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CAPE COD
COMMISSION

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June 21, 2018

Board of Selectmen
Town of Brewster
2198 Main Street
Brewster, MA 02631

Board of Selectmen
Town of Harwich
732 Main Street
Harwich, MA 02645

Board of Selectmen
Town of Chatham
549 Main Street
Chatham, MA 02633

Board of Selectmen
Town of Orleans
19 School Road
Orleans, MA 0265

Re: Pleasant Bay Targeted Watershed Management Plan – Determination of Consistency with the Cape Cod Area Wide Water Quality Management Plan Update

Dear Selectboard Members,

I am writing in response to your submission of the Pleasant Bay Targeted Watershed Management Plan (TWMP), as described in the document entitled "Pleasant Bay Targeted Watershed Management Plan: A Compilation of the Wastewater and Nitrogen Management Plans of Brewster, Chatham, Harwich and Orleans in Support of a DEP Watershed Permit" prepared by the Pleasant Bay Alliance dated May 2018, and your May 22, 2018 request for a determination that this TWMP is consistent with the Cape Cod Area Wide Water Quality Management Plan Update (208 Plan). Pursuant to Section 2(d)(iii) of the Commission's *Enabling Regulations*, I have determined that the Pleasant Bay TWMP is consistent with the criteria set out in the Commission's "Guidance on Section 208 Plan Update Consistency Review," dated April 2018, and thus have determined that **the TWMP is consistent with the Cape Cod Area Wide Water Quality Management Plan Update**. Exhibit A, "Pleasant Bay TWMP 208 Plan Consistency Analysis" provides additional staff comments and identifies suggested actions for maintaining consistency in the future.

Commission staff have been engaged through the Pleasant Bay Alliance on the development of the TWMP and are pleased with the progress that has been made over the last 12 months. *Section 16* of the TWMP appropriately describes the TWMP's consistency with the 208 Plan. Exhibit A contains Commission staff's analysis regarding 208 Plan consistency, which largely

recognizes the conclusions and reasoning in *Section 16* and assists in charting the next steps for the TWMP and maintaining consistency with the 208 Plan.

Pleasant Bay is one of the most iconic embayments on Cape Cod. Identified as one of eleven priority watersheds in the 2017 208 Plan Implementation Report, it is critical that immediate action be taken, as is proposed within the TWMP. The Commission recognizes and commends the efforts of the Pleasant Bay member towns to coordinate and collaborate on an approach to improve water quality. Consistent with the incremental and adaptive nature of the TWMP, it is anticipated that the Pleasant Bay member towns will continue to coordinate with one another, as well as with MassDEP and the Commission, and will maintain consistency with the 208 Plan through annual reporting and regular consistency reviews.

The Commission is committed to supporting communities in the development and implementation of local water quality management plans. One way in which the Commission provides assistance region-wide is by making large and complex data sets more accessible. The Commission strives to provide decision-support tools that utilize, analyze and display information in ways that make it more understandable to the general public and more easily consumed in the decision-making process. To that end, Exhibit B contains a data sharing protocol which largely mirrors the information anticipated in the annual reports, described in *Section 15* of the TWMP, and provides additional detail on data, technical studies, reports, maps and other relevant information the Commission requests receipt of as the Pleasant Bay communities move forward with implementation.

The Commission looks forward to working with the Pleasant Bay member towns, the Pleasant Bay Alliance and MassDEP on this important effort.

Please feel free to contact me with any questions.

Sincerely,



Kristy Senatori
Executive Director

CC: Carole Ridley, Pleasant Bay Alliance
Donna Kalinick, Brewster Assistant Town Administrator
Jill Goldsmith, Chatham Town Manager
Christopher Clark, Harwich Town Administrator
John Kelly, Orleans Town Administrator
Gary Moran, Deputy Commissioner, MassDEP
Millie Garcia-Serrano, Regional Director, Southeast Regional Office, MassDEP

Pleasant Bay TWMP 208 Plan Consistency Analysis

WMA assumes responsibility for controllable nitrogen for any part of the watershed within its jurisdiction

In June 2017, Brewster, Chatham, Harwich and Orleans signed a joint resolution endorsing the Pleasant Bay Composite Nitrogen Management Analysis, issued in March 2017, accepting it as an accurate representation of each Town’s share of current nitrogen load and load removal responsibility. The Nitrogen Management Analysis formed, in large part, the basis for the Pleasant Bay Targeted Watershed Management Plan (TWMP). The allocations of responsibility reflect “present” watershed loads published by the Massachusetts Estuaries Project (MEP) in 2006, based on a study period of 2001 through 2004. The allocations could change based on changes in land use, development patterns and regulations, and as the towns implement nitrogen-reduction strategies.

Future Action: Commission staff recommends that the allocation of responsibility be reviewed and amended, if necessary, at least every five years.

Plan meets applicable nutrient reduction targets

The TWMP is anticipated to achieve the nutrient reduction required to meet applicable total maximum daily loads (TMDLs).

Planning occurs at a watershed level with consideration of a hybrid approach

A primary purpose in preparing the Nitrogen Management Analysis was to show the collective efficacy of the four towns’ wastewater or water resources management plans on nutrient removal within the Pleasant Bay watershed. The TWMP describes strategies to be undertaken by each of the four towns, provides a path forward for implementation, and includes a range of traditional and non-traditional strategies, some of which are currently being piloted.

Future Action: Commission staff requests that data relative to pilot project implementation, groundwater discharge permits, and other technology performance data be shared with the Commission consistent with the data sharing protocol attached to this consistency determination as Exhibit B.

Public was engaged to gain plan consensus

The TWMP was presented at and approved at each of the four towns’ 2018 Spring Town Meetings. All four communities have consistently supported their municipal funding of the Pleasant Bay Alliance and have demonstrated commitment to implementing water quality solutions by regularly authorizing funding for traditional and non-traditional approaches and shared initiatives over the last several years. In addition to Town Meetings, each of the contributing communities have held numerous public meetings specific to their respective town-wide comprehensive wastewater and/or water resources management plans.

Future Action: The stakeholder engagement and public outreach strategy should ensure continued broad community knowledge about and support for implementation of the TWMP. Commission staff recommends that the member communities continually evaluate the effectiveness of outreach and engagement and recognize the role this process plays in adaptive management. Should support for implementation of the TWMP elements waiver, the member communities must structure a broader, more extensive stakeholder engagement process to consider next steps pursuant to the adaptive management plan. The Commission is committed to working with towns to ensure continued broad community support of water quality planning and implementation and is willing and able to assist with stakeholder engagement and outreach efforts.

Plan includes proposed strategies to manage nitrogen loading from new growth

Similar to the respective towns’ nitrogen allocations discussed herein, estimated watershed nitrogen load removal is based on the “present” watershed loads published by the MEP. The TWMP appropriately includes updates to the watershed nitrogen-loading model with inputs reflecting changes in both water use and development patterns within the watershed over the last approximately fifteen years. In addition, the Commission emphasizes the importance of aligning land use planning and visioning with water quality planning and implementation. The identification of future watershed nitrogen loads associated with new or different development and land uses, and how such loads will be addressed, is critical to achieving total maximum daily load limits at affordable costs and to maintaining community character consistent with the vision and goals of each community. The TWMP identifies certain land use or regulatory strategies to address future nitrogen loads associated with growth. Several of these strategies will require changes to local zoning and the Commission is able to work with the member communities as options for managing nitrogen load from growth are further developed.

Future Action: Progress toward implementing growth strategies should be included and described in annual reports on the TWMP and be reflected in the TWMPs adaptive management. The Commission recently collected updated water use data from the 17 municipal water purveyors across Cape Cod and maintains land use data layers and regularly updates those layers to reflect changes in watershed development. Commission staff can assist Pleasant Bay member towns to update land use and water use data to current conditions for the purposes of the Pleasant Bay watershed re-modeling. Consistent with the data sharing protocol attached as Exhibit B, the Commission requests updates to water use and land use data in the future.

Plan includes adaptive management approach

TWMP implementation is structured in five-year increments over a twenty-year period, as recommended in the 208 Plan and as required by MassDEP for the purposes of the Watershed Permit. Action items that should be undertaken at the outset are appropriately scheduled in the first five-year period: updating monitoring data; re-modeling the nitrogen dynamics in Pleasant Bay; and evaluating potential for nitrogen trading.

Future Action: While each of the member towns have developed town wide wastewater or water quality plans that include an adaptive management plan, the towns should ensure adaptive management specific to the TWMP by which the collective of member towns will work together to adjust and update its course of action. Commission staff recommends that the Pleasant Bay Alliance and member towns work to more clearly define a process by which the TWMP will be modified in response to the measured effectiveness of implemented strategies. The IMA signed by each of the member towns for the purposes of applying for and entering into a Watershed Permit designates the Pleasant Bay Alliance as the entity to coordinate joint efforts under the Permit; similarly, it is Commission staff’s opinion that the Alliance is the appropriate entity to coordinate joint adaptive management efforts under the TWMP.

Plan includes pre- and post-implementation monitoring program

The Alliance has completed 17 seasons of embayment monitoring, with monitoring locations appropriately selected and approved under a MassDEP Quality Assurance Project Plan to track compliance with the total maximum daily loads. Each town must take steps to develop and implement monitoring programs specific to their proposed nitrogen reduction technologies and approaches.

Future Action: Consistent with the data sharing protocol attached as Exhibit B, Commission staff requests that monitoring data be provided for incorporation into the regional water quality database.

Plan includes a description and assessment of the town’s proposed funding strategy

The funding strategy for the TWMP relies heavily on the individual town-wide plans, because the costs associated with the Pleasant Bay TWMP will primarily be covered on a town-by-town basis. The TWMP summarizes how each town plans to cover the costs of nitrogen reduction and identifies the need for a composite cost analysis.

Future Action: To facilitate a better understanding of the TWMPs costs, Commission staff suggests that the member towns outline the composite cost analysis prior to the first annual report and that the full analysis be completed during the first five-year increment. The composite analysis should include more detail on when and for what purposes different funding sources and financing options will be used and how that approach minimizes the overall cost of nitrogen reduction. In each annual report the member towns should provide an update on their individual capacity to cover the costs of proposed water quality management efforts in light of the costs for other municipal services and capital needs. This update may include cost projections for municipal operations over time and revenues to cover those costs, and a broadly conceived capital improvements plan (CIP) showing how capital needs will be financed and coordinated over time. Annual reports should also include an analysis of the financial impacts of the plan on people and businesses within the community.

WMA commits to regular 208 Plan Update Consistency reviews until water quality goals are achieved, generally to occur at least every five years

Member towns have identified in the TWMP a commitment to confirm and update with the Commission 208 Plan consistency prior to completion of each five-year increment of the TWMP, which timing is consistent with guidance from the 208 Plan and aligns with review intervals contemplated under the MassDEP Watershed Permit. In addition to obtaining an updated consistency determination at five-year intervals, the member towns have committed to annual reporting to the Commission and MassDEP, as described in *Section 15* of the TWMP.

Future Action: With each five-year 208 Plan consistency update, the member towns must update the TWMP and provide additional detail for the next five-year increment consistent with the TWMPs adaptive management approach. Such updates should address the “Future Actions” called out in this consistency analysis. Member towns should continue to engage and include Commission staff in TWMP implementation and adaptive management to ensure continued consistency with the 208 Plan. Commission staff is willing to provide technical assistance during the implementation phases.

In shared watersheds, WMA seeking 208 Consistency Review collaborates with neighboring WMA(s) on nitrogen allocation, shared solutions, and cost saving measures

The member towns have collaborated through the Pleasant Bay Alliance for more than two decades. The four-town IMA executed to support application for a Watershed Permit is in addition to the MOU between the four towns creating the Pleasant Bay Alliance. In addition, coordination between Chatham and Harwich resulted in completion of the Muddy Creek restoration project and in an executed IMA for shared treatment and effluent disposal. The TWMP identifies other areas where the four-member towns could pursue joint action, such as through nitrogen trading.

Future Action: Commission staff recommends that the member towns focus on opportunities for efficiency, shared infrastructure and cost sharing during the first five-year increment, and that an evaluation of nitrogen trading options be completed within that same timeframe.

Data Sharing Protocol for Consistency with the Cape Cod 208 Plan

In 2015, the Massachusetts Department of Environmental Protection and the U.S. Environmental Protection Agency certified and approved an update to the Cape Cod Area Wide Water Quality Management Plan, pursuant to Section 208 of the Clean Water Act. The purpose of the updated Cape Cod 208 Plan was to develop a framework through which communities could advance local wastewater and water quality planning and implementation efforts targeted at reducing nitrogen impacts on coastal embayments.

The 208 Plan places an emphasis on the importance of science-based and data driven decision-making. It provides tools through which information is made more accessible and easily understood and is supported by technical expertise in planning, water resources, data management and visualization. Success of the 208 Plan and local implementation of water quality plans and projects relies on the ability to understand, interpret and utilize data and information in decision-making.

The Commission is committed to maintaining the best available information, in a centralized and accessible location, to promote better decision-making and improvements to water quality. Consistent with recommendations in the 208 Plan and the subsequent 2017 Implementation Report, the Commission continues to update the water quality technologies matrix and associated decision-support tools and ensure information is available through a web-based interface. This includes, but is not limited to, maintaining information on nitrogen reduction, remediation and restoration technologies and maintaining a region-wide database of water use, land use and water quality monitoring data.

The Commission expects communities with 208 consistent water quality management plans and/or projects will provide data and information to the Commission on a regular basis. The Commission will work with communities to define the extent of data to be provided and methods to obtain the data in appropriate formats, including but not limited to establishing file transfer sites and other methods by which data and information can be sent and received, if necessary.

Exhibit B to Pleasant Bay TWMP 208 Plan Consistency Determination dated June 21, 2018
 “Data Sharing Protocol for Consistency with the Cape Cod 208 Plan”

The Commission expects the following data and information be provided within the timeframes suggested. The following is subject to amendment from time to time and/or as new information becomes necessary to determine consistency with the 208 Plan.

Data/Information	Timeframe
Technology Performance Data	Annually
<i>Traditional and non-traditional technology performance data from pilot and/or full-scale projects.</i>	<i>Provided as part of annual report, unless otherwise agreed upon.</i>
Groundwater Discharge Permits	Upon Issuance
<i>Issued by MassDEP</i>	<i>Provided upon receipt by the Town.</i>
Watershed Permits	Upon Issuance
<i>Issued by MassDEP</i>	<i>Provided upon receipt by the Town.</i>
Building Permit Data	Annually
<i>Providing the location and square footage for new structures and new bedrooms added</i>	<i>Provided as part of annual report, unless otherwise agreed upon.</i>
Assessors Data	Annually
<i>Extracted town-wide assessors data.</i>	<i>Provided as part of annual report, unless otherwise agreed upon.</i>
Water Use Data	Annually
<i>Parcel specific water use data from water purveyor(s)</i>	<i>Provided as part of annual report, unless otherwise agreed upon.</i>
Water Quality Monitoring Data	Annually
<i>Results of marine (embayments) and fresh (ponds, lakes) water quality monitoring</i>	<i>Provided as part of annual report, unless otherwise agreed upon. The first submission should include all historical monitoring data not previously provided to the Commission.</i>
Habitat, Pond, and Watershed Assessments, Technology Evaluations, and other Reports/Information	As Completed
<i>Draft and final reports, such as Massachusetts Estuaries Project Technical Reports, pond assessments, pilot project evaluations, and/or other reports providing information related to water quality status, habitat health, technology performance and other water quality initiatives.</i>	<i>Provided as available.</i>