

Section 300.6

Treatment of Sewage and Stormwater

A. Definitions

1. **Sewage:** Pursuant to R.I.G.L. § 46-12-1, sewage means “fecal material and human waste, or wastes from toilets and other receptacles intended to receive or retain body waste, and any wastes, including wastes from human households, commercial establishments, and industries, and storm water runoff...” For purposes of the Coastal Resources Management Program, “sewage” is further defined to include freshwater discharges, including stormwater runoff that may significantly alter the salinity of tidal waters or salt ponds; the terms “wastewater” and “septage”, as defined by the DEM OWTS Rules; and discharges of heated waters to tidal waters of the state.
2. **Onsite wastewater treatment systems (OWTS):** means any system of piping, tanks, dispersal areas, alternative toilets or other facilities designed to function as a unit to convey, store, treat or disperse wastewater by means other than discharge into a public sewer system.
3. **Point source discharges:** means any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft from which sewage is or may be discharged.
4. **Sewage treatment plants:** sewage collection and treatment facilities, including state, municipal, or privately owned and operated collection, pumping, treating, disposal or dispersion facilities designed for the treatment of sewage from residences, commercial buildings, industrial plants and institutions, together with any groundwater, surface water, or surface runoff that may be present in the waste stream.
5. **Stormwater runoff:** that portion of precipitation that does not naturally infiltrate into the landscape (*e.g.*, without human influence) but rather travels overland as surface flow. It is also commonly referred to as “stormwater”. Stormwater runoff is a significant contributor of pollutants such as sediments, bacteria, nutrients (nitrogen and phosphorus), hydrocarbons (oil and grease), metals, and other substances that adversely affect water quality and the coastal environment. In addition, significant discharges of stormwater may alter salinity and thereby, adversely impact the coastal environment, especially in poorly flushed estuaries and embayments.
6. **Stormwater management plan:** A plan describing the proposed methods and measures to prevent or minimize stormwater runoff (water quality and quantity) impacts associated with a development project both during and after construction. It identifies selected low impact development (LID) source controls and treatment practices to address those potential impacts, the engineering design of the treatment practices, and maintenance requirements for proper performance of the selected practices. The stormwater management plan details how a project complies with the eleven (11) minimum stormwater management standards and performance criteria detailed in the most recent version of the *Rhode Island Stormwater Design and Installation Standards Manual*. When such a plan is implemented, it provides protection and restoration of receiving waters by reducing pollutant loadings and other negative impacts associated with changes in land use (*i.e.*, urbanization).
7. **Redevelopment:** for purposes of the CRMC is defined as any construction, alteration, or improvement that disturbs more than 5000 square feet of existing impervious area where the existing land use is commercial, industrial, institutional, governmental, recreational, or multi-family residential.
8. **Low Impact Development (LID):** is a site planning and design strategy aimed at maintaining or replicating the predevelopment hydrology through the use of site planning, source control, and small-scale practices integrated throughout a site to prevent, infiltrate, and manage stormwater runoff as close to its source as possible. LID achieves natural resource protection by replenishing groundwater supplies, minimizing the stormwater runoff volume discharged to surface waters, and improving water quality. Examples of LID practices include bioretention, vegetated swales, stormwater planters, porous pavement or concrete, greenroofs, rainwater collection systems for water reuse, and other similar methods.

9. **Water quality volume (WQ_v):** the storage needed to capture and treat 90% of the average annual stormwater runoff volume, and in Rhode Island this equates to one (1)-inch of runoff from impervious surfaces.
10. **Maximum extent practicable:** means the applicant has made all reasonable efforts to meet the standard, including the evaluation of alternative methods to achieve the same level of treatment. To show that a proposed development has met a standard to the maximum extent practicable, the applicant must demonstrate the following: (1) all reasonable efforts have been made to meet the standard in accordance with current local, state, and federal regulations; (2) a complete evaluation of all possible management measures has been performed; and (3) if full compliance cannot be achieved, the highest practicable level of management is being implemented.

B. Policies

1. It is the Council's policy to maintain and, where possible, improve the quality of coastal wetlands, contiguous freshwater wetlands, freshwater wetlands in the vicinity of the coast, groundwater resources and tidal and salt pond surface waters. In so doing, the Council requires the use of low impact development (LID) strategies as the primary method of stormwater management to reduce the volume of stormwater runoff to surface waters, recharge groundwater supplies, and improve overall water quality.
2. It is the Council's policy to minimize the amount of onsite wastewater treatment system (OWTS)-derived nitrates and other potential contaminants which may leach into salt ponds and all other Type 1, 2, and 3 waters.
3. The Council encourages applicants for a CRMC Assent to install, alter or repair an OWTS to meet on site with CRMC staff prior to undertaking of OWTS groundwater and soil tests to discuss the location of the system and buffer zones, where applicable.
4. It is the Council's policy to require the proper management and treatment of stormwater through the preparation and implementation of a stormwater management plan in accordance with the most recent version of the *Rhode Island Stormwater Design and Installation Standards Manual*, and which satisfies the requirements of the RICRMP and any applicable Special Area Management Plan.
5. The most recent version of the *Rhode Island Stormwater Design and Installation Standards Manual* provides the appropriate methods for the preparation of stormwater management plans and the treatment of stormwater using LID practices and methods within the CRMC's jurisdiction. The Council also recognizes that the most recent version of the *Rhode Island Soil and Erosion and Sediment Control Handbook*, and its amendments, published jointly by the Rhode Island Department of Environmental Management and the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) provides additional guidance and supplemental information with respect to the management and treatment of stormwater.
6. It is the Council's policy that all stormwater management plans shall take into consideration all potential impacts associated with the discharge of stormwater runoff into the coastal environment. Potential impacts include, but are not limited to, the following: (i) impacts to salt marshes such as changes in species composition due to the introduction of freshwater to high marsh areas; (ii) changes in the salinity of receiving waters; (iii) thermal impacts to receiving waters; (iv) the effects of introducing stormwater runoff to receiving waters with low dissolved oxygen concentrations; and (v) other potential water quality impacts.
7. The Council's policy is to ensure that all projects are planned, designed, and developed in order to: (1) protect areas that provide important water quality benefits and/or are particularly susceptible to erosion and sediment loss; (2) limit increases of impervious surface areas, except where absolutely necessary; (3) limit land disturbance activities such as clearing and grading and cut and fill to reduce erosion and sediment loss; and (4) limit disturbance of natural drainage features and vegetation. Additionally, stormwater management practices should be designed as landscape amenities to include native plant species on project sites. The Council recommends

applicants to use the “Rhode Island Coastal Plant Guide,” an interactive, web-based plant list prepared by the URI Cooperative Extension Education Center in consultation with the CRMC and available online at: www.crmc.ri.gov/coastallandscapes.html.

C. Prerequisites

1. Applicants seeking a Council Assents to construct, alter, or repair onsite wastewater treatment systems or point source discharges shall first obtain the requisite permit(s) from the Department of Environmental Management.
2. The discharge standards, effluent limitations and pretreatment standards established for the discharge of pollutants to waters of the State under the Rhode Island Pollutant Discharge Elimination System (RIPDES) program, and administered by the Department of Environmental Management (DEM), are the State’s water pollution control requirements. Applicants for projects for which an Individual RIPDES Permit is required shall obtain said permit from DEM and submit the Individual RIPDES Permit with the CRMC Assent application. **Note:** Projects that are eligible to submit a Notice of Intent (NOI) for coverage under a RIPDES General Permit are not required to submit the RIPDES Authorization with the CRMC Assent application. Applicants for such projects, however, are encouraged to file a Notice of Intent (NOI) with DEM concurrently with their CRMC application to allow a coordinated review between the agencies.
3. The Council shall formally review proposed actions only after all other applicable state/local requirements have or will be met. The Council, however, will comment on preliminary plans for major facilities to assist in the planning process.
4. The Executive Director or the Council may require that an applicant obtain a DEM System Suitability Determination, as provided in the DEM OWTS Rules, for onsite wastewater treatment systems that pre-date 1968.

D. Prohibitions

1. Point source discharges of sewage and/or stormwater runoff are prohibited on unconsolidated coastal banks and bluffs.
2. New and enlarged stormwater discharges to the high salt marsh environment bordering Type 1 and Type 2 waters and within salt marshes designated for preservation which border Type 3, 4, 5, and 6 waters are prohibited. Stormwater discharges to existing well flushed tidal channels within high marshes shall not be subject to this prohibition. All such discharges, however, shall meet the applicable standards contained herein.
3. Point source discharges of sewage are prohibited in Type 1 waters.

E. Standards

1. For Onsite Wastewater Treatment Systems (OWTS):
 - (a) See standards given in “Filling, Removing, or Grading” (Section 300.2).
 - (b) The construction, repair or alteration of all OWTS and components shall conform to the standards set forth in the most recent *Rules Establishing Minimum Standards relating to Location, Design, Construction and Maintenance of Onsite Wastewater Treatment Systems* promulgated by the Department of Environmental Management (referred to herein as DEM OWTS Rules).
 - (c) Site grading around the OWTS shall direct the flow of surface runoff water away from the OWTS and meet all applicable requirements of the DEM OWTS Rules.
 - (d) Sub-drains constructed to lower groundwater levels in an area where an OWTS will be located shall: (1) conform to all applicable DEM rules; (2) have no piping located between the anticipated OWTS and the shoreline; and (3) have exposed outfalls suitably protected

against shoreline erosion and scour.

- (e) When existing buildings are changed from seasonal to year-round use, renovated or expanded by adding one or more rooms, an OWTS Suitability Determination shall be obtained by the applicant from the Department of Environmental Management to indicate that the existing OWTS meets all applicable DEM OWTS Rules.
 - (f) Connections to OWTS and cesspools that are abandoned shall be removed, blocked, or otherwise disconnected, and abandoned cesspools and septic tanks shall be pumped dry and filled with clean fill in accordance with all applicable DEM OWTS Rules.
 - (g) Where necessary, barriers shall be constructed to prevent vehicles from passing or parking over septic systems, unless permissible in accordance with DEM OWTS Rules.
2. The 1993 *Rhode Island Stormwater Design and Installation Standards Manual* (“Stormwater Manual”) will be superseded by the 2010 Stormwater Manual upon effective date of adoption by the Council. Unless otherwise provided in subsections (a) or (b), the requirements of the 2010 Stormwater Manual, as amended, shall apply to all CRMC applications submitted on or after January 1, 2011.
- (a) Applicants for projects which have a currently valid and vested Master Plan approval from a local planning board or commission on or before March 31, 2011 may elect to comply with the 1993 Stormwater Manual instead of the 2010 Stormwater Manual provided that a complete application for the project is submitted to the CRMC on or before June 30, 2011. Any project applicant that received Master Plan approval who submits an application to the CRMC after June 30, 2011 shall comply with the 2010 Stormwater Manual, including any future phases of a phased project having received Master Plan approval as of March 31, 2011. Applicants shall, at the time of application, submit a copy of the Master Plan approval document(s) demonstrating eligibility under this subsection. This subsection applies only to those projects which are required to obtain local Master Plan approval pursuant to R.I.G.L. § 45-23-40.
 - (b) In the case of any RIDOT project or a local government road or bridge project, the applicant may elect to comply with the 1993 Stormwater Manual instead of the 2010 Stormwater Manual provided that a complete application for the project is submitted to the CRMC on or before June 30, 2011. Any application submitted to the CRMC after June 30, 2011 shall comply with the 2010 Stormwater Manual.
3. For stormwater management the Council requires, in accordance with the “Smart Development for a Cleaner Bay Act of 2007” (R.I.G.L. § 45-61.2), that all applicable projects meet 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.
4. Residential, commercial, industrial or public recreational structures as defined in Section 300.3 shall provide treatment and management of stormwater runoff for all new structural footprint expansions, including building rooftops, greater than six (600) hundred square feet in size and any new impervious pavement, driveways, sidewalks, or parking areas, regardless of size. Applicable projects shall submit a stormwater management plan that demonstrates compliance with the eleven (11) minimum stormwater management standards and performance criteria as

detailed in the most recent version of the *Rhode Island Stormwater Design and Installation Standards Manual*. Single-family dwelling projects, however, may meet these provisions as detailed in 300.6.E.8 below.

5. Roadways, highways, bridges, and other projects subject to Section 300.13 shall provide treatment and management of stormwater runoff for all new impervious surfaces. These projects shall submit a stormwater management plan that demonstrates compliance with the eleven (11) minimum stormwater management standards and performance criteria as detailed in the most recent version of the *Rhode Island Stormwater Design and Installation Standards Manual*. Any improvement projects to existing roads, highways and bridges and other projects subject to Section 300.13 that result in the creation of new impervious surfaces shall provide treatment and management of stormwater as above for all new impervious surfaces. Maintenance activities such as pavement resurfacing projects, replacement of existing drainage systems, minor roadway repairs, or emergency roadway and drainage repairs are excluded from these requirements provided there is no expansion of the existing impervious surface area and no new or enlarged stormwater discharges.
6. Unless exempted as a maintenance activity herein, any **redevelopment** that disturbs more than 5000 square feet of existing impervious surface coverage shall comply with Minimum Stormwater Standard 6 (Redevelopment and Infill Projects) of the most recent version of the *Rhode Island Stormwater Design and Installation Standards Manual*. Maintenance activities subject to Section 300.14 are excluded from these requirements provided there is no expansion of the existing impervious surface area and no new or enlarged stormwater discharges resulting from the maintenance activity.
7. All stormwater management plans shall take into consideration potential impacts associated with the discharge of stormwater runoff into the coastal environment. Applicants shall address these potential impacts to include, but not limited to, the following: (i) impacts to coastal wetlands such as changes in species composition due to the introduction of freshwater to high marsh areas; (ii) changes in the salinity of tidal receiving waters; (iii) thermal impacts to receiving waters; (iv) effects of introducing stormwater runoff to receiving waters that have low dissolved oxygen concentrations; and (v) other potential water quality impacts as may be identified by CRMC staff.
8. Applicants for **single-family residential** dwellings and accessory structures shall treat the stormwater runoff water quality volume (**WQ_v**) from all new building rooftops greater than six (600) hundred square feet in size and any new impervious driveways and parking areas, regardless of size, as indicated in (a) and (b) below. All dwelling and accessory structure rooftop expansions constructed within a 12-month period shall be counted towards the 600 square foot threshold. Once the 600 square foot threshold is exceeded, stormwater management must be provided for all rooftop expansions constructed within that 12-month period. Applicants for single-family dwelling projects may use the design guidance and performance criteria in the *Rhode Island Stormwater Design and Installation Standards Manual* or equivalent guidance as approved by the CRMC. Applicants for single-family dwellings and accessory structures on CRMC-designated barriers shall manage stormwater runoff as provided in (c) below. Pretreatment of stormwater runoff is not required for single-family residential applications.
 - (a) Stormwater runoff from **rooftops** shall be treated and managed with one or more as needed of the following methods:
 - (1) Direct downspouts to an infiltration trench;
 - (2) Direct downspouts to a rain garden; or
 - (3) Direct down spouts to an infiltration drywell.

- (b) Stormwater runoff from impervious **driveways and parking areas** shall be treated by one or more as needed of the following methods:
 - (1) Infiltration trench;
 - (2) Vegetated swale;
 - (3) Rain garden or;
 - (4) Pervious surface construction (*e.g.*, pervious asphalt and pervious concrete using the RI stormwater manual design criteria and paver block systems).
- (c) Applicants for single-family dwellings and accessory structures located on CRMC-designated barriers shall manage stormwater runoff as follows:
 - (1) Runoff from rooftops shall be directed onto vegetated areas surrounding the dwelling or accessory structure; and
 - (2) Construction of driveway and parking surfaces shall be limited to crushed stone, crushed shell, open plastic grid systems filled with sand, gravel or vegetation, or any combination of the preceding, to prevent damage to other properties during major storm events. Stormwater runoff shall be directed by non-erosive sheet flow onto vegetated areas along side the driveway or parking area.
- 9. New or enlarged stormwater discharges to salt marshes and well flushed tidal channels within high marshes shall only be permitted when the applicant can clearly demonstrate that no reasonable alternatives exist (*e.g.*, no other discharge locations having a gravity flow outlet are available and impervious surfaces have been kept to an absolute minimum) and when no adverse impacts to the salt marsh will result. In these instances, the applicant shall meet all applicable standards contained in the most recent version of the *Rhode Island Stormwater Design and Installation Standards Manual*. This standard does not apply to low salt marsh environments with an average width along the property of less than 35 feet.
- 10. Stormwater open drainage and pipe conveyance systems must be designed to provide adequate passage for flows leading to, from, and through stormwater management facilities for at least the 10-year, 24-hour Type III storm event. Applicants may not be required to control post-development peak discharge rates at pre-development peak discharge rates provided the project design provides for non-erosive stormwater discharges to tidal waters.
- 11. Applicants may be required to submit a pollutant loading analysis to demonstrate that a proposed project will not unduly contribute to, or cause, water resource degradation when such projects are located in sensitive coastal resource areas. When a pollutant loading analysis is required, the applicant shall use the method detailed in Appendix H of the most recent version of the *Rhode Island Stormwater Design and Installation Standards Manual*. If the Council determines that any proposed stormwater discharge will result in an unacceptable discharge of pollutants to the tidal waters of Rhode Island, the Council shall require the applicant to mitigate the pollutant loads to acceptable levels using the practices detailed in the stormwater manual. Frequently, this can be accomplished using these practices in series to achieve higher pollutant removal efficiencies.
- 12. The use of proprietary hydrodynamic (swirl) separator or filter devices shall be limited to pre-treatment applications only, unless the device has met the requirements of the Technology Assessment Protocol (TAP) as detailed in the most recent version of the *Rhode Island Stormwater Design and Installation Standards Manual*. The CRMC may, however, approve such devices in situations where end-of-pipe retrofit solutions are the only alternative available when site constraints limit the use of standard low impact development methods for the treatment and management of stormwater runoff. In such circumstances, however, the use of such proprietary devices shall conform to the standards and performance criteria set forth in the most recent version of the *Rhode Island Stormwater Design and Installation Standards Manual* to the

maximum extent practicable.

13. For outfalls:

- (a) Work on outfalls, drainage channels, etc., shall proceed from the shoreline toward the upland in order that no unfinished or un-stabilized lower channel portions be subjected to erosion-producing velocities from upstream. If this cannot be accomplished, all flow shall be diverted from the unfinished areas until stabilization is completed.
- (b) Where possible, outfall pipe slopes shall be designed for an exit velocity of less than 5 feet per second.
- (c) Screens or grates shall be placed over the end of large outfalls to trap debris.
- (d) Beaches or other coastal features in front of outfalls shall be returned to original grade.
- (e) Riprap placed on beaches shall not increase the grade of the beach higher than one foot in order to maintain lateral access below mean high water.
- (f) Riprap shall be compact, hard, durable, angular stone, with an approximate unit weight of 165 lbs./cubic foot.
- (g) Riprap shall be placed with an adequate bedding of crushed rock or other suitable filtering material.

14. Applicants with projects subject to the stormwater management provisions herein shall submit the following information:

- (a) New or modified single-family dwelling projects shall submit the following:
 - (1) 8.5 x 11 inch site plan depicting the location of all structural stormwater (LID or otherwise) components; and
 - (2) Operation & Maintenance Plan consistent with CRMC guidance to ensure long-term maintenance and operation of the stormwater structural practice(s) on the site.
- (b) All other projects
 - (1) 8.5 x 11 inch site plan depicting the location of all structural stormwater (LID or otherwise) components;
 - (2) Operation & Maintenance Plan that meets the specifications detailed in the most recent version of the *Rhode Island Stormwater Design and Installation Standards Manual*; and
 - (3) Following completion of the approved project, a post-construction certification by a Rhode Island registered P.E. and Rhode Island registered Landscape Architect, where required, demonstrating that all stormwater structures, LID components, and requisite planting materials necessary for the function of the stormwater management system were installed in accordance with the approved permit, specifications and approved site plans.