

## BARNSTABLE COUNTY

In the Year Two Thousand and Eight

Ordinance 08-08

To establish a District of Critical Planning Concern pursuant to the Cape Cod Commission Act in the Town of Brewster, Massachusetts.

Barnstable County hereby ordains:

### **SECTION 1.0 Source Of Authority And General Purposes**

As authorized by Section 10 of the Cape Cod Commission Act, the Barnstable County Assembly of Delegates hereby designates the Brewster Water Protection District, as hereinafter described, a District of Critical Planning Concern ("District" or "DCPC"). The purposes of this District shall be the protection of Wellhead Protection Areas to the town of Brewster's four public water supply wells; the protection of the portions of the Wellhead Protection Areas from Harwich, Orleans, and Dennis that are located within the town of Brewster; the protection of the town's major public investment in its water supply infrastructure; the protection of the water quality of Pleasant Bay; and to manage growth in a manner that is compatible with the resource protection goals of the District.

### **SECTION 2.0 Effective Date**

The Ordinance shall take effect upon the effective date of this ordinance or upon recording of this Ordinance at the Barnstable County Registry of Deeds, whichever occurs later.

### **SECTION 3.0 Written Description Of The Area**

The area nominated for District designation is as follows:

The proposed boundary of the District is delineated as the boundary of the Zone II-Wellhead Protection Areas in the Town of Brewster as well as the boundary of the Pleasant Bay Watershed that lies within the Town of Brewster. The areas cumulatively consist of approximately 6,538 acres of land area in Brewster.

The exact boundaries are shown on the map attached to this Ordinance as Exhibit A that is incorporated by reference.

The proposed district encompasses two distinct, non-contiguous areas in Brewster: the south-western most portion lies on the town's boundary with Dennis and Harwich; the south-eastern most portion lies on the town's boundary with Orleans and Harwich. The majority of the land throughout the proposed DCPC is zoned Residential-Rural and Residential-Low Density. Approximately 200 acres of the south-eastern portion is zoned Industrial, and both portions are subject to the town's Ground Water Protection District Overlay Bylaw, consistent with Massachusetts Department of Environmental Protection statutes and regulations related to activities within Zones of Contribution to Drinking Water Wells.

Included within the overall district are approximately 1,829 acres of land owned by the Commonwealth of Massachusetts (1,780 acres in Nickerson State Park), approximately 126 acres of land owned by the Brewster Conservation Trust, and approximately 2,035 acres of land owned by the Town of Brewster (including approximately 779 acres in the Punkhorn Parklands and 444 acres owned by the Brewster Water Department).

#### **SECTION 4.0 Type Of District/Reasons For Designation**

The proposed Brewster Water Protection District as described above qualifies under Section 10(a) of the Cape Cod Commission Act for designation as a District due to the following factors:

a) The presence of significant natural, coastal and economic resources, the presence of and the establishment of an area of public investment, as well as values of regional and statewide significance as described below.

As the Town of Brewster identified, this area is designated as the following:

1. Water Resources District
2. Major Public Investment District

#### **SECTION 4.1 Reasons For The District's Designation**

The area is of critical concern to the region because it includes the wellhead protection areas for drinking water wells in Brewster, Dennis, Harwich and Orleans, and all land in the Pleasant Bay watershed located within the town of Brewster. The provision of a sustainable supply of high quality drinking water and protecting the ecological integrity of our surface waters is a fundamental goal of the Barnstable County Regional Policy Plan and the Cape Cod Commission Act.

Controlling development and redevelopment within the proposed District is important for the protection of groundwater and surface water quality, and the protection of Brewster's water supply infrastructure.

There are planning, regulatory, and best management tools available that are likely to be effective in protecting or otherwise meeting the objectives of the District. Current regulatory mechanisms are not in place to control growth, development, and land uses in a manner that would protect the resources of concern within the proposed District.

Pre-existing non-conforming uses and uncontrolled activities in the District have not been adequately monitored, potentially threatening water quality and safety of drinking water supplies. Specifically, existing regulatory structures and regulations do not adequately address the town's concerns over the following: 1) numerous fires, incidents of illegal dumping, storage and burying of unknown materials, and breaches of groundwater that are relatively frequent occurrences and pose significant hazards and threats; 2) negative impacts to water quality potentially associated with agricultural uses; 3) the potential for future subdivision and development of un-fragmented land; 4) erosion resulting from the excavation and clearing of larger tracts of forested land causing damage to wetlands and wildlife habitat; 5) management of animal wastes from livestock; 6) the lack of control over the application of fertilizers, herbicides, fungicides and/or pesticides; and 7) nitrogen loading from existing and future development within the Pleasant Bay watershed that has and will

continue to exceed acceptable water quality limits and has created impaired ecological conditions in the Bay.

The Monomoy Lens of the Cape Cod Sole Source Aquifer provides drinking water to the population of the Lower Cape and contributes to fresh and marine water resources of the Cape. Groundwater of the Monomoy lens is particularly vulnerable to a variety of land uses and activities that can release harmful compounds into the aquifer resulting in impairment to drinking water quality and marine water quality resources of the District.

The potential for uncontrolled or inappropriate development exists within the District and has occurred because of limits in the existing town regulatory structure and existing regulations. There is a need for additional land use planning, management and enforcement mechanisms/tools to ensure that the resources of this district will be better protected. Development and redevelopment need to proceed in a more controlled manner; management plans need to be developed and implemented for existing land uses and agricultural uses to reduce and control impacts to drinking and coastal water quality.

Set forth below are the reasons why the area is of critical concern to the region, the problems associated with uncontrolled or inappropriate development, and the advantages to be gained by the development of the area in a controlled manner.

#### **SECTION 4.1.1 Groundwater/Drinking Water**

Of the 6,538 acres included within the DCPC nomination area, approximately 5,544 acres are within the existing Groundwater Protection Districts for public supply wells, with 2,173 acres in west Brewster and 3,371 acres in east Brewster. The Groundwater Protection Districts are based on areas designated as Zone IIs by the Massachusetts Department of Environmental Protection, and are also mapped as Wellhead Protection Areas in the Barnstable County Regional Policy Plan.

These areas are contributing areas (CAs) or watersheds to the public water supply wells and are defined as the land areas on which rainfall enters the groundwater system and flows or is mechanically drawn towards a public supply well or group of wells. Each CA includes the wellhead protection land area of at least one municipal supply well. The CAs within the DCPC boundaries include CAs to wells within Brewster, and CAs to wells within Orleans, Harwich, and Dennis located in Brewster.

The four Brewster public drinking water wells within the DCPC boundaries provide drinking water to approximately ninety-five (95) percent of the Town. The remaining five percent of the town, located primarily in the western sector of Brewster, obtains drinking water from private wells on each individual lot. There are also a number of small public water supplies serving areas in Nickerson State Park (5 wells) and in the area of Slough Pond (2 wells).

A substantial portion of the western Brewster Zone II is undeveloped, consisting of Water Department lands, the Punkhorn Parklands and the Slough Road Woodlands Conservation Areas; the developed portions generally having 1-2 acre or larger lot sizes. The east Brewster Zone II encompasses a large portion of Roland C. Nickerson State Park, plus Water Department lands, and the Bakers Pond Conservation Area. This area also encompasses the largely undeveloped Clayhole

Road area and the densely developed Millstone Road/ Route 137/Freeman's Way area that tends to have smaller (1/4-1/2 acre) lot sizes.

Brewster's east and west wellfields also overlap with contributing areas to supply wells in the Towns of Dennis, Harwich, and Orleans. There are approximately 5,871 acres, or approximately 1/3 of the land in Brewster, of land in Brewster that provide wellhead protection/recharge area for its neighboring towns. It is critical that Brewster remains vigilant when it comes to protecting all recharge areas for this shared resource. None of the five towns sharing the Monomoy Lens has all of the recharge areas for all of their wells within their own town boundaries.

#### **SECTION 4.1.2 Pleasant Bay Watershed Management**

Brewster's portion of the Pleasant Bay Watershed, consisting of 3,308 acres, is included within the proposed DCPC. This watershed was delineated as part of the Massachusetts Estuaries Project (MEP) to develop nitrogen thresholds for estuaries in southeastern Massachusetts. The nitrogen thresholds for Pleasant Bay developed by the MEP have been adopted as Total Maximum Daily Loads (TMDLs) by the Massachusetts Department of Environmental Protection and have been approved by the United States Environmental Protection Agency under the federal Clean Water Act.

The Pleasant Bay MEP report indicates that the nitrogen thresholds for the Bay are exceeded by existing development within its watershed. Meeting these thresholds will require development of creative nitrogen management strategies by each of the towns in the watershed both on an individual basis, as well as a cumulative regional basis. These strategies will have to address both existing and future development and all of the various nitrogen sources, such as wastewater, stormwater runoff, and fertilizer applications.

Since each of these sources will require different methods, these methods will have to be integrated to meet the thresholds. Key activities for achieving this integration will be the development of town-focused Comprehensive Wastewater Management Plans that are coordinated with neighboring towns.

#### **SECTION 4.1.3 Major Public Investment Protection**

Brewster has invested millions of dollars in the development and protection of the public drinking water supply wells within the proposed DCPC. The expected revision of the regulatory structure will reinforce the existing protective efforts and ensure that these investments are protected in the long term.

The Brewster water system was established by a Special Town Meeting vote on November 9th, 1970.

The vote approved a bond issue of \$3,220,000 for the establishment of a public water system. Since that time the Water Department has kept pace with water demands and major infrastructure improvements.

Brewster has four groundwater wells pumping water from the Monomoy Lens, one of the six groundwater lenses that make up the Cape Cod Sole Source Aquifer. Each of the wells has large tracts of undeveloped land surrounding them for water quality protection. The two original wells,

#1 and #2, south of Freeman's Way and near Route 6, respectively, were constructed in 1971 and are approximately 76 feet deep. Well #3, built in 1986, is north of Freeman's Way near Route 6 and is 90 feet deep. Well #4, built in 1991, is at the north edge of the Punkhorn Parklands, near Run Hill Road and is 101 feet deep.

In 2005, the Brewster Water Department pumped over 473 millions gallons of water (or approximately 1.3 million gallons per day) from these four wells. The Monomoy Lens Capacity report indicates these wells have a capacity of 3.89 MGD for 16 hours and that Brewster's water demand will increase by 34% in the year 2020.

The Massachusetts' Source Water Assessment and Protection (SWAP) Report indicates that Brewster's drinking water wells are located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers (i.e., clay) that can prevent contaminant migration. The SWAP report recommends pollution prevention strategies for residential land uses, household hazardous materials, heating oil storage, and stormwater. The SWAP also identifies transportation corridors that run through the contributing areas and recommends pollution prevention strategies to minimize the impacts of oils spills and provide better response mechanisms. The SWAP ranks the following uses as high and medium threats to water quality: fertilizer use, pesticide storage, boat yards, golf courses, sand and gravel mining washing, industrial uses, fuel oil storage, lawn care, septic systems, clandestine dumping, landfills and transportation corridors.

It is also clear that meeting the Pleasant Bay TMDLs is likely to require significant public wastewater infrastructure investment. Development of appropriate management and regulatory tools for development in the proposed District will help to minimize the Town's future water and wastewater infrastructure expenditures.

## **SECTION 5.0 Suggested Guidelines For Development**

The following guidelines shall serve as the basis for future establishment of implementing regulations to be adopted by the Town pursuant to Section 11 of the Cape Cod Commission Act to control development with the Brewster Water Protection District.

### **SECTION 5.1 Introduction And General Guidelines**

The town of Brewster and stakeholders shall develop and review Implementing Regulations consistent with the Guidelines described herein. Implementing Regulations for the District may take the form of zoning ordinances, general bylaws, regulations, best management initiatives, or other means identified by the Town, which help to achieve the goals and interests of the District. Commission staff will assist the town of Brewster in drafting appropriate regulations.

The town of Brewster shall propose Implementing Regulations for the District to the Cape Cod Commission. In order to be approved, Implementing Regulations adopted by the town must be found by the Commission to be consistent with these Guidelines, pursuant to Section 11 (d) of the Act.

The town of Brewster shall adopt and incorporate Implementing Regulations within twelve (12) months of the District's designation by ordinance. If the town of Brewster fails to adopt and incorporate Implementing Regulations that are consistent with these Guidelines within twelve (12)

months, the Commission may grant an additional ninety (90) days. After the additional ninety (90) days, the Commission may propose, and the Assembly and the County Commissioners may adopt by ordinance, Implementing Regulations for the District.

Upon the adoption of certified Implementing Regulations, the local permitting previously stayed by the DCPC nomination may proceed consistent with the newly adopted Implementing Regulations.

## **SECTION 5.2 Goals and Interests**

The objective of these Guidelines is to ensure full protection of the following goals and interests of the District through the establishment of implementing regulations by the town of Brewster. The goals and interests of this District shall be to:

- Improve and maintain groundwater and drinking water quality within all Zone II/Wellhead Protection Areas located in the town of Brewster;
- Manage and reduce existing and future nitrogen loads to restore and protect the water quality of Pleasant Bay;
- Protect and support the major public investment in the Brewster water supply system;
- Manage structures, pervious and impervious area, and land uses in a manner that will not result in adverse impacts to water quality; and
- Manage development, redevelopment, and land uses to limit negative water quality impacts.

## **SECTION 5.3 Guidelines**

5.3.1 Implementing regulations should be developed to protect ground and surface water quality, such as through improvements, amendments, or development of a Water Quality Protection Bylaw, a Clearing and Grading Bylaw, re-vegetation requirements, performance standards and best management practices, Board of Health Regulations, Conservation Commission Regulations, and any other appropriate mechanism.

5.3.2 Implementing regulations should be developed to allow the Town to support local agriculture without compromising surface or drinking water quality.

5.3.3 The Town should consider adopting additional enforcement mechanism for inspections, monitoring and compliance penalties for ongoing existing uncontrolled activities.

5.3.4 Implementing Regulations should seek to address the District's high vulnerability to water quality contamination, such as by implementing the SWAP Report and any other appropriate pollution prevention strategies and by managing the land uses and their impacts to water quality.

5.3.5 The Town should develop Implementing Regulations that will reduce existing levels and significantly reduce future levels of nitrogen in order to comply with the Pleasant Bay TMDL. The Town's Comprehensive Wastewater Management Planning activities will be undertaken in coordination with this DCPC process.

## **SECTION 5.4 Review of Developments of Regional Impact (DRI) within the DCPC**

**BARNSTABLE COUNTY ASSEMBLY OF DELEGATES**

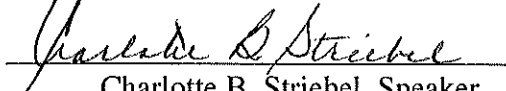
**Ordinance 08-08: Brewster DCPC**

**July 2, 2008**

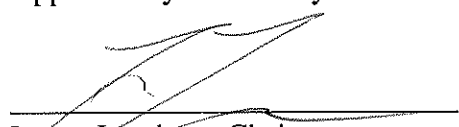
**Page 7 of 7**

The regulations adopted pursuant to these Guidelines in no way alter the process for the referral and review of Developments of Regional Impact according to the Act and Regulations of the Cape Cod Commission.

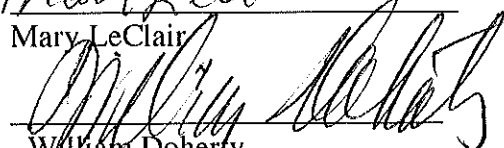
Adopted by the Assembly of Delegates on July 2, 2008.

  
Charlotte B. Striebel, Speaker  
Assembly of Delegates

Approved by the County Commissioners on 09/09/08 at 9:30am  
Date Time

  
Lance Lambros, Chair

  
Mary LeClair

  
William Doherty