



Northern Middlesex Council of Governments

February 26, 2015

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A Multi-Disciplinary
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RE: U.S. Environmental Protection Agency's (EPA) Draft Massachusetts Small MS4
General Permit

Dear Mr. Tedder:

The Northern Middlesex Council of Governments (NMCOG) and the Northern Middlesex Collaborative (NMSC) have reviewed the U.S. Environmental Protection Agency (EPA) Draft Massachusetts Small MS4 General Permit, appendices, and fact sheet, released on September 30, 2014.

Formed by the Northern Middlesex Council of Governments in 2013, the Northern Middlesex Stormwater Collaborative (NMSC) utilizes a regional approach to address the public education, procurement, management, administrative, and mapping tasks necessary to meet EPA requirements and implement municipal stormwater management plans. The NMSC is comprised of thirteen communities in the Northern Middlesex Region including Billerica, Burlington, Carlisle, Chelmsford, Dracut, Dunstable, Littleton, Lowell, Pepperell, Tewksbury, Tyngsborough, Westford and Wilmington. The NMSC is overseen by an Advisory Board with equal representation from each of the 13 participating communities. The goals of the Collaborative are to effectively manage stormwater, improve water quality, share resources, improve services for residents, reduce costs, and promote regional communication. We also strive to serve as a model to municipalities throughout the Commonwealth.

The NMSC recognizes the importance of stormwater management and values the importance of clean rivers, stream, lakes and water bodies. Achieving designated uses, in particular, is important to the health and economic well-being of our communities. However, at the same time, municipalities are balancing environmental concerns with multiple other needs and responsibilities. They are striving to implement stormwater management programs in a responsible manner that balances feasibility, fiscal responsibility, and maintenance of the health and well-being of the residents and

environment in their jurisdictions. As such, we submit the following comments on the Draft Massachusetts Small MS4 General Permit.

NMSC COMMENTS

The draft general permit requires regulated small MS4s to develop, implement and enforce a “Stormwater Management Program” designed to control pollutants to the maximum extent practicable, protect water quality, and satisfy appropriate requirements of the federal Clean Water Act. Municipalities must comply with existing water quality standards including TMDLs, water quality limitations as found on the 303d and 305b lists, and numeric and narrative criteria. It also includes implementation of six minimum control measures: illicit discharge detection and elimination (IDDE), public education and outreach, public participation, management of construction site runoff, management of runoff from new development and redevelopment, and good housekeeping practices.

WATER QUALITY-BASED EFFLUENT LIMITATIONS AND DISCHARGES TO IMPAIRED WATERS

In the Northern Middlesex region, there are two approved TMDLs: the bacteria/pathogen TMDL and the Assabet River Watershed TMDL. In addition, municipalities are subject to limitations related to phosphorus impaired waters without a TMDL.

Bacteria and Pathogen TMDL

Billerica, Burlington, Tewksbury and Wilmington are subject to the bacteria/pathogens TMDL. This is stipulated on page 14 of the Draft permit, which explains that municipalities “*that discharge to a waterbody segment listed on Table F-6 in Appendix Fshall meet the requirements ... with respect to reduction of bacteria/pathogens discharges from their MS4.*” Our first comments are editorial in nature. Table F-6 in Appendix F refers to the Phosphorus TMDL table, so the text should be amended to reference Table F-8, which is the bacteria TMDL table. In addition, for the larger tables embedded in the text, the Table name and number should be displayed at the top of the table, rather than at the bottom. For the bacteria TMDL table, one must scroll through **nine pages** in order to see the table name at the end of the table. Listing the table names at the top of the table would save time and enhance readability.

Table F-8 indicates that Billerica, Burlington, Tewksbury and Wilmington all discharge to water bodies impaired for fecal coliforms including Spring Brook (MA 83-14) in Billerica; the Shawsheen River (MA 83-17) in Billerica, and Wilmington; Vine Brook (MA83-06),

Long Meadow Brook (MA 83-11) and Sandy Brook (MA-83-13) in Burlington; and Strong Water Brook (MA 83-07) and an Unnamed Tributary (MA 83-15) in Tewksbury.

A review of the source documents indicate that the Lakes and Ponds TMDLs were drafted years ago using older data and outdated testing methods. For example, the Shawsheen River TMDL was finalized in 2002 and used data from 1989 through 1998.¹ This data likely does not reflect the current conditions today. In addition Fecal coliform is no longer the recommended indicator for bacteria sampling; today, EPA recommends E. coli as the best indicator of health risk from water contact in recreational waters.² The TMDLs should be revised to use more updated data and testing methodology.

To comply with the TMDL, municipalities must identify and implement Best Management Practices (BMPs) to reduce bacteria or pathogen discharges from its MS4. These include enhanced public education for pet waste, and septic systems and a “high priority” designation for catchments draining to any waterbody impaired for bacteria or pathogens. However, according to the Massachusetts Lakes and Pond Guide, bacteria and pathogens can come from a variety of sources including failing septic systems, waterfowl, farm animal and pet waste, polluted stormwater runoff, wildlife, and wastewater treatment plants.³ The bacteria and pathogen BMPs only focuses on pet waste, septic systems and illicit connection, and do not account for bacterial contamination that could come from waterfowl or other animals (e.g. farm animals or geese). Municipalities should have freedom to implement enhanced BMPs that make the most sense for their municipality, and that allow that municipality to focus on the main issues in their jurisdiction. Additionally, a permittee should be allowed to submit information to EPA demonstrating that all or a portion of its discharge does not contain bacteria/pathogens, to obtain an exemption from the Bacteria and Pathogen TMDL requirements.

¹ <http://www.mass.gov/eea/docs/dep/water/resources/n-thru-y/shawshee.pdf>

² <http://water.epa.gov/type/rs/monitoring/vms511.cfm>

³ http://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/ecology/shoreland/background/mass_lake_and_pond_guide.pdf

Assabet River TMDL

Carlisle, Littleton and Westford must comply with the Assabet River Watershed TMDL, which was approved by EPA in 2004. The TMDL addresses water quality impairments resulting from the excessive growth of algae caused by an over-abundance of phosphorus in the Assabet River system. The TMDL sets waste load allocations (WLAs) for Publically Owned Treatment Works (POTWs) within the Assabet River watershed, as well as load allocations (LAs) for sediment flux and cultural contribution associated with stormwater runoff and groundwater. It does not require phosphorus load reductions from MS4 permittees, however, it also does not allow additional phosphorus from stormwater sources associated with future growth. Therefore, municipalities are required to take measures to ensure that current phosphorus loads from MS4 stormwater discharges do not increase. Municipalities must implement enhanced BMPs, including enhanced public education and outreach, additional requirements for stormwater management in new development and redevelopment, and additional good housekeeping practices (e.g. twice annual street sweeping.)

As with the bacteria TMDL, the age of the water quality data utilized to form the TMDL is a concern. Much of the data is from 1999, and is thus more than 15 years old.⁴ The document should be updated with more recent data to better reflect current conditions. Additionally, municipalities should not be limited to the enhanced BMPs listed in Appendix F, because they may not be the most cost-effective and productive BMP for the community. For example, twice annual street sweeping may not be the most cost-effective way to remove phosphorus from the River. In fact, the requirement that municipalities in a nutrient impaired water body must sweep streets a minimum of two times per year is of particular concern. Municipalities worry that this could have unintended results at the municipal level – it could encourage the elimination of street trees, as well as permit denials for new street trees. Trees are important to the environment, and this requirement should be eliminated or revised so as not to discourage street trees in any way.

As with the bacteria TMDL, municipalities should have the freedom to choose the BMPs that work best for them, and should not be restricted to the three BMPs listed in the

⁴ <http://www.mass.gov/eea/docs/dep/water/resources/a-thru-m/anuttmdl.pdf>

permit. Finally, a permittee should be allowed to submit information to EPA demonstrating that all or a portion of its discharges do not contain phosphorus to obtain an exemption from the Phosphorus TMDL requirements.

Phosphorus Impaired Waters

Billerica, Burlington, Carlisle, Chelmsford, Dracut, Dunstable, Littleton, Lowell, Pepperell, Tewksbury, and Tyngsborough are listed as discharging to Phosphorus Impaired Waters. Phosphorus Impaired Waters do not have a defined pollutant reduction target and no approved TMDL has been established. Appendix H outlines an iterative approach for addressing pollutant reductions to these waters: each permittee must comply with enhanced BMPs (public education, phosphorus-optimized BMPs, and increased street sweeping), a Phosphorus Source Identification Report, and additional structural BMPs.

These requirements are significantly stricter than the bacteria and pathogen TMDLs, and the proactive implementation of structural BMPs will be particularly costly for municipalities. Without an approved TMDL, it is difficult to make the most informed, cost-effective decisions regarding phosphorus reductions. Structural BMPs should not be required without a further understanding of the phosphorus loads to each of the designated water bodies, as well as the potential source. Requiring across-the-board implementation of structural BMPs will be extremely expensive, and it is unlikely that municipalities will be able to implement these structures without a designated funding source.

The permit stipulates that each municipality must complete a Phosphorus Source Identification Report within four years of the effective date of the permit. Additionally, all permittee-owned properties must be evaluated for the possibility of structural BMP retrofit opportunities within five years of the effective date of the permit. The permittee must install one structural BMP as a demonstration project within six years of the permit effective date. While six years may seem like a reasonable timeframe, the reality is that securing funding and planning for this project will take time, especially in addition to other permit requirements. The installation of the demonstration project should be changed to ten years to ensure municipalities have proper time for planning and funding the project. Installation of additional structural BMPs should only be required if phosphorus cannot be reduced using non-structural methods.

SIX MINIMUM CONTROL MEASURES

Public Education and Outreach (2.3.2)

The draft permit requires municipalities to distribute educational materials to four audiences: (1) residents, (2) businesses, institutions and commercial facilities, (3) developers (construction), and (4) industrial facilities. Municipalities must:

- Distribute two educational messages the first year;
- Distribute at least eight educational messages during the permit term; and
- Ensure messages to each audience are spaced at least a year apart.

In each annual report, municipalities must also document the messages for each audience, the method of distribution, the evaluation methodology, and the measures used to assess the overall effectiveness of the education program. It is clear that the EPA wants municipalities to evaluate the effectiveness of their educational messages and presumably modify or change that messaging over time, as necessary to be effective. However, the current draft permit does not provide any guidance on what would be considered effective messaging or how municipalities should be measuring success. It is recommended that EPA either remove this requirement from the permit or provide more clear instruction on how to adequately measure effectiveness of the individual messages as well as the overall educational program.

Education is a crucial component to stormwater management, and educating different audiences at various intervals is an excellent way to ensure that the message gets across to multiple stakeholders. However, this methodology is not appropriate for all communities. In particular, the smaller municipalities in our region, Dunstable, Pepperell and Carlisle, have very few businesses or industrial facilities. The requirement to educate these audiences should be waived if not applicable to the municipality.

Illicit Discharge Detection and Elimination (IDDE) & System Mapping (2.3.4)

The new draft permit requires municipalities to complete a SSO and Outfall inventory, a detailed system map, a detailed written IDDE program and catchment rankings. Dry weather investigation of key junction manholes as well as wet weather investigations for manholes with system vulnerability factors is required. The extent of the IDDE program requirements is particularly burdensome for municipalities. Comments regarding the IDDE program are as follows:

- *Outfall Inventory:* Municipalities are required to complete an outfall inventory and physically visit each outfall within one year of the permit. The range in the number of outfalls per community is highly variable and is dependent on the population and road miles in the affected community. In the NMSC region, some municipalities have over 600 outfalls, and it would likely take two to three years to visit all the outfalls. EPA should revise the permit to allow extended time for the completion of the outfall inventory, such as 3 to 5 years.

The permit states that the municipality must “*physically label all MS4 outfall pipes (excluding interconnections) with their unique identifier by the end of the permit term.*” This new condition will presumably require a physical sign to be installed at each outfall pipe in the field. For some municipalities this will result in the installation of more than six hundred new signs. This will not only result in a substantial initial cost in both staff time and material costs for installation but will also introduce legacy costs to manage, maintain and eventually replace the signs over time. The location of many of these signs will also be in places where they will not aesthetically fit the character of the surrounding area and could also be vulnerable to potential vandalism. The installation of a physical sign should not be necessary with the increased level of MS4 mapping detail that will be required under the new permit – particularly because this would not be correlated with any improvements to water quality. EPA should eliminate the need to physically label all MS4 outfall pipes with their unique identifier.

- *GIS Map:* The permit indicates a full map of the drainage system is to be completed in two years. However, in order to correctly and thoroughly map the system, municipalities estimate it could take up to five years. EPA should revise the permit to allow for five years for the full map of the drain system to be completed.
- *Catchment Delineations:* The permit requires that catchment delineations are mapped for the use of priority rankings. Mapping catchments for each outfall will be very time consuming, and has the potential to be expensive with a low level of accuracy. EPA should consider that catchment mapping may not be necessary in all circumstances. For example, if outfall inspections yield a clean result, the outfall should be exempt from the catchment mapping requirement. EPA should revise the permit to allow municipalities to map the catchments as they are being inspected, or as needed.

- *System Vulnerability Factors:* The permit requires that municipalities develop a written systematic procedure for catchment investigation that includes detailed methodology and procedures to isolate and confirm sources of IDDE. The permit provides a series of vulnerability factors which are intended to identify catchments with a high potential for illicit connections. Many of the system vulnerability factors are too all-encompassing, and would include all of the catch basins in a municipality. In particular the factors that state “*Areas formerly served by sewers*” and “*Any sanitary sewer and storm drain infrastructure that is greater than 40 years old*” would encompass almost 100% of the sanitary sewers in many municipalities. EPA should eliminate these factors.
- *Reporting:* The permit states that municipalities need to report the volume or mass of material removed from each catch basin draining to water quality limited waters and the total volume or mass of material removed from all catch basins. This task will significantly increase the cost of catch basin cleaning for municipalities and is not necessarily a wise use of the limited resources available to municipalities. The tracking of volume and/or mass should be eliminated.
- *Wet weather monitoring:* Municipalities must conduct wet weather monitoring during the spring at designated outfalls, in order to identify illicit discharges that may activate or become evident during wet weather. This has the potential to be extremely costly for municipalities, with a low potential for benefits. Municipalities should be able to focus on removing dry weather discharges, which would indicate the most severe problems. Wet weather monitoring should not be required under the permit. Rather, it should be considered an optional BMP for compliance with Bacteria and Pathogen TMDLs.

Stormwater Management in New Development and Redevelopment (2.3.6)

This section of the permit requires municipalities to develop, implement, and enforce a program to address post-construction stormwater runoff from all new development and redevelopment projects that disturb one or more acres. There are two particularly problematic components of this requirement.

First, as currently written, roadway reconstruction projects greater than one acre will be required to provide storage and/or treatment for the first inch of stormwater runoff. This type of infiltration and treatment would likely be impossible for a linear project, and would be crippling to local road budgets. EPA should revise the permit to clarify that linear projects are exempt from this requirement.

Second, the permit requires that stormwater management systems on new and re-developed sites be designed to either: retain the first one (1) inch of runoff from all impervious surfaces on site, or provide the level of pollutant removal equal to or greater than the level of pollutant removal provided through the use of biofiltration on the first one (1) inch of runoff from all impervious surfaces on site.

Unfortunately, there is a discrepancy between the Massachusetts Stormwater Handbook and the requirements as outlined in this section: the Massachusetts Stormwater Handbook has variable infiltration requirements depending on soil type and site condition. The 1-inch requirement as outlined in the draft permit is particularly problematic for redevelopment sites. Many redevelopment sites are old, abandoned mill sites, which are constrained by site conditions and/or soil type. Municipalities are concerned that implementation of the 1-inch rule would render many of these properties undevelopable. As a result, developers would seek new land to develop as opposed to redeveloping a parcel. With the 1-inch requirement inadvertently encouraging new development, EPA should work with DEP to eliminate any discrepancy between standards.

PROGRAM EVALUATING RECORD KEEPING AND REPORTING

The demands of the new draft permit will significantly increase the level of reporting and record keeping that will be required, compared to the current 2003 permit. These additional demands will not only place a substantial and unfair financial burden on cities and towns but will also require a significant increase in municipal staff time and resources necessary to manage the new permit conditions.

Under the current permit, a significant amount of time and record keeping is required over the course of a year to make certain that all conditions of the permit are being met. The results of those efforts are documented in the annual report which typically ends up being about twenty pages in length for the average-sized community. The bulk of information included in the annual report is dedicated to a self-assessment and a summary of how the municipality is complying and will continue to comply with the permit's minimum control measures. The new permit will not only continue to require the current 2003 permit reporting and record keeping standards but will also require the preparation of extensive supporting documentation for inclusion in the annual report in order to demonstrate permit compliance. These additional requirements are expected to more than triple staff efforts to manage the permit over the course of each

permit year, and the resulting annual reports are expected to be more than five to ten times the size of current annual reports. In order to ease the proposed reporting and record keeping burden, it is recommended that EPA consider the following recommendations and improvements to the current draft permit:

- Provide a standardized and easy to use template that would be utilized to prepare annual reports. The Fact Sheet indicates that EPA is currently developing a suggested annual report template that will have pre-populated information to help ease the reporting burden. A reporting format similar to the current reporting format would be practical, since municipalities have become very familiar with this format, and introducing the option of having the template pre-populate information would also be helpful and appreciated.
- Reduce or eliminate the need to include extensive supporting documents with annual reports. It should be adequate for municipalities to summarize and confirm compliance within each report without the need to provide extensive back-up materials.
- Cities and towns should be given the option to electronically submit their annual reports rather than mailing or hand delivering a hard copy. The Fact Sheet does indicate that it will be possible to submit annual reports via email, however the draft permit only provides EPA's and MassDEP's physical mailing addresses where reports will need to be submitted. The draft permit should include information on electronic submissions.
- Provide guidance documents, to help municipalities fully understand and meet the increased reporting and record keeping requirements of the new permit, and to allow communities to better understand EPA's permit expectations. The current draft permit is almost three hundred pages long with the nine appendices, and the supporting Fact Sheet with attachments is one hundred and fifty pages long. The combined volume of information between the two is not only overwhelming but also confusing and difficult to fully interpret. Helpful documents that would provide better guidance and direction for municipalities include: a summary table of major changes between the current and draft permits (this was provided for the previous draft permit), a simplified summary of permit requirements (this was also provided for the previous draft permit), permit checklists, standardize reporting and record keeping templates,

examples of completed forms and reports that show level of detail expected, FAQ sheets, etc.

- Each annual report is required to estimate the annual increase or decrease in impervious area and directly connected impervious areas. This task would be much more manageable and cost effective for municipalities if it were required every five years, rather than recalculating these areas on an annual basis. Most cities and towns use aerial imagery and GIS to calculate and track impervious cover, which would be extremely expensive if required every year. The expected level of accuracy for the change in impervious area should also be specified in the draft permit.

Funding & Additional Assistance

As drafted, EPA estimates the cost to meet the requirements associated with implementation of the six minimum control measures to be between \$78,000 and \$829,000 per year averaged over the permit term. This does not include compliance with any additional parts of the permit, including the water quality requirements.

Municipalities will have a very difficult time funding this work. Funding mechanisms should be suggested and provided by EPA, so that municipalities can meet the terms of the permit effectively and efficiently. EPA should also provide assistance with educating local municipal managers, administrators, and boards regarding the permit terms. This education will be crucial to permit implementation at the local level. It is recommended that EPA hold a series of meetings for municipal administrators and policy boards, so they understand the components and implications of the permit.

Thank you for considering our comments. Should you have any questions or need clarification, please feel free to contact me directly at (978) 454-8021, ext. 120.

Sincerely,



Beverly Woods
Executive Director

cc: NMSC Advisory Board
NMCOG Councilors