

CAPE-WIDE FERTILIZER MANAGEMENT DISTRICT OF CRITICAL PLANNING CONCERN NOMINATION FORM

Attachments:

- Map fully describing the area proposed for designation.
- MEP/Watershed map
- Cape Cod 'lawn' map.
- HW Fertilizer study map
- Public Well Map
- Horsley Witten (HW), Draft "Cape Cod Pesticide and Fertilizer-Use Inventory" (June 2013)
- Documentation of community concern about the area (e.g., letters, newspaper articles, minutes of meetings, board resolutions).
 - 1) Cape Cod Times, "Falmouth Fertilizer Limits Nixed" (May 29, 2013)
 - 2) Wicked Local Orleans, "Orleans Fertilizer Bylaw May Be Moot" (May 18, 2013)
 - 3) Cape Cod Times, "Falmouth's Fight Over Fertilizer" (March 28, 2013)
 - 4) Ocean River Institute, Defend Falmouth's Bylaw to Reduce Nitrogen Pollution of Estuaries (<http://www.oceanriver.org/CapeCod.php>)
 - 5) Boston Globe, "Fertilizer Harming Plum Island Salt Marsh, Study Finds" (October 18, 2012)
 - 6) Model "Municipal Policy to Reduce Nutrients in Municipal Turf Management," Pleasant Bay Alliance (February 2012)
 - 7) Horsley Witten, "Pleasant Bay Fertilizer Management Plan, Final Report" (December 2010)

If the nomination concerns land in more than one town, have you consulted with appropriate municipal agencies in those towns before this application? Have you notified board(s) of selectmen before submitting this application? If so, please attach a copy of such notification or correspondence.

An informational memorandum, copy attached hereto, will be mailed to towns along with the notice of receipt of nomination.

Deputy Director Patricia Daley announced the Commission's intent to proceed with a nomination at the June 2013 Cape Cod Selectmen & Councilor's Association meeting in Falmouth.

Studies or reports addressing the need for this district:

- 1) MEP Reports
- 2) Horsley Witten, "Cape Cod Pesticide and Fertilizer-Use Inventory" (June 2013)
- 3) 1978 208 Report
- 4) Cape Cod Commission Technical Bulletin 91-001 – Nitrogen Loading

- 5) Cape Cod Golf Course Study
- 6) Miscellaneous Fertilizer Reports (See above)

GENERAL INFORMATION

Nominating entity:

Name/Organization: Cape Cod Commission
Contact Person: Patty Daley, Deputy Director
Address: 3225 Main Street, PO Box 226, Barnstable, MA 02630
Telephone: 508-362-3828

Describe the location of the proposed district, including the affected town(s) and references to any distinguishing landmarks such as structures and roads that may act as boundary limits to the proposed district. If appropriate, give measurements in feet. The boundaries should be delineated as accurately as possible, both on the attached maps and in the narrative below.

The proposed district includes the fifteen (15) towns which comprise Barnstable County, incorporating the area within their municipal corporation boundaries (Cape-wide DCPC).

Does the proposed district include land located in more than one town? If yes, please indicate if this application relates to another application for the same district or purpose. (Applicants are encouraged to file joint applications for nominations that include more than one town.)

The proposed district includes land located in more than one town, but this application does not relate to another application for the same district or purpose.

Identify existing local regulations that relate to the purposes of the proposed district [include zoning and general bylaws, overlay districts (e.g., water resource protection districts), health regulations, and local historic districts]. Cite the pertinent sections of those regulations or bylaws and attach a copy of each.

Regulations similar to the proposed regulations anticipated to be developed in the DCPC process are not formally adopted in any town in the region. Falmouth and Orleans have accepted fertilizer regulations or by-laws at town meeting; however, Falmouth’s regulation was disallowed by the State Attorney General as being inconsistent with the amendments to Chapter 128. It is anticipated that the Attorney General will similarly disallow the Orleans fertilizer regulation.

The Implementing Regulations adopted pursuant to the Town of Sandwich’s 3 Ponds DCPC do limit “excessive” use and application of fertilizers within 300 feet of the waterbodies located in that DCPC.

Are there any local subdivision or development permits pending in this area?

The question of whether development permits or subdivision approvals are pending in the nominated district is not relevant to the proposed DCPC. The CCC meeting and publication on the receipt of nomination minimize the required full moratorium period to the greatest extent possible. Additionally, if the nomination is accepted for consideration, all classes of development will be allowed to proceed during the proposed designation the DCPC and implementation of regulations. It would be appropriate to allow all development during this available limited moratorium period because regulation of fertilizer application, which is the primary purpose of the DCPC, does not require development permits as those terms are defined under the Cape Cod Commission Act.

Are you aware of any state, federal, or county landholdings within the proposed district? If yes, please describe.

The Massachusetts Military Reservation and Cape Cod National Seashore are federally owned and included within the proposed district.

Are you aware of any technical studies or management plans proposed, ongoing or completed relating to the proposed district. If yes, please cite.

Yes. As of October 2012, a total of 36 Massachusetts Estuaries Project technical reports were complete and another 10 were pending. The results of the technical reports have been adopted as the federal- and state-approved TMDLs, which makes them the basis for watershed nutrient-management planning.

Indicate the type of district that is proposed.

“Other” – Fertilizer Management District

PURPOSE OF PROPOSED NOMINATION

The Cape Cod Commission Act provides for designation of certain areas that must be preserved and maintained due to one or more of the following factors:

- C1. the presence of significant natural, coastal, scientific, cultural, architectural, archaeological, historic, economic, or recreational resources or values of regional, statewide, or national significance; or*
- C2. the presence of substantial areas of sensitive ecological conditions that render the area unsuitable for development; or*
- C3. the presence or proposed establishment of a major capital public facility or area of public investment.*

Explain why you think this area warrants designation (A district may be nominated for more than one reason.) Reference the criteria (C1, C2, or C3) listed above. Include supporting facts and figures when available.

As the population of Cape Cod has increased over the last several decades, so has the volume of nutrients entering its coastal waters and freshwater ponds. The key nutrient of concern for coastal embayments is nitrogen. A healthy coastal ecosystem needs some amount of nitrogen, but when too much nitrogen is added to an embayment, it can result in significant algae growth, loss of eelgrass, diminishing shellfisheries, ponds choked with algae, and decreasing dissolved-oxygen concentrations—occasionally leading to massive fish and shellfish kills, odor, and frequent violation of water quality standards. Coastal waterbodies around the Cape are showing the stress of excess nitrogen, with effects that impair their natural functions and their recreational appeal.

The nitrogen load that changes a healthy system to an unhealthy system (or eutrophic condition) is defined as a critical threshold— more often referred to as a Total Maximum Daily Load (TMDL) under the federal Clean Water Act. In order to determine current nutrient loads and assist in the evaluation of future nutrient load scenarios, the Massachusetts Department of Environmental Protection (MADEP) and the University of Massachusetts-Dartmouth, School of Marine Science and Technology (SMAST) began the Massachusetts Estuaries Project (MEP). The resulting MEP technical reports for each of the impaired watersheds have been adopted as the federal- and state- approved TMDLs, which makes them the basis for watershed nutrient-management planning.

Water quality testing for the MEP clearly documented that many of Cape Cod's waterbodies have impaired water quality and ecological damage due to nitrogen loading in their watersheds. The MEP technical reports and TMDLs contain estimates for how much watershed nitrogen needs to be removed to meet the TMDL. In many watersheds, the amount of nitrogen needing to be removed is 100%. When the amount of nitrogen removal required is averaged across Cape Cod, the average removal rate is more than 50%—a significant reduction to comply with the requirements of the TMDL.

Additionally, with respect to drinking water quality, the Environmental Protection Agency (EPA) has established a maximum contaminant limit (MCL) for nitrate of 10 parts per million (ppm), or 10 milligrams per liter (mg/L). The Cape Cod Regional Policy Plan (RPP) also recommends a nitrogen concentration standard of 5 mg/L to ensure that nitrate levels in drinking water are well below the federal standard. Excess nitrate in drinking water can pose health risks, particularly to young infants, as it can result in restriction of oxygen transport in the bloodstream. Infants under the age of four months lack the enzyme necessary to correct this condition, also known as the blue baby syndrome. Recent research also indicates that nitrate levels above 5 mg/L may lead to increased cancer risks in certain populations. Public drinking water quality on Cape Cod is generally very good, but the Cape Cod Commission has identified a recent trend toward some degradation.

While wastewater from on-site septic systems is the primary source of controllable nitrogen loading, fertilizer in the groundwater or as runoff during storms is an important and controllable secondary source of nitrogen. MEP Technical Bulletins estimate fertilizer nitrogen contributions ranging from 1% to 24%. The principle components of fertilizer are Nitrogen,

Phosphorus, and Potassium (N-P-K). A 2013 Horsley Witten Group Report, entitled “Cape Cod Pesticide and Fertilizer-Use Inventory” found that the total amount of fertilizer use on Cape Cod is nearly 6 million pounds per year, with the greatest amount coming from residential fertilizer use. Managing fertilizer use, through education, Best Management Practices, and enforceable regulations, will help towns achieve cost-effective and efficient nitrogen reduction.

Describe what would be gained through additional planning or regulatory control of this area, including establishment of new regulatory controls to address any problems associated with inappropriate development of the area.

A District of Critical Planning Concern (DCPC), a planning and regulatory tool authorized under the Cape Cod Commission Act, allows a Cape Cod town or towns to designate an area for the purposes of examining particular threats or opportunities, vital to preserve and protect, and then adopt implementing regulations to so preserve and protect that area’s important resources. Regulations adopted pursuant to this proposed Cape-wide DCPC will be voluntary; towns may, at their discretion, opt to adopt Implementing Regulations in the form of a fertilizer regulation consistent with a model regulation that will be developed by the Commission with input from the towns.

DCPC nominations may be made by the Commission, shall fully describe the area nominated, and contain information explaining why the subject area should ultimately be designated as a district of critical planning concern, including:

- Why the proposed area is of critical value to Barnstable County and must be preserved and maintained due to, in relevant part, one or more of the following factors:
 - 1) the presence of significant natural, coastal, scientific, cultural, architectural, archaeological, historic, economic or recreational resources or values of regional, state-wide or national significance;
 - 2) the presence of substantial areas of sensitive ecological conditions which render the area unsuitable for development(...)
- Why there is a need for a special, coordinated system of planning and regulations in the district which are likely to be effective in protecting or otherwise meeting the objectives of the proposed district by preserving or maintaining a value(s) or resource(s) intended to be protected by the Act.

This Cape-wide, self-nominated DCPC will facilitate the development of fertilizer management regulations in furtherance of water resource protection. Excessive nitrogen loading, including the contribution made by fertilizer applications, is the greatest threat to Cape Cod marine and drinking water quality. Regulating fertilizer application is one of the more straight-forward, easily-implemented and cost-effective ways to help address the broader nitrogen loading issues on Cape Cod.

The opportunity to adopt local fertilizer management regulations through a DCPC is especially important now that the county and towns’ ability to regulate this area has been restricted reduced. The Attorney General has advised that recently enacted amendments to Chapter 128

of the General Laws give the Massachusetts Department of Agricultural Resources (MDAR) exclusive authority to regulate and enforce fertilizer application in the Commonwealth.

One of the limited exceptions to MDAR's exclusive jurisdiction in the Chapter 128 amendments is for regulations adopted pursuant to the Cape Cod Commission Act, if completed prior to January 1, 2014. Implementing Regulations adopted pursuant to a fertilizer management DCPC would preserve the towns' ability to regulate fertilizer applications in light of the recently enacted amendments to Chapter 128 by the State Legislature. These regulations will focus on nitrogen in fertilizers; the regulation of phosphorus in fertilizers is significantly pre-empted by the amendments to Chapter 128, and the MDAR's regulations reportedly will focus on phosphorus. Also consistent with the amendments to Chapter 128, Implementing Regulations developed for the DCPC must be consistent with UMass Amherst Cooperative Extension office recommendations.

Without special fertilizer management regulations in place in the proposed district, inappropriate unguided fertilizer application could continue to contribute to degradation of Cape Cod's water resources. Evidence suggests that fertilizer management regulations could help protect, maintain and repair Cape Cod's water quality. Implementing regulations are anticipated to include time and place restrictions on the application of fertilizers containing nitrogen.

What classes or types of proposed development should be allowed to continue during the consideration of the nomination for designation by ordinance?

All activities and development that require a federal, state and/or local permit should be allowed to continue during the consideration of the nomination because they will not be substantially detrimental to the area and to the public health, safety, and general welfare, and will not contravene the purposes of the Act.

If new development control regulations will be sought, what type(s) of uses and/or development would be appropriate or inappropriate within the proposed district?

All types of development would generally be appropriate in the proposed district, subject to fertilizer management regulations, including appropriate time, place and manner restrictions on fertilizer use and applications imposed therein.

The regional 208 plan being developed by the Commission will more comprehensively address the appropriateness of certain types of development Cape-wide, given their impacts on the broader nitrogen loading issue.

What regulatory controls should be instituted in the proposed district to protect the values and purposes for which the district is being nominated (e.g., local zoning and general bylaws, regulations, local overlay districts)?

Each municipality in the proposed district should adopt DCPC Implementing Regulations in the form of local Board of Health regulations, based on a model Cape Cod Commission regulation

that will outline the requirements necessary to protect the values and purposes for which the district is being nominated.

What other types of initiatives may be needed to implement the objectives of the proposed district (e.g., grants, design guidelines, studies)?

Fertilizer Management Best Management Practices (BMPs), in accordance with the University of Massachusetts Extension Program BMPs, could be developed. Additionally, a Barnstable County sponsored educational program initiative could be instituted.

Cape-wide Fertilizer Management District
DCPC Nomination
Supplemental Narrative

Definition of Proposed District

The proposed DCPC is Cape-wide and includes all 15 towns which comprise Barnstable County, incorporating the area within their municipal corporation boundaries.

Why This Area Warrants Designation as a DCPC

As the population of Cape Cod has increased over the last several decades, so has the volume of nutrients entering its coastal waters and freshwater ponds. The key nutrient of concern for coastal embayments is nitrogen. A healthy coastal ecosystem needs some amount of nitrogen, but when too much nitrogen is added to an embayment, it can result in significant algae growth, loss of eelgrass, diminishing shellfisheries, ponds choked with algae, and decreasing dissolved-oxygen concentrations—occasionally leading to massive fish and shellfish kills, odor, and frequent violation of water quality standards. Coastal waterbodies around the Cape are showing the stress of excess nitrogen, with effects that impair their natural functions and their recreational appeal.

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While wastewater from on-site septic systems is the primary source of controllable nitrogen loading, fertilizer in the groundwater or as runoff during storms is an important secondary source of nitrogen. MEP Technical Bulletins estimate fertilizer nitrogen contributions ranging from 1% to 26%. The principal components of fertilizer are Nitrogen, Phosphorus, and Potassium (N-P-K). A Draft 2013 Horsley Witten Group Report, entitled “Cape Cod Pesticide and Fertilizer-Use Inventory” estimated that the total amount of fertilizer use on Cape Cod is nearly 6 million pounds per year, with the greatest amount coming from residential fertilizer use. Managing

fertilizer use, through education, Best Management Practices, and enforceable regulations, will help towns achieve cost-effective and efficient nitrogen reduction.

Purpose of DCPC Nomination

A District of Critical Planning Concern (DCPC), a planning and regulatory tool authorized under the Cape Cod Commission Act, allows a Cape Cod town or towns to designate an area for the purposes of considering particular land use concerns or opportunities, and then to adopt implementing regulations to preserve and protect that area's important resources identified during consideration. The regulations associated with the proposed DCPC will be voluntary; towns may, at their discretion, opt to adopt Implementing Regulations in the form of a fertilizer regulation consistent with a model regulation that will be developed by the Commission with input from the towns.

DCPC nominations may be made by the Commission, shall fully describe the area nominated, and contain information explaining why the subject area should be ultimately be designated a district of critical planning concern, including:

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