



PLEASANT BAY
ALLIANCE

Mr. Paul Niedzwiecki
Executive Director
Cape Cod Commission
PO Box
Barnstable MA 02630

November 17, 2014

Re: Comments on 208 Plan Update

Dear Mr. Niedzwiecki:

The Pleasant Bay Alliance wishes to submit this letter of comment on the draft 208 Plan Update. Alliance members have participated in the 208 Plan work groups at the watershed and sub-regional levels, and have served on technical committees.

The member towns of the Pleasant Bay Alliance—Chatham, Orleans, Brewster, and Harwich—are among the Cape Cod towns taking a proactive and regional approach to managing nutrient loading in coastal waters and ponds. Chatham is among the first towns to obtain Comprehensive Wastewater Management Plan approvals and begin construction of sewers, Orleans' plan has received state and Cape Cod Commission approval, Harwich's plan is undergoing state and Cape Cod Commission review, and Brewster's plan is in the process of being developed.

The Alliance has coordinated studies and resource monitoring in support of a watershed-based approach to nutrient management. These studies and monitoring efforts have contributed to local and regional actions to reduce nutrient loads and achieve regulatory thresholds for Total Nitrogen in Pleasant Bay.

The 208 Plan Update has the potential to provide valuable analysis and policy guidance to enhance regional cooperation and ensure the selection of cost effective nutrient management approaches in Pleasant Bay and other estuaries. However, in a number of areas the current draft plan stops short of providing the specific guidance needed by the towns. The comments provided below are intended to identify these areas in the hopes that they could be addressed in the final version of the plan update, and thereby enhance its value to the Alliance communities and other towns on Cape Cod seeking a multi-town watershed approach.

Regional Planning

During work group sessions, the importance of watershed planning for nutrient management was frequently noted. However, the draft 208 Plan lacks specific proposals and scenarios for shared watersheds that would have been a good starting point for evaluating a best overall solution.

For the Pleasant Bay watershed, an analysis of potential regional solutions to achieve nutrient thresholds would be valuable. For example, does it make economic sense for Chatham, Harwich and Orleans to build individual wastewater treatment facilities, or can money be saved by building only one or two? Similarly, if three treatment plants are built, should they each have septage handling capabilities or should one of them provide that capacity for all four towns? Or should there be a single septage handling facility to serve the entire Cape. The information contained in the plan does not provide a technical basis for assessing these or other alternative scenarios within the context of individual town plans.

Allocating Responsibility for Nitrogen Removal

A critical first step in watershed planning involving multiple towns is to develop a common understanding of how to allocate responsibility for nutrient removal. MEP reports do not include a town-by-town breakdown of current or future nutrient load by town. In 20xx the Pleasant Bay Alliance requested and received from the Cape Cod Commission a breakdown of attenuated and un-attenuated nitrogen load by town for each subwatershed for which a TMDL was established. This provided a starting point for towns to discuss shared strategies to equitably manage nutrients and share costs. The load allocations should be reviewed and confirmed through the 208 Plan Update, and similar figures should be provided for all shared watersheds. Load allocations should reflect current loads, as well as anticipated build out assumptions for each town, along with any other factors identified by the Commission.

Assumptions about Nitrogen Removal from Fertilizer and Stormwater

The 208 Plan Update poses that towns should factor in a credit equivalent to 25% of the nutrient load from fertilizer and stormwater, respectively, if the towns implements a fertilizer control bylaw or regulation, and in anticipation of future storm water improvements in compliance with the new US EPA non-point source discharge permit.

As stated in a previous letter (March xx, 2014) the Alliance believes that this approach to determining design load over-states the efficacy of fertilizer controls, and under-emphasizes the high costs and limited applicability of stormwater improvements that remove nutrients. As a result, nutrient removal strategies based on the adjusted design load may have insufficient nutrient removal capacity. It is also noted that MassDEP has not yet prescribed terms by which towns may employ fertilizer and stormwater reductions in a manner acceptable for compliance purposes.

While MassDEP will consider allowing towns to use a 25% placeholder while employing alternative nitrogen controls such as fertilizer controls, this placeholder is not the same as a credit. The effectiveness of fertilizer controls would have to be evaluated over time, primarily through water quality monitoring, to determine whether nitrogen thresholds were being met at sentinel stations. If the alternative controls do not prove effective in achieving targeted thresholds, additional nutrient removal capacity would need to be provided by the town. It is

essential that the design load for town or watershed plans include the additional capacity that would be needed in the event that fertilizer controls or other methods are not as effective as planned. This capacity would not be available if the 25% credit is applied to the design load.

In the case of stormwater management, any credit for nutrient removal must be based on a plan that specifies stormwater technologies and the subwatersheds in which they will be employed. The applicability of nutrient removal through stormwater management may be limited. In watersheds where the existing network of catch basins is functioning, there will be little incentive for a costly retrofit of alternative stormwater technologies to remove nutrients. Likewise, if a watershed is highly built out, there will be little opportunity to include nitrogen reducing stormwater systems in new subdivisions and development projects.

From a cost standpoint, it is not workable to look only at the incremental cost of adding denitrification to stormwater improvements. If the only reason to improve or replace stormwater infrastructure is to add denitrification, then all of the cost new infrastructure would be attributable to nutrient removal. Due to high costs per pound of nitrogen removed, significant site limitations, and varying nitrogen reduction capabilities of stormwater technologies, 25% is likely to be the upper limit of what is achievable. It is more likely that the share of nitrogen reduction from stormwater would be significantly lower than 25%. Therefore, a 25% reduction of this source off of design load would result in insufficient capacity.

Non-Traditional Technologies

There is a great deal of cost and technical information in the draft 208 Plan concerning non-traditional technologies. However, much of the data used to demonstrate cost effectiveness are derived from vendors, or are site specific, limiting their overall reliability. MassDEP has not specified nutrient crediting and permitting procedures for non - traditional technologies because of the lack of data and the need to evaluate results from demonstration projects or pilots.

Ideally the 208 plan would make specific recommendations on which non-traditional technologies are most promising and should be subject to Cape-specific testing and demonstration. This would lead to more in-depth vetting and detail on cost and performance of a smaller number of preferred non-traditional solutions, including permitting and monitoring issues. Without this type of information the costly and time consuming vetting of alternative technologies is left to individual towns or groups of towns, and may result in duplicated efforts or costly delays.

Watershed Multi-Variant Planner (MVP)

The Commission's MVP planning tool has been vetted for computer programming but not for its internal assumptions and algorithms. A review of algorithms and assumptions would help to build understanding and confidence in MVP as a planning tool, and ensure its effective and appropriate use.

In situations where in-depth analysis of land use, build out and water use has been developed through a CWMP process, the 208 Plan should encourage reliance on the more detailed data, recommending use of MVP in instances where such data do not exist or are otherwise not reliable. During the Orleans wastewater planning process, questions arose concerning the ability of the

MVP to account for different buildout scenarios. It also appeared that the MVP combined a number of less effective strategies into the category of traditional solutions, instead of relying on the most effective technologies. As a result, the nitrogen concentration of effluent under the traditional scenario was higher than it should have been, requiring a larger sewer service area. The Orleans wastewater process is an example of where reliance of more precise data developed through the CWMP would have resulted in a more accurate traditional scenario than was possible using the MVP.

Buildout/Growth Management

Build-out assumptions and methodologies employed by towns differ widely across the Cape. The 208 Update should include guidance to towns aimed at standardizing procedures for assessing build out. Given the cost of growth in nitrogen-sensitive watersheds, Cape-wide costs can be reduced if towns (with Commission assistance) use procedures that avoid excessive growth projections.

Growth management should be presented as a tool available to communities to reduce or otherwise manage future nitrogen load. Dealing with the nutrient load from proposed future growth is a significant cost factor. The Cape Cod Commission previously estimated that it could cost an estimated \$3.4 billion to treat wastewater from existing development, and another \$1 to \$2 billion could be needed to deal with nitrogen loads associated with new construction and redevelopment.

The 208 update should be expanded to provide more information on growth management options that towns can employ to reduce nitrogen control costs. In this vein, the East Harwich Village Center case study should be expanded to note the projected cost savings associated with smart growth, based on analysis underwritten by the Association to Preserve Cape Cod (Wright-Pierce, 2012). The 208 Update also should include an example to illustrate how nitrogen control costs can increase substantially when large growth allowances are included. The growth (800,000 square feet of commercial growth and 200 additional housing units) projected for East Harwich in the town's draft CWMP provide the basis for analyzing wastewater costs associated with growth, versus the smart growth strategies employed in the APCC study.

Guidance on "No Net Nitrogen" and "Fair Share" Allocation Policies

Future increases in nitrogen loads in sensitive watersheds can be reduced through a "no-net-nitrogen-increase" policy and it would benefit the towns if the 208 Plan Update provides advice on this tool. For either redevelopment or vacant land development, a town could require developers to meet a "no net nitrogen increase" standard. The developer would be required to offset the new nitrogen from the proposed project with a reduction in existing nitrogen from sources in the same watershed.

The 208 Update should propose changes in the Cape Cod Commission's "fair share" policy, which promotes the allocation of the nitrogen threshold to new projects on a pound-per-acre basis. The nitrogen threshold is divided by the total land area in the watershed, and new development must not exceed that pound-per-acre "fair share". This approach has merit when current loads are less than the threshold. When existing watershed loads exceed the threshold, the "fair share" policy only places a limit on the new nitrogen without addressing the existing

nitrogen. A more effective approach would be to allocate the difference between the threshold and the current load, thus assuring that the threshold is not exceeded.

Effluent Disposal and Reuse

One of the most important determinants of wastewater management costs is the location of the effluent disposal system. The 208 Update should identify regional disposal sites in non-sensitive watersheds that individual towns might use even if outside the boundaries of that town.

Also, there is very little said about effluent reuse in the draft 208 Update. This can be an important tool, particularly in watersheds with golf courses, such as Pleasant Bay's. Much more emphasis on effluent reuse is needed.

On-site Systems

The 208 Plan Update should provide guidance to towns on the use of on-site denitrification systems, indicating where they are appropriate and where not. The 208 Plan Update should provide guidance to towns on the use of deferrals, escrow accounts and covenants as tools to transition from on-site system to off-site systems, as appropriate.

The Cape Cod Commission and its team of consultants is to be commended for providing leadership on wastewater planning for the region. We appreciate your consideration of the enclosed comments, which are intended to strengthen the usefulness of the 208 plan update for towns in the Pleasant Bay Watershed.

Sincerely,
For the Steering Committee



Allin P. Thompson, Jr.
Chairman