

Chris,

As I mentioned, Ozzie requested additional clarification in the stormwater section of the bacteria TMDL. I've attached the revised stormwater section.

Let me know if you have any questions on these. Thanks.

Nisha

5.5 NPDES Regulated stormwater discharges (new section)

As seen in Tables 5-1 through 5-4, the control of stormwater discharges from regulated sources is a principal means of addressing this TMDL. Regulated stormwater discharges consist of those authorized under the MS4 GP, Industrial GP, Construction GP, and Commercial GP. Each of these general permits requires the preparation and implementation of some type of a stormwater management plan. In order to meet these WLA goals, stormwater discharges regulated by a NPDES permit (issued subsequent to this TMDL) must include in their plan measures to minimize bacteria, to the maximum extent possible, or to eliminate sources of bacteria where feasible.

5.5.a. MS4 GP discharges

The Stormwater Management Plan required for municipalities regulated by the MS4 permit reissued on January 9, 2011 includes best management practices (BMPs) grouped into six Minimum Control Measures (Section 6(a) of the MS4 permit). To address this TMDL, MS4s must implement BMPs to address bacteria sources in runoff from developed areas by focusing on the implementation or improvement of a pet waste ordinance and control program, a nuisance wildlife control program, increased or targeted street sweeping above the basic MS4 GP requirements, a septic system monitoring and enforcement program, any additional measures that can be added to the required illicit discharge detection and elimination (IDDE) program that would target bacteria, and other possible sources specific to an area or community. In addition to these measures, MS4s should implement additional structural and non-structural management measures to address bacteria as discussed in Section 6.2. below. The regulated MS4 will need to determine which BMPs are appropriate for their community and are free to develop additional BMPs to address specific sources.

5.5.b. Industrial GP discharges

Industrial facilities are required to develop a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must include control measures (similar to BMPs) to reduce or eliminate the discharge of pollutants from the site. To address this TMDL, the plan should include the implementation or improvement a nuisance wildlife control program, conducting increased or targeted road/ parking lot sweeping above the basic Industrial GP requirements, and investigating and eliminating any illicit discharge (conveying bacteria) connected to the storm sewer system. In addition to these measures, industrial facilities should implement additional structural and non-structural management measures to address bacteria as discussed in Section 6.2. below. The industrial facility will need to determine which BMPs are appropriate for its site and are free to develop additional BMPs to address specific sources. In cases where additional, site-specific controls are necessary to address this TMDL, DEEP will inform the permittee of the need to install such additional controls. Finally, industrial stormwater discharges must comply with the monitoring requirements for impaired waters with and without a TMDL specified in Section 5(e) of the Industrial GP, as amended.

5.5.c. Commercial GP discharges

The Commercial GP regulates commercial sites with impervious surfaces exceeding 5 acres such as malls and “big box” stores. The plan to address the control of stormwater pollutants from these sites is called a Stormwater Management Plan (SMP). While the Commercial GP reissued on May 1, 2001 (current permit) does not discuss or address TMDLs or stormwater discharges to impaired waters, future versions of the permit will include measures similar to the Industrial and MS4 GPs. The current permit does not include a monitoring component. However, future versions may include monitoring. To address bacteria sources, commercial sites should implement or improve a nuisance wildlife control program, conduct increased or targeted road/ parking lot sweeping above the basic Commercial GP requirements, implement and maintain good housekeeping measures, and investigate and eliminate any illicit discharge (conveying bacteria) connected to the storm sewer system. In addition to these measures, commercial sites should implement additional structural and non-structural management measures as discussed in Section 6.2. below. The commercial facility will need to determine which BMPs are appropriate for its site and are free to develop additional BMPs to address specific sources.

5.5.d Construction stormwater discharges

The construction general permit regulates the runoff during construction activities and includes measures to address post-construction stormwater management. The construction control measures in the Construction GP primarily address the control of sediment discharges from a site during construction. Although construction projects are not a significant source of bacteria, bacteria may be bound to sediment conveyed in stormwater runoff. While the Construction GP reissued on April 9, 2010 (current permit) does not address impaired waters or TMDLs, the proposed modified Construction GP, expected to be reissued in 2012, requires controls that would address any bacteria present in runoff. Specifically during construction, erosion and sediment control requirements would minimize the discharge of sediment and therefore, address any potential sources of bacteria to all receiving waters, including to impaired waters with and without a TMDL. For post-construction discharges, the proposed permit includes performance standards that require the retention and/or infiltration of stormwater using LID and runoff reduction methods. Compliance with Construction GP requirements will meet the requirements of this TMDL, unless a permittee is otherwise informed by DEEP to implement additional measures and/ or conduct additional monitoring.

5.5.e Non-regulated MS4 discharges

Approximately 1/3 of the municipalities in the state do not fall under the MS4 permit (any municipality not listed in Appendix A of the MS4 GP is not regulated by the NPDES program). Therefore, stormwater discharges from these systems are not regulated. These non-MS4 municipalities can follow the BMPs included in the MS4 permit and Section 6.2 of this TMDL to address sources of bacteria.

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5.6 Monitoring Plans

A comprehensive water quality monitoring program is necessary to guide TMDL implementation efforts and should be designed, at a minimum, to accomplish two major objectives; source detection and tracking water quality improvements. Monitoring is needed to identify specific sources of bacterial loading which will, in turn, direct BMP and implementation efforts. As changes are made within the watershed and BMPs applied, additional monitoring is needed to quantify progress in achieving TMDL established goals.

Facilities that are covered by an Industrial GP for stormwater discharges that are affected by this TMDL must continue with monitoring obligations as directed by DEEP. Monitoring must include data collection on the appropriate pollutant (in this case indicator bacteria), as directed in the Industrial GP and the Impaired Waters Monitoring Requirements Table (found at www.ct.gov/deep/stormwater) associated with the Industrial GP, effective October 1, 2011 and as updated in the future.. CT DEEP may contact a permittee with requests to do additional or adjusted sampling in the future. After the first year of TMDL sampling, the facility may discontinue sampling for the indicator pollutant if it isn't detected, unless DEEP gives a different directive to continue sampling. If the pollutant is detected, the permittee must continue sampling under the protocols issued by DEEP.

Stormwater discharges from approximately two-thirds of the municipalities in the state are regulated under the MS4 permit. While water quality monitoring can be incorporated into any implementation activity, it is explicitly required under the MS4 GP. Stormwater monitoring is required under Section 6(h)(1)(A) of the MS4 GP which specifies the following monitoring requirement:

“Stormwater monitoring shall be conducted by the Regulated Small MS4 annually starting in 2004. At least two outfalls apiece shall be monitored from areas of primarily industrial development, commercial development and residential development, respectively, for a total of six (6) outfalls monitored. Each monitored outfall shall be selected based on an evaluation by the MS4 that the drainage area of such outfall is representative of the overall nature of its respective land use type.”

This type of monitoring may be referred to as event monitoring because it is scheduled to coincide with a stormwater runoff event. Event monitoring can present numerous logistical difficulties for municipalities and may not be the most efficient way to measure progress in achieving water quality standards. This is particularly true for streams draining urbanized watersheds where many sources contribute to excursions above water quality criteria.

In order to customize their monitoring plan to better identify TMDL pollutant sources and track the effectiveness of TMDL pollutant reduction measures, the municipality may request written approval from DEEP for an alternative monitoring program as allowed by Section 6(h)(1)(B) of the MS4 GP:

“The municipality may submit a request to the Commissioner in writing for implementation of an alternate sampling plan of equivalent or greater scope. The Commissioner will approve or deny such a request in writing.”

DEEP advises municipalities with discharges that contribute pollutant(s) for which a TMDL(s) has been designated to request approval for an alternative monitoring program to address both source detection and track the effectiveness of TMDL pollutant reduction measures. Source detection monitoring will include visual inspection of storm sewer outfalls under dry weather conditions, event sampling of individual storm sewer outfalls, and should be expanded to include monitoring of ambient in-stream conditions at closely spaced intervals to identify “hot spots” for more detailed investigations leading to specific sources of high bacteria loads. Such monitoring may be performed by municipal staff, citizen volunteers, or contracted to an environmental consulting firm. When the MS4 permit for a municipality is next reissued, it may also include additional measures for compliance with TMDLs and reduction goals.

Progress in achieving TMDL established goals through BMP implementation may be most effectively gauged through implementing a fixed station ambient monitoring program. DEEP strongly recommends that routine monitoring be performed at the same sites used to generate the data to perform the TMDL calculations. Samples should also be collected at other key locations within the watershed, such as above and below potential contributing sources or areas slated for BMP implementation. Since watershed borders and TMDLs do not follow town borders there is a possibility DEEP did not sample locations in

your town. If this is the case collecting a sample where the waterbody enters your town and another where the waterbody leaves your town maybe helpful to determine how stormwater from your town influences water quality. Sampling should be scheduled at regularly spaced intervals during the recreational season (May 1- Sept 30). In this way the data set at the end of each season will include ambient values for both “wet” and “dry” conditions in relative proportion to the number of “wet” and “dry” days that occurred during that period. As additional data is generated over time it will be possible to repeat the TMDL calculations and compare the percent reductions needed under “dry” and “wet” conditions to the percent reductions needed at the time of TMDL adoption.

All pollutant parameters must be analyzed using methods prescribed in the Code of Federal Regulations. Results of monitoring that indicate unusually high levels of contamination or potentially illegal activities should be forwarded to the appropriate municipal or State agency for follow-up investigation and enforcement. Consistent with the requirements of the MS4 permit, the following parameters should be included in any monitoring program:

- pH (SU)
- Hardness (mg/l)
- Conductivity (umhos)
- Oil and grease (mg/l)
- Chemical Oxygen Demand (mg/l)
- Turbidity (NTU)
- Total Suspended Solids (mg/l)
- Total Phosphorous (mg/l)
- Ammonia (mg/l)
- Total Kjeldahl Nitrogen (mg/l)
- Nitrate plus Nitrite Nitrogen (mg/l)
- E. coli* (col/100ml)
- Precipitation (in)

DEEP is committed to providing technical assistance in monitoring program design and establishing procedures for electronic data submission.