

Appendix B

**April 21, 2009 Memorandum
Comments on June 13, 2008 DCWMP/DEIR and
NPC Certificate**



To: Robert Duncanson, Ph.D.

From: N.C. Weeks, P.E.
J.J. Gregg, P.E

Date: April 21, 2009

Re: **Town of Chatham**
Comprehensive Wastewater Management Planning Project
Comments on June 13, 2008 DCWMP-DEIR and NPC Certificate

Job No. 70098.0

This memo is written to address comments received from the public and environmental review process for the Town's Comprehensive Wastewater management Planning (CWMP) Project.

The April 2008 Draft Comprehensive Wastewater Management Plan and Draft Environmental Impact Report (DCWMP-DEIR) and Notice of Project Change (NPC) was submitted to many regulatory groups and citizens as part of the study's review process, and written comments were received from nine agencies and individuals.

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*.

A. COMMENTS FROM THE MASSACHUSETTS SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS DATED JUNE 13, 2008.

DRAFT RECOMMENDED WASTEWATER FACILITIES PLAN

Under Phase I of the Town of Chatham's Draft Recommended Comprehensive Wastewater Management plan (CWMP), the Town proposes to expand its existing wastewater collection system with approximately 110 miles of new gravity and pressure sewers, 1200 grinder pumps, 80 lift stations to serve the 17 sub-watershed Areas of Concern (AOC), and to upgrade the Chatham Wastewater Treatment Facility (Chatham WWTF) to meet Enhanced Nitrogen Removal (ENR) standards for the on-site treatment and disposal of up to 1.3 millions gallons per day (mgd) of average wastewater flows. According to the information contained in the DEIR document, the need for the proposed CWMP is to remediate the current nitrogen loading to coastal estuaries and embayments, including Pleasant Bay. Proposed facility upgrades will also include the construction of a new Sewer and Water Department maintenance and administration building. Phase II sewer construction activities will involve further expansion of Chatham's wastewater collection and treatment systems to serve the Phase II Needs Areas and accommodate a total of approximately 1.9 mgd of wastewater flows collected from all areas of Chatham. According to the proponent, the proposed upgrades to the Chatham WWTF will include additional treatment capacity to accommodate possible future wastewater flows from areas of the Town of Harwich located adjacent to the proposed new sewers in Chatham.



A1. This is an appropriate summary with the clarification that the proposed WWTF upgrade will allow space on the site plan to expand the treatment capacity for Harwich if it is needed and agreed upon in the future. Since the submittal of the DEIR, the Town has decided to place the administrative staff for the Sewer and Water Department in the DPW building; therefore, the WWTF upgrade will only include a building for wastewater operations, analytical laboratory, and maintenance.

As described by the Town, the previously completed (1996) improvements to the Town of Chatham's WWTF have enabled the facility to achieve drinking water quality standards associated with its on-site groundwater discharge. With the proposed upgrades to the WWTF, the Town will achieve an effluent nitrogen concentration of three parts per million (PPM), which is well below the state and federal drinking water standards. The Town has participated in further groundwater modeling analysis as part of its wastewater effluent discharge site screening and selection process and has determined that the WWTF's existing wastewater discharge location can accommodate additional Phase I and Phase II treated wastewater flows with no adverse effects on surrounding properties and groundwater resources.

In its comments, MassDEP indicated that a portion of the Chatham WWTF's groundwater discharge site is located within the Zone II of a Public Drinking Water Supply and that it will require that the Town incorporate treatment, including disinfection, as part of the facility's treatment process pursuant to MassDEP's Interim Guidelines on Reclaimed Water (Revised), January 3, 2000. The FEIR should include a detailed discussion of the need for disinfection as part of the Town's proposed wastewater treatment process.

A2. The Town has had several discussions with MassDEP regarding their requirements for disinfection. The Town will provide disinfection facilities. Text in the FEIR will be provided to discuss the need for disinfection facilities.

Adaptive Management Planning

The Town of Chatham's CWMP includes the implementation of an adaptive management process to monitor groundwater elevations and water quality at the Chatham WWTF groundwater recharge site, and nitrogen loading levels to coastal embayments during construction and upon completion of the phased sewerage project. This adaptive management approach will enable the CWMP to be adjusted based on the monitoring results of the environmental and economic impacts associated with the construction of the new sewers in Chatham.

MassDEP has requested that the Town develop a feasible water quality and habitat quality compliance measure to track changes in water quality and habitat quality during implementation of each phase of project construction to verify the effectiveness of the Town's CWMP over time. The FEIR should respond to MassDEP's comments and include feasible water quality and habitat quality compliance measures and a detailed project implementation schedule with specific milestones and completion dates for the Phase I portion of the project.



A3. The FEIR will respond to MassDEP comments for these items. We met with MassDEP on August 13, 2008 to discuss an appropriate monitoring program. It is noted that the Town of Chatham continues to work with the MassDEP Pilot Project (through the Pleasant Bay Alliance) to develop a standard protocol for documenting these compliance items. MassDEP continues to coordinate with UMass Dartmouth School for Marine Science and Technology (SMAST) for the needed technical input.

In its comments, CCC has recommended that the Town design and implement an Adaptive Management Plan (AMP) to guide the implementation and monitor the success of the Town's proposed CWMP. Specifically, CCC has asked the Town include in an AMP a detailed description of how the AMP's monitoring results will be used to demonstrate achievement of TMDL water quality goals. The AMP should also include status reporting for nitrogen removal associated with the Town's phased construction of new sewers. The Town should consult with the CCC and MassDEP to design an AMP for this project. The FEIR should report on the Town's consultations with CCC and MassDEP.

A4. The Town has met with CCC and MassDEP staff (August 13, 2008) to discuss the details of an appropriate Adaptive Management Plan. The FEIR will report on the consultations and provide an outline for the AMP that allows modifications or "mid-course corrections" based on the following key factors:

- ***Implementation of the CWMP***
- ***Documentation on capital expenditures***
- ***Compliance with the groundwater discharge permit***
- ***Reporting on estuarine water quality monitoring***
- ***Reporting on groundwater elevation and quality monitoring***
- ***Summary of habitat assessments that may be completed by the Town, MassDEP, regional organizations, or others***
- ***Continued coordination with the Pleasant Bay Alliance who is coordinating any MEP model runs on this estuary***
- ***Potential evaluations and changes as needed***

Muddy Creek Basin Restoration

As described in the FEIR, MEP's findings conclude that the restoration of the Muddy Creek to a partial freshwater system could result in a significant reduction of nitrogen loading in the sub-watershed. The Town of Chatham and the Town of Harwich have identified the restoration of the upper portion of an old dyke located in the Muddy Creek basin to a freshwater body as a means of providing the natural attenuation of nitrogen from the Muddy Creek.

According to the Town, if successful, the restoration of Muddy Creek could reduce the extent of new sewers currently proposed in the Town's recommended CWMP. In its comments, the Pleasant Bay Resource Management Alliance (Pleasant Bay Alliance) has indicated that more information and analysis is needed to determine the potential impacts to surrounding resource areas associated with the re-installation of a dike in Muddy Creek. I note that the Pleasant Bay Alliance has received grant funding from the Cape Cod Water Protection Collaborative to study the potential effects of restoring the



upper portion of Muddy Creek into a freshwater system. The Town should consult with the Pleasant Bay Alliance and DMF as this component of the Chatham CWMP proceeds to final design. The Division of Marine Fisheries (DMF) has also requested that the town consult with DMF to assess the potential impacts of the proposed Muddy Creek basin restoration project to diadromous fish species. The FEIR should provide an update of the Town's consultations with the Pleasant Bay Alliance and DMF.

A5. The Town has consulted with the Pleasant Bay Alliance and DMF, and the FEIR will provide an update on those consultations.

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.

As currently proposed, the project will extend sewers within coastal floodplains and barrier beaches. In its comments, CZM has indicated that the Town has demonstrated that the proposed sewer project has been designed to eliminate or minimize potential storm damage risks associated with sewer barrier beach areas by locating proposed pump stations outside of the 100-year flood zone and protecting this portion of the Town's proposed sewer collection system from potential wave action. CZM recommends that the Town incorporate a system of check valves into the new sewer collection system for barrier beach areas to minimize impacts in the event of a storm-related breach to the collection system. The Draft Wastewater Facilities Plan/DEIR includes a discussion of the potential future build-out of the proposed new sewer areas and the consistency of the Town's WWFP with Executive Order #385 which discourages unintended growth within areas planned for sewerage. The Town has recently passed (May 2005) a new section of the Town of Chatham's *Rules and Regulations of the Sewer Department* designed to prohibit new growth that might occur in newly sewer areas of Chatham. I note that according to the comments received from the Pleasant Bay Alliance, the Town of Chatham is currently undergoing a review of its zoning bylaws and should use this review period to assess the use of zoning and other growth management tools to control growth and development in newly sewer areas.

The FEIR should describe any new by-laws or regulations being considered or proposed by the Town for controlling new future development requesting municipal sewer service and located in areas outside of the proposed new sewer areas. I encourage the Town to adopt any proposed growth by-laws, regulations, and policies prior to the construction of any new sewer extensions.



A6. The adoption of the additions to the “Rules and Regulations of the Sewer Department”, as approved by Town Meeting, is the primary control mechanism that makes this CWMP and FEIR “growth-neutral.” No additional by-laws have been passed since submittal of the DEIR.

The FEIR should include a separate chapter on mitigation measures associated with the Final FEIR/Facilities Plan. This chapter on mitigation should include Draft Section 61 Findings for all state agency actions. The Draft Section 61 Findings should contain a clear commitment to implement mitigation, an estimate of the individual costs of the proposed mitigation, and the identification of the parties responsible for implementing the mitigation. A schedule of the implementation of mitigation should also be included.

The FEIR should provide a detailed description of the proponent’s proposed mitigation plan, and should also discuss the value of the proposed mitigation in terms of the resources it provides the opportunities for open space protection, and active and/or passive recreation it affords. I ask that the proponent consult EEA staff, CCC and MassDEP to provide advice to the Town on feasible mitigation alternatives.

A7. The FEIR will provide a separate chapter on “MEPA Draft Section 61 Findings and Mitigation Measures” to summarize these items in one place.

In order to ensure that the issues raised by commenter’s are addressed, the FEIR should include a response to comments. This directive is not intended to, and shall not be construed to enlarge the scope of the FEIR beyond what has been expressly identified in the initial scoping certificate or this certificate. The Town of Chatham should respond to the issues identified in the comments received by the CCC, MassDEP, Office of Coastal Zone Management (CZM) and others on this DEIR/2nd NPC submittal, and the comments received on the Town’s prior ENF and NPC submittals to the MEPA Office. I ask the Town to continue to work closely with the CCC, MassDEP, and CZM, to design and implement a sustainable Comprehensive Wastewater Facilities Plan and mitigation plan for the Town of Chatham that will help to offset the proposed project’s municipal water withdrawal and sewerage impacts. The Town should continue to prepare the Phase IV – Final Wastewater Facilities Plan/FEIR for the project in accordance with a copy of this Certificate and the Certificate granting a Phase I Waiver Request. The FEIR document should also contain copies of the comments received. The proponent should circulate the FEIR to those who commented on the ENF, and each of the previous four NPC submittals, and to any party required by regulation.

A8. This memorandum is the response to comments and will be included in the FEIR as an attachment with a copy of all comments submitted. Also, the FEIR will be circulated to all who have commented and any party required to receive a copy by regulation.



**B. COMMENTS FROM THE CAPE COD COMMISSION DATED
DECEMBER 12, 2008**

WATER RESOURCES

Ponds and Drinking Water

Cape Cod Commission project review includes an evaluation of potential impacts associated with all water resources including: wellhead protection areas, fresh water ponds, marine water and potential water supply areas. Although the focus of the CWMP/DEIR is targeted at restoring marine water and addressing the other site specific wastewater needs of Areas of Concern, the Commission notes that the Town of Chatham has undertaken other significant actions concurrent with the CWMP/DEIR including an assessment of the status and management needs of its fresh water ponds. This year's town meeting approved additional funds for in-pond treatments of two of Chatham's Great Ponds; Lovers Lake and Stillwater Pond. The Commission recommends that the town continue to participate in the Pond and Lake Stewardship (PALS) water quality snap-shot offered by the School of Marine Science and Technology.

The Town of Chatham has also undertaken appropriate actions to protect its drinking water quality. Land use controls and regulations that have been adopted and implemented over the last 30 years have been effective in protecting Chatham's water supply. The Commission reviewed available drinking water data and found that Chatham water supplies have low concentrations of nitrogen, below 0.5 ppm. These concentrations are well below state and federal drinking water regulations and the Regional Policy Plan nitrogen loading standard of 5 ppm. The benefits of sewerage the priority areas of the town for TMDL compliance and other Areas of Concern will have an additional benefit of protecting drinking water that originates in the Zone II areas by further reducing nitrogen and other contaminants from entering the Zone II areas.

B1. No response necessary.

Massachusetts Estuary Project and Total Maximum Daily Loads

The recommendations of the initial 1999 Needs Assessment Report relied upon the empirical findings of the Cape Cod Commission's Coastal Embayment Project of 1998. In response to public comment and need for more detail in the assessment of estuarine environments, the Town of Chatham was one of the first Cape towns to engage the Massachusetts Estuary Project to better document the health and critical nitrogen loads for its marine waters. The MEP was developed by the Commonwealth in response to the need of coastal communities for irrefutable scientific evidence on the nature of their marine waters by using a more detailed approach to these assessments. This effort took a substantial period of time due, in part, to the many organizational and institutional matters that were required to be tested and resolved in this multi-million dollar, multiple-year project for Southeast Massachusetts.

The MEP, through the use of the "Linked" method approach, determined the nitrogen thresholds for Chatham's marine waters in a series of reports, listed in the CWMP. These thresholds were then codified into Total Maximum Daily Loads (TMDLs) under the federal Clean Water Act. These reports, as revised, indicate that the following embayment systems have been impaired due to nitrogen loading, primarily from septic systems in their watersheds, and the percent of wastewater load to be removed to restore water quality. Also shown are percentages of nitrogen to be removed through wastewater



collection according to a scenario listed in the MEP Technical Report to achieve compliance with the Final Total Maximum Daily Load.

Stage Harbor

Oyster Pond 100%
Oyster River 100%
Stage Harbor 100%
Mitchell River 50%
Mill Pond 50%
Little Mill Pond 50%

Sulphur Springs

Buck Creek 62%
Cockle Cove 0%

Taylor's Pond

Taylor's pond 60%
Mill Creek 100%

Pleasant Bay

Crows Pond 0%
Pleasant Bay 50%
Ryders Cove 75%
Frost Fish Creek 100%
Bassing Harbor 0%
Upper Muddy Creek 100%
Lower Muddy Creek 76%

Efforts to comply with the TMDL by reducing nitrogen loading will result in: 1) restoration of natural distribution of eelgrass as a habitat for shell and finfish, 2) prevention of algae blooms, 3) protection of benthic communities from impairment or loss, and 4) maintenance of dissolved oxygen concentrations that are protective of estuarine environments.

B2. No response necessary.



Effluent Recharge Site

The screening and selection of appropriate wastewater effluent recharge sites on a Sole Source Aquifer is a challenging problem. Indeed, this was a central issue in DEP's 1987 Administrative Consent Order. The Town of Chatham took part in a \$295,000 County funded regional project to evaluate the issues and approach of locating potential wastewater effluent recharge sites through the use of groundwater modeling by the U.S. Geological Survey. This project, coordinated by the Commission, assisted 12 of the Cape towns and was instrumental in resolving a number of critical areas of concern relative to the issue of groundwater interactions and responses to proposed treated effluent discharges and water supply pumping. The original Administrative Consent Order for Chatham was based upon early modeling efforts and a conservative understanding of aquifer response to the existing wastewater discharge at the Chatham facility. Groundwater modeling performed under this County project was able to assist Chatham and its consultants in determining that the concerns of the 1987 ACO were overstated and that in fact the existing wastewater facility has potential for excess capacity to recharge treated effluent. Both the Department of Environmental Protection and the Commission concur with these findings.

Further modeling performed by the town's consultant confirmed the regional conclusions and was used to better gauge the influence of the use of the site relative to receiving downgradient waters of Cockle Cove, Sulphur Springs and Taylor's Pond. Follow-up MEP Technical Memorandums found that the health of these waters would be protected when the CWMP reaches its full implementation.

A portion of the Chatham effluent recharge site is in a Zone II to Chatham's Indian Hill water supply well. The location of such sites in the Zone II is not prohibited by either state or county regulations, when the objective of the facility is to improve water quality. The Chatham Wastewater facility was upgraded in 1996 to Class I standards, which are drinking water standards associated with the groundwater discharge permit. The nitrogen concentrations at the facility have averaged 7.4 mg/l, which is under the state and federal drinking water standard. The treatment of wastewater as proposed in the CWMP/DEIR will result in an effluent nitrogen concentration of 3 ppm. Although a portion of the discharge site is located in the Zone II it is unlikely that the circumstances of the Zone II delineation will be met over the next 30 years of this project's implementation with the Indian Hill well off-line. Furthermore the CWMP includes an adaptive management approach that will provide detailed monitoring information as conditions potentially change in the future. Additionally, current groundwater modeling indicates that the predominant groundwater flow pattern from the loaded site will be towards the coast, not the interior where the wells are located. The hydrologic conditions at the Chatham site are less complicated than the Town of Barnstable Wastewater Facilities site where the recharge was substantially inland, within several Zone IIs and close to the groundwater divide.

The Commission concurs that the groundwater monitoring program for water levels and water quality should be revised. It is suggested that these revisions be based upon a review of the existing data. The Commission is available to assist Chatham in this area and looks forward to providing input on the Groundwater Discharge Permit.

B3. No response necessary.

The Commission concurs with the CWMP/DEIR proposal that disinfection is not warranted for treated effluent recharge at this site, given that there is essentially natural pathogen removal through the



proposed sand beds and that the predominate groundwater flow direction is towards the coast, not into Water Supply areas.

B4. See response A2.

Regional Wastewater Management

The DEIR addresses a number of regional issues within the context of Chatham's demonstrated needs. These include the reduction of nitrogen in the watersheds to coastal embayments of Stage Harbor, Sulphur Springs, Taylor's Pond, and Pleasant Bay. The reductions of nitrogen in the shared watersheds to Pleasant Bay, including Muddy Creek, involve neighboring towns of Harwich, Orleans and Brewster. A substantial portion of the Muddy Creek watershed falls in the Town of Harwich. The Commission provided a nitrogen loading breakdown by town for the Pleasant Bay Resource Management Alliance Working Group. The existing attenuated nitrogen load for Muddy Creek is comprised of 36 percent from Chatham and 64 percent from Harwich. The Chatham CWMP/DEIR refers to discussions to potentially accept additional wastewater from Harwich and that the preliminary sewer design include accommodations to potentially accept additional wastewater flow from Harwich, also that sewerage and enhanced natural attenuation are two components of reducing nitrogen in the watershed to Muddy Creek. The FEIR should provide additional detail, to the extent possible, about the protocol and procedures to evaluate potential regional solutions to achieving the TMDL. The Commission continues to be available to provide technical assistance at any level to further such regional evaluations and solutions.

B5. The FEIR will provide additional detail about protocols and procedures to facilitate regional solutions to achieve the TMDLs. These included:

- ***Continued coordination with the Pleasant Bay Alliance in strategies and planning to meet the TMDL for this large shared waterbody and watershed.***
- ***Coordination with the Town of Harwich on their possible use of the upgraded Chatham WWTF to meet their portion of the TMDLs, including:***
 - ***Planned legal and technical evaluation on Harwich's possible use of the site***
 - ***Identification of land area at the WWTF site where facility expansion could occur to accommodate flow from Harwich and/or meet more stringent treatment requirements in the future***

Adaptive Management Approach

The Chatham CWMP/DEIR discusses the use of an adaptive management approach to help guide the implementation of the Plan and to monitor its success. The CWMP/DEIR should provide more detail on the adaptive management approach in the FEIR by developing an Adaptive Management Plan (AMP). The following issues to be considered for inclusion into the AMP include, but are not limited to: 1) the use of monitoring for demonstrating achievement of the water quality goals of the TMDL, 2) reporting progress on the status of the CWMP implementation in regards to the areas sewerage and percent of nitrogen removed, 3) how the monitoring requirements of the Groundwater Discharge Permit will be integrated into TMDL compliance, incorporation of advances or changing interpretation of the MEP



results and the TMDLs, 4) incorporation of results from MEP scenarios being performed for neighboring towns, and 5) as sewerage increases and potential water supplies are added over the long term that additional groundwater modeling should be incorporated at appropriate milestones.

B6. Please see response A4.

C. COMMENTS FROM THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (MassDEP) DATED JUNE 6, 2008.

SERO and Boston Office Comments

The proposed discharge site falls within the Zone II of a Public Water Supply well. As such, it is considered an indirect discharge and requires treatment standards consistent with MassDEP's "Interim Guidelines on Reclaimed Water (Revised)" dated January 3, 2000. As such, disinfection will be required as part of the treatment process.

C1. Please see response A2.

MassDEP is encouraged that Chatham and Harwich have initiated discussion regarding the potential for a regional approach to their shared watersheds. It is evident that due to the different stages in planning in which both towns find themselves finalizing any regional plan is not feasible at this time. However, the final design of the upgraded wastewater treatment facility should maintain some flexibility for potential future expansion should additional flow from neighboring communities be feasible as described in the DCWMP/DEIR.

C2. Please see response B5.

The DCWMP/DEIR identifies a two-phase project. Phase I has been developed to meet MEP thresholds and TMDLs and is projected to be completed over a twenty-year period. Phase II will be completed in the following ten years and complete sewerage of the rest of the town.

Restoration targets under the MEP and TMDLs focus on reestablishing eelgrass beds where they have been lost or reestablishing healthy in faunal communities where there is no historical evidence of eelgrass presence. By meeting nitrogen thresholds at a sentinel station or stations within an embayment system (as established in MEP Technical Reports), conditions throughout the embayment will be sufficient to restore habitat quality to the appropriate level. However, system response to reductions in nitrogen loads to the embayments will not be immediate and will not result in immediate improvement or restoration of habitat; therefore, a feasible compliance measure needs to be developed coupled with an appropriate monitoring program to track trends in water quality and habitat quality changes/improvement as implementation proceeds.



C3. The FEIR will provide more detail on this issue as described in response A4.

The Town will need to develop further its Phase I plan to include a more detailed implementation schedule that will effect the load reductions necessary to meet the target threshold concentrations at the sentinel stations (as identified in both the MEP Technical Reports and the TMDLs) in their embayments. The implementation schedule will identify specific milestones and associated dates of completion.

MassDEP will consider adherence to the milestone schedule in helping to determine compliance with the TMDL.

C4. The specific milestones were identified in the financial plan of the DEIR. They will be reiterated and expanded in the Planned Implementation Timing section and in a new section on the Adaptive Management Plan.

Particle tracking analysis shows that portions of the projected plume from the upgraded WWTF will enter several other embayments. There needs to be further analysis to show that the nitrogen contribution from the WWTF to these systems will still maintain the threshold concentrations in order to achieve restoration goals.

C5. This analysis has been completed and added to the FEIR.

The DCWMP/DEIR reports that Chatham and Harwich are pursuing further studies to evaluate the feasibility of converting the upper reach Muddy Creek to a freshwater system to help achieve nitrogen reductions. MassDEP encourages this investigation and will work with the town particularly in regard to determining the regulatory feasibility of such a proposal.

C6. No response is necessary.

In addition, the project will need a Groundwater Discharge Permit (314 CMR 5.00) and as they move through different phases of sewer construction likely will need permits under the Sewer System Extension and Connection Permit Program (314 CMR 7.00).

C7. No response is necessary.

Construction Activities – EPA Comments

The project construction activities may disturb one or more acres of land and therefore, may require a NPPDES Stormwater Permit for Construction Activities. The proponent can access information regarding the NPDES Stormwater requirements and an application for the Construction General Permit at the EPA website: <http://cfpub.epa.gov/npdes/stormwater/cgp.cfm>.

C8. The Town plans to comply with this requirement.

Bureau of Waste Site Cleanup Comments



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 (310 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 opinion. 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.

C9. The Town plans to comply with this requirement.

**D. COMMENTS FROM MASSACHUSETTS COASTAL ZONE MANAGEMENT (CZM)
DATED JUNE 3, 2008.**

CZM has reviewed the DCWMP/DEIR and had limited comments on the construction of sewer infrastructure within coastal floodplains and barrier beaches. Under the DCWMP/DEIR, a number of areas within the coastal flood plain and along barrier beaches will be connected to the town wastewater treatment facility via sewer lines and are therefore subject to the requirements set forth in Executive Order 181. Specifically, Executive Order 181 prohibits projects that promote growth on a barrier beach that would otherwise not be allowed. It also seeks to minimize and mitigate potential storm damage by prohibiting development within flood velocity zones.

CZM understands that the water quality benefits from extending the sewage collection system and treatment infrastructure to the area currently utilizing on-site sewage treatment must be balanced with the potential storm damage risks associated with this low-lying, barrier beach landform. CZM believes that these storm damage risks can be minimized through careful design considerations and that the long-term water quality improvements outweigh the potential risks. The proponent has addressed these design considerations by locating critical pump stations outside the 100-year flood elevation and by protecting the collection system from potential wave action. CZM recommends that a system of check valves also be incorporated into the design for section of the collection system within this flood zone. This can minimize impacts from a storm related breach to the collection system.

D1. Pump stations will be located outside of flood zones when possible, protected with a system of check valves in critical areas, and generally protected from floods and natural hazards.

To address the requirement that the project not encourage new growth in this area, a new section of the *Town of Chatham Rules and Regulations of the Sewer Department* was passed at the Chatham Town meeting in May, 2005. This regulation was specifically designed to prohibit growth that might occur as



a result of sewer extensions. CZM believes this regulation meets the spirit and requirements set forth in Executive Order 181.

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, Project Review Coordinator, at (617) 626-1050 or visit the CZM web site at www.state.ma.us/czm/fcr.htm.

D2. No response is necessary.

**E. COMMENTS FROM MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE
DATED MAY 28, 2008.**

Various areas within the Town of Chatham are located within Priority and Estimated Habitat as indicated in the 12th Edition of the MA Natural Heritage Atlas. Therefore, projects proposed within these areas would require review through a direct filing with NHESP for compliance with the Massachusetts Endangered Species Act (MESA 321 CMR 10.00). The applicant is encouraged to consult with the NHESP concerning potential state-listed species concerns once additional details on the exact location and extent of some of the proposed work are available. The NHESP believes that state-listed species concerns can be readily addressed through the MESA review process and looks forward to careful coordination with the proponent on the various portions of the Comprehensive Wastewater Management Plan.

E1. The Town has consulted with NHESP during preparation of the Federal USDA funding application for the WWTF upgrade. The Town will continue to consult and coordinate with NHESP during the sewer extension components of the project.

**F. COMMENTS FROM PLEASANT BAY RESOURCE MANAGEMENT ALLIANCE
DATED JUNE 4, 2008**

Regional Coordination

As it has gone through the lengthy process of developing this draft CWMP, Chatham officials have actively participated in discussions sponsored by the Alliance to explore regional strategies to achieve TMDLs for Pleasant Bay. The draft CWMP makes reference to several regional efforts that have emanated from these discussions.

One example is the consideration of re-installing a dike in Muddy Creek for the purposes of natural attenuation of nitrogen from the Muddy Creek sub-watersheds, which are shared by Chatham and Harwich. The draft CWMP indicates that 75% to 100% of the watershed nitrogen load needs to be removed from the Muddy Creek sub-watersheds to meet TMDLs. The draft CWMP proposes sewerage to achieve this load reduction. The plan also cites analysis done by the MEP which indicates that approximately one-third of the load reduction could be achieved through natural attenuation made



possible by re-installing the dike, and thereby reducing the amount of sewerage needed. However, the full potential impact of the dike re-installation on surrounding resources is not known. More analysis is needed to determine what other resource impacts could occur if the dike were reinstalled and whether these impacts outweigh the benefits of nitrogen attenuation. The Alliance has obtained a grant from the Cape Cod Water Protection Collaborative to study the resource effects of reverting the upper portion of the Creek into a freshwater system for this purpose. This information is necessary to weigh the benefits of nitrogen attenuation against possible alteration of the surrounding resources that could result. On the basis of this study the Alliance will recommend whether to proceed with further assessment of the project.

F1. The Town will continue to work with the Pleasant Bay Alliance to complete the analysis and find a solution that is acceptable to the people that live in the shared watershed.

Although the draft CWMP calls for sewerage to remove the Town's wastewater nitrogen load beyond levels needed to meet TMDLs, the draft CWMP also recognizes the value of reductions in fertilizer use throughout the Town to reduce this share of watershed nitrogen load. The Alliance has received a grant to study the effects of fertilizer on nitrogen loading, and determine administrative and public education efforts to deal with these issues. As part of this work the Alliance recently commissioned Dr. Martin Petrovic of Cornell University, a national expert in nutrient leaching, to undertake an in-depth literature search, and recommend one or more nitrogen leaching rates for different land use fertilizer applications within the watershed. Based on Dr. Petrovic's findings, the Alliance will assess any impacts the recommended leaching rates may have on watershed loading calculations, and develop appropriate management responses to control nitrogen impacts from fertilizer use. While we recognize that any nitrogen reductions achieved through fertilizer controls would be above and beyond the load removal achieved by sewerage, we underscore their importance as these load savings could be implemented quickly with relatively low public investment.

The draft CWMP also notes that the Towns of Chatham and Harwich have initiated discussions regarding the possible treatment of wastewater from Harwich at the proposed Chatham wastewater treatment and recharge site. It is regretful that the delay in completing MEP technical reports for the Town of Harwich's estuaries has delayed the detailed analysis needed to assess or further develop the feasibility of this option. Regional discussions with the Town of Harwich would appear to be more meaningful if they referenced a needs assessment for Harwich along with estimated wastewater treatment volumes that could be explored for treatment and/or recharge at the Chatham facility.

The Chatham and Harwich discussions demonstrate the significant potential for regional cooperation that could result in expedited and cost effective treatment alternatives. However, the example also points out the difficulties inherent in attempting to develop regional options among towns at varying stages of the CWMP process. Other Pleasant Bay watershed towns are at earlier phases in the CWMP process. As plans develop within these other communities, opportunities for regional coordination to address watershed nutrient management needs may come into clearer focus. By incorporating the concept of adaptive management into the draft CWMP, it is our expectation that the Town of Chatham would continue to foster dialogue with other watershed communities and remain open to modifications and flexibility in the implementation of the CWMP to address shared watershed nutrient management needs. The Alliance encourages all towns to identify and quantify the potential for wastewater treatment



capacity beyond levels needed to meet individual town needs and to actively explore how that potential capacity could help to meet the needs of neighboring towns.

F2. Please see response B5.

Phasing of Implementation

The draft CWMP indicates that the first phase of sewerage will be those sewersheds needed to achieve TMDLs. Phase 2 will extend sewerage to other areas of Chatham, including areas within the Pleasant Bay watershed that are beyond the level of treatment needed to meet TMDLs. The combined phases represent a significant commitment on the part of the town to ensure long-term water quality protection. We recognize that due to many technical and economic factors not all areas identified in Phase 1 will be implemented at the same time. In much of the Pleasant Bay watershed, it may take up to 20 years for implementation of sewers to be completed. While we acknowledge the complexity involved with developing a phased plan, we urge the Town to make every effort to address water quality issues in Pleasant Bay as early as possible within Phase 1.

F3. The Town is flexible in its implementation plan and hopes to make maximum use of combining the implementation of wastewater infrastructure with road reconstruction, private redevelopment, or other projects. There are expected to be opportunities to extend sewers to the Pleasant Bay Watershed during the Phase 1 implementation.

Growth Management

Chatham was among the first towns to recognize the potential growth effects of sewerage and adopt a “growth neutral” sewer connection regulation, and this regulation has been used as a model in other communities. While this effort addresses growth that may occur in the absence of Title 5 criteria, it does not fully respond to growth that may be allowed under current zoning. We understand that the town is going through a comprehensive zoning re-write, and in the process of revising zoning we urge to the Town to fully assess the growth effects of sewerage and how zoning and other growth management tools may be used to ensure that sewerage supports the community’s long-term growth management and resource protection priorities. Going forward, the adaptive management approach to CWMP implementation should be integrated with other facets of long-range community planning.

F4. It will be.

Septage Treatment

Another issue of regional concern is the availability of adequate facilities to meet regional septage handling needs. The Alliance encourages Chatham and all towns to identify their anticipated septage treatment needs to ensure that potential changes in septage handling requirements at any facility can be considered and that future septage treatment needs do not slow efforts to provide sewer expansions to the Pleasant Bay watershed.



F5. The capacities of the septage facilities are well-documented in the DEIR with current flows. Chatham septage flows will decline as sewers are extended. The excess capacity could be available for other towns or septage haulers if desired and agreed.

G. COMMENTS FROM CHATHAM BOARD OF HEALTH DATED JUNE 4, 2008

The Chatham Board of Health has, for the last ten years, been actively promoting the reduction of nitrogen from wastewater in Chatham through Nitrogen Loading Regulation. These regulations have resulted in the town now having approximately 100 individual Innovative Alternative Septic systems installed or proposed. Although we feel confident that these systems have reduced, and will continue to reduce, the amount of nitrogen reaching our groundwater, we realize that this piecemeal approach is not an efficient or practical method to solve our wastewater problem or to meet the Total Maximum Daily Loads mandated by MA DEP.

The Board of Health strongly believes that a central wastewater treatment and disposal facility, as proposed in the DCWMP, will best address the wastewater nitrogen problems in Chatham. In addition, the Board supports the construction of phased-in collection system built over twenty to thirty years to minimize disruption of daily life and reduce the impact of annual project costs. We believe this will allow for adjustments in the plans as implemented and the potential to address issues of emerging contaminants as they arise.

In conclusion, the Board of Health recommends the acceptance of this plan as proposed. This is the best approach to protect the health of Chatham's residents and the Town's ground water resources, and to improve the water quality of Chatham's salt water embayments and fresh water lakes.

G1. No response is necessary.

H. COMMENTS FROM MASSACHUSETTS DIVISION OF MARINE FISHERIES DATED JUNE 4, 2008

Before starting the restoration of the dyke in Muddy Creek, the Town should contact *Marine Fisheries'* Anadromous Fisheries biologist to assess the potential impacts to the diadromous fish species.

H1. The Town will coordinate with DMF and their Anadromous Fisheries biologist as this component of the project proceeds.



I. COMMENTS FROM DONALD EDGE OF CHATHAM SUMMER RESIDENTS ADVISORY COMMITTEE DATED JUNE 6, 2008

I write as Chairman of the Chatham Summer Residents Advisory Committee that represents over sixty percent of Chatham homes – all owned by non-voting taxpayers. Our Committee is advisory to the Chatham Board of Selectmen, and we have advised them for the past three years of our support for sewerage all of Chatham, and our unanimous support for a reuse water system to be used for irrigation of lawns, golf courses, town properties, and the like, and for recharging the aquifer.

A reuse water system is 4.5 percent of the total projected cost.

In many ways Chatham is a town built on water, and our most important water is the aquifer that must be protected at all costs and in every manner possible.

II. No response necessary.

J. COMMENTS FROM MASSACHUSETTS HISTORICAL COMMISSION DATED MAY 21, 2007

The project will include upgrades to the existing wastewater treatment plant and expansion of sewer system infrastructure within sewersheds town-side. MHC notes that the proposed project may utilize funding from the US Department of Agriculture, Rural Development Program. The MHC has previously reviewed an ENF in 1998 and a Notice of Project Change in 2004. The wastewater treatment plant portion of the project (MHC #RC.40177) was reviewed in 2006 and at that time that project, as proposed, was determined to be unlikely to affect historic and archaeological resources.

MHC proposed to review phased water supply, wastewater and stormwater management expansion and improvements as they are designed. Additional information, including a USGS topo map with the project area clearly outlined and scaled project plans showing existing and proposed conditions, should be submitted for each phase of improvements or expansion projects. The submittal information to the MHC should occur as early as possible, once a feasible location and design has been selected. The submittal should not wait until final plans are developed. MHC review will assist to determine if any, as yet unidentified, historic and archaeological resources may be affected by project elements. For example, archaeological survey may be requested for project elements located in archaeologically sensitive areas.

Project planners should continue to consider feasible design and locational alternatives that meet the engineering requirements, while also seeking to avoid or minimize impacts to historic and archaeological properties and areas. Proposed above-ground construction should be designed to be compatible and sensitive to surroundings, and could incorporate vegetative screening to minimize visual effects. Placing utilities within existing streets and other previously impacted areas can assist to avoid or minimize impacts to archaeological sites. MHC notes that the project planners indicate locating sewer pipelines and pump stations within existing road right-of-ways in the Chatham Historic Business District.



MHC notes that historic and archaeological resources have been considered within multiple sections of the DEIR, including Assessment of Impact (Section 10.4.11, pg 10-13), Cultural Resources (Section 10.6, pg. 10-15) and Miscellaneous Issues (Section 10.9.2, pg. 10-18), Planned Mitigation Measures (Section 11.3.A.2, pg 11-7 and Section 11.3.A.3, pg. 11-9). As alternative project locations are identified, MHC invites project planners to consult the Inventory of Historic and Archaeological Assets of the Commonwealth to take into account identified properties. MHC's Inventory of Historic and Archaeological Assets of the Commonwealth (which includes current State Register listings) is available for research at our office, without an appointment, during normal business hours.

J1. The Town plans to comply with these requirements.

K. COMMENTS FROM TOWN OF CHATHAM CWMP CITIZENS ADVISORY COMMITTEE DATED MAY 22, 2008

On the basis of the CAC's in-depth knowledge of the thorough analyses which underlie the development of this Plan, the CAC strongly supports the recommended wastewater management plan. In particular, the CAC supports the construction of a single, expanded, central wastewater treatment and disposal facility, built in stages, at the current plant site. The CAC also supports replacing existing residential septic tank systems throughout the Town with gravity and force main sewers. Finally, the CAC supports constructing the proposed treatment and collection system over a period of twenty to thirty years.

An extended construction period is important if the Town is to minimize disruption of the normal pattern of life in Chatham and to reduce the annual impact of project costs. Moreover, a construction period of twenty to thirty years will better enable the Town to make adjustments, during this period, to the plans for installing the wastewater collection system. Such adjustments could become appropriate if, for example, sufficient improvements in water quality are observed in one or more of Chatham's estuaries during the implementation of the Plan. For this reason, the CAC strongly supports the recommendation to continue monitoring the water quality of Chatham's embayments during the implementation of the Plan.

As noted above, the CAC also reviewed the evaluations conducted by S&W of alternative wastewater management plans. These included the use of individual nitrogen-removing septic systems and the use of small wastewater treatment plants to treat wastewater collected from a number of residences in a neighborhood. The CAC concurs with S&W's findings that these alternatives have some serious drawbacks associated with them and, therefore, have not been considered further.

In summary, the recommended Plan entails collecting the Town's wastewater, treating it to a high degree of purity and disposing of the treated effluent in a manner that will not contaminate ground and surface waters. The CAC is confident that implementation of the recommended Plan will, over the years, help protect the health of Chatham's residents and the Town's ground water resources, and improve the water quality of Chatham's salt water embayments and fresh water lakes.

K1. No response necessary.



L. ADDITIONAL DISCUSSIONS WITH MASSDEP REGARDING PROPOSED REGULATION CHANGES THAT MIGHT REQUIRE THAT THE WWTF NEED TO MEET A TOTAL ORGANIC CARBON (TOC) LIMIT OF 3 MG/L.

After the DEIR review period, MassDEP and the Town discussed the potential impact of MassDEP regulation changes on the planned WWTF upgrades. These discussions are briefly summarized below.

- i. The proposed regulation changes would require:
 - Disinfection of the treated water recharge at the WWTF site.
 - Possible treatment to meet a TOC discharge limit of 3 mg/l unless MassDEP agreed to an alternative plan.
- ii. The Town has since completed an evaluation of several ways to meet these requirements and met with MassDEP on March 20, 2009 to discuss the findings. The following items were decided:
 - MassDEP will not require the Town to meet the TOC limit of 3 mg/l, but the WWTF site should allow some space for expansion or upgrades to meet these limits in the future.
 - The Town will need to provide disinfection of the treated water.

L1 These findings will be provided in the FEIR, and the WWTF will provide UV disinfection and space for expansion and/or upgrades to meet new limits in the future.