
TO:	Erin Perry, Cape Cod Commission	DATE:	9 January 2019
FROM:	Mike Giggey	PROJECT NO.:	13351E
SUBJECT:	Cape Cod Commission's Water Resources Technical Bulletin Comments on Draft Issued for Public Comment		

The purpose of this memorandum is to provide comments on the Commission's draft Water Resources Technical Bulletin, as issued for public comment on 29 November 2018. I understand that the original 30-day comment period has been extended until 13 January 2019.

This current memorandum is a condensation and refinement of an earlier document that was circulated in early December, addressed by Commission staff, and discussed at the 4 January meeting of the Pleasant Bay Alliance Watershed Work Group. I understand that some of my original comments will be combined into comments made directly by the Alliance.

I have participated in several telephone calls with Tom Cambareri and Scott Michaud to provide input to the Commission's calculation of a nitrogen offset fee and how that fee would be applied. I reviewed the draft Technical Bulletin in late November to follow up on those prior conversations, and I talked with Tom on November 29 to gain more understanding of the Technical Bulletin and the Commission's policy.

This is a complicated subject and a detailed bulletin. I do not purport to have a full understanding of it, but I offer these observations to inform the process. I have focused on the protection of marine waters, Goal WR-3. Below, I have summarized my understanding of the requirements of the Technical Bulletin, to establish a basis for my comments.

The Bulletin describes standards that apply to nitrogen and phosphorus loadings from new development that are considered Developments of Regional Impact (DRIs). These standards do not apply to projects or activities that do not reach one or more of the DRI thresholds, but the assumptions and procedures could serve as a basis for companion approaches by the four Pleasant Bay towns, such as in a nitrogen trading program or for procedures to manage growth in nitrogen load.

1. The nitrogen-offset wording of the Bulletin is cumbersome. Here is my understanding:
 - a. Any DRI in a nitrogen-sensitive watershed must find a way to be nitrogen-neutral; that is, the developer must reduce existing loads in the same watershed to fully offset any new loads caused by the development.
 - b. In locations where an approved CWMP lays out a nitrogen control plan that will be in place within 5 years, the offset requirement is waived, but only if the town nitrogen plan provides for new nitrogen loads equaling or exceeding the load from the development.

- c. In those cases where public infrastructure is planned, but will not be available in 5 years, the developer can pay an offset fee to cover some or all of new nitrogen load. The offset fee can be used only in certain Placetypes designated by the Bulletin. Those Placetypes are intended to be areas where towns expect to grow.
 - d. Regardless of how the developer intends to offset new nitrogen, he/she must also meet the areal nitrogen loading requirement of 5 mg/l, estimated as the average nitrogen recharge concentration of the development. Steps taken to meet the areal loading standard may reduce the amount of new nitrogen to be offset. (These requirements apply both within and outside nitrogen-sensitive watersheds and address Goal WR-1, protection of groundwater quality.)
2. The Technical Bulletin sets forth computational procedures for estimating the areal nitrogen loading. Those procedures include ways to estimate both wastewater-based loads and the loads from lawn fertilization and stormwater disposal. It is not clear if the same procedures apply to the nitrogen offset computation, and there is inference that only the wastewater-based load is subject to offset. Clarification is needed.
3. The portion of the areal nitrogen load that is wastewater-associated is based on a wastewater flow computed as the average of the Title 5 flow and the expected annual average flow. This is a carry-over from Technical Bulletin 91-001. This approach is not correct. It does create a safety factor in the calculations, but a safety factor, if needed, should be included as an explicit item. I support consistency with the MEP methodology.
4. The areal loading calculations are to be based on septic system effluent of 35 mg/l, while the nitrogen offset computations are to be based on 26.25 mg/l. The difference should be acknowledged or reconciled. I support consistency with the MEP methodology.
5. Historically, the Commission has used the so-called "fair share" approach to allocating new nitrogen loading. I see no reference to this approach in the draft Bulletin. This current nitrogen-neutral approach that is at the heart of the draft Bulletin is a much better way to deal with new nitrogen load, and the fair share approach should be dropped.
6. When an offset fee is allowed, it is to be computed as "up to \$8,290 per kilogram". I have worked with Tom and Scott on the derivation of this numerical amount, which is intended to be equivalent to the costs for a municipal sewerage system and includes both capital costs and the present value of 20 years of operation and maintenance costs. The Bulletin should be clarified as to the units. It is intended that this dollar amount be applied to one year of expected nitrogen load, and therefore should be expressed as "\$8,290 per kilogram per year". Alternatively, it could be set as \$500 per kilogram applied to each and every kilogram released over the life of the project. The one-time fee is better from a practical perspective.

7. While I agree with the approach used to calculate the offset, we should consider the fact that the true cost of options to be implemented in the Pleasant Bay watershed may be higher than the offset fee. My review of costs from the various CWMPs shows costs of about \$13,500 per annual kilogram for the traditional approaches that have been selected. So, from the Pleasant Bay perspective, the Commission's figure is not "conservative" as indicated in Appendix C. Should the towns be allowed to direct the Commission on the fee to be used in a specific watershed? Should the towns be allowed to impose an additional fee to increase the \$8,290 figure to the true cost for that watershed?
8. There is no reference to natural attenuation in the computation of the offset. If the developer's plan is to provide nitrogen control for existing sources (say, by paying for I/A systems at existing homes), and that nitrogen control is located upgradient of a pond, the extent of the offset must be increased. I support consistency with the MEP methodology.
9. The Commission's nitrogen offset approach is similar to the "no-net-nitrogen" policy DEP has applied to new groundwater discharge permits in sensitive watersheds. The two approaches should be directly compared, and any the reconciliation of any differences could be considered. If the developer's nitrogen control plan includes a wastewater treatment plant with a Groundwater Discharge Permit, DEP will not allow discharge under that permit until the nitrogen offset is in place, regardless of the timing of public solutions such as sewers.

While my review has focused on just portions of the Technical; Bulletin, I hope that these comments are helpful to the finalization of this document.