



Deval L. Patrick, Governor
Richard A. Davey, Secretary & CEO
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November 20, 2014

Cape Cod Commission
P.O. Box 226
3225 Main Street
Barnstable, MA 02630

Re: **Section 208 Water Quality Management Plan Update for Cape Cod**

Dear Reviewer:

The Massachusetts Department of Transportation's Highway Division (MassDOT), has reviewed the Draft Section 208 Water Quality Management Plan Update for Cape Cod (dated August 2014), and is providing comments herein in response to the 90-day comment period ending on November 20, 2014. MassDOT's comments are presented below.

Nutrient Mitigation Technologies and Matrix

The 208 Plan lists technologies for mitigating nitrogen in the categories of prevention, reduction and remediation and provides removal efficiencies for each. The plan discusses the potential need for monitoring to confirm removal credits. MassDOT's interest in this stems from current and likely future NPDES stormwater treatment requirements.

COMMENT: MassDOT does not believe that the burden of monitoring and development of treatment credits to be on the discharger. We feel that research institutions such as USGS and universities are the more appropriate entities to perform research to determine removal credits. To monitor BMP performance with statistical confidence can cost hundreds of thousands of dollars. Monitoring requirements, for the purpose of collecting uncontrolled grab samples, place an unnecessary burden and financial tax on dischargers and still may be far from conclusive in determining treatment credits.

MassDOT was cited on page 3-13, as follows: "MADOT identifies an average removal rate of 42% nitrogen for bioretention systems (MADOT, 2014)."

COMMENT: For clarification, MassDOT did not directly study or determine the 42% removal rate. This rate was derived by the UNH Stormwater Center, and should be included in the references section, as follows:

"University of New Hampshire Stormwater Center. October 2012. 2012 Biennial Report. Load reductions for Total Nitrogen assumed to be similar to that for Dissolved Inorganic Nitrogen (NO₃-N). "

Phytobuffers in the body of the report are described as vegetative filter strips to receive surface runoff. In the technology matrix worksheet they sound more like Phytoirrigation including the same exact advantages and disadvantages. The cost per acre is reported as \$405,000/ac with \$5,500 annual O&M costs. The cost appears to include the land purchase which is \$250,000/ac, although land costs are not included for vegetative swales.

COMMENT: Phytobuffers or vegetative filter strips are feasible BMPs for MassDOT and we want to ensure they are represented appropriately in the technology matrix. Please clarify information on phytobuffers. The costs seem very high for what would be considered a vegetative filter strip. It seems unlikely that land would be purchased for the sole purpose of installing vegetative filter strips.

In the Technology Matrix the influent nutrient concentration assumed for stormwater is 1.5 mg/L for N and 2.0 mg/L for P. In addition, the matrix calls these “loads”.

COMMENT: MassDOT has measured stormwater runoff from its roadways indicating significantly lower average concentrations for both N and P. The concentrations alone are not indicative of the loads. In addition, we assume the average annual runoff was used to calculate the nutrient loads. Also, column O lists the Phosphorus influent “load” as 1 mg/L which does not align with what is listed in row 104.

Model and Scenarios

It appears that stormwater improvements are considered in the “non-traditional” scenario with the assumption of stormwater and fertilizer nitrogen reductions of 25%.

COMMENT: Without more explanation, MassDOT is concerned that the 25% reduction target is not realistic.

The Plan’s definition of stormwater runoff is “rainfall and snow melt from diffuse (non-point) sources such as roofs, roadways, driveways, and other impervious surfaces.” In addition, the plan lists the primary controllable sources of nitrogen to be wastewater, fertilizer and stormwater.

COMMENT: Wastewater and fertilizer are sources of nitrogen. Stormwater runoff is the mechanism by which water and associated pollutants contribute to the groundwater or receiving water. In addition stormwater runoff is not exclusive to impervious surfaces. We feel the sources and pathways of nitrogen, primarily for what is called “stormwater” in the plan, need to be better defined to more accurately estimate contribution and potential mitigation measures. There are several sources that contribute to stormwater, some of which are controllable and some not (atmospheric deposition).

Regulatory

The plan includes a recommendation for a Watershed Permit via MassDEP, including nitrogen credit system.

COMMENT: We believe that the current system for authorizing stormwater discharge, through MassDEP's Stormwater Standards, the EPA's NPDES MS4 Permits, and any applicable TMDL requirements, is thorough and adequate, and to add yet another permit for authorizing stormwater discharges would be redundant.

Planning and Growth Management

Page 6-9 contains a statement: "The Massachusetts Department of Transportation (MassDOT) state roadway system impacts coastal and freshwater bodies through stormwater runoff and tidal restrictions caused by state roadway bridge abutments and there is an opportunity to work cooperatively to address these issues."

COMMENT: This statement calls attention to MassDOT discharges as harmful, with little context or supporting discussion. The Town roadways, bridges, and culverts are not discussed in a similar way, or at all, in the plan. This language needs to be re-worded. In general, there is very little discussion of the Towns' impacts and responsibilities for their stormwater discharges and tidal restrictions and no associated recommendations in the plan for Towns to address their presumed impact.

The title of the section in Chapter 6 discussing MassDOT as a partner is "Role of MassDOT in Stormwater Management".

COMMENT: This section also discusses MassDOT's work in tidal flushing which is not associated with stormwater management.

On page 6-14 the plan states "It is recommended that the Commission work with the Cape Cod Metropolitan Planning Organization (MPO) to adopt policies that would require design and construction of Cape-specific BMPs in Transportation Improvement Project (TIP) funded roadway improvement projects in the region."

COMMENT: MassDOT is currently committed to including BMPs where practical in roadway projects to impaired waters. We feel that the recommendation to "require" design and construction of BMPs for roadway improvement projects would be better stated by revising "require" to "require to the maximum extent practical."

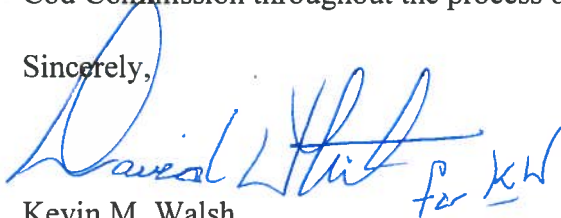
The plan suggests that a regional nitrogen budget could be developed to better explain nitrogen cycling on Cape Cod.

COMMENT: We recommend that the Plan provide more detail on how the nitrogen budget will be used. (We understand that TMDLs and estimates from the MEP have

already been developed.) If a nitrogen budget were to be developed, MassDOT would like to participate in that process. MassDOT has specific runoff data representing highways including data from the Cape Cod area.

Thank you for the opportunity to comment on the Section 208 Water Quality Management Plan for Cape Cod. If you have any questions, please contact Henry Barbaro at 857-368-8788. We look forward to continued communications with the Cape Cod Commission throughout the process of adopting this Plan.

Sincerely,



Kevin M. Walsh

Director

Environmental Services