



June 21, 2013

To	Town of Mashpee		
Copy to	F. Thomas Fudala		
From	J. Jefferson Gregg, P.E., BCEE	Tel	774-470-1640
Subject	MEPA – Notice of Project Change(s) Comment Response	Job No.	8612001

This memo is written to address comments received from the public and environmental review process for the Town's Watershed Nitrogen Management Planning (WNMP) Project.

The November 26, 2007 and July 6, 2012 Certificates of the Secretary of Energy and Environmental Affairs on the Notices of Project Change (both) provided written comments with regards to this project.

The written comments are attached at the end of this memo and are discussed in the memo. Excerpts from the comment letters are provided in standard type and then addressed with numbered responses (A.1, A.2 etc.) in ***bold italics***. This memo will be attached in an appendix to the Alternatives Screening Analysis Report (ASAR) with the Secretaries Certificate and the original comment letters. Reviewers will be able to read these items to understand how we have addressed their comments.

We have prepared this Comment Response memo with a broad perspective that is appropriate for the broad scope of this project.



## 2007 COMMENTS

### A. COMMENTS FROM THE MASSACHUSETTS SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS, DATED NOVEMBER 26, 2007.

Pursuant to the Massachusetts Environmental Policy Act (M.G. L. c. 30, ss. 61-62H) and Section 11.10 of the MEPA regulations (301 CMR 11.00), I have reviewed the Notice of Project Change (NPC) and Needs Assessment Report submitted for this project and hereby determine that the Scope for the Environmental Impact Report (EIR) issued for the project on November 9, 2001 still stands.

#### Project Description

As originally outlined in the Environmental Notification Form (ENF) submitted in October of 2001, the project involves the development of a comprehensive nitrogen and wastewater management plan for the Town of Mashpee. The Plan is intended to address the Town's needs for reducing nitrogen impacts to its coastal embayments and to evaluate all options for restoring those embayments.

As stated in the Secretary's Certificate on the ENF dated November 9, 2001, the project is expected to proceed in phases with the submission of reports dealing with four major work elements: ( 1) a Needs Assessment Report, defining those areas that need nitrogen and wastewater management and establishing project flows from those areas; (2) an Alternatives Screening Analysis Report, evaluating the various means of meeting the wastewater requirements of the needs areas; (3) the Nitrogen and Wastewater Management Plan and Draft Environmental Impact Report (DEIR), which will identify a proposed management plan and assess the potential environmental impacts of that plan; and, (4) the Nitrogen and Wastewater Management Plan and Final EIR (FEIR), which will provide any additional environmental analysis required and will respond to comments submitted on the DEIR. The Certificate on the ENF directed the Proponent to prepare and submit for review the first two reports prior to the submission of the DEIR.

The project is subject to MEPA review and to the Mandatory EIR provisions of the MEPA regulations at 301 CMR 11.03(5)(a)(3) because it is presumed that the project will ultimately result in the construction of more than 10 miles of new sewers. The Proponent is seeking financial assistance from the Commonwealth under the State Revolving Fund (SRF); therefore, MEPA has broad scope jurisdiction over the project. The project is being reviewed under a Joint Environmental Review Process established between the Executive Office of Energy and Environmental Affairs (EEA) and the Cape Cod Commission.

#### Review of the NPC Needs Assessment Report

The NPC currently under review includes the final Needs Assessment Report, which is the first of the review documents for the project. The Proponent submitted the NPC with the report in accordance with the MEPA regulations for a lapse of time, at 301 CMR 11.1 0(2). Following the submission of the ENF, the project was put on hold as the Proponent awaited the results of the Massachusetts Estuaries Project (MEP). The MEP's reports relevant to the Project Planning Area (PPA) were released in 2004 and 2005, and will be used by the Proponent in the development of the nitrogen management needs and management plan.



The Needs Assessment Report provides information on existing wastewater facilities; physical features, land use and regulatory issues affecting wastewater facilities; and existing conditions related to environmental resources, nitrogen loadings and on-site septic systems. The report also identifies the impacts of population growth in the PPA on wastewater collection, treatment and disposal facilities. The Proponent has identified a number of priority areas for nitrogen removal and nitrogen management and has established three levels of rankings for these sites.

I commend the Town of Mashpee for its efforts and for the comprehensive nature of the Needs Assessment Report. Comments submitted to MEPA on the NPC indicate that the report is an excellent foundation from which to develop the Watershed Nitrogen Management Plan. The Proponent should incorporate responses to technical comments submitted on the NPC from the Cape Cod Commission, the Department of Environmental Protection, the Office of Coastal Zone Management and the Massachusetts Historical Commission into the Alternatives Screening Analysis Report.

**A1. We appreciate your support and understanding of this complex project involving Mashpee and its neighboring communities. This comment response addresses those technical comments and where appropriate they have been addressed in the text or identified as work to be completed as part of the Recommended Plan development and Environmental Impact Report.**

B. COMMENTS FROM THE MASSACHUSETTS HISTORICAL COMMISSION, DATED OCTOBER 29, 2007.

Staff of the Massachusetts Historical Commission have reviewed the Notice of Project Change filed with the planning document submitted for the project referenced above.

In Chapter 3 (Section 3.2, Federal Regulatory Issues), Section 106 of the National Historic Preservation Act of 1966 as amended (36 CFR 800) will also apply to review of projects proposed, as federal funding and permitting is anticipated.

**B1. This will be incorporated into the Draft and Final Recommended Plan/ Environmental Impact Report(s) under the Chapter discussing the Draft Section 61 Findings.**

In Chapter 5 (Page 5-10), since the 1988 plan, two additional properties (for a total of six properties) are subject to Preservation Restrictions (MGL c. 184, ss. 31-33) held by the MHC and all are listed in the State Register of Historic Places. Another property (the Sophronia Young House Site in the area of New Seabury) is proposed for a Preservation Restriction and listing in the State Register. In Mashpee, there are many properties in the Inventory of Historic and Archaeological Assets of the Commonwealth, which gives an indication of the likelihood of many other, as yet unidentified historic and archaeological resources in the town.

**B2. We understand and appreciate that this number may have increased again since this comment was made. As specific sites for any types of facilities are considered in the future the Town /District will be reviewing these listed resources again and also will engage in the use of archeological surveyors to expand upon the work done as part of our initial site investigation at Site 4 (transfer station) and the work done by PALs for the Town in general regarding historically significant and archeologically sensitive areas.**



MHC looks forward to review of project information when plans for preferred alternatives to address the priority areas are developed.

**B3. As specific sites are selected for final consideration, these will be submitted formally for MHCs review. As identified in Chapter 2 of this document and Chapter 6, several of the sites of interest have been identified, however work still continues.**

C. COMMENTS FROM SHARON STONE, SERO MEPA COORDINATOR, DATED NOVEMBER 16, 2007

The Southeast Regional Office of the Department of Environmental Protection (MassDEP) has reviewed the Notice of Project Change (NPC) for the proposed nitrogen management planning study project for the Cape Cod Watershed located in Massachusetts (EOEEA #12615). The project proponent provides the following information for the project:

"The Notice of Project Change is submitted solely for a lapse of time; there is no substantial project change."

MassDEP is pleased to see that the Needs Assessment Report has incorporated planning on a watershed-wide basis and includes consideration of the towns of Sandwich and Barnstable. MassDEP also notes that the preliminary prioritization of Priority Area groups takes into account the findings of the Massachusetts Estuaries Project (MEP). However, as alternatives analysis proceeds, any recommended alternative will have to demonstrate that it will be able to reduce nitrogen loads sufficiently to meet the target threshold nitrogen concentration at the sentinel stations in the respective watersheds.

The MassDEP Southeast Regional Office appreciates the opportunity to comment on this proposed project. If you have any questions regarding these comments, please contact Sharon Stone at (508) 946-2846.

**C1. As shown in Chapters 3 and 4 this effort has been done to show each alternatives ability to meet the TMDLs under build-out conditions as modeled by MEP.**

D. COMMENTS FROM THE MASSACHUSETTS OFFICE OF COASTAL ZONE MANAGEMENT, DATED NOVEMBER 9, 2007

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Needs Assessment Report and Notice of Project Change, noticed in the Environmental Monitor dated October 27, 2007, and offers the following comments.

#### Project Description

The project involves the development of a comprehensive nitrogen and wastewater management plan through the Popponesset Bay and Waquoit Bay East Watershed Nitrogen Management Planning Project (EOEA # 12651). The Needs Assessment Report (NAR) is the first phase of this project, as outlined in the Certificate of the Secretary of Environmental Affairs on November 9, 2001. The Certificate requires the submission of four reports, including the NAR, an Alternatives Analysis Screening Report, the Nitrogen and Wastewater Management Plan and Draft Environmental Impact Report (EIR), and the Final Nitrogen Management Plan and Final EIR. The purpose of the Watershed Nitrogen Management Plan (WNMP) is to provide an environmentally and economically sound plan for nitrogen reduction, wastewater treatment, and effluent recharge in the project planning area. The NAR is intended to outline the existing conditions and



future conditions within the project planning area, and to identify the wastewater, storm water and other nitrogen related problems within this area.

#### Project Comments

CZM commends the Town of Mashpee for its continued efforts to develop a watershed-based nitrogen management plan. This planning effort has benefited from Mashpee's participation in the Massachusetts Estuaries Project (MEP) and the completion of MEP reports on the Popponesset Bay and Waquoit Bay East watershed systems. The results of these reports have been incorporated into this NAR, and the subsequent development of alternatives and management recommendations will be based upon the findings of MEP Total Maximum Daily Loads.

The NAR is comprehensive and exceeds the Secretary's minimum requirements to identify areas that require nitrogen wastewater management and establish flows for those areas. The NAR provides background information on existing wastewater infrastructure, natural resources, land use and associated regulatory issues within the project planning area. In addition to characterizing existing flow and nitrogen loadings, estimates of future flow and nitrogen loadings are presented. These flow estimates are well described and are based on build-out information developed from the MEP analysis and from town sources.

The NAR identifies a number of priority areas for nitrogen removal and nitrogen management and establishes three levels of rankings for these sites. The rationale and factors used to identify and prioritize these sites are clearly presented. CZM believes the rationale is sound, and that this initial prioritization is a necessary first step in this planning process. CZM recognizes that this initial prioritization of sites will be evaluated further as more data is developed through the ongoing planning process.

One of the factors used in the identification of priority areas is proximity to any of the eight existing Waste Water Treatment Facilities (WWTF) within the project planning areas, and potential future expansion of these facilities. The NAR identifies potential excess capacity at many of these WWTF facilities, however the majority of them are privately owned. CZM recommends that the proponent develop and present a process to engage with these private facilities in an effort to ensure the potential for future expansion. This process should be incorporated into the future Alternatives Screening Analysis Report.

***D1. The issue of ownership of these private facilities continues to be a priority for the Town as they are such an integral part of the planning process. The Town has maintained active communications with these facilities; however the process is currently complicated by the Town's work with the Mashpee Water District in the formation of a Water/Sewer District. Once these details have been resolved a more clear approach on ownership and use of these facilities can be incorporated into the Draft and Final WNMP/EIR.***

#### Federal Consistency

The proposed project may be subject to CZM federal consistency review, in which case the project must be found to be consistent with CZM's enforceable program policies. For further information on this process, please contact, Robert Boeri, Acting Project Review Coordinator, at 617-626-1050 or visit the CZM web site at [www.state.ma.us/czm/fcr.htm](http://www.state.ma.us/czm/fcr.htm).



***D2. As the recommended plan is developed we will begin more active conversations with CZM to address any concerns regarding the project.***

E. COMMENTS FROM THE CAPE COD COMMISSION, DATED NOVEMBER 16, 2007

The Cape Cod Commission (the Commission) has received a Notice of Project Change (NOPC) for the Watershed Nitrogen Management Plan for the Town of Mashpee. The NOPC was accompanied with a report entitled, "Town of Mashpee, Popponessett Bay and Waquoit Bay-East Watersheds, Needs Assessment Report." The NOPC was noticed in the Environmental Monitor on October 10, 2007.

The proposed Mashpee Watershed Nitrogen Management Plan is being reviewed jointly by the Executive Office of Energy and Environmental Affairs (EOEEA) - MEPA Unit, and by the Cape Cod Commission as a Development of Regional Impact (DRI) in accordance with the Memorandum of Understanding (MOU) between the Commission and EOEA. This NOPC is being submitted by the town because more than three years have passed since the 2001 MEPA Certificate on the project.

Although the Commission has not taken a formal position on the NOPC, staff has reviewed the 2001 scope of Watershed Nitrogen Management Plan and with the updates incorporated into the 2007 Needs Assessment supports the requested extension of time to complete the project.

Staff has reviewed the Needs Assessment that will be incorporated into the Draft Environmental Impact Report and offers the following general and technical comments as an attachment.

The Cape Cod Commission looks forward to continuing our participation with the Town of Mashpee, and its neighboring towns, as it moves forward in its Watershed Nitrogen Management Plan.

Please contact me or Tom Cambareri of my staff if you have any comments or questions.

General

The Needs Assessment Report documents the significant level of effort that has gone into the determining the Total Maximum Daily Load (TMDL) of nitrogen for the two subject embayments over the course of the last six years. This has included participation in the Massachusetts Estuary Project (MEP) consisting of town-supported water quality monitoring, assessment of sediments, plants and fauna, land use assessments, compilation of water use from Mashpee Water District, hydrodynamic modeling of the estuaries and use of the Linked Water Quality Model to determine the nitrogen thresholds. The MEP technical reports for Popponessett Bay and East Waquoit Bay were completed in April 2004 and July 2004, respectively. Regulatory review to establish the MassDEP TMDL took over two years for Popponessett Bay and have not yet been finalized for Waquoit Bay East (a draft TMDL was released in July 2005). Final EPA approval of the DEP TMDLs have not been completed.

During that period of time the Town took advantage of a number of opportunities including the DEP Pilot Project and the Cape Cod Commission TMDL Implementation Project, which were both funded through EPA. Through these projects, Mashpee, together with representatives of Barnstable and Sandwich, has been able to participate in the drafting of a TMDL nitrogen loading allocation for each town and have discussions on potential nutrient trading opportunities. Mashpee was also able to run a number of MEP alternative nitrogen loading scenarios and to have an assessment of cranberry bogs and streams for potential additional Natural Attenuation.



The town also received wastewater grant funds from Barnstable County to 1) model sewer collection systems in the Popponessett watershed and 2) to receive technical assistance from the US Geological Survey and Commission water staff, to use a groundwater model to evaluate potential wastewater disposal sites.

#### Technical

The Needs Assessment recognizes the appropriate water resources minimum performance standards from the Regional Policy Plan.

The Town should continue to make use of its Citizens Advisory Committee (CAC) and Pilot Project group to obtain input on its proposed nitrogen removal scenarios.

The identification of priority areas uses the Mashpee Planning areas as its fundamental building block. It is noted that areas of Barnstable in the Popponessett Bay watershed appear to have a similar density characteristic of the higher nitrogen loading rates of the Mashpee planning areas. The town should continue to work through its CAC Barnstable Representative to obtain input about the priority ranking of neighborhoods in the adjacent towns.

***E1. The Town has participated in several pilot projects dealing with regionalization and fair share allocation. The Sewer Commission is active in engaging the adjacent Towns. Currently the Sewer Commission Administrator sits on the Town of Barnstable CAC. The Sewer Commission also actively invite the neighboring Town's to their monthly meetings as well, and have held joint meetings with the neighboring Towns and their associated wastewater /nutrient management committees. The Sewer Commission and staff have also worked with the Cape Cod Water Protection Collaborative's consultants on these issues.***

The Needs Assessment identifies the Zone IIs and Groundwater Protection District of the town as discussed contamination from the MMR. It would seem appropriate if the Needs Assessment also included a characterization of the water quality in terms of nitrogen and the potential for any local impacts from wastewater disposal on drinking water quality.

***E2. Groundwater water quality characterization related to drinking water supplies is currently not in the GHD scope of the project as submitted in the ENF and Notices of Project Change(s); however groundwater protection related to the Town/District's water resources is an important consideration that is addressed in the review of recharge areas and the parcel by parcel nitrogen loading analysis performed as part of the Needs Assessment with a focus on addressing onsite septic systems which contribute to this degradation of water quality.***

The Needs Assessment identifies Santuit Pond as being listed on the Clean Water Act 303d list of "impaired waters" and that the Cape Cod Pond Atlas identifies another 18 additional fresh water ponds that are impaired. The next listing of impaired waters by the DEP is scheduled for 2008 and it is likely that a number of these additional ponds will be included on the updated 303d list. We agree that a more definitive assessment of the water quality of Santuit Pond is warranted and that a plan for the assessment of the additional ponds should be considered.



***E3. Water quality assessment of Santuit Pond and additional freshwater ponds is also not currently part of the GHD scope as the focus of the Watershed Nitrogen Management Plan is nitrogen and not phosphorus; however the Town has been taking active steps outside of this project to address the issues of Santuit Pond, and phosphorus mitigation is an important factor regarding the ultimate recharge location(s) selected and the collection and treatment of wastewater using advanced wastewater treatment (beyond septic system effluent) will also help to mitigate this issue.***

The Needs Assessment contains a good characterization of the Private Sewage Treatment Facilities, including treatment efficiency and excess capacity. The WNMP calculates build out numbers showing that future wastewater flows will approach and/or exceed permitted capacity at most of the facilities. As such, private facilities that are identified for expansion are ones where new or expanded infrastructure can physically be accommodated. Were Title 5 flows used for build out? Is it possible that capacity may be available on a phased basis at any of the facilities? For instance, Provincetown built a facility using Title 5 design flows, but found after several years of operation, that the actual use was only 70% of the capacity thereby making that capacity available for sewer expansion.

***E4. Build-out flows were based on water usage data, and the MEP data and build-out information provided from Falmouth, Mashpee, and Barnstable (Sandwich was based on MEP). Design flows would be determined for each facility once the recommended plan is developed and the level of treatment and location is determined. They would be based on the water usage data with applicable peaking factors, but not based on Title 5 which is already considered a peaked flow.***

The section on existing infrastructure also includes a brief discussion on Innovative and Alternative septic systems. We anticipate that the subsequent report on technology evaluation will have a characterization on the performance of the IAs that will make use of findings from the Barnstable County Health Department and MEP model scenarios about IA systems from the pilot project.

The wastewater flows and nitrogen loading section indicates that IA systems were assumed to have a treated concentration of 19 mg/l nitrogen. The BCDHE white paper on these systems indicates the median treatment efficiency of 19 mg/l for 60% of the samples evaluated. This performance is less than required by MassDEP goals and it is likely that most of these systems will be assigned effluent concentrations higher than 19 ppm.

***E5. This is discussed in the Technology Screening Report issued in 2007 and summarized in Chapter 1 of this report, in addition to the discussion over performance of I/A technologies. Based on the amount of nitrogen removed for TMDL compliance, a higher level of operational oversight of these types of facilities would be required, and therefore a higher level of consistent performance should be achieved.***

The Needs Assessment has chosen to use the Planning Zones as the fundamental unit to base nitrogen loading rates. Of the 161 planning areas in the town, 23 were in the high to medium high range. This number increased to 47 of 161 for future conditions. This information was graphically displayed. Elsewhere in the report, the amount of nitrogen removal as per the MEP technical report is shown in tabular form. It would be



useful to graphically compare the MEP nitrogen percent removal areas (watersheds) to the loading rates of the planning areas.

***E6. Planning areas were used initially, however the focus has been on neighborhoods and “sewersheds” to better reflect implementation feasibility in alternatives analysis. In general, the comparison of these areas to the percent removals was done on the Matrix table included in the NAR and in Chapter 1 of this document; however it is important to note that the MEP percent removals are only ONE approach to meeting the TMDLs and they are based on existing conditions.***

It is not exactly clear why the WNMP uses 35 mg/L for nitrogen concentration to calculate nitrogen loads. The WNMP states that it did not want to include the attenuation that takes place in the septic system. If that is the case, then perhaps a concentration of 60 mg/L should be considered since this is more characteristic for flow coming into a septic system. The MEP recommendations for percent removal are based upon a nitrogen concentration of 26.5 mg/L. If the WNMP uses a higher concentration for the same flow then, the plan will need to accordingly increase the amount of wastewater planned to be removed. This approach should be evaluated for consistency with the MEP before alternative nitrogen loading scenarios are prepared.

***E7. As we developed the Scenarios/Options for the ASAR we used the 26.25 mg/L TN value for those facilities located within the watershed. The balance of water was assigned an effluent concentration (most often 3 mg/L TN if discharged within one of the two watersheds) for modeling purposes. At the time in the NAR the 35 mg/L was being carried as an average concentration that a WWTF might see on the influent side, but it was prematurely stated.***

The WNMP also does not include natural attenuation in its calculations. Natural attenuation in the rivers and freshwater ponds was included in the calibrated MEP model that was used to develop the TMDLs. It is not clear why the WNMP does not use this naturally occurring process. By choosing not to include natural attenuation, the loads assigned to the subwatersheds are higher than what is included in the watershed portion of MEP model. For example, the WNMP adjusted nitrogen load for the Mashpee River is 87 kg/day as compared to the MEP attenuated load of 54.2 kg/day. Since the scenario described in the MEP report indicates that 100% removal of the MEP load is required to meet the TMDL, it is unclear whether the WNMP is making the case that all 87 kg/d needs to be removed or whether 54.2 kg/d (66% of the 87 kg/d) needs to be removed. Clarification of the intended use of the WNMP nitrogen loading calculations is required to understand the goals of these alternative nitrogen loads.

***E8. Natural attenuation is considered in the MEP model runs for each of the Scenarios/Options we developed in order for the project to demonstrate TMDL compliance. We understand the ultimate goals of the project, however the Needs Assessment Report wasn't identifying solutions and therefore natural attenuation wasn't being examined as closely as it is when we consider alternatives analysis. Because there is variability in any modeling, our goal during the Needs Assessment was to identify the total loads in the watershed (regardless of attenuation). If it is determined through later analysis that the attenuations have changed or the nitrogen sinks have “reduced”, then by not going through this exercise we could potentially underestimate the nitrogen loads within the watersheds.***



The priority ranking of Planning Areas includes all the appropriate criteria. The methodology resulted in the figure 8-l. The following are some observations about the conclusionary graphic. 1) It is noted that the area upgradient of Ashumet and John's Pond are high priority areas. While the loading rates may be high, natural attenuation that occurs in the pond will reduce that overall loading on the receiving water of concern which is Waquoit-West. 2) The high priority area of Shoestring Bay in Mashpee is not extended across the town boundary into Barnstable. 3) Similarly, the low priority ranking of the Falmouth Quashnet area will be of interest to Falmouth which is just embarking on a wastewater plan of East Falmouth. As noted above, input from neighboring towns on their perspective of priority and participation should be obtained for these shared watersheds. It is recommended to graphically compare the MEP nitrogen percent removal areas (watersheds) to the prioritized planning areas. Because the intent of the prioritization is for sewer collection, it would be helpful to omit surface waters and protected open space from the color scheme.

***E9. This was done in Chapter 9 Table 9-1 is the Priority Area Criteria Summary which considered area relative to sensitive watersheds as well as the other criteria. A more detailed approach on "prioritization" will be performed during the Draft Recommended Plan/Draft EIR.***

The Cape Cod Commission staff has participated and provided technical assistance to the PEP Pilot Project stems from a EPA TMDL Implementation Grant to the Cape Cod Commission, Under this grant Commission staff have participated in meetings, prepared TMDL allocations by town and subwatershed and lead discussions on Nutrient Trading opportunities.

***E10. The Town of Mashpee continues to be interested in the concept of Nitrogen Trading. It is their hope that the Cape Cod Commission and DEP will construct a framework for all of Cape Cod to create this mechanism so that it is fair for all Towns across Cape Cod. It is important to note that under build-out conditions, some Towns like Mashpee might not have much additional nitrogen to take based on the MEP model runs performed to date, due to their limited discharge locations and capacities.***

## 2012 COMMENTS

### F. COMMENTS FROM THE MASSACHUSETTS SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS, DATED JULY 6, 2012

Pursuant to the Massachusetts Environmental Policy Act (M. G. L. c. 30, ss. 61-62) and Section 11.10 of the MEPA regulations (301 CMR 11.00), I have reviewed the Notice of Project Change (NPC) submitted for .this project and hereby determine that the Scope for the Draft Environmental Impact Report (DEIR) issued on November 9, 2001 still stands.

#### Project Description

As originally described in the Environmental Notification Form (ENF) submitted in October of 2001, the project involves the development of a comprehensive nitrogen and wastewater management plan for the Town of Mashpee (Mashpee CWMP). The Mashpee CWMP is intended to achieve reductions of wastewater nitrogen loading and meet Total Maximum Daily Loads (TMDLs) for nitrogen loading to the Town's coastal embayments including Popponesset Bay and Waquoit Bay.



### Project History

As stated in the Secretary's Certificate on the ENF dated November 9, 2001, the project is expected to proceed in phases with the submission of reports dealing with four major work elements: (1) a Needs Assessment Report, defining those areas of Mashpee that need nitrogen and wastewater management, identified as the Project Planning Area (PPA) and establishing project flows from the PPA; (2) an Alternatives Screening Analysis Report, evaluating the various means of meeting the wastewater requirements of the needs areas; (3) the Nitrogen and Wastewater Management Plan and Draft Environmental Impact Report (DEIR), which will identify a proposed management plan and assess the potential environmental impacts of that plan; and, (4) the Nitrogen and Wastewater Management Plan and Final EIR (FEIR), which will provide any additional environmental analysis required and will respond to comments submitted on the DEIR. The Certificate on the ENF directed the Town to prepare and submit for review the first two reports prior to the submission of the DEIR.

### Notice of Project Change

The Town submitted a Notice of Project Change, together with a final Needs Assessment Report, to the MEPA Office in October 2007 in accordance with the MEP A regulations for a lapse of time, at 301 CMR 11.10(2). As described in the first NPC document, the project was put on hold following the submission of the ENF as the Town awaited the results of the Massachusetts Estuaries Project (MEP). The MEP's reports relevant to the PPA were released in 2004 and 2005, and were to be used by the Town in the development of the nitrogen management needs and management plan. The Needs Assessment Report provided information on existing wastewater facilities; physical features, land use and regulatory issues affecting wastewater facilities; and existing conditions related to environmental resources, nitrogen loadings and on-site septic systems. The report also identified the impacts of population growth in the PPA on wastewater collection, treatment and disposal facilities. The Town has estimated the total amount of wastewater flow from the PPA to be approximately 2.7 million gallons per day (MGD).

### Permits and Jurisdiction

The project is subject to MEPA review and to the Mandatory EIR provisions of the MEPA regulations at 301 CMR 11.03(5)(a)(3) because it is presumed that the project will ultimately result in the construction of more than 10 miles of new sewers. The project will require a Groundwater Discharge Permit, a Chapter 91 License, and a 401 Water Quality Certificate from the Department of Environmental Protection (MassDEP). The project must be reviewed by the Natural Heritage Endangered Species Program (NHESP) and the Massachusetts Historical Commission (MHC) because portions of the project occur within Priority Habitat and within or adjacent to recorded archaeological sites and archaeologically sensitive areas, respectively. It may require Federal Consistency Review by the Massachusetts Coastal Zone Management (MCZM) Office. It may also require a Construction Access Permit from the Massachusetts Highway Department. The project may be required to obtain a Section 404 Permit from the U.S. Army Corps of Engineers. The project will require an Order of Conditions from the Mashpee Conservation Commission (and, on appeal only, a Superseding Order from MassDEP). The project should comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for storm water discharges from a construction site.

The Town is seeking Financial Assistance from the Commonwealth under the State Revolving Fund (SRF); therefore, MEP A has broad scope jurisdiction over the project. The project is being reviewed under a Joint



Environmental Review Process established between the Executive Office of Energy and Environmental Affairs (EEA) and the Cape Cod Commission (CCC).

#### REVIEW OF THE SECOND NOTICE OF PROJECT CHANGE

The Town has submitted this second Notice of Project Change (2nd NPC) in accordance with the MEPA regulations at 301 CMR 11.1 0(2)(b)(2) because more than three years have elapsed between the publication of the ENF and commencement of non-construction related project work or activity.

As described in the 2nd NPC document, subsequent to the issuance of the Secretary's Certificate on the 1<sup>st</sup> NPC (November 26, 2007), the United States Environmental Protection Agency (EPA) established Total Daily Maximum Loads (TMDLs) of nitrogen for the Popponesset Bay and the East Waquoit Bay estuaries (Quashnet River, Hamblin Pond, Little River, Jehu Pond and Great River). According to the Town, the TMDLs for Waquoit Bay (Childs River, Eel River) are currently being reviewed by the US Environmental Protection Agency (EPA). The Town is currently conducting an analysis of alternative scenarios for the targeted collection, treatment and disposal of wastewater flows located in the PP A to address the water quality requirements and TMDLs of the Town's marine and freshwater water resources. These wastewater treatment and disposal alternatives include: 1) the conveyance of wastewater flows to existing and proposed privately-owned wastewater treatment facilities (WWTFs); 2) relocation of existing public water supply wells; and 3) shared regional approaches to wastewater treatment and disposal with the Towns of Barnstable, Sandwich and Falmouth.

#### Conclusion

I commend the Town of Mashpee for its ongoing efforts to design a comprehensive approach to achieve reductions of wastewater nitrogen loading and meet nutrient TMDLs to the Town's coastal embayments including Popponesset Bay and Waquoit Bay. Comments submitted on the 2nd NPC indicate that a timely Implementation program and a prioritized targeted watershed restoration plan are important factors to incorporate into the analysis of the Mashpee CWMP program alternatives. The DEIR should include a response to comments submitted on the 2<sup>nd</sup> NPC from the CCC, MassDEP and NHESP. I strongly encourage the Town to work closely with the MassDEP and the CCC during the Town's preparation of the alternatives analysis for this project.

***F1. Comments from original NPC are included above. The Town has actively engaged both MassDEP and the CCC in their work, and they are invited to participate at each of their monthly meetings as well.***

Because the Town of Mashpee shares a portion of the Popponesset Bay and Waquoit Bay watersheds with the Towns of Falmouth to the west, the Town of Barnstable to the east, and Sandwich to the North, I ask the Town of Mashpee to work with these neighboring Towns, and with MassDEP and the CCC to continue discussions meant to identify possible opportunities to integrate the Town of Mashpee's wastewater treatment planning efforts with the planning efforts that are currently being undertaken by those neighboring towns. In a separate section of the DEIR, the Town should include an update of the Town's efforts to identify regional strategies for reducing the nutrient loading to coastal embayments and freshwater ponds in Barnstable, Mashpee, Sandwich and Falmouth.

***F2. An update on adjacent Towns can be included in the Draft EIR.***



### Circulation

The DEIR should be circulated in compliance with Section 11.16 of the MEPA regulations and copies should also be sent to the list of "comments received" below and to town officials from the Towns of Barnstable, Eastham and Brewster. A copy of the DEIR should be made available for public review at the Barnstable, Sandwich and Falmouth Public Libraries.

***F3. Once the DEIR is drafted, copies will be sent to the distribution list and shall include the Libraries of the adjacent Towns.***

G. COMMENTS FROM SHARON STONE, SERO MEPA COORDINATOR DATED JUNE 26, 2012

The Southeast Regional Office of the Department of Environmental Protection (MassDEP) has reviewed the Notice of Project Change (NPC) for the proposed Watershed Nitrogen Management Plan developed for the Town of Mashpee, Massachusetts (EOEEA #12615). The project proponent provides the following information for the project:

"As originally outlined in the Environmental Notification Form (ENF) submitted in October of 2001, the project involves the development of a comprehensive nitrogen and wastewater management plan for the Town of Mashpee. The Plan is intended to address the Town's needs for reducing nitrogen impacts to its coastal embayments and to evaluate all options for restoring those embayments."

### Water Pollution Control Program Comments

Mashpee has been pursuing due diligence in its evaluation of appropriate nitrogen mitigation strategies in order to address impaired coastal water bodies. MassDEP supports the request for an extension in order to provide the Town the opportunity to develop an optimal plan that is both cost effective and adequately protective of the environment and public health.

### Bureau of Waste Site Cleanup

In considering the need for upgrading the infrastructure in town, the assessment should include the potential for encountering contamination associated with waste sites (both known and unidentified) throughout the town if excavation is necessary for the installation of the collection system/or distribution system. The filing of a Utility Release Abatement Plan would be required to excavate in contaminated areas. The location of known sites should be taken into consideration when conducting the assessment to upgrade the infrastructure.

The Project Proponent is advised that, if oil and/or hazardous material is identified during the implementation of this project, notification pursuant to the Massachusetts Contingency Plan (31 0 CMR 40 .0000) must be made to MassDEP, if necessary. A Licensed Site Professional (LSP) may be retained to determine if notification is required and, if need be, to render appropriate opinions. The LSP may evaluate whether risk reduction measures are necessary or prudent if contamination is present. The BWSC may be contacted for guidance if questions regarding cleanup arise.

***G1. The Sewer Commission will further identify this under the mitigation measures to be identified in the Draft EIR.***



### Proposed s.61 Findings

The "Certificate of the Secretary of Energy and Environmental Affairs on the Notice of Project Change" may indicate that this project requires further MEPA review and the preparation of an Environmental Impact Report. Pursuant to MEPA Regulations 301 CMR 11.12(5)(d), the Proponent will prepare Proposed Section 61 Findings to be included in the EIR in a separate chapter updating and summarizing proposed mitigation measures. In accordance with 301 CMR 11.07(6)(k), this chapter should also include separate updated draft Section 61 Findings for each State agency that will issue permits for the project. The draft Section 61 Findings should contain clear commitments to implement mitigation measures; estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation.

The MassDEP Southeast Regional Office appreciates the opportunity to comment on this proposed project. If you have any questions regarding these comments, please contact Sharon Stone at (508) 946-2846.

***G2. As stated in Chapter 7 of this document, the Proposed Chapter 8 of the Draft Recommended Plan and Draft EIR will include the "Draft Section 61 Findings", which would discuss and summarize the Draft Section 61 Findings for State Agency Action. It will identify the planned mitigation measures, implementation schedule of those measures and will work to identify associated costs not captured as part of the recommended plan.***

### H. COMMENTS FROM THE CAPE COD COMMISSION DATED JUNE 21, 2012

On June 4, 2012, the Cape Cod Commission (Commission) staff received a copy of a Notice of Project Change (NPC) from F. Thomas Fudala, Chairman of the Mashpee Sewer Committee and Paul Gobell, the Mashpee Sewer Administrator. The NPC is to request an extension of time from the Executive Office of Energy and Environmental Affairs for Mashpee's Watershed Management Plan.

Commission Water Resources staff has reviewed the NPC and supports the Town's continuing efforts on their Comprehensive Wastewater Management Plan. The NPC submittal refers to three options with collection and treatment ranging from 1.76 to 1.91 million gallons a day (MGD) which have been formatted for Massachusetts Estuaries Project (MEP) scenario analysis. These scenarios will provide the Town with additional information in order to identify where flows and loads are collected, treated and discharged. Commission Water Resources staff encourages the Sewer Commission to incorporate the suggestion below as part of their work, seek technical input and keep Commission staff apprised of their efforts.

In regard to the filing, Commission Water Resources staff found little to review other than three graphical descriptions of alternatives under review. The Town provided a February 15, 2012 and October 3 2011 memos from GHD that describes option IA, 1B and 1C. Commission Water Resources staff has reviewed and summarized the options and provides the following comments.



The presented options are variations on targeted wastewater collection areas and where the treated water would be discharged. The total amount of flow in the Planning Area is 2.7 MGD. These options include:

Option 1A - Send a majority of wastewater flow (1.03 MGD) to the Rock Landing Well Site under the assumption that the public supply wells could be relocated in the future. Continued and expanded use of four existing wastewater treatment facilities (WWTFs), use of three proposed WWTFs; Wastewater from Falmouth, Sandwich and Barnstable would be treated by those towns out-of-watershed.

Rock Landing:	1.03 MGD - new
Johns Pond:	0.37 MGD - new
Existing WWTF:	0.34 MGD
<u>Proposed Private WWFT:</u>	<u>0.05 MGD</u>
	1.79 MGD

F + S + B:	0.40 MGD (all out)
<u>Title 5 and IA:</u>	<u>0.52 MGD</u>
	0.92 MGD

Total: ~2.7 MGD

Option 1B - Managing wastewater flow within the watersheds that generate the flow, so that 4 new large WWTF sites would receive 1.67 MGD with the majority in the eastern portion of Town going to Willowbend. This option includes Sandwich and Barnstable flows remaining in the Popponessett watershed, with the latter flows being treated at Willowbend (except for the Barn-39 sector) and Falmouth flows being taken out-of-watershed. Less flow remains to be treated with Title 5 system in this alternative.

Keeter	.34 MGD - new
Willow Bend:	.63 MGD - new
Johns Pond	.37 MGD - new
Central Mashpee:	33 MGD - new
Existing WWTF:	.16 MGD
<u>Proposed Private:</u>	<u>.09 MGD</u>
	1.92 MD

S + F + B:	.42 MGD (Sand in, Fal-out, Barn in-B39)
<u>Title 5 + IA:</u>	<u>.37 MGD</u>
	.80 MGD

Total: ~2.7 MGD

Option 1C-This is similar to Option 1A but includes wastewater in the neighboring towns being managed like Option 1B.



There are a number of additional qualifications and caveats to the proposed alternatives that are being forwarded to the MEP for model scenarios such as existing private treatment facilities that will remain and improve treatment to 3 ppm nitrogen and IA systems that will achieve a treatment level of 19 ppm.

The Town has conducted pre-run accounting indicating how the rearrangement and treatment of wastewater can achieve the numerical amount of nitrogen to be removed according to the MEP thresholds and Total Maximum Daily Load (TMDL). This is a reasonable approach that the Commission anticipates illustrating with the WatershedMVP tool.

Commission staff suggests the Town should re-examine the Town's water supply infrastructure including rates of withdrawal, and water quality and evaluate options of potential sources including new wells and/ or purchase from the Upper Cape Water Collaborative. Commission Water Resources staff notes that according to the 2008 Annual Statistic Report over 46% of the Town's supply was pumped from the Rock Landing wells. Given that a large percentage of the Town's supply comes from this area raises the question whether this alternative could be implemented within a reasonable period.

***H1. As identified in Chapter 6 of the ASAR, the Rock Landing Site was removed from consideration based on several factors including its rated capacity; however the Town will continue to consider future sites for all its water and wastewater needs. Evaluation of the Water District's withdrawals, etc. goes beyond the current scope of the WNMP as currently drafted.***

Considering wastewater infrastructure construction time frames of 20 or more years, the time of implementation and setting priorities for targeted watershed restoration are important factors to incorporate into the analysis. It is recommended that the Town work with the Commission staff, MEP and DEP to gage the incremental water quality restoration benefits of a targeted watershed approach with expedited wastewater collection for unattenuated nitrogen loads in priority areas.

***H2. The Town and Sewer Commission will continue this coordination through the development of its phasing and implementation plan in addition to its adaptive management approach to be carried forward following completion of the WNMP.***

In regard to the Popponessett watershed, it appears that Option 1B includes regional treatment options for the Barnstable portion of the watershed which is a good aspect of a targeted approach. Sandwich is presently evaluating both public and private partnership approaches for the Triangle Area and other adjacent properties for treatment outside of the Popponessett watershed. Commission staff suggests the tables accompanying the Memo dated October 2011 showing the amount of flow and load after treatment should also contain a column with the existing attenuated loads so the degree of nitrogen removal can be relative to the contribution. This would likely recast the need for widespread collection in an area of the watershed that gets a high proportion of nitrogen removed from natural attenuation such as the Sandwich area. Adaptive Management should be factored into the alternatives so that less crucial areas can be deferred depending on monitoring.

***H3. We would be happy to discuss our approach to scenario development regarding nitrogen removal and the MEP models. In general our approach was to assume "all" wastewater nitrogen was removed from the watershed and then iteratively add load back in to the watersheds to achieve the TMDLs under build-out conditions. Tables 1, 2, and 3 from the memo***



***reflect the estimated load at the recharge point at a specific concentration (treatment level) relative to the recharge point and is not removal vs contribution. It is a redistributed contribution as water is not being recharged necessarily where it originated and is an aggregate of multiple watersheds and subwatersheds with differing attenuation. Accounting for attenuation is best captured through the use of the MEP “rainbow spreadsheets” (landuse model) to assess the best location for recharge and the best location to see the reduction in load. The most recent scenarios and those previously prepared by GHD were prepared as such. All our scenarios have shown that under build-out conditions large quantities of load (attenuated or not) from Sandwich need to be removed as well as from Barnstable and Mashpee in order to achieve the TMDLs.***

A high volume of wastewater, of 1 MGD discharged at the Keeter Site 6 could be problematic due to mounding and flow into the Rock Wells and the Waquoit area. Commission Water Resources staff notes that option 1B has a lower amount of 335,000 gpd, which should be evaluated.

***H4. This site was evaluated as a fall-back if New Seabury/Rock Landing/Outside the watershed alternatives could not be achieved. It is understood that the impacts of a recharge site at Site 6 would require much more in-depth analysis and hydraulic modeling to consider their impacts on the adjacent watersheds/subwatersheds and well recharge locations and a higher level of treatment.***

The new format for the identification of Sewer planning areas is a good step for comparing phased options for collection and treatment or trading from one area to another.

Commission Water Resources staff is available to answer any questions that you may have about this letter.

***H5. The Town and Sewer Commission appreciate the Commissions support in their efforts to address this very complicated and important project.***

I. COMMENTS FROM THE DIVISION OF MARINE FISHERIES DATED JUNE 26, 2012

The Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife has reviewed the Notice of Project Change (NPC) for the proposed Watershed Nitrogen Management Plan for the Town of Mashpee and would like to offer the following comments with regard to state-listed species and their habitats.

Portions of the Town of Mashpee and associated infrastructure improvements for the nitrogen management plan are mapped as Priority and Estimated Habitat in accordance with the 13th Edition of the MA Natural Heritage Atlas. The NHESP is supportive of the Town's plan to manage nitrogen, as at least ten (10) of the twenty-seven (27) species listed in accordance with the Massachusetts Endangered species Act (MGL c. 131A) rely on aquatic and/ or marine habitats for at least one stage of their life cycle and may directly benefit from reduced levels of dissolved nitrogen and improved water quality. These species include the American Brook Lamprey, Eastern Pondmussel, and Pine Barren's Bluet, among others.

The NHESP notes that any portions of the proposed project that occur within Priority and Estimated Habitat, and that are not exempt pursuant to 321 CMR 10.14, will require review through a direct filing with the NHESP for compliance with the MESA and the rare species provisions of the Wetlands Protection Act The



NHESP encourages the Town to consider design and implementation alternatives which avoid, minimize and mitigate impacts to state-listed species and their habitats, and to consult with the NHESP on the proposed project during the design phase. We appreciate the opportunity to comment on this project, and look forward to working with the Town to proactively address potential concerns related to state-listed rare species.

If you have any questions about this letter, please contact Misty-Anne Marold, Endangered Species Review Biologist, at [misty-anne.marold@state.ma.us](mailto:misty-anne.marold@state.ma.us) or 508-389-6356.

***11. The Town and Sewer Commission will make final submittals for review as they finalize their plans and site selection, and look forward to working with NHESP on this important project.***