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MS4 Compliance

Devens, MA

May 25, 2021

Weston & Sampson

What is an MS4?

Municipal Separate Storm Sewer System (MS4) All man-made stormwater collection and conveyance infrastructure owned by a municipality or public entity.

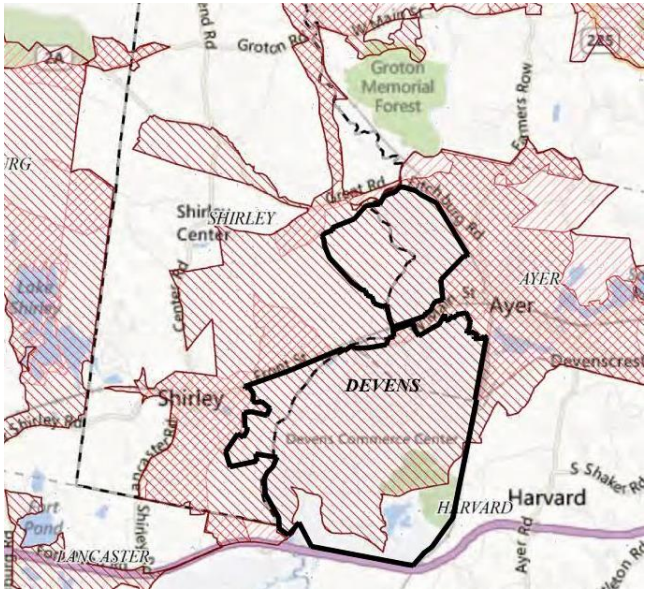
- Drain Pipes
- Drain Manholes
- Catch basins
- Outfalls
- Culverts
- Man-made Channels / Swales
- Infiltration / Detention / Retention Basins
- Treatment structures

Background

- Clean Water Act
- National Pollutant Discharge Elimination System (NPDES) Program
- Municipal Separate Storm Sewer System (MS4)
- MS4 Permit Originally Issued 2003

Regulated Area in Devens

- "Urbanized Area" as defined by 2010 Census
- MS4 Discharges to "Waters of the US"



Background

- Five-year permit cycles
- 2016 Permit effective July 1, 2018
- Devens is a new permittee
- Notice of Intent submitted October 1, 2018
- Permit Year 3 – July 1, 2020 to June 30, 2021

Six Minimum Control Measures

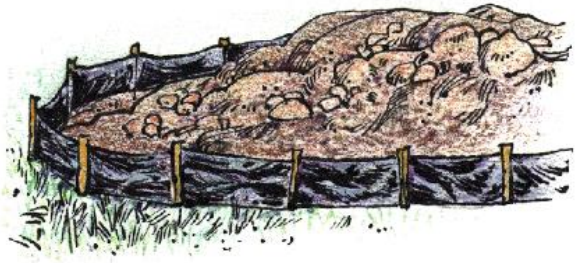
- Public Education and Outreach
- Public Participation and Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Runoff Control
- Pollution Prevention/Good Housekeeping

Regulatory Update: Illicit Discharge Detection and Elimination

- An illicit discharge is defined as a discharge to the MS4 that is not comprised entirely of stormwater
- The DEC and MassDevelopment must establish legal authority to:
  - Prohibit illicit discharges
  - Investigate suspected illicit discharges
  - Eliminate illicit discharges, including discharges from properties not owned by or controlled by the DEC or MassDevelopment that discharge to the MS4, and
  - Implement appropriate enforcement procedures and actions.
- Template IDDE regulatory mechanism developed by MA State Attorney General's office
- Proposed IDDE regulation to be adopted as 974 CMR 8.10

Regulatory Update: Construction Site Runoff Control

- Rules and regulations (974 CMR) must include:
  - Requirements for erosion and sediment controls
  - Requirements for waste control on construction sites
  - Devens is generally already in compliance
- Created written procedures for:
  - Site plan review
  - Site inspection and enforcement



silt fence

1-Acre Threshold

Regulatory Update: Post-Construction Runoff Control

- Stormwater rules and regulations must include:
  - Requirements for Low-Impact Development (LID) practices
  - Pollutant removal requirements for stormwater treatment structures
  - Requirements for long-term operation and maintenance of stormwater management systems
  - Requirements for the submission of as-built plans

1-Acre Threshold; Includes Subdivisions

Regulatory Update: Post-Construction Runoff Control

- Devens' existing regulations were mostly in compliance
- Most updates made to 974 CMR 4.08:
  - Requirement for all stormwater BMPs on development projects to remove 90% of TSS and 60% of phosphorus from stormwater runoff
  - Requirement for stormwater BMPs to be optimized for phosphorus removal
  - Added language to facilitate the creation of easements for maintenance of stormwater management systems
- Also incorporated updates to meet the terms of the CLF settlement

1-Acre Threshold; Includes Subdivisions

Questions

thank you

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APPENDIX

974 CMR: List of Sections to be Updated

- 974 CMR 1.14
- 974 CMR 3.02
- 974 CMR 4.08
- 974 CMR 8.10 – inserting new section; moving “Severability” to 974 CMR 8.11.

Updates to 974 CMR 1.14:

- Text was added to 974 CMR 1.14(2)(i) to read as follows:
  - “powers provided to the DEC to make and enforce reasonable public health regulations including, but not limited to, the issuance of permits and the assessment of fines related to the violation of the By- Laws and 974 CMR including the removal and transport of garbage or other offensive substances, atmospheric pollution, disposal of cesspool and septic-tank waste, illicit connections or discharges to the drainage system, and the construction, maintenance, and alteration of certain sewage disposal systems; and”

Updates to 974 CMR 3.02:

- In 3.02(1)(e), add the following after “or that will disturb one acre or more”. This includes disturbances of less than one acre that are part of a larger common plan of development that will disturb one acre or more.

- Add the following as 3.02(2)(y) to satisfy CLF settlement requirements: “All project submittals subject to DEC review shall require the stamp and signature of a registered Professional Engineer in the Commonwealth of Massachusetts certifying that the project complies with the requirements of 974 CMR 3.04(4), Stormwater Management Design Standards, and 974 CMR 4.08, General: Stormwater Management.

- Updated 3.02 (3)(e)(5)(g) to require sequencing plans for erosion and sedimentation controls on land disturbances of one acre or more (reducing threshold from two acres) to be more consistent with MS4 Permit requirements.

Key Changes in New 974 CMR 4.08:

- 4.08(2)(a): New language has been added as follows: "The stormwater design standards and criteria shall apply to all projects under DEC review". Existing language was renumbered starting with section 4.08(2)(b)
- Language added under 4.08(2)(c) (previously 4.08(2)(b) as 4.08(2)(c)(iv): "The Design Standards and Criteria outlined in §4.08(3)".
- 4.08(2)(d)(vi) has been updated as follows: "All projects, including flood management and culvert replacement projects, shall incorporate LID techniques for stormwater management to the maximum extent feasible. For projects proposing traditional closed drainage systems, the Applicant shall demonstrate to the satisfaction of the DEC why LID stormwater management design methods are not feasible. For LID stormwater controls not referenced in this section (974 CMR 4.08) or the Handbook, or for which pollutant removal rates have not been provided, the effectiveness and pollutant removal of the structural control must be documented through prior studies, literature reviews, or other means and receive approval from the DEC before being included in the design of a stormwater management system.
    - In addition to LID controls outlined in this section (974 CMR 4.08) or the Handbook, flood management and culvert replacement projects shall assess, and to the maximum extent feasible implement, stream daylighting and improved channel connectivity.
- Definitions for "stream daylighting" and "channel connectivity" have been included in the footnotes as follows:
    - "Stream daylighting" means the practice of exposing some or all of a previously buried river, stream, and/or stormwater drainage system and restoring the watercourse to a more natural condition.
    - "Channel connectivity" means the degree to which hydrologic components of a river system or watershed are joined, or connected, by various transport mechanisms including streams, non-tidal wetlands, riparian buffers, or underground aquifers.

Key Changes in New 974 CMR 4.08 (contd.):

- New language has been inserted as 4.08(3)(b) as follows:
  - All projects shall manage all stormwater onsite, unless granted an exemption by the DEC that this requirement is not feasible.
    - If a project is granted an exemption under §4.08(3)(b), all stormwater runoff from the site must satisfy the requirements of 974 CMR 3.04(4)(b) before being discharged to the Devens Municipal Separate Storm Sewer System (MS4).
    - If a project is granted an exemption in accordance with §4.08(3)(b)(i), the developer of the project shall propose a Mitigation Project to be implemented as a component of project approval, and the DEC will publicize the project's annual Total Suspended Solids (TSS) removal worksheets on the DEC's website. A "mitigation project" shall mean an infrastructure project designed to mitigate adverse water quality impacts from a previously completed project, or from an area which has no stormwater treatment and management facilities, by improving the quality of stormwater runoff onsite or at an off-site location.

Key Changes in New 974 CMR 4.08 (contd.):

- The existing 4.08(3)(b) has been moved to 4.08(3)(c) and updated as follows: “In addition to compliance with the SMS, the post-development peak rate of stormwater discharge off0site shall not be greater than the pre-development peak rate of stormwater discharge for the 2, 10, 25, 50 and 100 year storm events from any point of discharge on the site. In accordance with Section 2.d.iii. above, pre-development peak rate calculations shall reflect the “green field” site condition, regardless of any existing development or impervious coverage on the site at the time of application.”

Key Changes in New 974 CMR 4.08 (contd.):

- 4.08(3)(i) has been added and includes the following language:
  - "Stormwater management systems shall be designed to meet an average annual pollutant removal equivalent to 90% of the average annual load of Total Suspended Solids (TSS) related to the total post-construction impervious area on the site AND 60% of the average annual load of Total Phosphorus (TP) related to the total post-construction area on the site.
    - Average annual pollutant removal requirements in §4.08(3)(h) are achieved through one of the following methods:
      - Installing BMPs that meet the pollutant removal percentages developed consistent with EPA Region 1's BMP Accounting and Tracking Tool (2016) or other BMP performance evaluation tool provided by EPA Region 1, where available. If EPA Region 1 tools do not address the planned or installed BMP performance, then any federally or State-approved design guidance or performance standards (e.g. the Handbook) may be used to calculate BMP Performance; or
        - Retaining the volume of runoff equivalent to, or greater than, one (1.0) inch multiplied by the total post-construction impervious surface on the development site, or
        - Meeting a combination of retention and treatment that achieves the above standards; or
        - Utilizing offsite mitigation in accordance with §4.08(3)(b) that meets the above standards within the same USGS HUC12 as the development site.
      - Maintenance and redevelopment activities related to existing roads including repaving, drainage infrastructure improvements, adding shoulder, or correcting intersections shall be exempt from other requirements in this part. Projects of this nature should consider options to improve any existing conditions by incorporating LID techniques or other stormwater best management practices and include in the construction permit application process a narrative describing that investigation's conclusions and chosen results when possible. Any road construction that increases the impervious surface by more than a single land width will not be covered under this exemption and shall be subject to all requirements in §4.08.3.(h)."
- Pollutant removal is calculated based on average annual loading and not on the basis of any individual storm event.

Key Changes in New 974 CMR 4.08 (contd.):

- The following language has been added as 4.08(3)(j): "To support compliance with the MS4 Permit, all BMPs must be optimized for the removal of phosphorus. The justification and design of such BMPs must also include a methodology for assessing BMP performance. Pollutant removal shall be consistent with EPA Region 1's evaluation tool."
- 4.08(7)(b) has been updated as follows: "A statement that the Applicant is responsible for the operation and maintenance of the entire on-site system, including emergency repairs."
- The following language has been inserted as 4.08(7)(c): "If applicable, a statement providing stormwater management easements to the DEC as necessary for access for facility inspections and maintenance, and preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event. The purpose of each easement shall be specified in the maintenance agreement signed by the property owner." All other items under 4.08(7) have been renumbered accordingly.