



MEMORANDUM

April 30, 2014

To	Town of Mashpee		
Copy to	F. Thomas Fudala		
From	J. Jefferson Gregg, P.E., BCEE	Tel	774-470-1640
Subject	MEPA – ASAR Response to Comments	Job No.	8612001

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

The November 1, 2013 Certificate of the Secretary of Energy and Environmental Affairs on the Phase 2 – Alternatives Screening Analysis Report provided written comments with regards to this Project.

The written comments are discussed in the memorandum. Excerpts from the comment letters are provided in standard type and then addressed with numbered responses (A.1, A.2, etc.) in ***bold italics***. The complete written comments are attached at the end of this memorandum. This memorandum will be attached as an appendix to the Draft Comprehensive Wastewater Management Plan and Draft Environmental Impact Report (Draft CWMP/DEIR) 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 Memorandum with a broad perspective that is appropriate for the broad scope of this project.



A. COMMENTS FROM THE MASSACHUSETTS SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS, DATED NOVEMBER 1, 2013.

SCOPE FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT

The Town should prepare a DEIR in accordance with this Scope which identifies the information and analysis necessary to complete MEPA review and ensure that impacts and issues are fully analyzed. The DEIR should contain additional information and analysis of potential direct and indirect project-related impacts to wastewater management, wetlands, water quality and water supply for the Town's draft CWMP. The Town should use the DEIR to demonstrate that the Mashpee CWMP has been designed consistent with the Wetlands Regulations (310 CMR 10.00) and associated stormwater management standards for water quality, recharge to groundwater, and protection of existing public water supply sources for projects located within an Outstanding Resource Water (ORW) and critical resource areas. Also, the DEIR should demonstrate consistency with c.91 Waterways permitting and 401 Water Quality Certification requirements and the ACOE Section 404 permitting requirements.

A1. These items are discussed in Chapter 7 regarding the Environmental Impact Evaluation.

Project Description

The DEIR should include a detailed description of the draft CWMP to reduce nutrient loading to the marine embayments and freshwater ponds in Mashpee. It should identify significant environmental benefits and impacts, and measures that will be taken to avoid, minimize and mitigate adverse impacts. The DEIR should describe the proposed schedule for the remaining phases of project planning, design, environmental permitting and review, and construction. The DEIR should discuss the state permitting for this project and describe how it will meet applicable performance standards. The DEIR should include a detailed description of the proposed alteration and/or expansion of existing WWTFs and recharge sites and the construction of new WWTFs and recharge sites, including maps that show where new sewer lines, cross-country easements, pumping stations, and other facilities would be located. Detailed information should be provided for each area in Mashpee where the construction of cluster systems, new I/A systems, satellite facilities, centralized or decentralized wastewater management systems and non-wastewater nutrient mitigation alternatives are proposed, including maps that show where sewer lines, cross-country easements, pumping stations, and other facilities will be located. In preparing this section of the DEIR, the Town should review the provisions of Executive Order 181 and CZM Coastal Hazards Policy #3 to ensure that the Draft CWMP does not promote growth and development in high hazard areas designated in Flood Insurance Rate Maps (FIRMs) as V zones, AO zones and specific A zones that are accompanied by moderate wave action capable of structural damage (MoWa). CZM recommends that the DEIR include a description and discussion of any contingency plans the Town will adopt if the Mashpee CWMP is not meeting the nitrogen Total Maximum Daily Loads (TMDLs) established for the marine embayments surrounding Mashpee.

A2. The details of the proposed plan are discussed in Chapter 6 and their relation to environmentally sensitive areas is discussed in Chapter 7. Chapters 7 and 8 discuss the permitting aspects related to the proposed plan.

The MEP's linked watershed embayment model and the CCC's watershed management tool (Watershed-MVP) should be used to confirm the effectiveness of the CWMP in providing required reductions in nitrogen



loading. The DEIR should include a discussion of additional wastewater disposal or reuse alternatives that may be required to support any inter-municipal (regional) approaches to wastewater management. The DEIR should identify the estimated costs and potential environmental benefits associated with the implementation of the draft CWMP.

A3. Option 1A which was the basis for the Draft Recommended Plan was modeled by MEP and it is the project's intent to have the model rerun following the review of the Draft Recommended Plan by the Regulators and general public. This will allow the model to be run efficiently based on the Final Recommended Plan to document anticipated performance.

Land Alteration

The DEIR should quantify the total amount of alteration associated with the draft CWMP (including areas to be altered for sewer mains, wastewater treatment and disposal, and other project components). The DEIR should include a breakdown showing the amount of alteration associated with each project element. The DEIR should clarify the amount of new impervious area associated with the construction of the components of the draft CWMP.

A4. This is discussed in Chapter 7.

Wastewater Treatment

The DEIR should evaluate the potential resource area impacts associated with all aspects of the project. The DEIR should include a detailed discussion of any/all proposed improvements, upgrades or replacement of existing WWTFs and construction of any new WWTFs. The DEIR should discuss individual I/A systems, small wastewater treatment systems and cluster and centralized wastewater management systems to be included in the Town's draft CWMP. The DEIR should identify the proposed sites for locating cluster wastewater treatment systems, areas to be served, system design capacity, and treatment efficiency. The DEIR should include a discussion of the potential benefits associated with the implementation of a targeted and incremental approach to wastewater nutrient management in Mashpee. This discussion should evaluate the feasibility for initially constructing cluster wastewater treatment systems to serve neighborhoods located in the sub-watersheds of the most significantly impacted coastal embayments and freshwater ponds in Mashpee. The DEIR/Draft CWMP should include a discussion of the opportunities and obstacles for using technologies assigned with MassDEP's Provisional Approval. The Town should consult with MassDEP and the CCC during the preparation of this section of the DEIR.

A5. These aspects are discussed in Chapters 6 and 7 primarily. It should be noted that the Town already has "cluster" systems installed throughout the Town; however, they are not looking to install new "cluster" neighborhood systems as part of this plan (there are other projects in the works outside of the CWMP that could potentially create new "cluster" systems). As part of the plan, two more localized WWTF are being considered to serve portions of Town, and expand the service area of existing "cluster" systems as needed to take advantage of those systems. The consideration of cluster systems serving smaller neighborhoods is discussed and evaluated in Chapter 5.



Groundwater Recharge

The DEIR should include a detailed discussion of any proposed expansions of existing wastewater recharge sites and any proposed new recharge sites. The DEIR should evaluate the potential impacts associated with the use of these recharge sites to nearby surface and groundwater levels, effluent flow and nutrient loading (nitrogen, phosphorous), and downgradient public water supplies and watersheds serving numerous water resource areas. The DEIR must provide a detailed discussion of how the draft CWMP will meet the TMDLs established for Hamblin and Jehu Ponds and the Quashnet River. The DEIR should provide groundwater evaluations to satisfactorily demonstrate the feasibility of increasing the effluent discharge at existing recharge sites and/or constructing new recharge sites. I ask that the Town of Mashpee work closely with CCC, MassDEP and others to identify and complete any additional groundwater modeling and/or nutrient loading analysis that may be needed to determine the feasibility of the Town's wastewater effluent discharge plans under the draft CWMP.

A6. Effluent recharge facilities are discussed in Chapters 6 and 7; however as part of the project scope at this time only one site (Site 4) was evaluated for more detailed groundwater evaluations. Based on the timing of the phased implementation, the detailed groundwater evaluations required as part of a new Groundwater Discharge Permit would be performed as part of that preliminary design. At that time the Town/District will work with MassDEP and the CCC regarding the extent of those efforts for the purpose of design and permitting of a permanent facility.

The DEIR should also include a discussion of how the draft CWMP will comply with MassDEP's Groundwater Discharge Regulations and water quality standards for groundwater discharges to Zone II areas associated with drinking water supply wells. The DEIR should provide additional information and analysis of the potential impacts to existing public water supplies from any proposed increases in wastewater discharges or from any proposed new discharge sites to Zone II areas under the Town's draft CWMP. This analysis should include a summary of the quality of existing public water supplies in Mashpee, including the presence of sodium, volatile organic compounds and the occurrence of Contaminants of Emerging Concern (CEC), and the distances of wastewater discharge sites from Zone II areas. I note that in March 2009, MassDEP revised its Groundwater Discharge Regulations (314 C1'v1R 5.00) to limit the amount of carbon-based compounds and contaminants typically found in pharmaceuticals and personal care products in treated wastewater flows discharged in Zone II areas. MassDEP's Total Organic Carbon (TOC) regulations are intended to provide increased protection of groundwater resources by limiting naturally occurring and man-made forms of organic carbon present in treated wastewater. MassDEP's groundwater discharge regulations establish a low limit (3 milligrams per liter (mg/L)) for TOC in wastewater effluent discharged to Zone II areas. The DEIR should identify any potential new water supply sites in Mashpee and the feasibility of their development for future water supplies to replace the abandonment of any existing water supply wells for use as a recharge site.

A7. None of the proposed WWTF recharges are proposed to be located within a Zone II. In order to receive a groundwater discharge permit, facilities will need to be designed in accordance with applicable MassDEP regulations. At this time there are no provisions in the approved Scope of



Services for additional evaluation of the Mashpee Water District water quality. In addition, the use of the Rock Landing Site is no longer under consideration as part of this plan.

Non-Wastewater Nutrient Management Projects and Programs

The DEIR should provide information for each of the non-wastewater nutrient management projects and programs to be included in the Town's CWMP sufficient to understand their potential environmental impacts to resources areas. The DEIR should include a description of all aspects of each project and program and a schedule for construction and implementation activities. The DEIR should describe the range of potential impacts to wetland resource areas, coastal sediment transport, and local beaches associated with any proposed non-wastewater nutrient management project, including the potential for flooding of upstream rare species habitats. The DEIR should identify the proposed sites for locating non-wastewater nutrient management projects and programs and should also include maps and plans at a reasonable scale that clearly locate and delineate project elements, surface water and wetlands resource areas, adjacent land uses, and aquifer protection districts on and adjacent to the project site. Maps and plans should show water supply resources, conservation areas, and any priority and estimated rare species habitat in the project area.

A8. These items are discussed in Chapter 7.

The DEIR should describe how projects will be evaluated for incorporation into the Town's CWMP. It should provide modeling, evaluation, and impact assessments to demonstrate the effectiveness of these non-wastewater nutrient management projects. It should address how the projects can provide targeted and incremental nitrogen removal from the more stressed subwatersheds in Mashpee. This section of the DEIR should also include a list of permits, anticipated schedules and cost estimates for the proposed Pilot Projects. The DEIR should indicate whether any of these projects, evaluated individually, would exceed MEPA thresholds for an ENF or EIR. If projects do exceed an ENF and/or EIR threshold, the DEIR should address whether sufficient information will be provided in the DEIR to facilitate the review of impacts and associated mitigation or if individual MEPA review will be requested. The Proponent should work closely with MassDEP, CCC, the Buzzards Bay Coalition and others in the design and implementation of any proposed non-wastewater nutrient management project included in the draft CWMP.

A9. Please refer to the applicable sections of Chapters 5, 6, and 7 regarding the proposed use of Shellfish Aquaculture as part of this project. The Town is proceeding with these efforts as part of a larger shellfish restoration program and is looking to demonstrate the nitrogen removal performance that is expected to be achieved through these efforts to further support the expansion of this shellfish restoration project; and therefore the Town will receive the benefit of this performance in achieving its TMDL goals. At this time no other demonstration or pilot projects are being proposed, however through adaptive management and the findings of the 208 Planning Process, additional efforts may be identified, and at that time the Town/District will look to address these relative to the MEPA process.

Water Quality Monitoring and Adaptive Management

The Mashpee CWMP will include a water quality monitoring program. The Town's water quality monitoring activities should include periodic sampling events during the summer season and surveys for benthic infauna organisms over an extended period of time (approximately every five years). This water quality monitoring



program should include groundwater monitoring at existing and proposed WWTFs and wastewater recharge sites. The DEIR should include a commitment to monitor groundwater, embayment and pond water quality and related habitat areas. The DEIR should describe how existing and proposed water quality studies and water quality monitoring programs will be incorporated into the Town's water quality monitoring program activities.

A10. This program has already been developed by MEP and it is anticipated that as outlined in the shellfish program that these monitoring efforts will be continued in order to show performance and compliance.

The DEIR should discuss how the water quality monitoring plans will be used to inform the Town's long-term adaptive management planning process. As described in the Phase 2 document, the Town's CWMP will incorporate the use of an AMP to identify the need for any adjustments or mid-course corrections to the Town's CWMP based on the results of its water quality monitoring program. The DEIR should provide a detailed description of the Town's proposed AMP and water quality monitoring program to accommodate the Town's CWMP. This AMP should describe a systematic process for determining the effectiveness of the Town's CWMP and the need for any revisions before initiating subsequent CWMP phases. The AMP should include a Groundwater and Surface Water Quality Monitoring Plan that identifies specific annual water quality monitoring activities to be completed by the Town for the coastal embayments and select freshwater ponds in the PPA watersheds. The DEIR should include a commitment to coordinate the Town's water quality monitoring activities with MassDEP, CZM, CCC and the Mashpee Conservation Commission and any ongoing water quality monitoring and modeling activities in the watershed areas. The AMP should describe the process for reporting the results of the Town's ongoing annual groundwater quality and habitat monitoring activities. The DEIR should include a commitment to prepare an annual report (TMDL Compliance Report) to document reductions in watershed nitrogen loads.

A11. These efforts are discussed in Chapter 10.

The DEIR should include a commitment to provide TMDL Compliance Reports to MassDEP, DMF, CZM, CCC, MEP, local area watershed associations, and representatives from the Towns of Barnstable, Falmouth and Sandwich. MassDEP will review the TMDL Compliance Report to determine the Town's compliance with the established TDMLs identified for the coastal embayments in Mashpee. The AMP should clearly identify the process the Town will employ to consider whether adjustments or mid-course corrections are necessary prior to initiating the next phase of CWMP project construction. .

A12. This is discussed in Chapter 10.

Regional Approaches to Nitrogen Reduction/Wastewater Management

The DEIR/Draft CWMP should provide a detailed discussion of the potential opportunities for regional approaches to achieve reductions of wastewater nitrogen loading and meet nutrient TMDLs to those coastal embayments shared by Mashpee, Barnstable, Falmouth and Sandwich. This section of the DEIR should help to identify and guide future opportunities for regional cooperation. The Town should continue its efforts to initiate discussions with MMR regarding how the Upper Cape municipalities could share in the use of the MMR WWTF. The Town should continue to work closely with the CCC and MassDEP to ensure that the DEIR is consistent with the goals of the Regional Policy Plan (RPP) and MassDEP's Groundwater Discharge



Regulations and that proposed wastewater infrastructure design and construction accounts for the unique aspects of linked groundwater and surface water system that characterizes Cape Cod. The DEIR should include an update of the Town's ongoing efforts to identify regional strategies and opportunities for reducing the nutrient loading to coastal embayments.

A13. A regional solution is proposed in Chapters 5 and 6 regarding the use of Joint Base Cape Cod (JBCC) to treat and recharge wastewater from portions of Mashpee, Sandwich, and potentially Falmouth to achieve TMDL compliance within the Waquoit Bay East Watersheds. The Town is actively continuing discussions with JBCC regarding its use in the future. It is understood as well that Bourne, Falmouth, and Sandwich may have additional needs that they will be discussing with JBCC regarding their own planning efforts.

Wetlands and Stormwater

The project is expected to impact a variety of inland and coastal wetland resources. The DEIR should analyze both direct and indirect impacts on wetlands and water bodies resulting from the project, and quantify the amount of direct wetland impacts. The DEIR should delineate on a plan of reasonable scale all environmental resources areas located within areas proposed for wastewater nitrogen management activities associated with the Mashpee CWMP including wetlands, water bodies, drinking water supplies, sensitive habitats, fisheries, designated Areas of Critical Environmental Concern (ACECs), Article 97 lands, historic resources, and agricultural lands. The DEIR should include an analysis of cumulative impacts and a breakdown of impacts for different CWMP project components. Proposed areas of impact and replication areas should be identified on site plans, and described and quantified. The DEIR should describe measures that will be implemented to avoid and minimize, or mitigate, adverse impacts to wetlands and buffer zones.

A14. These efforts are discussed in Chapters 6 and 7. As a planning document, efforts are made to avoid wetlands and other resource areas, however the full extent of impact is typically identified and addressed through preliminary and final design and permitting. Until wetlands flagging and detailed topographic survey is performed, and utility locations and conflicts are identified during design, it is difficult to fully quantify these impacts; therefore the mitigation measures as discussed in Chapters 7 and 8 are done so in order to minimize these impacts during the design and implementation.



The DEIR should examine alternatives that avoid impacts to wetland resource areas, their associated buffer zones, riverfront protection areas and 100-year flood plain areas. The DEIR should identify all parcels that are currently deemed unbuildable within the 100-year flood plain that would potentially become buildable as a result of sewer installation. Where it has been demonstrated that impacts are unavoidable, the DEIR should demonstrate that the impacts can be minimized, and that the project will be accomplished in a manner that is consistent with the Wetlands Regulations (310 CMR. 10.00) and associated performance standards. The Town must provide wetlands replication at a ratio of 1:1, at a minimum, for any unavoidable impacts to wetlands. For any amount of required wetlands replication, a detailed wetlands replication plan should be provided in the DEIR that, at a minimum, includes replication location(s), elevations, typical cross sections, groundwater elevations, the hydrology of areas to be altered and replicated, list of wetlands plant species of areas to be altered and the proposed wetland replication species, planned construction sequence, and a discussion of the required performance standards and monitoring.

A15. This is discussed in Chapters 7 and 8.

The DEIR should clarify the amount of new impervious area associated with the implementation of the draft CWMP. The DEIR should describe the proposed stormwater management system and its consistency with the Wetlands Regulations and associated stormwater standards, including construction-period stormwater controls.

A16. New impervious surfaces are shown on Chapter 6 figures related to development of Sites 4 and 6 (and Back Road Site if JBCC is not available). However, the full extent of the new impervious surface would be identified during design. Stormwater management is discussed in Chapters 7 and 8.

Rare Species

According to comments from the Massachusetts Natural Heritage and Endangered Species Program (NHESP), portions of the PPA are mapped as Priority and Estimated Habitat in accordance with the 13th Edition of the MA Natural Heritage Atlas. The ASAR identifies the use of cluster systems for locations that may contain mapped Priority and Estimated Habitat areas. NHESP comments also indicate that a number of the potential wastewater treatment and recharge sites identified in the ASAR for further assessment may also be located within Priority and Estimated Habitat areas. The DEIR should include a habitat assessment, additional information on proposed project components, and a description (including a quantification of altered habitat) of potential impacts to state-listed species. The DEIR should analyze the impacts to rare or endangered species and evaluate avoidance/mitigation strategies and address the comments raised in NHESP's comments. The Town should work closely with NHESP and consult with the Mashpee Conservation Commission during the preparation of the draft CWMP project design and this section of the DEIR to identify design, construction and post-construction commitments to avoid adversely impacting habitats of state-listed rare species. The DEIR should report on the results of the Town's consultations with NHESP.

A17. To clarify, the ASAR identified "cluster" system areas that would be considered for further evaluation as part of this document. It was determined that it was more cost-effective to address these areas through other means, and therefore those areas would not be impacting



the NHESP areas. However, the impacts on mapped resource areas are discussed in Chapter 7 related to the proposed plan.

Fisheries Resources

According to the comments received from the Division of Marine Fisheries (DMF), the rivers and embayments located within the Popponesset Bay and Waquoit Bay East watersheds provide important foraging, spawning, and/or nursery habitat for a variety of diadromous fish species, including winter flounder, horseshoe crabs and shellfish. DMF comments express support for the Town's efforts to reduce nitrogen loading in the Popponesset Bay and Waquoit Bay East watersheds. According to DMF's comments, the DEIR should include an analysis of options to remove source nitrogen to meet the TMDLs for Hamblin and Jehu Ponds and the Great/Little River system. The DEIR should include an evaluation of the potential impacts to aquatic resources located downstream from existing and proposed new effluent recharge sites proposed in the draft CWMP. I encourage the Town to work with DMF to ensure that diadromous fish species, winter flounder, horseshoe crabs and shellfish are protected and that habitat impacts from the project are avoided or minimized.

A18. These approaches to nitrogen removal and mitigation are discussed in Chapter 7.

Greenhouse Gas Emissions (GHG)

The project is subject to the MEPA Greenhouse Gas Emissions Policy and Protocol ("the Policy"). The Policy requires projects to quantify carbon dioxide (CO₂) emissions and identify measures to avoid, minimize or mitigate such emissions. The Town will be required to quantify the direct and/or indirect CO₂ emissions associated with the project's stationary source energy usage (e.g., building energy use, process-related energy use) and transportation-related emissions (mobile sources), if applicable. Unlike many projects reviewed under the Policy, wastewater treatment process energy loads and subsequent CO₂ emissions play a large role in the overall project's GHG emissions, rather than the buildings that contain the facilities. To ensure that the DEIR includes adequate analysis of GHG emissions, emissions associated with wastewater alternatives and mitigation consistent with other similar facilities, the Town should consult with the MEPA Office, MassDEP and DOER to further define the scope for the GHG analysis.

A19. These efforts were not included in the original approved Scope for this project. As this project dates back to 2001. The Town has made every effort to coordinate with DOER, however at this time we do not have sufficient information regarding energy use and water use (as the facility does not have separate metering) to present the estimated CO₂ based on the Town's one existing (public) WWTF. This is discussed in Chapters 7 and 8.

The ASAR contained descriptions of three project alternatives that include modifications of existing wastewater management systems, pump stations and discharge facilities and construction of new systems and facilities. The analysis should evaluate existing and proposed infrastructure. To establish and baseline and to evaluate upgrades and/or expansion of existing infrastructure, the Town should provide data on existing energy use and conduct energy audits. The energy audits can identify energy use of existing facilities and identify measures to increase energy efficiency of buildings and processes.

A20. Due to the ownership nature of the other existing facilities in Town—and that these requirements were not part of the projects approved Scope of Services—energy audits for



private facilities were not performed. However, the plan makes the recommendation that existing facilities consider this as a way to improve their energy efficiency.

Because there is no building energy code equivalent that applies specifically to wastewater management systems and facilities or a readily available energy use model (such as eQUEST) to estimate the projected energy use of wastewater processing energy loads, the Town should use the EPA's Energy Star Portfolio Manager (ESPM) computer modeling program to assess energy usage associated with proposed treatment technologies with data that is readily available at the CWMP stage (i.e. influent flow, influence BOD, effluent BOD, design capacity, etc.). This program will allow the Town to rank the estimated energy use of the proposed facilities to compare their rankings with other facilities that have similar fundamental operating parameters and are located in similar climate zones. In addition, the Town could perform an analysis of power consumption to compare the energy use of specific treatment technologies. The GHG analysis should also address energy use associated with existing and proposed wastewater collection. I encourage the Town to identify a base case for pump stations a preferred alternative using best engineering practices for improved energy efficiency.

A21. The Town is considering the use of EPA's Energy Star Portfolio Manager (ESPM) as appropriate for proposed facilities. Because this system is typically designed for larger facilities, its application may not be applicable for the smaller facilities being considered as part of this project. The findings of this evaluation are included in Chapter 7.

At this stage of planning, I encourage the Proponent to consider, in addition to the ESPM program, a comparison of GHG emissions associated with the WWTF versus other wastewater disposal systems - specifically on-site septic systems - using the Local Government Operations (LGO) Protocol. This analysis is not mandated as part of the Policy; however, it could assist the Town in understanding the energy impacts of the alternatives currently under review.

A22. Please see responses A20 and A21.

The DEIR should include evaluation of the feasibility of installing renewable energy on-site (e.g., solar (photovoltaic (PV)), wind, geothermal). Installation of PV systems on municipal buildings or on municipal properties may achieve cost-savings beneficial to the community and offset ongoing operational costs. Analysis of PV (either ground-mounted or building-mounted) should use online DOER and Massachusetts Clean Energy Center (CEC) resources to calculate potential project cost, payback periods and returns on investment. The DEIR should state assumptions with regard to available area for PV equipment, efficiencies, etc and should consider both first-party and third-party ownership/lease scenarios.

A23. This evaluation is not included in the current scope of services and would be identified as an additional study that the Town/District could consider. The DEIR discusses PV use in general in Chapters 7 and 8.

The DEIR should identify appropriate energy efficiency measures for the collection system, facility buildings, treatment processes and operations for the draft CWMP. It should outline, in a qualitative manner, a commitment to evaluate and implement, as feasible, GHG reduction strategies that will be determined upon advancement of facility design (which may occur after MEPA review of the CWMP has concluded but prior to permitting). The BMPs should be based on EPA's BMP Guidance Document (Evaluation of Energy



Conservation Measures for Wastewater Treatment Facilities, September 2010) or other best practices and informed by the knowledge about the community and needs as part of the CWMP planning process. MassDEP and DOER will work with the Town to incorporate proposed GHG reduction measures through MEPA review and continuing into advanced design through its project financing and permitting authority. The Section 61 Findings should include a commitment to provide a self-certification to the MEPA Office upon completion of the construction of proposed improvements and upgrades and new wastewater management systems and facilities. It should be signed by an appropriate professional (e.g., engineer, architect, general contractor) and indicate that the all of the GHG mitigation measures committed to have been incorporated into the project(s).

A24. This is discussed in Chapters 7 and 8.

Historical/ Archaeological Resources

The DEIR should describe potential impacts of the draft CWMP to historic and archaeological resources and identify measures to avoid and minimize, or mitigate impacts to cultural resources. The Town should provide Massachusetts Historical Commission (MHC) with a U.S. Geological Survey topographical map that clearly locates the phased project areas and scaled project plans showing existing and proposed conditions. These plans should be submitted to MHC as early as possible during the design of each of the proposed project development phases. The Town should coordinate with MHC to address potential historic impacts and the DEIR should provide an update on the status of these discussions. If MHC determines the project will have an "adverse effect" on historic or archaeological resources, the DEIR should include a discussion of appropriate measures to avoid, minimize and mitigate impacts.

A25. This project does not include the design of facilities; therefore these submittals would be made during design as identified in Chapter 8.

Coastal Hazards and Adaptation

The availability of sewer infrastructure in coastal areas subject to storm damage, flooding, and erosion could allow new or expanded development in these hazard-prone areas. This development may also adversely impact natural buffers to storm waves and erosion, and compromise the storm protection provided to landward development, infrastructure, natural resources, and upland areas. The DEIR should contain an analysis of specific planning and design considerations for areas located within mapped coastal flood zones and barrier beaches. Specifically, the project must be designed to comply with the Massachusetts State Building Code requirements and local requirements for structures located within the floodplain. Current rates of sea level rise, as well as projections for accelerated rates of sea level rise, pose significant threats to coastal development and resource areas from potentially increasing storm surge heights and related increasing frequencies of coastal flooding events. The DEIR should discuss how the project design will incorporate adaptation measures for sea level rise and the potential for more frequent and intense storm events. The Town should work closely with CZM and others to identify appropriate adaption measures to be incorporated into the project design for the draft CWMP.

A26. Please see Chapter 8 for discussion on these mitigation measures.



Sewering and Growth Management

Executive Order #385 requires that state and local agencies engage in protective and coordinated planning oriented towards resource protection and sustainable economic development. For reasons of both environmental protection and fiscal prudence, investments in public infrastructure should be carefully targeted toward those areas for which clear existing needs have been established and for areas where denser development is appropriate, thereby relieving development pressures on open space, agricultural lands, and other valuable natural resources. The DEIR should include a detailed discussion of potential land use control mechanisms that can be employed to limit secondary growth impacts associated with implementation of the CWMP. The Town should consider adopting and implementing growth control by-laws, regulations, and policies prior to the construction of any new sewers. I encourage the Town to consult with MassDEP and CCC in developing growth-neutral policies and a strategy to prohibit and/or discourage future new development requesting municipal sewer service and located in areas outside the AOCs and the proposed new sewer areas.

A27. At this time, no decisions have been made with regards to growth-neutral policies as the dynamics between the Town and proposed Water/Sewer District have yet to be formalized.

Costs to Homeowners

Although economic considerations are not typically addressed through the MEPA process, for informational purposes, I encourage the Town to provide revised cost estimates (both capital and operating) for the draft CWMP, a projection of the impact on local sewer rates, and a comparison of the resulting local sewer rates to Massachusetts Water Resources Authority (MWRA) and statewide averages. The DEIR should include estimates for the costs of land acquisition associated with the location of any proposed new wastewater management facilities and groundwater recharge sites. Cost evaluations for groundwater recharge sites should include the land acquisition costs for the required acreage for recharge beds, plus a reasonable buffer zone (as opposed to the entire parcel). The Town should not presume market rate acquisition costs for all parcels identified as potential groundwater discharge sites, especially those parcels that may be owned by the Commonwealth or non-profit organizations.

A28. There is no current rate structure for sewers in Mashpee. In addition, the majority of facilities that exist are privately owned and operated. Capital costs and O&M costs are presented in the Draft CWMP/EIR and including contingencies for land acquisition (if applicable).

As for comparison of rates to MWRA, there are a number of factors which would differentiate the MWRA system with smaller systems covered under this planning effort. The MWRA wastewater system was formed out of existing MDC infrastructure in 1985. The collection system was in place precluding the costs for the construction of all-new wastewater transport facilities. Outside funds also assist the financing of the MWRA. The MWRA received federal grant money to assist in the construction of new treatment facilities, as well as a regular cash infusion from the State for rate-stabilizing purposes. The wastewater system also has the advantage of economy of scale with a service population of approximately two million.

The MWRA system is one of a few systems that measures actual wastewater flow employing over 200 meters for this purpose. The information from this system is used in formulating



wholesale rates for the member communities served, as well as retail rates for a few special customers.

The MWRA rates formula uses the annual flow volumes as well as factors for high load and high strength wastes to recover operating costs. For capital costs, the formula includes a community's total population, served population, and monthly high flow. In addition this two-tiered formula is averaged over three years.

MWRA rates are calculated independently for each of the forty-three member communities; however it is simpler to use the average wholesale rates for comparison purposes.

For the calendar year 2011 the average MWRA retail wastewater cost was \$.0144/gallon.

The lowest community rate was \$.0035/gallon the highest was \$.016/gallon.

The MWRA advisory board also publishes rates for other Massachusetts wastewater treatment systems as well as other systems countrywide. Of these systems, the lowest Massachusetts system reported had a wastewater rate of \$.003/gallon; the highest was \$.015/gallon.

Across the country the lowest rate included in the report was \$.003/gallon, the highest \$.0113 with the average at \$.0062.

The Town of Mashpee's plan will be to incorporate existing privately owned treatment facilities in order to use remaining excess capacities. This will bring some cost-effectiveness to the operation of the individual facilities, however many factors contribute to the costs of operation and capital debt. Among these are staffing levels and costs, energy and chemical costs, treatment types and levels, discharge locations, size of service area, etc. Since these are private facilities, detailed operational costs are not available at this time.

A recent report completed by Ch2MHill identified costs to users of the Wastewater Treatment facility at Joint Base Cape Cod as \$.018/gal.

Therefore due to both the unique nature of Mashpee and its private facilities, the fact that the planning area includes other communities that will not be part of the newly forming Mashpee Water/Sewer District, the number of existing private facilities that may or may not over time become part of the District, and lack of existing sewer rate structure, these financial considerations for potential users will not be established as part of this document but will be developed by the Town and District based on their implementation of the plan.

Construction Period Impacts

The DEIR should include a Construction Management Plan (CMP) describing project activities and their schedule and sequencing, and BMPs that will be used to avoid and minimize adverse environmental impacts. The Town's CMP should address potential demolition and construction period impacts (including but not limited to land disturbance, noise, vibration, dust, odor, nuisance, vehicle emissions, construction and demolition debris, impacts on trees and other vegetation, and construction-related traffic) and analyze and outline feasible measures that can be implemented to eliminate or minimize these impacts. The DEIR should outline potential measures to address materials management during the construction period. The CMP



should discuss plans for reuse and recycling of construction materials including asphalt, brick and concrete (ABC). The CMP should include an erosion control component to address protection of water quality and wetlands resources. The project must comply with MassDEP's Solid Waste and Air Quality Control regulations during construction.

A29. Please refer to Chapter 9.

Hazardous Materials

The Town should consider the potential for encountering contamination during excavation. The DEIR should identify known hazardous waste sites governed by the Massachusetts Oil and Hazardous Material Release Prevention and Response Act (M.G.L. c. 21E) in the vicinity of the project area and provide an updated summary on the status of these sites consistent with the Massachusetts Contingency Plan (MCP, 310 CMR. 40.0000). The DEIR should provide an overview of any anticipated or planned remediation efforts in the PPA. The Town is advised that, if oil and/or hazardous material (OHM) is identified during the implementation of the project, notification pursuant to the MCP 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. Construction protocols and procedures should reflect the potential for discovery of OHM during the construction period. The Town should consult with MassDEP for additional guidance on the prevention and management of potential releases of OHM.

A30. Please refer to Chapter 7.

Public Participation

I note that the SRF regulations require the Town to conduct a minimum of one public meeting and one public hearing for this project. The DEIR should include a summary of the Town's public participation program activities completed and proposed.

A31. Please refer to Chapter 3.

Mitigation and Section 61 Findings

The DEIR should include a separate chapter on mitigation measures, which should include a summary table of all mitigation commitments as well as detailed draft Section 61 Findings for all State Permits. The draft Section 61 Findings should describe proposed mitigation measures, contain clear commitments to mitigation and a schedule for implementation based on the construction phases of the project, estimate the individual cost of each proposed measure, and identify parties responsible for funding and implementing the mitigation measures. The draft Section 61 Findings will serve as the primary template for permit conditions.

A32. Please refer to Chapter 8.

Comments

The DEIR should include a copy of this Certificate and a copy of each comment letter received. In order to ensure that the issues raised by commenters are addressed, the DEIR should include a response to comments received on the Phase 2 document to the extent that the subject matter of the comment is within the Scope. The Town must provide a detailed response to the comment letters submitted by MassDEP and the Cape Cod Commission as part of the joint DRI/DEIR review process. The Town should use either an



indexed response to comment format, or direct narrative response. The DEIR should present any additional narrative or quantitative analysis necessary to respond to the comments received. This directive is not intended to, and shall not be construed to enlarge the scope of the DEIR beyond what has been expressly identified in this Certificate.

A33. Please refer to Appendix 1-2.

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, Falmouth and Sandwich. A copy of the DEIR should be made available for public review at the public libraries in the Towns of Mashpee, Barnstable, Falmouth and Sandwich.

A34. Please refer to the distribution list included with the transmittal letter.

B. COMMENTS FROM THE DIVISION OF MARINE FISHERIES DATED OCTOBER 21, 2013

The ASAR identifies three wastewater management options (1A, 1B, and 1 C) that all fail to meet TMDL thresholds for Jehu Pond and Hamblin Pond. The DEIR alternatives analysis should include options that adequately remove source nitrogen to meet TMDL thresholds for all embayment sections.

B1. As stated in the documents, these options met the TMDLs based on the MEP model results for the Eastern Waquoit Bay model. It was only after the MEP remodeled the entire Waquoit Bay system that the "incoming tidal flow" from Waquoit Bay puts the values slightly over the TMDL level. This was done (in the MEP model) with the assumption that NO other nitrogen is removed from the portions of that watershed solely within Falmouth. This assumption is a conservative estimate, and addressing this goes beyond the scope of this project. It is the Town/District's position that the Town of Falmouth will be addressing Waquoit Bay through their ongoing efforts and therefore no additional nitrogen removal (within the PPA) is anticipated. In addition, the plan as drafted will be proposing the use of shellfish propagation for those two waterbodies to address the nitrogen load. As modeled under traditional methods, nearly 100% of the wastewater from these areas is already proposed to be removed. As part of the Final Recommended Plan it is expected that MEP will be asked to remodel the plan. At that time an "assumption" or projection of the minimum additional nitrogen removal required from the rest of Falmouth could be used to quantify the actual extent of this impact if necessary.

Options 1A, 1B, and 1C include discharge of treated flow to a variety of locations. The DEIR should consider potential impacts to aquatic resources downstream of these discharge locations.

B2. Please refer to Chapters 6 and 7 discussing the proposed plan and proposed mitigation measures.



The ASAR framework includes a variety of direct environmental mitigation components including shellfish aquaculture as potential supplements to the overall wastewater management approach. The *Marine Fisheries Shellfish Planting Guidelines* [6] will be used by *Marine Fisheries* as the template for approval of any local shellfish restoration or planting program and should be used in the development of any shellfish aquaculture-based nitrogen removal projects.

B3. Please refer to discussion in Chapters 6 and 8.

C. COMMENTS FROM MASSDEP SERO MEPA UNIT DATED OCTOBER 25, 2013

Wastewater Management Program Comments

It is clear that this document is a preliminary evaluation of a range of options prior to developing a recommended plan as part of a Draft Comprehensive Wastewater Management Plan (DCWMP). As such it is somewhat broad in scope and has evolved over several iterations since 2007. MassDEP is pleased to see that the analysis incorporates a watershed approach and is flexible enough to encourage consideration of an inter-municipal approach as one of the options available. In developing the DCWMP, MassDEP expects that the Town will incorporate appropriate elements of the Cape Cod Commission's 208 planning study and will further develop inter-municipal or regional strategies in the draft document.

C1. Based on the timing of this report and the ongoing 208 planning, the CCC efforts are discussed in Chapter 10, Adaptive Management.

All of the proposed options have been modeled through the Massachusetts Estuaries Project (MEP); however, none have been shown to meet critical nitrogen thresholds at all of the sentinel stations. The DCWMP will have to review other alternatives to demonstrate that nitrogen thresholds will be met at all appropriate sentinel stations.

C2. Please see response B1.

The Alternatives Screening Analysis also addresses some non-traditional approaches to managing nitrogen which include restoration and management of the Santuit Bogs, shellfish aquaculture, stormwater management, inlet reconfiguration, permeable reactive barriers and potential land management strategies. These approaches may help augment the identified options described above and their potential effectiveness will be further informed by the aforementioned 208 study and the demonstration projects currently underway in the Town of Falmouth.

C3. It is anticipated that those will be part of the Town's/Districts Adaptive Management Approach.

Bureau of Waste Site Cleanup

Based upon the information provided, the Bureau of Waste Site Cleanup (BWSC) searched its databases for disposal sites and release notifications located within and near the proposed project area. A disposal site is a location where there has been a release to the environment of oil and/or hazardous material that is regulated under M.G. L. c. 21E, and the Massachusetts Contingency Plan [MCP - 310 CMR 40.0000].

C4. These areas are discussed in Chapter 8.



The proposed project involves development of a town-wide nitrogen management plan for the Town of Mashpee. Please be advised that there are many BWSC disposal sites located within and near the proposed project area. Many of the sites have been closed under the MCP, but many others are open sites that are undergoing continued environmental monitoring and/or active remediation. A listing of these sites and a discussion of the site status will not be presented here. The Project Proponent is encouraged to consult the BWSC Waste Sites/Reportable Release Lookup at:

<http://public.dep.state.ma.us/SearchableSites2/Search.aspx>

C5. These areas were reviewed and are discussed in Chapter 8.

In addition, the Project Proponent can view a map showing BWSC disposal sites located within and near the proposed project area using the MassGIS online data viewer (Oliver) at:

http://maps.massgis.state.ma.us/map_ol/oliver.php Under "Available Data Layers" select "Regulated Areas", and then "DEP Tier Classified 21E Sites".

C6. These areas were reviewed and are discussed in Chapter 8.

The Project Proponent is advised that if oil and/or hazardous material are identified during the implementation of this project, notification pursuant to the Massachusetts Contingency Plan (310 CMR 40.0000) must be made to MassDEP, if necessary. A Licensed Site Professional (LSP) should 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 arise regarding cleanup.

C7. This is discussed in Chapter 8.

Proposed s.61 Findings

The "Certificate of the Secretary of Energy and Environmental Affairs on the Alternatives Screening Analysis Report" may indicate that this project requires further MEPA review and the preparation of a Final 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.

C8. Please refer to Chapter 8.

D. COMMENTS FROM THE EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS OFFICE OF COASTAL ZONE MANAGEMENT DATED OCTOBER 25, 2013

Nitrogen Removal

The DEIR should include the following information relating to the efficacy and fate of the recommended plan;

- A description of the modeling and monitoring that will be used to establish the efficacy of the proposed alternative at removing nitrogen from the watershed



- A description of the modeling and groundtruthing efforts that will be used to determine the ultimate fate of the nitrogen load
- The long-term monitoring program upstream and downstream of the project that will be used to ensure that the selected alternative continues to remove nitrogen at the required rate for the duration of the project

D1. This is discussed in Chapters 9 and 10.

Natural Resources

The DEIR should include the following information relating to direct and indirect resource impacts;

- The locations of resources including, but not limited to, eelgrass, diadromous fish runs, salt marsh shellfish beds, fish spawning areas, and Special, Sensitive, or Unique resource areas listed in the Massachusetts Ocean Management Plan and any potential impacts
- The long-term monitoring program that will ensure that the structure and function of adjacent wetlands and other natural resources are not negatively impacted during the life of the project
- The contingency plan that the Town of Mashpee Sewer Commission will adopt should it be found that natural resources are being affected by the project and/ or the project is not removing nitrogen at the desired rate
- The modeling that will be used to project any potential flooding effects and the parcels affected if the project is a wetland deepening, beach breaching, or culvert widening project)
- The modeling that will be used to determine how long the project will be stable and how often the project area will need to be altered (e.g., redredging, replanting, replacement of a carbon source)

D2. This is discussed in Chapters 7, 8, and 9.

Federal Consistency

The proposed project may be subject to CZM federal consistency review. For further information on this process, please contact, Robert Boeri, Project Review Coordinator, at 617-626-1050 or visit the CZM web site at www.state.ma.us/czm/fcr.htm.

D3. As the Town/District begins the implementation process, depending on the areas being considered the Town/District shall contact CZM for a pre-application meeting and provide the appropriate documentation to allow CZM to complete the federal consistency review.

E. COMMENTS FROM DIVISION OF FISHERIES AND WILDLIFE DATED OCTOBER 25, 2013

Portions of the Town of Mashpee and potential infrastructure improvements associated with the FASAR are mapped as *Priority* and *Estimated Habitat* in accordance with the 13th Edition of the *MA Natural Heritage Atlas*. Those activities that are not otherwise exempt (321 CMR 10.14) will require review through a direct filing with the Division for compliance with the Massachusetts Endangered species Act (MGL c. 131A) and its implementing regulations (321 CMR 10.18) (MESA) and/ or the rare species provisions of the Wetlands Protection Act Regulations (310 CMR 10.37 & 10.59) (WPA). Although the Division is supportive of the Town's plan to improve wastewater and nitrogen management, as many state-listed species rely on aquatic habitats and may directly benefit from improved water quality, potential impacts from infrastructure



improvements to rare upland species should also be considered during the planning process and avoided/minimized to the greatest extent possible.

E1. Please see the discussion in Chapter 7.

Although the FASAR identifies which potential cluster system sites are located within mapped habitats, it does not contain an assessment of potential impacts to state-listed species at these sites. Additionally, the Division notes that many of the potential treatment and recharge sites identified within the FASAR for further assessment are also located within Priority and Estimated Habitat. This includes the Massachusetts Military Reservation, which provides important habitats for numerous state-listed species. Since it appears that the Town will seek to compare centralized and cluster development approaches to managing wastewater within the Draft Environmental Impact Report, an assessment of potential impacts to state-listed species from the development of these sites should be included in these analyses. The Division would encourage the Town to consider design and implementation alternatives that avoid and minimize impacts to state-listed species and their habitats, and to initiate consultations with the Division as soon as possible in order to inform this assessment.

E2. Discussions regarding Sites 2, 4, and 6 were initiated in 2008 and 2009, and mitigation and implementation are discussed in Chapters 7 and 8.

F. COMMENTS FROM THE CAPE COD COMMISSION DATED OCTOBER 25, 2013

As noted in the Report, opportunities do exist for Mashpee to address Hamblin and Jehu Ponds thresholds through a reallocation of wastewater collection from Project Planning Areas where thresholds are overachieved under Option 1B (e.g. Shoestring Bay). Option 1B model results assume nitrogen thresholds will be met in other portions of Waquoit Bay shared with the Town of Falmouth. Nitrogen reductions to Waquoit Bay planned by the Town of Falmouth could bring Hamblin and Jehu Ponds in line with the MEP thresholds. However, Falmouth solutions for Waquoit Bay are many years out. The Recommended Plan should lay out a process for coordinating solutions for Hamblin and Jehu Ponds and the Quashnet River with Falmouth's planning efforts to restore water quality in the greater Waquoit Bay system.

F1. This is discussed in Chapter 10.

Consistent with 208 planning efforts, the Town of Mashpee is considering a number of alternatives to conventional wastewater management options that will be evaluated under an adaptive process. Evaluations of similar alternatives by the Town of Falmouth will provide useful information to the Town of Mashpee as it begins to develop its Recommended Plan. The Commission encourages continued regional discussions concerning the potential shared use of the MMR treatment facility by Upper Cape municipalities.

F2. The Town is actively pursuing these efforts of coordination.