal high groundwater, depth to bedrock, and estimated hydraulic conductivity. Soils information will be based on site test pits or borings logged by a DEM-licensed Class IV soil evaluator or RI-registered PE.~~
- ~~8.5 x 11 inch copy of site plan for public notice, as applicable.~~

~~A.1.3—Minimum Stormwater Management Standards~~

~~Minimum Standard 1: LID Site Planning and Design Strategies~~

~~Document specific LID site planning and design strategies and associated methods that were employed for the project in the following table:~~

LID Site Planning and Design Checklist

The applicant must document specific LID site planning and design strategies applied for the project (see Manual Chapter Four and the *RI Community LID Guidance Manual* for more details regarding each strategy). If a particular strategy was not used, a justification and description of proposed alternatives must be provided. If a strategy is not applicable (N/A), applicants must describe why a certain method is not applicable at their site. For example, preserving wetland buffers may be not applicable for sites located outside any jurisdictional wetland buffers. In communities where conservation development or other low impact development site planning and design processes exist, following the local community conservation development option may help a project achieve this standard.

1. Strategies to Avoid the Impacts

A. Preservation of Undisturbed Areas

Not Applied or N/A. Use space below to explain why:

Select from the following list:

- Limits of disturbance clearly marked on all construction plans.
- Mapped soils by Hydrologic Soil Group (HSG).
- Building envelopes avoid steep slopes, forest stands, riparian corridors, HSG D soils, and floodplains.
- New lots, to the extent practicable, have been kept out of freshwater and coastal wetland jurisdictional areas.
- Important natural areas (i.e., undisturbed forest, riparian corridors, and wetlands) identified and protected with permanent conservation easement.
- Percent of natural open space calculation is provided.
- Other (describe):

Explain constraints when a strategy is applied and/or proposed alternatives in space below:

B. Preservation of Buffers and Floodplains

Not Applied or N/A. Use space below to explain why:

Select from the following:

- Applicable vegetated buffers of coastal and freshwater wetlands and perennial and intermittent streams have been preserved, where possible.
- Limits of disturbance included on all construction plans that protect applicable buffers
- Other (describe):

Explain constraints and/or proposed alternatives in space below:

LID Site Planning and Design Checklist

C. Minimized Clearing and Grading

Not Applied or N/A. Use space below to explain why:

Select from the following list:

- Site fingerprinting to extent needed for building footprints, construction access and safety (i.e., clearing and grading limited to 15 feet beyond building pad or 5 feet beyond road bed/shoulder).
- Other (describe):

Explain constraints and/or proposed alternatives in space below:

D. Locating Sites in Less Sensitive Areas

Not Applied or N/A. Use space below to explain why:

Select from the following list:

- A site design process, such as conservation development, used to avoid or minimize impacts to sensitive resources such as floodplains, steep slopes, erodible soils, wetlands, hydric soils, surface waters, and their riparian buffers.
- Development located in areas with least hydrologic value (e.g., soil groups A and B)
- Development on steep slopes, grading and flattening of ridges has been avoided to the maximum extent practicable.
- Other (describe):

Explain constraints and/or proposed alternatives in space below:

E. Compact Development

Not Applied or N/A. Use space below to explain why:

Select from the following list:

- A site design technique (e.g., conservation development) used to concentrate development to preserve as much undisturbed open space as practicable and reduce impervious cover.
- Reduced setbacks, frontages, and right-of-way widths have been used where practicable.
- Other (describe):

Explain constraints and/or proposed alternatives in space below:

~~LID Site Planning and Design Checklist~~

~~F. Work with the Natural Landscape Conditions, Hydrology, and Soils~~

~~Not Applied or N/A. Use space below to explain why:~~

~~Select from the following list:~~

- ~~Stormwater management system mimics pre-development hydrology to retain and attenuate runoff in upland areas (e.g., cuts and fills limited and BMPs distributed throughout site; trees used for interception and uptake).~~
- ~~The post-development time of concentration (t_c) should approximate pre-development t_c .~~
- ~~Flow velocity in graded areas as low as practicable to avoid soil erosion (i.e., slope grade minimized). Velocities shall not exceed velocities in Appendix B, Table B-2.~~
- ~~Plans show measures to prevent soil compaction in areas designated as Qualified Pervious Areas (QPAs) for better infiltration.~~
- ~~Site designed to locate buildings, roadways and parking to minimize grading (cut and fill quantities)~~
- ~~Other (describe):~~

~~Explain constraints and/or proposed alternatives in space below:~~

~~2. Strategies to Reduce the Impacts~~

~~Reduce Impervious Cover~~

~~Not Applied or N/A. Use space below to explain why:~~

~~Select from the following list:~~

- ~~Reduced roadway widths~~ ~~Reduce driveway areas~~ ~~Reduced building footprint~~
- ~~Reduced sidewalk area~~ ~~Reduced cul-de-sacs~~ ~~Reduced parking lot area~~
- ~~Other (describe):~~

~~Explain constraints and/or proposed alternatives in space below:~~

~~3. Strategies to Manage the Impacts~~

~~A. Disconnecting Impervious Area~~

~~Not Applied or N/A. Use space below to explain why:~~

~~Select from the following list:~~

- ~~Impervious surfaces have been disconnected to QPAs to the extent possible.~~
- ~~Other (describe):~~

~~Explain constraints and/or proposed alternatives in space below:~~

~~LID Site Planning and Design Checklist~~

~~B. Mitigation of Runoff at the point of generation~~

~~Not Applied or N/A. Use space below to explain why:~~

~~Select from the following list:~~

- ~~Roof runoff has been directed to a QPA, such as a yard or vegetated area.~~
- ~~Roof runoff has been directed to a lower impact practice such as a rain barrel or cistern.~~
- ~~A green roof has been designed to reduce runoff.~~
- ~~Small scale BMPs applied at source.~~
- ~~Other (describe):~~

~~Explain constraints and/or proposed alternatives in space below:~~

~~C. Stream/Wetland Restoration~~

~~Not Applied or N/A. Use space below to explain why:~~

~~Select from the following list:~~

- ~~Historic drainage patterns have been restored by removing closed drainage systems and/or restoring degraded stream channels and/or wetlands.~~
- ~~Removal of invasive species.~~
- ~~Other (describe):~~

~~Explain constraints and/or proposed alternatives in space below:~~

~~D. Reforestation~~

~~Not Applied or N/A. Use space below to explain why:~~

~~Select from the following list:~~

- ~~Low maintenance, native vegetation has been proposed.~~
- ~~Trees are proposed to be planted or conserved to reduce runoff volume, increase nutrient uptake, and provide shading and habitat.~~
- ~~Other (describe):~~

~~Explain constraints and/or proposed alternatives in space below:~~

~~E. Source Control~~

~~Not Applied or N/A. Use space below to explain why:~~

~~Select from the following list:~~

- ~~Source control techniques such as street sweeping or pet waste management have been proposed.~~
- ~~Other (describe):~~

~~Explain constraints and/or proposed alternatives in space below:~~

~~☐ Minimum Standard 2: Groundwater Recharge~~

~~Demonstrate that groundwater recharge criteria for the site have been met. Include:~~

- ~~☐ The required recharge volume (Re_v) in acre-feet (See Manual Section 3.3.2)~~
- ~~☐ LID Stormwater Credit from Checklist Section A.1.4 to be applied to recharge requirement, if applicable, with the following calculations (See Manual Section 4.6.1):~~
 - ~~☐ the recharge area (Re_a) in acres for the site~~
 - ~~☐ the site impervious area draining to QPAs~~
 - ~~☐ the new Re_v requirement~~
- ~~☐ Specific BMPs from Checklist Section A.1.5 that will be used to meet the recharge requirement. Note: Only BMPs listed in Manual Table 3-5, List of BMPs Acceptable for Recharge may be used to meet the recharge requirement.~~

~~☐ Minimum Standard 3: Water Quality~~

~~Demonstrate that the water quality criteria for the site have been met. Include:~~

- ~~☐ Required water quality volume (WQ_v) in acre-feet or ft^3 (see Manual Section 3.3.3).~~
- ~~☐ LID Stormwater Credit from Checklist Section A.1.4 to be applied to water quality requirement, if applicable, with the following calculations (see Manual Section 4.6.1):~~
 - ~~☐ the new impervious area (in acres) for the site~~
 - ~~☐ the new WQ_v in acre-feet or ft^3~~
- ~~☐ Specific BMPs from Checklist Section A.1.5 that will be used to meet water quality volume requirement. Note: Only BMPs listed in Manual Table 3-6, Acceptable BMPs for Water Quality Treatment may be used to meet the water quality requirement.~~
- ~~☐ Specify any additional pollutant-specific requirements and/or pollutant removal efficiencies applicable to the site as the result of SAMP, TMDL, or other watershed-specific requirements.~~

~~☐ Minimum Standard 4: Conveyance and Natural Channel Protection~~

~~Demonstrate that the conveyance and natural channel protection criteria for the site have been met. Include:~~

- ~~☐ Justification for channel protection criterion waiver, if applicable (see Manual Section 3.3.4).~~
- ~~☐ Required channel protection volume (CP_v) (see Manual Section 3.3.4).~~
- ~~☐ Specific BMPs from Checklist Section A.1.5 that will be used to meet the channel protection requirement. Hydrologic and hydraulic site evaluation as described in Manual Section 3.3.4 should be included in Checklist Section A.1.5 for each channel protection BMP.~~

Minimum Standard 5: Overbank Flood Protection

Demonstrate that the overbank flood protection criteria for the site have been met. Include:

- Justification for overbank flood protection criterion waiver, if applicable (see Manual Section 3.3.5).
- Pre- and post-development peak discharge rates.
- Specific BMPs from Checklist Section A.1.5 that will be used to meet the overbank flood protection requirement. Hydrologic and hydraulic site evaluation as described in Manual Section 3.3.4 should be included in Checklist Section A.1.5 for each overbank flood protection BMP.

 Minimum Standard 6: Redevelopment and Infill Projects

Demonstrate that criteria for redevelopment and/or infill projects have been met, if applicable. Include:

- Description of site that meets redevelopment/infill definition.
- Approved off-site location within watershed where stormwater management requirements will be met, if applicable (see Manual Section 3.2.6).
- Not Applicable.

 Minimum Standard 7: Pollution Prevention

Demonstrate that the project meets the criteria for pollution prevention. Include:

- Stormwater pollution prevention plan

 Minimum Standard 8: LUHPPLs

Demonstrate that the project meets the criteria for LUHPPLs, if applicable. Include:

- Description of any land use activities considered stormwater LUHPPL (see Manual Table 3-2).
- Specific BMPs listed in Checklist Section A.1.5 that receive stormwater from LUHPPL drainage areas. These BMP types must be listed in Manual Table 3-3, "Acceptable BMPs for Use at LUHPPLs."
- Additional BMPs, if any, that meet RIPDES MSGP requirements.
- Not Applicable.

 Minimum Standard 9: Illicit Discharges

Applicant asserts that no illicit discharges exist or are proposed to the stormwater management system in accordance with State regulations.

~~**Minimum Standard 10: Construction Erosion and Sedimentation Control**~~

~~Demonstrate that ESC practices will be used during the construction phase and land disturbing activities. Include:~~

- ~~Description of temporary sediment trapping and conveyance practices, including sizing calculations and method of temporary and permanent stabilization (see Manual Section 3.2.9 and the Rhode Island Soil Erosion and Sediment Control Handbook).~~
- ~~Description of sequence of construction. Activities should be phased to avoid compacting soil during construction, particularly in the location of infiltrating stormwater practices and qualifying pervious areas for stormwater credits.~~
- ~~Location of construction staging and material stockpiling areas.~~

~~**Minimum Standard 11: Stormwater Management System Operation and Maintenance**~~

~~Provide a stormwater management system operation and maintenance plan that at a minimum includes:~~

- ~~Name, address, and phone number of responsible parties for maintenance~~
- ~~Description of annual maintenance tasks~~
- ~~Description of applicable easements~~
- ~~Description of funding source~~
- ~~Minimum vegetative cover requirements~~
- ~~Access and safety issues~~

~~A.1.4 LID Stormwater Credit~~

~~Description of stormwater credit, if applicable. Label qualifying pervious areas (QPAs) on the site map, and document that all stormwater credit requirements listed in Section 4.6 are met. For each QPA, note the impervious area (in acres) that drains to it, and place a check in the appropriate box to demonstrate that it meets the following criteria:~~

	QPA 1	QPA 2	QPA 3	QPA 4
Impervious Area Draining to QPA (acres)				
QPA Criteria	Criterion Met?			
Construction vehicles shall not be allowed to drive over the QPA during construction. If the area becomes compacted, soil must be suitably amended, tilled, and revegetated once construction is complete to restore infiltration capacity.				
QPA infiltration area is at least 10ft from building foundation.				

	QPA 1	QPA 2	QPA 3	QPA 4
Contributing impervious area does not exceed 1,000 ft².				
Length of QPA in feet is equal to or greater than the contributing rooftop area in ft² divided by 13.3. The maximum contributing flow path from non-rooftop impervious areas is 75ft.				
QPA does not overlap any other QPA.				
Lot is greater than 6,000 ft².				
The slope of the QPA is less than or equal to 5.0%.				
Disconnected downspouts draining to QPA are at least 10 feet away from the nearest impervious surface.				
Runoff from rooftops without gutters / downspouts that drains to QPA flows away from the structure as low-velocity sheet flow.				
QPA is located on Hydrologic Soil Group (HSG) A or B soils.				
Depth to groundwater within QPA is 18 inches or greater (has been confirmed by evaluation by a DEM-licensed Class IV soil evaluator or RI-registered PE).				
Runoff is directed over soft shoulders, through curb cuts or level spreaders to QPA.				
Measures are employed at discharge point to prevent erosion and promote sheet flow.				
The flow path through the QPA complies with the setback requirements for structural infiltration BMPs.				
Rooftop runoff draining to QPA from LUHPPLs does not commingle with runoff from any paved surface or areas that may generate higher pollutant loads				
Inspection and maintenance of the QPA is included in the site Operation and Maintenance Plan (Minimum Standard 11).				
The QPA is owned or controlled by the property owner				
There is no history of groundwater seepage and / or basement flooding on the property				

- Existing condition analysis for drainage area boundaries, curve numbers, times of concentration, runoff rates, volumes, velocities, and water surface elevations showing methodologies used and supporting calculations.
- Proposed condition analysis for drainage area boundaries, curve numbers, times of concentration, runoff rates, volumes, velocities, water surface elevations, and routing showing the methodologies used and supporting calculations.
- Downstream Analysis, where required (see Manual Section 3.3.6).
- Final sizing calculations for structural stormwater BMPs including, contributing drainage area, storage, and outlet configuration.
- Stage discharge or outlet rating curves and inflow and outflow hydrographs for storage facilities (e.g., detention, retention, or infiltration facilities).
- Dam breach analysis, where necessary, for earthen embankments over six (6) feet in height, or a capacity of 15 acre feet or more, and that is a significant or high hazard dam.
- Drainage Area Maps prepared in accordance with DEM's *Guidance for Preparation of Drainage Area Maps* (included in Appendix K).
- Representative cross-section and profile drawings, notes and details of structural stormwater management practices and conveyances (i.e., storm drains, open channels, swales, etc.), which include:
 - Locations, cross sections, and profiles of all streams and drainage swales and their method of stabilization.
 - Existing and proposed structural elevations (e.g., invert of pipes, manholes, etc.).
 - Design water surface elevations.
 - Structural details of outlet structures, embankments, spillways, stilling basins, grade control structures, conveyance channels, etc.
 - Logs of borings and/or test pit investigations along with supporting soils/geotechnical report.
- Planting plans for structural stormwater BMPs, including:
 - Species, size, planting methods, and maintenance requirements of proposed planting.
- Structural calculations, where necessary.
- Applicable construction specifications.
- Identification of all anticipated applicable local and State permits.
- Identification of all anticipated legal agreements related to stormwater (e.g., off-site easements, deed restrictions, and covenants).

APPENDIX B: VEGETATION GUIDELINES AND PLANTING LIST

Vegetation can often be an important factor in the performance and community acceptance of many stormwater BMPs. This Guide provides general background on how to determine the appropriate plant species for use in Rhode Island. This guide also includes tips on how to establish more functional landscapes within stormwater BMPs. General guidance for all BMPs is discussed, as well as specific guidance for each of the BMP groups, focusing on native, non-invasive species. For coastal-specific areas, designers should also refer to the *Coastal Buffer Zone Planting Guide* (CRMC, 2008) and the *University of Rhode Island Sustainable Coastal Plant List* (URI Cooperative Extension, 2007).

B.1 VEGETATION FOR LID PRACTICES

Choosing appropriate vegetation is a critical element to improve both the function and appearance of stormwater best management practices (BMPs). The first section outlines general guidance that should be considered when planting any stormwater practice. In addition, specific guidelines are presented for bioretention areas. In the second section, key factors in selecting plant material for stormwater practices are reviewed, including hardiness zones, physiographic regions, hydrologic zones, and cultural factors.

B.2 NATIVE SPECIES

This manual encourages the use of native plants in LID practices. Native plants are defined as those species which evolved naturally to live in this region of the world. Practically speaking, this refers to those species which grew in Rhode Island before recent human settlement. Many introduced species were weeds brought in by accident; others were intentionally introduced and cultivated for use as food, medicinal herbs, spices, dyes, fiber plants, and ornamentals.

Some introduced species are invasive, have few predators, and can take over naturally occurring species at an alarming rate. As such, they can often escape cultivation and begin reproducing in the wild. This is significant ecologically because many introduced species out-compete indigenous species and begin to replace them in the wild. By planting native species in stormwater management facilities, we can help protect the natural heritage of Rhode Island and provide a legacy for future generations.

Native species also have distinct genetic advantages over non-native species for planting in Rhode Island. Because they have evolved to live here naturally, indigenous plants are best suited for the local climate. This translates into greater survival rates when planted and less replacement and maintenance during the life of a stormwater management facility. Both of these attributes provide cost savings for the facility owner.

SMALL BUSINESS IMPACT STATEMENT

November 26, 2014 Update: The RI Stormwater Design and Installation Manual is being amended to be consistent with the Environmental Protection Agency (EPA) “C&D Rule”, the Rhode Island Discharge Elimination System (RIPDES) General Permit for Discharges of Stormwater Associated with Construction Activity (Construction GP), and the newly adopted Rhode Island Soil Erosion and Sediment (RI SESC) Handbook. The RIPDES Construction GP was noticed for public review and comment and promulgated in accordance with the RIPDES Rules in 2013. The RI SESC Handbook was adopted in 2014 after a two year peer review process by a technical review committee, a sixty (60) day public review and comment period and a public workshop.

Pursuant to Chapter 46-23 of the State of Rhode Island General Laws, as amended, the Rhode Island Department of Environmental Management proposes to amend and take public comment on the following sections only of the Rhode Island Stormwater Design and Installation Manual (RISDISM): Amended Section 3.2.10 Minimum Standard 10 Construction Erosion and Sedimentation Control (re-named: Construction Activity Soil Erosion, Runoff, Sedimentation, and Pollution Prevention Control Measure Requirements), and add new Section 3.3.7 : Soil Erosion, Runoff, and Sedimentation Control Measures. These changes were made to ensure consistency with the EPA’s National Effluent Limitation Guidelines (ELGs) and new source performance standards (NSPS) established for the Construction and Development Point Source Category. These requirements are referred to as “the C&D rule”. These ELGs were adopted by the EPA in their 2012 Construction GP and were subsequently adopted by the RI DEM in the RIPDES Construction GP in 2013. RI DEM is the delegated state authority to administer the NPDES Rules in RI and therefore is required to make changes to the RIPDES Construction GP to be consistent with the Federal Requirements. In August of 2014 the Rhode Island State Conservation Committee (RISCC) adopted updates to the 1989 RI Soil Erosion and Sediment Control Handbook. The updates included the incorporation of Performance Criteria for SESC Measures that were also consistent with the EPA ELGs and the RIPDES Construction GP.

In addition, Appendix A which is a stormwater management checklist form, is being removed from the Stormwater Manual regulations to facilitate a more efficient method of updating and improving the checklist form. The department will publish an updated version of the checklist and make it available on the Department’s website.

Summary of Proposed Amendment to Section 3.2.10 Minimum Standard 10 Construction Erosion and Sedimentation Control: Section renamed to Construction Activity Soil Erosion, Runoff, Sedimentation, and Pollution Prevention Control Measure Requirements to reflect the emphasis of pollution prevention measures. The name of the plan was changed to Soil Erosion and Sediment Control (SESC) Plan. Four broad objectives were added for SESC Measures. A reference was added to the Performance Criteria in Section 3.3.7. The definition of a qualified SESC Plan preparer added.

Summary of Proposed Amendment to Section 3.3.7 Soil Erosion, Runoff, and Sedimentation Control Measures: Fifteen (15) Performance criteria are added to be consistent with the C&D rule, the RIPDES Construction GP, and existing authorities in the RISDISM.

In order to accurately predict the impact the adoption, amendment, or repeal of a regulation will have on small businesses, the promulgating authority must conduct a thorough analysis that not only considers the potential effects of the action but also quantifies the costs, if any, associated with each. The questions below are designed to aid promulgating authorities in conducting their analysis.

Subject: RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL

Agency submitting regulation: Department of Environmental Management (DEM)

Subject matter of regulation: Stormwater Management

ERLID No: 6222

Statutory authority: RIGL chapters 46-12, 46-13.1, 42-17.6 and 42-17.1

Other agencies affected: Coastal Resources Management Council (CRMC)

Other regulations that may duplicate or conflict with the regulation: None

Describe the scope and objectives of the regulation:

DEM and CRMC administer a number of regulatory permitting programs that require stormwater management. The Stormwater Manual is a compilation of standards that applicants must comply with only if they are required to manage stormwater under the existing regulatory programs. The Manual does not expand the regulatory authority of these existing programs. The Stormwater Manual is not a stand alone regulatory document.

Regulatory permitting programs that include requirements for stormwater management: DEM Freshwater Wetlands Program, DEM RI Pollutant Discharge Elimination System Program, DEM Water Quality Certification Program, DEM Groundwater Discharge Program, CRMC Coastal Resources Management Permitting Program, and CRMC Freshwater Wetlands Program.

A Stormwater Manual with standards for design, installation, operation and maintenance is necessary to specify the requirements for managing stormwater when required by the regulatory programs above to prevent adverse impacts from stormwater to water quality, habitat and flood storage capacity. The Manual provides a consistent approach for review of applications by different programs and agencies.

What was the rationale for establishing this regulation?

Stormwater has been identified as the leading cause for RI's waters not meeting its designated standards/uses in many areas of the state. RI first adopted a Stormwater Manual in 1993. The 2010 Stormwater Manual updated the 1993 Manual to reflect current science and engineering practice concerning stormwater management and to incorporate low impact development (LID) methods in managing stormwater.

In 2007 the RI General Assembly passed the "Smart Development for a Cleaner Bay Act of 2007" (the Act) (RIGL §45-61.2-1, *et seq.*). This Act requires that DEM and CRMC amend the 1993 version of the Stormwater Manual. As stated in the Act, "The changes shall include, but not be limited to,

incorporation into existing regulatory programs that already include the review of stormwater impacts the following requirements:

- (a) Maintain pre-development groundwater recharge and infiltration on site to the maximum extent practicable;
- (b) Demonstrate that post-construction stormwater runoff is controlled, and that post-development peak discharge rates do not exceed pre-development peak discharge rates; and
- (c) Use low impact-design techniques as the primary method of stormwater control to the maximum extent practicable.”

Does the rationale still exist? Yes

Is the rationale still relevant? Yes

Business industry (s) affected by the regulation:

No specific category of small business is targeted by the Stormwater Manual. All future development undertaken by any small business that is subject to the stormwater management requirements of the state regulatory programs above will have to comply with the requirements in the Stormwater Manual. Thresholds for permitting are specified based on project size, location, or impact. Some projects proposed by small businesses may not be affected by the Manual’s requirements.

Types of businesses included in the industry (s):

See above – no specific types of businesses are targeted by the Stormwater Manual.

Total number of small businesses included in the regulated industry (s) *(Please see the attached guidance documents for assistance determining the total number of small businesses)*

See above – no specific types of businesses are targeted by the Stormwater Manual.

Number of small businesses potentially subject to the proposed regulation:

The number of small businesses subject to the Stormwater Manual is not known for the reasons described above.

How often do small businesses contact your agency for assistance with clarification of the regulation and/or receive assistance with compliance issues? Two times per day.

What is the cost to your agency of establishing and enforcing this regulation? Administration and enforcement of the standards in the Stormwater Manual is done under the purview of the regulatory programs cited above. Therefore it is not practical to separately determine the staff/resources to implement the Manual.

What would the consequences be if the regulation did not exist?

If a Stormwater Manual was not adopted, the regulatory programs listed above would each have to specify in their program regulations the necessary requirements for stormwater management. Not only would that make these individual regulations unwieldy, over time, standards for stormwater may vary between the programs. Having the standards in one comprehensive document ensures predictability and consistency for the applicants preparing applications to the various programs, consistency in the program reviews and ensures protection of water quality. Furthermore, by having one set of stormwater standards, DEM and CRMC have been able to consolidate permitting reviews and eliminating duplication in permitting for projects that are subject to more than one regulatory program, thereby reducing paperwork and fees for applicants.

Effective date used in cost estimate: Does not apply.

For each question below, please answer “yes” or “no” and offer a brief explanation. Please describe any facts, data, views, arguments, or other input from small businesses, organizations or any other sources that were used to quantify the impacts outlined below.

1.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<p>Do small businesses have to create, file, or issue additional reports?</p> <p>The Manual requires specific information to be prepared for submission to the permitting authority to document compliance with the Manual, e.g., application checklists, drainage calculations, operation and maintenance plans. The Manual provides the opportunity for DEM and CRMC Programs to streamline the application process and reduce duplicative applications and fees when permits are required from multiple regulatory programs.</p>
2.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<p>Do small businesses have to implement additional recordkeeping procedures?</p> <p>Businesses are to maintain records of inspection and maintenance of their stormwater management structures.</p>
3.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<p>Do small businesses have to provide additional administrative oversight?</p> <p>Businesses will be responsible to effectively implement the operation and maintenance plans for the approved stormwater management structures.</p>
4.	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<p>Do small businesses have to hire additional employees in order to comply with the proposed regulation?</p> <p>Businesses subject to the Manual requirements typically contract with outside firms to prepare applications and carry out construction projects in compliance with the Manual, this will not change as a result of modifications to Minimum Standard 10 and the removal of the Appendix A checklist from the regulation.</p>
5.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<p>Does compliance with the regulation require small businesses to hire other professionals (e.g. a lawyer, accountant, engineer, etc.)?</p> <p>Businesses subject to the Manual requirements will contract with environmental consultants/engineers to prepare applications. In some cases, they will need to hire contractors to construct and possibly maintain the stormwater management system.</p>
6.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<p>Does the regulation require small businesses to purchase a product or make any other capital investments in order to comply with the regulation?</p> <p>Businesses subject to the Manual will have to construct an acceptable stormwater management system. The type of stormwater management system that is installed on the property is decided upon by the contracted professional based on a multitude of economic and technical factors, including parcel size, presence of wetlands and soil conditions.</p>
7.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<p>Are performance standards more appropriate than design standards?</p>

			The Manual involves <u>both</u> performance standards and design standards.
8.	Yes	No	<p>Does the regulation require small businesses to cooperate with audits, inspections, or other regulatory enforcement activities?</p> <p>The stormwater management system permitted by the state may be subject to inspection by the state or a state contractor.</p>
9.	Yes	No	<p>Does the regulation have the effect of creating additional taxes and/or fees for small businesses?</p> <p>Permit application fees are triggered by the regulatory permitting programs, not by the Manual.</p>
10.	Yes	No	<p>Does the regulation require small businesses to provide educational services to keep up to date with regulatory requirements?</p> <p>The changes proposed to the Manual will not require educational services to be provided however the RIDEM in cooperation with the University of RI and the RIDOT will be hosting training sessions on the proposed changes to Minimum Standard 10 through the RI Soil Erosion and Sediment Control Handbook Outreach and Training effort.</p>
11.	Yes	No	<p>Is the regulation likely to <i>deter</i> the formation of small businesses in RI?</p> <p>The Manual is a tool in implementing the regulatory permitting programs.</p>
12.	Yes	No	<p>Is the regulation likely to <i>encourage</i> the formation of small businesses in RI?</p> <p>The proposed modifications to the Manual will not necessarily encourage any new small businesses but may require existing small businesses to provide additional services in order for property owners to satisfy the Performance Criteria proposed in Minimum Standard 10.</p>
13.	Yes	No	<p>Can the regulation provide for less stringent compliance or reporting requirements for small businesses?</p> <p>The proposed modifications to the Manual have been structured to minimize reporting requirements to the extent practical while still achieving the goal of protecting the environment during land disturbing activities.</p>
14.	Yes	No	<p>Can the regulation establish less stringent schedules or deadlines for compliance or reporting requirements for small businesses?</p> <p>The proposed changes to Minimum Standard 10 of the Manual were made to ensure consistency with the EPA's National Effluent Limitation Guidelines (ELGs) and new source performance standards (NSPS) established for the Construction and Development Point Source Category. All construction activities subject to the</p>

			Manual must comply with these ELGs, as a result there were no alternatives.
15.	Yes	No	<p>Can the compliance or reporting requirements be consolidated or simplified for small businesses?</p> <p>The intent of the proposed changes to Minimum Standard 10 is to establish a uniform set of Performance Criteria for controlling erosion, runoff, sedimentation, and pollution during land disturbing activities of all sizes throughout the State of RI. This uniformity of requirements should simplify the process of preparing applications and complying with the requirements for all businesses.</p>
16.	Yes	No	<p>Can performance standards for small businesses replace design or operational standards?</p> <p>See response to question 7.</p>
17.	Yes	No	<p>Are there alternative regulatory methods that would minimize the adverse impact on small businesses?</p> <p>The proposed changes to Minimum Standard 10 of the Manual were made to ensure consistency with the EPA's National Effluent Limitation Guidelines (ELGs) and new source performance standards (NSPS) established for the Construction and Development Point Source Category. All construction activities subject to the Manual must comply with these ELGs, as a result there were no alternatives.</p>
18.	Yes	No	<p>Have any small businesses or small business organizations been contacted during the preparation of this document? If so, please describe.</p> <p>The proposed Performance Criteria contained in Minimum Standard 10 are consistent with the Performance Criteria contained in the 2014 RI Soil Erosion and Sediment Control Handbook. The Performance Criteria contained in the RI Soil Erosion and Sediment Control Handbook were adopted in 2014 after a two year peer review process by a technical review committee, a sixty (60) day public review and comment period and a public workshop.</p>

*State of Rhode Island and Providence Plantations
Department of Administration
Office of Management and Budget - Budget Office
(Form Revised: 02/18/2014)*

Fiscal Note for Proposed Administrative Rules (R.I.G.L. 22-12-1.1)

Name of Administrative Rule: Rhode Island Stormwater Design and Installation Standards Manual
(Stormwater Manual)

Date of Notice: To be determined, anticipated December 22, 2014

Date of Hearing: To be determined, anticipated January 26, 2015

RIGL: The Stormwater Manual is adopted in accordance with Chapter 42-35 pursuant to Chapter 45-61.2-1, 46-12, and 42-17 of the Rhode Island General Laws of 1956 (“RIGL”), as amended.

FISCAL IMPACT

<i>State Revenues</i>		<i>State Expenditures</i>		<i>City/Town Expenditures</i>	
FY 2015	\$0	FY 2015	\$0	FY 2015	\$0
FY 2016	\$0	FY 2016	\$0	FY 2016	\$0
FY 2017	\$0	FY 2017	\$0	FY 2017	\$0

Summary of Policy Change:

The RI Stormwater Design and Installation Manual is being amended to be consistent with the Environmental Protection Agency (EPA) “C&D Rule”, the Rhode Island Discharge Elimination System (RIPDES) General Permit for Discharges of Stormwater Associated with Construction Activity (Construction GP), and the newly adopted Rhode Island Soil Erosion and Sediment (RI SESC) Handbook. The RIPDES Construction GP was noticed for public review and comment and promulgated in accordance with the RIPDES Rules in 2013. The RI SESC Handbook was adopted in 2014 after a two year peer review process by a technical review committee, a sixty (60) day public review and comment period and a public workshop.

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Summary of Proposed Amendment to Section 3.3.7 Soil Erosion, Runoff, and Sedimentation Control Measures: Fifteen (15) Performance criteria are added to be consistent with the C&D rule, the RIPDES Construction GP, and existing authorities in the RISDISM.

Summary of State Fiscal Impact:

The proposed amendments are necessary to make the Stormwater Manual consistent with other rules and regulations and therefore no new impacts to state income and expenses are expected.

City or Town Impact:

The proposed amendments are necessary to make the Stormwater Manual consistent with other rules and regulations and therefore no new impacts to cities or towns are expected.

Approved:

Thomas A. Mullaney
Executive Director/State Budget Officer

Date