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March 31, 2010

BY HAND
BY ELECTRONIC MAIL—Murphy.thelma@epa.gov
AND FIRST CLASS MAIL

EPA—Region 1
Attn: Thelma Murphy
Office of Ecosystem Protection
5 Post Office Square, Suite 100
Mail Code: OEP06-4
Boston, MA 02109-3912.

Subject: Comments on the 2010 Massachusetts North Coastal Small MS4 NPDES Draft General Permit.

Dear Ms. Murphy:

The following comments on the 2010 Massachusetts North Coastal Small MS4 NPDES draft general permit (the "Permit") are submitted on behalf of the Town of Belmont (pop. 24,720),[1] Town of Boxford (pop. 6,266), Town of Dedham (pop. 23,782), Town of Essex (pop. 3,260), Town of Georgetown (pop. 6,384), Town of Lincoln (pop. 7,666), Town of Manchester-by-the-Sea (pop. 5,286), Town of Millis (pop. 8,238), Town of North Reading (pop. 12,002), Town of Rockport (pop. 7,482), Town of Topsfield (pop. 5,754), Town of Walpole (pop. 20,212), Town of Watertown (pop. 33,284), and the Town of Winthrop (pop. 18,127) ("Municipalities").[2]

As an initial matter, the Municipalities recognize and share the EPA's goals and objectives in eliminating pollution in the Commonwealth's waterways and recognize that that stormwater management is an important factor in eliminating and cleaning up the waterways. All of the communities that have joined in submitting these comments have an excellent track record of compliance with prior permits and take their role as stewards of the environment extremely seriously. However, while the goals and objectives of the Permit may be laudable, the Municipalities object to the means by which the EPA is attempting to achieve them. As will be discussed in greater detail below, there are numerous provisions in the Permit that unduly shift the burden of obtaining the EPA's goals and objectives to the Municipalities. This burden shifting

[1] Population estimates are based on information publicly available through the Massachusetts Department of Housing and Community Development.

[2] Please note that certain of the Municipalities have provided additional comments under separate cover, the within comments are in addition to not a substitute for the other comments already submitted.

would be unwarranted and troublesome in prosperous economic times, but in these uncertain economic times it is simply unacceptable. As a result, the Municipalities request that the EPA withdraw the draft Permit and take additional time to work with all of the stakeholders in this matter to craft a permit that properly recognizes the Municipalities' role in preventing degradation of the Commonwealth's waterways as well as the role of private stakeholders.

The Municipalities object to the Permit for the following reasons.

A. The Compliance with the Permit Conditions and Requirements is Cost Prohibitive

1. As a general observation it is important to note that the Municipalities have an overall concern about increased Permit expectations and obligations. Earlier this month, the Massachusetts Legislature announced that local aid to cities and towns will be reduced by about 4% for the coming Fiscal Year. This reduction follows a 29% reduction for the last Fiscal Year. In addition to dramatic decreases in state aid, property values and other taxable spending by residents remains extremely low. As a result, cities and towns are having to balance their budgets with record-low revenues and they are having to reduce staffing in order to stay afloat. Of course, these drastic reductions in state aid reflect the weakened state of the economy generally, and the loss of income by individual homeowners and ratepayers. This overall weakness not only constrains tax revenue, but also makes imposition of new fees and charges all be impossible. Therefore, in light of the present state of the world, national, state, and local economies and the resulting municipal budget cuts and staffing reduction, these increased expectations and obligations will place a burden on the Municipalities that will force a choice of compliance with the proposed Permit conditions or the provision of essential municipal services. The provision of both is not an economically feasible option.

2. For example as indicated in comments by other permittees, the cost for sampling and laboratory testing for 25% of the outfalls as required by the Permit is approximately $40,000-$100,000 for communities with 200 to 700 outfalls. Other sources estimate that it will cost $60 per capita, per year to comply with the requirements of the draft Permit. Costs for compliance with the other conditions of the Permit, e.g. labor and consumable supplies required to develop and distribute public education materials, to conduct site investigations, to develop the data and mapping, to inventory and inspect municipal facilities, to inspect and enforce construction activities, to review site plans for proposed new development or redevelopment projects, and to develop and implement reports, policies and ordinance makes compliance with the Permit economically impossible for the Municipalities in today's economic environment.

3. Section 1.10(c) of the Permit "encourages" the permittee to maintain an adequate funding source for the implementation of the program. While the language of this section appears to be directory and not mandatory, it is vague and does not adequately provide the Municipalities with guidance for compliance with this provision. Moreover, to the extent that the language is mandatory, in all likelihood the Municipalities will be in violation of the Permit upon its effective date due to the timing of municipal funding. Municipal budgets are established at least 6 months prior to the end of a fiscal year. Fiscal Year 2011 budgets have already been established and in some circumstances adopted. The Permit was only recently released and still does not provide the necessary detail for the Municipalities to make long term financial projections. Even if the Permit did contain the necessary detail, the budgets for the first year Permit term are already established.

4. Furthermore, the requirement that the Municipalities maintain a "consistent source of revenue" is not achievable. Unlike public water and sewer systems which are funded through user fees, stormwater systems costs may only be able to be passed on to the citizens through property taxes. With no independent source of revenue, stormwater budgets must be established annually by Town Meeting appropriation. Town officials cannot control how the voters will choose to spend limited resources in a given year in these economic times it is difficult to see where the necessary funding would be obtained. In the short term, funding at least for the first year permit cycle is unavailable as budgets have been set and approved by Town Meeting.

5. In this economic climate the Municipalities are fiscally struggling to maintain public roads, sidewalks, schools, teachers, fire and police personnel and other critical infra structure and personnel requirements. The diversion of funds for compliance with permit conditions requiring the monitoring and enforcing dog waste bylaws and requiring personnel to monitor dumpster covers is simply too onerous and expensive and should be significantly scaled back to reflect the severe economic realities of today.

B. Numerous Conditions and Requirements of the Permit are Vague

The Municipalities object to numerous conditions and requirements of the permit because they are vague in that the conditions and requirements fail to include specific, measurable quantitative standards to determine compliance with the Permit or inform the Municipalities of what is required of them, making it difficult, if not impossible to determine compliance. Such vague permit conditions and requirements also unlawfully allow the EPA or DEP unfettered discretion to

determine which communities are in compliance and which communities are not, essentially leaving the determination to whichever EPA or DEP enforcing authority is charged with reviewing the reports submitted by the Municipalities. This may result in uneven and disparate enforcement and indefinite expansion and manipulation of the Municipalities obligations. The Municipalities vagueness objections include, but are not limited to the following provisions:

6. Section 2.2.1(b) states in relevant part that "[i]n addition to ...specific requirements, EPA may notify the permittee of the need to comply with additional requirements to achieve consistency with the waste load allocation (WLA)." This condition of the Permit is vague and vest too much discretion in the EPA to impose any requirement it sees fit upon the Municipalities without the opportunity for the Municipalities to provide any substantive comments during the draft permit stage and presumably since this is a condition of the Permit, once imposed during the life of the final permit, it would also escape any appeal by the Municipalities.

7. Section 2.2.1 (d) is equally vague in that this condition requires that "municipalities that discharge to the Charles River or within its tributary watershed must reduce phosphorus loading to support achievement of the WLA included in the TMDLs for nutrients." The phases "to support achievement" provides the Municipalities with no set of criteria to measure whether the Phosphorus Control Plans that are required of them are in fact sufficient to satisfy the conditions of the Permit, essentially leaving the determination of compliance to EPA after the issuance of the Permit. This unfettered discretion should be removed from the Permit and tangible concrete criteria should be spelled out in the Permit allowing the Municipalities the opportunity to comment on the exact requirements of the Phosphorus Control Plan and other requirements for the removal of nutrients and pathogens.

8. 2.3.2.2 (d) is vague and does not provide the Municipalities with any notice as to what is required of them in order to comply with this section. Specifically the phrase "[t]o the extent consistent with law and EPA policy" leaves unfettered discretion to EPA to indefinitely expand and manipulate this condition.

9. Section 2.3.3 (b) is similarly vague requiring permittees to "demonstrate to the satisfaction of MassDEP . . . ." This vague language and lack of specific concrete criteria for compliance leaves the Municipalities with no guidance for compliance and MassDEP unfettered discretion to determine compliance. The condition should provide concrete criteria for compliance so that the Municipalities can meaningfully comment on this requirement during the comment period.

10. Section 2.3.3(c) is vague and vests in both EPA and MassDEP unfettered and unappealable discretion to add requirements above and beyond those found in the Permit even if all of the conditions found in Section 2.3.3 are met. This condition should be struck from the Permit and clear

criteria should be established so that the Municipalities can know, going forward, what it will take to comply with the Permit.

11. Section 2.4.4.8 (c) requires the Municipalities to designate catchments as problem catchments. However, the criteria for establishing a "problem catchment" is vague and could result in either requiring the Municipalities to check every catchment or miss a catchment because the Municipalities did not characterize the catchment as "highly suspect" since that term is not defined in the Permit. The term highly suspect should be defined and concrete criteria for establishing a catchment as highly suspect should be provided in the Permit so that the Municipalities have an opportunity to comment on the criteria.

C. The Timeline Outlined in the Permit is Unrealistic

12. The many "milestones" described in the Permit cannot realistically be met. The requirements should be reduced to reflect a more realistic set of achievable milestones in light of the considerable other requirement of the Permit including data gather and testing.

D. Compliance with Certain Permit Conditions is Impossible

13. Section 2.4.4.8 in some respects is impossible for the Municipalities to comply with. This section requires that the "permittee has adequate legal authority to accomplish the following tasks: prohibit illicit discharges; investigate suspected illicit discharges . . . including discharges from properties not owned or controlled by the MS4 . . ." The United States and Massachusetts Constitutions limit the extent to which government officials can enter private property without the permission of the property owner, and state law further limits the authority of the Municipalities to regulate certain entities and uses such as agricultural uses. The Municipalities cannot be required to violate the constitutional rights of its citizens as condition of a permit making this provision legally impossible for the Municipalities to comply with.

E. EPA has Exceeded its Authority in Issuing this Permit

14. Section 2.1.1 requires that discharges not cause or contribute to an exceedance of water quality standards. Section 2.4 requires that the discharge of pollutants be reduced to the maximum extent practicable (MEP). These directives appear to be in conflict. MEP is the statutory standard

that establishes the level of pollution reductions that MS4 operators must achieve. Application of pollution controls to the MEP may not assure that discharges do not cause or contribute to an exceedance of water quality standards. Since MEP is the statutory standard for MS4s it should apply throughout the Permit and be the governing standard to determine compliance.

F. Challenge to the EPA's Reliance on TMDL's Issuing the Permit

15. By the following Comment sections G through M the Municipalities hereby challenge the TMDL's relied upon by EPA in drafting the Permit, including but not limited to the TMDL issued for the Charles River, Neponset River and the Shawsheen River.

G. The Permit Improperly Applies the Findings of the TMDL to MS4's

16. The Permit is based on a misinterpretation of the TMDL when it requires each community to achieve the specific percentage reduction in phosphorus identified in the TMDL. The community level phosphorus loadings presented in the TMDL were developed based on land uses in the communities and export coefficients (pounds per unit of time) associated with those land uses. By knowing the different types of land uses and export coefficients, it is possible to estimate the phosphorus loading from that community. However, this does not mean that that EPA or DEP knows how much phosphorus comes from the community MS4; to the extent that the phosphorus comes from a property not tributary to an MS4, that phosphorus is not the responsibility of the community under its ownership of the MS4. It may be either the responsibility of the owner of the storm sewer, or it may represent overland flow to the receiving water, and thus represent a non point phosphorus source. Thus, the requirements of appendix G should be modified to reflect the phosphorus load reductions required from the MS4's, and not from the community as a whole.

H. The Phosphorus Control Requirements of the Permit are Premature

17. The TMDL makes specific recommendations concerning the implementation of the reductions, owing to the uncertainty of the ability of various technologies to achieve the reductions. The TMDL says that:

> *Pilot Studies*
> There is currently limited information available on the overall effectiveness of some of the newer technologies available to the Charles River watershed. Conducting comprehensive

pilot studies on stormwater management in the Charles River watershed is one potential option to collect useful information on the effectiveness of newer and innovative watershed nutrient controls. Pilot studies can be used to evaluate the effectiveness of various non-structural and structural BMPs that will be actually be implemented in the Charles River watershed. The results of the studies could be used to refine stormwater management programs and develop enhanced SWMPs. Prior to initiating any pilot studies, EPA and MassDEP should carefully evaluate project needs and design criteria. For pilot studies to be effective, the results should be transferable among the watershed communities. Therefore, all pilot studies must be well designed and have consistent study and monitoring approaches. Permittees could be given the option of participating in needed pilot studies within the watershed or selected area, once they have completed the source monitoring and drainage area characterizations. In order to maintain a reasonable rate of progress in reducing nutrient loading to the Charles, the pilot studies should address high-priority drainages systems that, in total, comprise approximately 20% of the participating community's total contributing drainage area.

Examples of a structural and non-structural BMP that could be evaluated in these pilot studies are discussed below and include infiltration and bioretention/filtration practices, as well as high-efficiency street sweeping[3].

As of this date, there is no indication that the necessary studies and design criteria called for in the TMDL have been produced, and until such time as these documents have been produced, the TMDL can be said to have been based on unproven approaches to stormwater control.

I. The TMDL Is Flawed

18. The TMDL is based on the rebuttable presumption that the reductions in phosphorus are achievable using the technologies identified in the TMDL. However, Municipal Separate Storm Sewer Systems (MS4's) cannot be required to meet limitations established in a TMDL that are more stringent than controls that represent the maximum extent practicable standard required by section 402(p) of the Clean Water Act. If the level of control necessary to meet a TMDL is not achievable – i.e. exceeds reductions that represent the "maximum extent practicable," EPA or DEP will have found a clear instance where one of the several factors enumerated 314 CMR 4.03(4) is at play. The factors most likely resulting in these conditions include items (a) concerning naturally occurring pollutants, (c) concerning human caused conditions or (d) concerning dams, diversions or other hydrologic modifications. At a minimum, the TMDL should have considered these factors in

[3] Final Total Maximum Daily Load for Nutrients In the Lower Charles River Basin, Massachusetts, p 118

developing its phosphorus control strategies, and should have considered the potential use of a variance under 314 CMR 4.03(4) while a use attainability study is conducted.

19. The TMDL highly recommends infiltration as a phosphorus reduction measure[4]. However, information suggests that phosphorus may migrate considerable distances in certain soils[5], and that the porous sandy soils most amenable to infiltration are the one least likely to provide substantial phosphorus uptake. Indeed the widespread incidence of small, eutrophic lakes surrounded by cottages with subsurface sewage disposal systems should give pause for concern over this method of "treatment."

20. In addition to the technological uncertainty of the preferred techniques in reducing phosphorus, the TMDL failed to consider the regulatory hurdles faced in implementing these solutions. Indeed, the Commonwealth's revised groundwater discharge regulations would appear to require that the discharge of most MS4 stormwater is subject to a permit. Since stormwater is known to contain toxic substances (metals) and oil and grease, it is not clear that infiltration of stormwater will be allowed unless treatment is provided to remove these pollutants. The implications of the need for stormwater treatment prior to groundwater discharge have not been factored into the feasibility, practicality, cost, or schedules of the Permit.

J. All Bacteria Limits Should be Struck from the Permit

21. The Permit expresses limits on pathogens in stormwater discharges using fecal coliform densities. However, fecal coliform densities are no longer used as the measure of bacteriological contamination in these waters and for these uses under the Massachusetts water quality standards. The proper organism is E. Coli for freshwater. Thus, there is no basis for including fecal coliform standards in this permit.

K. All Percent Reduction Limits for Pathogens Should be Struck from the Permit

22. The percentage reduction requirements for pathogens contained in the Permit are based on calculations contained in the TMDL. Those calculations were based on the reduction in pathogen densities in the receiving water necessary to meet water quality standards. This is not a calculation of a "maximum daily load," which is what the TMDL regulations require. Thus, the percentage reduction limits for pathogens should be struck from the permit.

23. Moreover, the observed concentrations in the receiving waters represent a variety of sources ranging from combined sewer overflows to privately owned storm drains to animal wastes. Even if

[4] Ibid, p118
[5] http://toxics.usgs.gov/highlights/phosphorous_migration.html

percentage reduction was some form of a "load," the proper way to allocate this "load" would be to identify the relative sources, and assign both waste load allocations and load allocations to the various sources, as specified by the TMDL regulations. This process would more properly assign the responsibility for source reductions.

L. All Numeric Limits on Fecal Coliform Should be Struck from the Permit

24. The numeric limits on fecal coliform are imposed as a result of the approved Charles, Neponset and Shawsheen TMDL's. However, the approved TMDL's are flawed because they fail to identify the maximum daily load which the water body can tolerate and then to provide load allocations and waste load allocations as established by the TMDL regulations. Rather, the TMDLs simply decide that if all discharges meet the water quality standards, the receiving water will then be protected. This line of logic is inconsistent with the entire regulatory scheme established under the Clean Water Act. If all discharges meet water quality standards, not only would there be no need for a TMDL, there would be no need for technology based effluent limits, or water quality based effluent limits that vary according to the dilution of the discharge in the receiving water . All discharges everywhere would simply need to meet water quality standards.
The basic rationale for this line of logic was presented in the Total Maximum Daily Loads of Bacteria for the Neponset River Basin which states:

> FECAL COLIFORM TMDL
>
> Loading Capacity. The pollutant loading that a waterbody can safely assimilate is expressed as either mass-per-time, toxicity or some other appropriate measure (40 C.F.R. § 130.2(i)). Typically, TMDLs are expressed as total maximum daily loads. However, MADEP believes it is appropriate to express bacteria TMDLs in terms of concentration because the fecal coliform standard is also expressed in terms of the concentration of organisms per 100 ml. Since source concentrations may not be directly added, the previous equation does not apply. To ensure attainment with Massachusetts' water quality standards for bacteria, all sources (at their point of discharge to the receiving water) must be equal to or less than the standard. Expressing the TMDL in terms of daily loads is difficult to interpret given the very high numbers of bacteria and the magnitude of the allowable load is dependent on flow conditions and, therefore, will vary as flow rates change. For example, a very high number of bacteria are allowable if the volume of water that transports the bacteria is high too. Conversely, a relatively low number of bacteria may exceed water quality standard if flow rates are low. For all the above reasons the TMDL is simply set equal to the standard and may be expressed as follows:
>
> TMDL = Fecal Coliform Standard = WLA(p1) = LA(n1) = WLA(p2) = etc.

Where:
WLA(p1) = allowable concentration for point source category (1)
LA(n1) = allowable concentration for nonpoint source category (1)
WLA(p2) = allowable concentration for point source category (2) etc.

For Class B surface waters the fecal coliform TMDL includes two components: (1) the geometric mean of a representative set of fecal coliform samples shall not exceed 200 organisms per 100 ml; and (2) no more than 10 % of the samples shall exceed 400 organisms per 100 ml. For Class SB surface Waters the fecal coliform TMDL is more restrictive to protect the shellfish use goal and also includes two components: (1) the geometric mean of a representative set of fecal coliform samples shall not exceed 88 organisms per 100 ml; and (2) no more than 10 % of the samples shall exceed 260 organisms per 100 ml. The goal to attain water quality standards at the point of discharge is environmentally protective, and offers a practical means to identify and evaluate the effectiveness of control measures. In addition, this approach establishes clear objectives that can be easily understood by the public and individuals responsible for monitoring activities. Also, the goal of attaining standards at the point of discharge minimizes human health risks associated with exposure to pathogens because it does not consider losses due to die-off and settling that are known to occur.[6]

25. This logic is faulty for a variety of reasons, including the following:

a. The fact that the standard is expressed as a concentration does not justify the use of concentration alone in establishing the "load." Virtually all numeric water quality standards are established in terms of concentrations, but TMDL's are expressly designed to measure the loading that a water body can safely assimilate, usually expressed as a mass per unit time. In the case of these bacteria TMDL's, it would have been appropriate to use the number of organisms per unit of time as the proper metric. EPA provides several example pathogen TMDL's on its website that approach pathogen total load development in this manner. [7]

b. The statement is wrong when it says that source concentrations may not be added. It is quite common to "add" the sources using numerical simulation models to develop the assimilative capacity of the receiving water. EPA and the New England Interstate Water Pollution Control Commission have developed that kind of model for the lower Charles River which was published as Appendix B to the final pathogen TMDL for the Charles River, and is a technique used in the example pathogen TMDL's on EPA's website.

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[6] Neponset River TMDL, page 34, Shawsheen TMDL, page 54
[7] Reference

c. The statement is wrong when it says that all sources must be at or below the standard to ensure compliance with standard. As a practical matter, to the extent that any source is below the standard, then other sources may be above the standard, and the standard may still be met. In addition, bacteria undergo natural reduction in the receiving waters due to die-off, settling and other factors. As a result, waters that may be initially contaminated becomes less contaminated over time, and can serve to offset the input of discharges that are in excess of the standard. All of these factors are amenable to analysis and simulation through numerical models. Indeed, simulation model described in Appendix B of the Charles River Pathogen TMDL clearly showed that implementation of stormwater controls at levels far above the 200/100 ml standard was effective in significantly reducing the distribution of water quality violations

d. The statement is wrong when it claims that the limits represent a practical means for assessing the effectiveness of control measures. Since the requirement is for a geometric mean to be lower than 200 organisms per 100 ml, and not more than 10 % to be lower than 400 organisms per 100 ml, a person can only know if compliance is being achieved if they have the entire sampling dataset available to them. This is hardly more effective for assessing compliance than any other limitation, or more easily understood by the general public. For example, it is quite possible to have a single discharge with a concentration of 100,000 coliform per 100ml – but if less than 10 % of the discharges from this source are over 400/100 ml, or the geometric mean of all samples is over 200 per 100 ml, the single discharge does not constitute a violation.

e. The statement is correct when it says that the goal of meeting water quality standards at the point of discharge is environmentally protective. But in the context of a TMDL this is irrelevant – the purpose of a TMDL is to develop the assimilative capacity of the receiving water. The fact that a pollutant discharged at the water quality standard (or indeed if the proposal were to require no coliform in the discharge) is environmentally protective is not material and cannot be used to justify a TMDL limit.

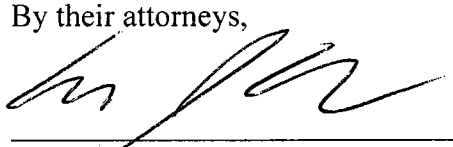
26. The communities realize that development of tools necessary to establish proper total maximum daily loads will be neither simple nor inexpensive. But, by the same token compliance with these arbitrary standards will be far more costly. More work on the basic pathogen sources, and controls needs to be done to justify the expenditures necessary to comply with these requirements.

M. Adoption of Any and All other Comments Submitted during the Comment Period of this Permit

27. The Municipalities hereby adopt any and all other comments submitted to the EPA in response to its request for comments as if actually set forth herein together with any and all documentary support for said comments including but not limited to the comment submitted by the City of Woburn, the Massachusetts Municipal Association and the Massachusetts Coalition for Water Resources Stewardship.

If you have any questions regarding this matter please do not hesitate to contact me or my associate Jeffrey Blake.

THE MUNICIPALITIES
By their attorneys,



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Senator Scott Brown
Congressman Michael E. Capuano
Congressman William Delahunt
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Congressman Stephen F. Lynch
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