STAFF REPORT

CAPE COD COMMISSION

PROJECT: **Draft Comprehensive Wastewater Management Plan (DCWMP), Draft Environmental Impact Report (DEIR), and Notice of Project Change (NPC)**
Falmouth South Coast Watersheds and Recommendations for West Falmouth Harbor Watershed
(Commission Project: JR07014, MEPA EEA Project No.: 14154)

TO: **Falmouth South Coast Watersheds DCWMP/DEIR/NPC Subcommittee**
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DATE: **September 28, 2012**

INTRODUCTION

The Cape Cod Commission (Commission) has received a Draft Comprehensive Wastewater Management Plan (DCWMP), Draft Environmental Impact Report (DEIR), and Notice of Project Change (NPC) from the Town of Falmouth (Applicant). The DCWMP/DEIR for Little Pond, Great Pond, Green Pond, Bournes Pond, Eel Pond, and Waquoit Bay Watersheds (South Coast Watersheds) and Recommendations for West Falmouth Harbor (WFH) Watershed was noticed in the September 5, 2012 Massachusetts Environmental Policy Act (MEPA) *Environmental Monitor*. As the project required the preparation of an Environmental Impact Report (EIR), it is also subject to Commission Development of Regional Impact (DRI) review pursuant to Section 2(d)(i) of the *Enabling Regulations* (revised March 2011) as "*[a]ny*

proposed development for which an Environmental Impact Report (EIR) is required to be prepared under the provisions of MEPA shall be deemed a DRI."

The Applicant requested Joint MEPA/Commission Review pursuant to the Memorandum of Understanding between the Commission and the Executive Office of Energy and Environmental Affairs – MEPA Unit. The Commission received the application for Joint Review of the DCWMP/DEIR on September 4, 2012 from the Applicant's representative, Nathan C. Weeks, P.E., BCEE, of GHD. The Joint MEPA/DRI scoping session/public hearing will be held on October 4, 2012 at 6:00 PM at the Falmouth Public Library, 300 Main Street, Falmouth, MA. The purpose of the scoping session/public hearing is to gather information for the Joint MEPA/DRI Review of the project and to recommend a scope for the Final EIR. The close of the MEPA comment period is November 7, 2012.

Joint Review was initiated in December 2007, with the review of the Environmental Notification Form (ENF) for the Town of Falmouth Comprehensive Wastewater Management Planning Project for the South Coast Watersheds including the Needs Assessment Report and Alternatives Screening Report for Little Pond, Great Pond, Green Pond, and Bournes Pond. A subcommittee of the Commission reviewed that ENF and submitted comments to MEPA on January 22, 2008. The Secretary of the Executive Office of Energy and Environmental Affairs issued a Certificate on that ENF requiring the preparation of an EIR on January 30, 2008.

The DCWMP/DEIR presents a significant change from the screened alternatives presented in the 2007 ENF. Commission staff understands that the 2007 ENF and its associated reports were the basis for the development of a Town internal 2009 DCWMP/DEIR that was then modified by the Town. Since 2009, the Town restructured their wastewater advisory bodies to broaden and incorporate a variety of perspectives to solving the wastewater needs for the Town of Falmouth. The review committee concluded their work with a set of recommendations to also include specific opportunities for innovative on-site technologies and on-site non-discharging systems, tidal flushing, aquaculture and permeable reactive barrier demonstration projects, and non-structural nitrogen reduction strategies consisting of fertilizer controls and stormwater management. These recommendations were acted upon at the Spring 2011 Town Meeting and the Town has begun to implement them through its Water Quality Management Committee (WQMC). The DCWMP/DEIR incorporates those changes and incorporates an excellent preamble of the Town's vision and goals.

Wastewater management is one of the most significant regional concerns affecting Cape Cod. The Commission is actively engaging with Cape towns to discuss the science, the challenges, and the potential solutions for managing wastewater in an efficient and cost-effective way. The Commission supports the efforts of the Town of Falmouth to develop a comprehensive plan to address wastewater management and applauds the Town for continuing to seek input from the Commission on its plan and proposed alternatives through Joint Review with the Commission,

MEPA, and the Town's Water Quality Management Committee (WQMC) at all stages of the review process. The Commission also recognizes the efforts the Town of Falmouth has made to coordinate its wastewater planning efforts with its neighboring Towns of Mashpee, Sandwich, and Bourne, and with the Massachusetts Military Reservation (MMR). The Commission looks forward to continuing to partner with the Town of Falmouth as its CWMP develops.

PROJECT DESCRIPTION

The purpose of the Town of Falmouth's proposed CWMP is to provide a comprehensive plan for wastewater management for the South Coast Watersheds and to provide recommendations for the West Falmouth Watershed where the existing Wastewater Treatment Facility (WWTF) is located. The proposed CWMP also identifies several demonstration projects for non-traditional wastewater and nitrogen management methods. The proposed plan is for the 20-year planning period of 2015 to 2035 with a 40-year perspective.

The DCWMP/DEIR includes a summary of the Town's Review Committee's identification and screening of alternative solutions to meet its wastewater needs and summaries of its detailed evaluations of scenarios for wastewater and nitrogen management. As indicated in the DCWMP/DEIR, the Review Committee decided on a "Preferred Alternative" called Scenario 1E. This scenario includes wastewater collection from Phase 1 and 2 Nitrogen Management Areas (as illustrated in Figure ES-3 in the DCWMP/DEIR), treatment at the existing WWTF, and recharge of additional treated water at two sites (Sites 7 and 10) north of the existing WWTF site using sand infiltration beds. The DCWMP/DEIR also identifies proposed demonstration projects, non-wastewater management components, deferral of planned sewer construction in select areas, and a modular approach to the construction of treatment and recharge facilities.

The DCWMP/DEIR describes estimated costs, financing plans, and project milestones. The Town describes two strategies to fund the proposed wastewater and nitrogen management projects: 1) issuing "new" debt when an "old" debt is paid off, and 2) using the State Revolving Fund (SRF) loan program for project construction costs. Commission staff notes that the Town is hoping MEPA and Commission reviews will be completed before the Spring 2013 Town Meeting.

COMMENTS FOR INCLUSION IN THE MEPA EIR SCOPE

Commission staff has reviewed the proposed project for consistency with the 2009 Regional Policy Plan (RPP), as amended in August 2012, and offers the following comments on the project and the MEPA Final EIR scope.

LAND USE

The task of predicting future development is difficult and as with all buildout methodologies is subject to a wide variety of assumptions to arrive at an estimate of future growth. Section 5 of the 2007 Needs Assessment Report, submitted with the 2007 ENF, and included in Appendix 2-1 of the DCWMP/DEIR, includes a discussion of the existing and projected land use conditions in the Town. In the Final EIR, Commission staff recommends that the Town of Falmouth elaborate on growth projections used to inform its CWMP, in particular any changes in growth projections since the preparation of the ENF and the assumptions used when calculating additional residential units, non-residential buildings, redevelopment, and additions.

WATER RESOURCES

The CWMP/DEIR targets Phase 1 and 2 areas for significant wastewater nitrogen removal, including portions of Little, Green, Great, Bournes, and Eel Ponds, and West Waquoit Bay (as illustrated in Figure 5-2 in the DCWMP/DEIR and attached hereto). These areas are mostly consistent with the area identified in the 2007 South Coastal estuaries Needs Assessment. It has been modified by removing the Scranton Ave/Falmouth Heights area and the Waquoit East Area. The Waquoit area has been identified for action in Phase 3. The Little Pond watershed is prioritized for the first conventional sewering project of the Phase 1 and 2 areas. Sewering and pilot projects are projected to be implemented over a 5 year time frame to 2020. The initial wastewater volume from Little Pond watershed will be treated at the WWTF on Blacksmith Shop Road with effluent disposal at identified off-site discharge Sites 7 and 10, to comply with nitrogen limits on WFH. The estimated flow from the Little Pond Watershed area is 0.29 million gallons per day (MGD), which is 60% of the combined A and B areas of Phase 1 with a combined estimated cost of $44 million.

The WWTF at Blacksmith Shop Road has the capacity to handle the increased flow from Little Pond watershed, but will need to be expanded prior to expanding sewer service to the remainder of the Phase 1 and 2 areas. The expansion will require increased flow capacity from 1.2 to 2.1 MGD (as illustrated in Table 2 in the DCWMP/DEIR, Appendix 5-10, Technical Memo 7, and attached hereto).

The DCWMP/DEIR provides an incremental approach combining a targeted watershed nitrogen removal strategy with the development of pilot projects that have the potential to be incorporated over the next 5 years. The DCWMP/DEIR proposes a highly complex but inclusive approach that recognizes the potential benefits of new and innovative technologies and alternative management strategies. The Town is presently implementing the recommendations of the advisory committee and the $2.77 million Town meeting vote through the procurement process to retain an omnibus engineering consultant to oversee design aspects of the entire project and separate expert consulting capacity to prepare feasibility studies for the pilot projects. Pending appropriate approvals, the Town proposes to appropriate $9 million in Spring

2013 to provide the design of the Little Pond Watershed collection system, necessary facility upgrades, and pilot project implementation. Subsequent to the design, the Town proposes to appropriate necessary funds, loans, and grants in 2014 to construct the Little Pond Watershed collection system and implement the pilot projects over the next 5 years concluding in 2020. The DCMWP/DEIR estimates the cost of this work at $44 million.

The DCWMP/DEIR projects a subsequent 20 year period ending in 2040 to complete nitrogen removal within the Phase 1 and 2 areas. At the end of the 20 year planning period, the proposed plan will have removed nitrogen from the significant high density sources adjacent to the south coastal ponds. The Final EIR should include a table indicating the percent of nitrogen removal that could be achieved by sewering the Phase 1 and 2 areas compared to the total load for removal identified by the MEP. Additional work beyond 2040 is anticipated to complete the nitrogen removals presently required by the Total Maximum Daily Loads (TMDL) in the Phase 3 Area, as may be modified through an Adaptive Management Plan. The total projected cost of the Phase 1 and 2 conventional sewer collection area and treatment and disposal is $320 million with $39 million of annual operation and maintenance. A projected cost estimate for conventional sewering of the Phase 3 areas is approximately $110 million.

The DCWMP/DEIR also includes an assessment of cluster versus centralized treatment alternatives for Seacoast Shores (Appendix 5-9, Technical Memo 6). These include scenarios for 15, 5, and 1 clustered plant to treat an average annual flow of 150,000 gallons per day (gpd) with a peak flow of 300,000 gpd compared to a centralized option. The total cost comparison indicates the following respective costs for each: $70, $61, $54, and $34 million. Major differences were house connection costs and effluent discharge sites (local versus remote centralized). The peer review indicated that some parameters such as cost share, and collection systems should be revisited. The Final EIR should make accommodation to revisit this type of assessment within the 5 year implementation of the pilot projects as new information becomes available, for example on the effectiveness of alternative methods such as Permeable Reactive Barriers (PRB). Expediting the time frame for nitrogen reduction is another important component to include in this type of assessment, especially if the centralized alternative, which is removing only a portion of the required nitrogen removal for this area, is not scheduled to be implemented until two decades later. The Orleans CWMP included potential interim cluster facilities that could be retro-fitted as pump stations later on in their plan's implementation.

The DCWMP/DEIR indicates that the selected plan includes a Draft CWMP for Oyster Pond. Commission staff understands that this is not in the planning area and is a separate project from the DCWMP/DEIR, but suggests it should be described in the Final EIR if it too will eventually lead to a project requiring an SRF loan and/or a NPC.

West Falmouth Harbor

According to the 2001 Commission Development of Regional Impact (DRI) Decision for the Town of Falmouth's Wastewater Facilities Plan and EIR (Commission project #EIR99001), the WWTF at Blacksmith Shop Road is limited to a flow of 600,000 gpd with a total nitrogen discharge concentration of 3 mg/l. At the time of the Decision, this was acknowledged as the loading rate that will attain 0.35 mg/l at the sentinel station for WFH. Any allowances above those rates are subject to review by the Commission. The DRI Decision also requires the Town to submit the wastewater treatment and landfill monitoring data to the Commission annually. This information should be evaluated and interpreted to assist in quantifying downgradient groundwater quality improvements and this would be used to assess changes of input to WFH and characterize altered groundwater quality from proposed new treated effluent water discharge sites to assess impacts on downgradient freshwater ponds.

The Decision allows an increase of treated discharge at the facility to the watershed up to 1.0 MGD, if the town were to sewer the "West of Route 28" portion of the West Falmouth Watershed, thereby reducing the watershed nitrogen load. The DCWMP/DEIR estimates the wastewater flow from the WFH area at 0.23 MGD with a present sewering cost of $22-26 million. The Town's Advisory Committee recommended and decided not to sewer the West Falmouth Watershed area as part of this DCWMP/DEIR. Therefore, the DRI limit of 600,000 gpd will remain, unless, as stated in the DRI Decision, additional assessment indicates otherwise.

Staff notes that the DRI review was conducted prior to the MEP and that subsequent work has come to light through negotiations between the Town, DEP, and the Coalition for Buzzards Bay. These discussions culminated in a modified Groundwater Discharge Permit (GWDP) for the WWTF and WFH watershed allowing up to 0.8 MGD with 0.23 MGD coming from the WFH watershed. If the WFH watershed is not sewered, the GWDP permitted amount is 570,000 gpd, with a number of conditions that specify other nitrogen reduction strategies. These conditions are consistent with the DRI Decision of 2001, but will require Commission participation in accordance with the DRI permit.

Wastewater Disposal Sites

The siting of suitable effluent disposal areas is a Cape-wide challenge. Disposal sites in Zone IIs, that cover large areas of the Cape, can incur a prohibitive cost to implement. Similarly, disposal sites in nitrogen sensitive watersheds are contrary to the goal of restoring these watersheds.

The CWMP proposes the use of Sites 7 and 10 that are located outside of the WFH Watershed to accommodate increased treatment volumes from the south coastal area. Commission staff has reviewed Appendix 5-11 (Technical Memo 8) and Appendix 5-12 (Technical Memo 9) that describe the site characteristics and provide groundwater modeling assessment of impacts. The

hydraulic loading tests indicate a sustained rate of 72 and 84 gpm/ft^2. The DCWMP/DEIR selected a conservative infiltration rate of 7 gpm/ft^2. Groundwater modeling was undertaken to primarily assess the ultimate nitrogen loads to WFH from the discharge of treated effluent at the three locations combined. Particle tracking indicates that the allocation of discharge could be accommodated (WFH TMDL is met) if wastewater was applied to specific areas within the identified discharge sites. The TMDL is not met if the wastewater is applied uniformly across the sites. The groundwater modeling also indicated 14% of the wastewater does not enter WFH but underflows to discharge further out into Buzzards Bay. This result is largely driven by the selected boundary conditions of the model and has not been field tested. Field work in other Cape environments has found that the inland coastal boundaries will focus groundwater discharge prior to the off-shore boundary so the conservative approach of assuming 100% of the discharge enters the Harbor is a valid approach. Additional site specific work to characterize the potential for this underflow phenomenon may be warranted.

Groundwater modeling indicated that 68% to 54% of the treated effluent from Site 10 would daylight in the Wing Pond corresponding to 0.48 to 0.92 MGD of treated effluent. According to the Cape Cod Ponds and Lake Atlas, Wing Pond is 3,500 feet downgradient of Site 10, and is 26 acres with a maximum depth of 22 feet. The Final EIR should provide an evaluation of the potential impact of the discharge on Wing Pond. This should include a diagnostic evaluation of the trophic condition of the pond including the mapping of bathymetry, and hydrologic and nutrient budgets. This data should be integrated into the groundwater model to provide a better estimate of the travel time and fate of the treated effluent components including the pond's contribution to the downgradient cranberry bogs and estuary. Additional field work to verify hydrogeologic conditions and the groundwater surface water interface and its recharge area (watershed) is warranted.

Groundwater modeling of Sites 7 and 10 did not account for the potential capture of treated effluent by Crocker Pond which is 1,500 feet downgradient of Site 7. According to the Cape Cod Ponds and Lake Atlas, Crocker Pond is 7.5 acres. The 2003 Atlas indicates that this pond had elevated concentrations of nitrogen and phosphorous, consistent with elevated concentrations found in ponds Cape-wide. The groundwater model should be modified to simulate the Crocker Pond hydrologic feature. A diagnostic assessment and hydrogeologic characterization, as described above for Wings Pond should also be conducted to evaluate the potential impacts of effluent disposal on the fresh water pond.

Depending on the results of the modified modeling recommended above, mitigation for potential impacts to the identified ponds should be developed and/or additional alternatives for treated effluent disposal including Site 2B, ocean outfall, and regional use of the MMR infiltration beds, should be further considered. The Commission is participating in the Joint Land Use study for the MMR and would be able to assist the Town in pursuing future discussions on that option.

Fresh Water Ponds

The Commission's comments on the 2007 ENF indicated that the Town should take advantage of the Ponds and Lakes Stewardship (PALs) freshwater pond sampling program to better characterize the fresh water conditions of the Town. This opportunity was reinforced by the 2008 MEPA certificate on that ENF. The DCWMP/DEIR did not address this recommendation. The last Falmouth PALs sampling was conducted in 2008 when 3 ponds were sampled. It is recommended that the Final EIR discuss how the Town will implement the Commission's and MEPA's recommendations to better establish the water quality issues associated with its fresh water ponds in an effort to inform future pond and watershed management strategies.

Modeling of Ocean Outfall Impacts

The DCWMP/DEIR indicates that an ocean outfall solution for treated effluent has minimal land requirements and groundwater impacts and offers possible cost savings and drinking water supply protection. The DCWMP/DEIR identifies the difficult regulatory and legal hurdles of ocean outfall, and has provided a straightforward design and estimated the cost for an ocean outfall at Nobska Point. However, satisfying the legal requirements for attaining a waiver for ocean outfall will require a significant technical feasibility study. Issues to be addressed include: tides, depth, sediments, benthic surveys, fish and fowling habitats, modeling of mixing zones, documentation of background water quality, projection of impacts, establishment of a Scientific Task Force and developing a monitoring and contingency plan. These studies would take several years to implement and interpret and would need to be duplicated if the town desired to carry forward both Nantucket Sound and Cape Cod Canal options. If the Town wishes to carry this option forward, the budget and timing to conduct the feasibility studies should be clarified.

Groundwater modeling was used in a general sense to gage the impact of diverting on-site wastewater on the general water table. The DCWMP/DEIR indicates that the water table may drop 0.5 feet in identified areas. The assessment generally concludes it is a small relative change. If the Town pursues the ocean outfall option, then a more specific assessment that evaluates the change in stream flows and surface waters should be conducted.

Project Coordination

The DCWMP/DEIR proposes to implement eleven (11) different projects over the next several years to 2020. Keeping track of the progress and setting reasonable milestones will be components of the Commission's DRI review and approval. Commission staff has identified the following projects for coordination with Commission staff:

1. Engineering Design Consultant scope and implementation
2. Fertilizer Bylaw
3. Zero Percent Loan Bylaws
4. Baseline Water Quality Monitoring

5. Shellfish Aquaculture Project
6. Inlet Widening
7. Eco-Toilet
8. On-Site Denitrifying Systems
9. Permeable Reactive Barrier
10. Sewer for Little Pond Watershed
11. Little Pond Storm Water Control

Waquoit Bay

Implementation of sewer service beyond 2020 is proposed to incrementally expand to the east, and under that plan Waquoit Bay would not experience nitrogen reduction until the end of the 20 year period. The area of west Waquoit is scheduled to be part of Phase 3 which will occur subsequent to 2040. Waquoit Bay is a shared regional watershed that has been identified as one of the more regionally impacted embayment systems on Cape Cod. Expediting nitrogen removal for the Waquoit Bay area should be a goal and towards that end, the Final EIR should identify and prioritize potential opportunities to expedite nitrogen removal for Waquoit Bay including piloting of the Permeable Reactive Barrier, interim collection and treatment systems, and potential regional solutions with Mashpee and the MMR. Cape Cod Commission staff are prepared to lend the Town specific assistance on this issue.

Adaptive Management Plan

The CWMP/DEIR contains the results of a workshop by the Town to begin a process to identify project evaluation criteria for Adaptive Management Planning purposes. This is an excellent beginning to level evaluations and comparisons of the different technologies and applications. The Commission staff will work with the Town to further develop this and other aspects, such as the groundwater monitoring aspect of the Adaptive Management Plan, under its DRI review.

COASTAL RESOURCES

Standards under RPP Coastal Resources Goals intend to protect and enhance public and traditional maritime interests and public trust rights, to limit development in known coastal hazard areas in order to protect the natural beneficial functions of Coastal Resources, and to mitigate pollution sources and minimize negative impacts to Coastal Resources. The DCWMP/DEIR proposes a combination of traditional (sewer installations) and non-traditional (demonstration projects) techniques in Coastal Resource areas.

Demonstration Projects

Section 4.1 proposes PRB construction as a demonstration project. This method involves the construction of a permeable barrier of reactive material along lengths of an estuary's shoreline

that allows groundwater to flow through and reacts with the nitrate in the ground water to convert it into nitrogen gas. The DCWMP/DEIR proposes to further evaluate this method through hiring a consultant to assist in the development of the demonstration project who will be responsible for recommending two (2) sites for PRB demonstration projects. Commission staff suggests further evaluation of this method is needed and recommends sites be selected where impacts to Coastal Resources can be minimized to the greatest extent feasible.

Section 4.7 of the DCWMP/DEIR includes evaluation of potential coastal pond inlet widening of Little and Bournes Ponds to increase tidal flushing in these ponds. The intent of these proposed inlet widenings is to restore the area to a more unrestricted tidal regime, allow for greater tidal flushing, and reduce concentrations of nutrients and other contaminants retained in the pond. As acknowledged in the DCWMP/DEIR, gaining regulatory approval to widen an inlet to a coastal pond requires detailed modeling, evaluations, and impact assessments. In general, Commission staff supports the Town's proposal to demonstrate the effectiveness of inlet widening as a component of its CWMP, provided that all associated impacts, including impacts to wetland resources, coastal sediment transport, and local beaches are identified and mitigated. Commission staff looks forward to reviewing more detailed plans for these proposed demonstration projects.

Section 4.8 of the DCWMP/DEIR proposes shellfish cultivation to harvest nitrogen and algae from the estuaries as a non-traditional nitrogen management method and a component of the CWMP. The DCWMP/DEIR acknowledges that research continues on the concept of aquaculture as a nitrogen management method. The RPP allows for coastal aquaculture provided it is designed to have no significant adverse impacts to water quality or marine habitat.

Sewer Installations

Commission staff notes that the existing WWTF and proposed infiltration beds are not located in any FEMA-designated flood zones. However, portions of proposed sewer areas may fall within FEMA-designated flood zones. According to the RPP, new non-water dependent public infrastructure in Land Subject to Coastal Storm Flowage (LSCSF) is prohibited unless there is an overriding public benefit. This prohibition is relaxed for activities such as underground utility crossings, provided that best available measures are used to minimize impacts on the critical characteristics of LSCSF and provided that all other standards for underlying resource areas are met.

Migration of Coastal Resources

To the extent feasible, the landward migration of coastal resources should be considered during the planning and design phases of any proposed development. Commission staff notes that Section 6.6.1 of the DCWMP/DEIR considers climate change and its impacts to Coastal Resources, and shoreline residential and commercial development. The DCWMP/DEIR notes

that “given the extent of development or otherwise restrictive natural features adjacent to many coastal wetlands in the Town, progression [of coastal wetlands] inland may not be a viable option.” The DCWMP/DEIR also highlights the importance of coastal wetlands, in particular salt marshes, in the sequestration of carbon toward mitigating the impacts of greenhouse gases on climate change. It also acknowledges that wastewater pumping stations and treatment facilities need to be sited high enough to avoid being exposed to damaging wave action in large storm events and protected from expected flood elevations anticipated with climate change. The DCWMP/DEIR recommends that “future wastewater facilities for flood prone areas should be designed for climate change to have as long a design life as possible.” Commission staff commends the Town for considering climate change impacts in its CWMP.

NATURAL RESOURCES

The DCWMP/DEIR presents analysis of the recommended plan components, including the following: 1) expansion of facilities at the existing Blacksmith Shop Road site, 2) addition of two infiltration beds to the north of this site, outside of the WFH watershed (Sites 7 and 10), 3) sewer installations within existing road layouts, and 4) alternative nitrogen-reduction strategies (non-wastewater management components). Commission staff provides the following comments addressing the potential wetlands, habitat, and open space impacts associated with each of these components.

Expansion of facilities at Blacksmith Shop Road

The existing facilities at this site are not located within a Significant Natural Resource Area (SNRA). The proposed expanded facilities within the existing development footprint do not appear to have adverse impacts on significant resources such as rare species habitat or wetlands. The expansion of facilities within a previously disturbed site is consistent with RPP interests to cluster development and reduce fragmentation of habitat and open space.

Sites 7 and 10

Both of these sites are located within SNRA due to the presence of state listed rare species habitat. Information provided in the DCWMP/DEIR indicates that the Natural Heritage and Endangered Species Program (NHESP) has mapped both of these sites for Eastern Box Turtle habitat. In addition, both sites are located in the midst of large forested woodlands. Site 10 in particular would result in the fragmentation of a more than 200 acre woodland, 115 acres of which were purchased with Town of Falmouth Land Bank funds for open space preservation. A certified vernal pool appears to be located within 400 feet or less of the proposed disposal bed site. RPP standards discourage the fragmentation of wildlife habitat, require the protection of rare species habitat, and require no disturbance of the 350 foot buffer to vernal pools. In addition, the section of the moraine where Site 10 is proposed contains trail systems that are of great recreational value to the Town and the region.

Recognizing the challenges associated with identifying disposal sites that meet the siting and engineering criteria, Commission staff encourages the Town to investigate alternative disposal bed sites that may have fewer natural resource impacts. Staff notes that neither Site 7 nor 10 appears to be owned by the Town, and would have to be acquired to install the disposal beds. The Town may wish to consider, if it has not already, the option of siting disposal beds on Town-owned land (even open space) that currently may be degraded or have fewer natural resource constraints, and swap the "conversion" of such land for the protection of the parcel at Site 10 for open space purposes.

Sewer Installations

Commission staff does not anticipate natural resources problems associated with the installation of sewers within existing road layouts. The Town should work with the NHESP and the Falmouth Conservation Commission to avoid impacts to rare species habitat and wetland resources to the greatest extent feasible.

Non-wastewater Management Components

The DCWMP/DEIR makes reference to several specific efforts to manage nitrogen before it enters a sewer system. Of note are efforts to improve nitrogen attenuation within Bournes Pond and/or Little Pond. As noted in the Coastal Resources section, Commission staff encourages investigation of opportunities to attenuate nitrogen through increased tidal flushing within these water bodies. We also encourage a thorough investigation of the potential positive and negative impacts that may be associated with inlet widening or dredging, including the potential for flooding of upstream rare species habitats. Projects designed to improve nitrogen attenuation through increased tidal exchange should consider the range of potential natural resource impacts associated with a given design, and incorporate an avoid/minimize/mitigate approach to designs selected.

CONCLUSION

In conclusion, Commission staff has reviewed the DCWMP/DEIR and recommends that the Town be permitted to proceed to the preparation of a Final EIR to implement the Little Pond Watershed and pilot projects. A Notice of Project Change is recommended at the conclusion of the 5 year construction period for a comprehensive review of the project's findings and Wastewater Management Plan. Commission staff recommends that the Town continue to work with Commission staff as project plans develop to help ensure that the CWMP complies with MPS identified in the RPP.

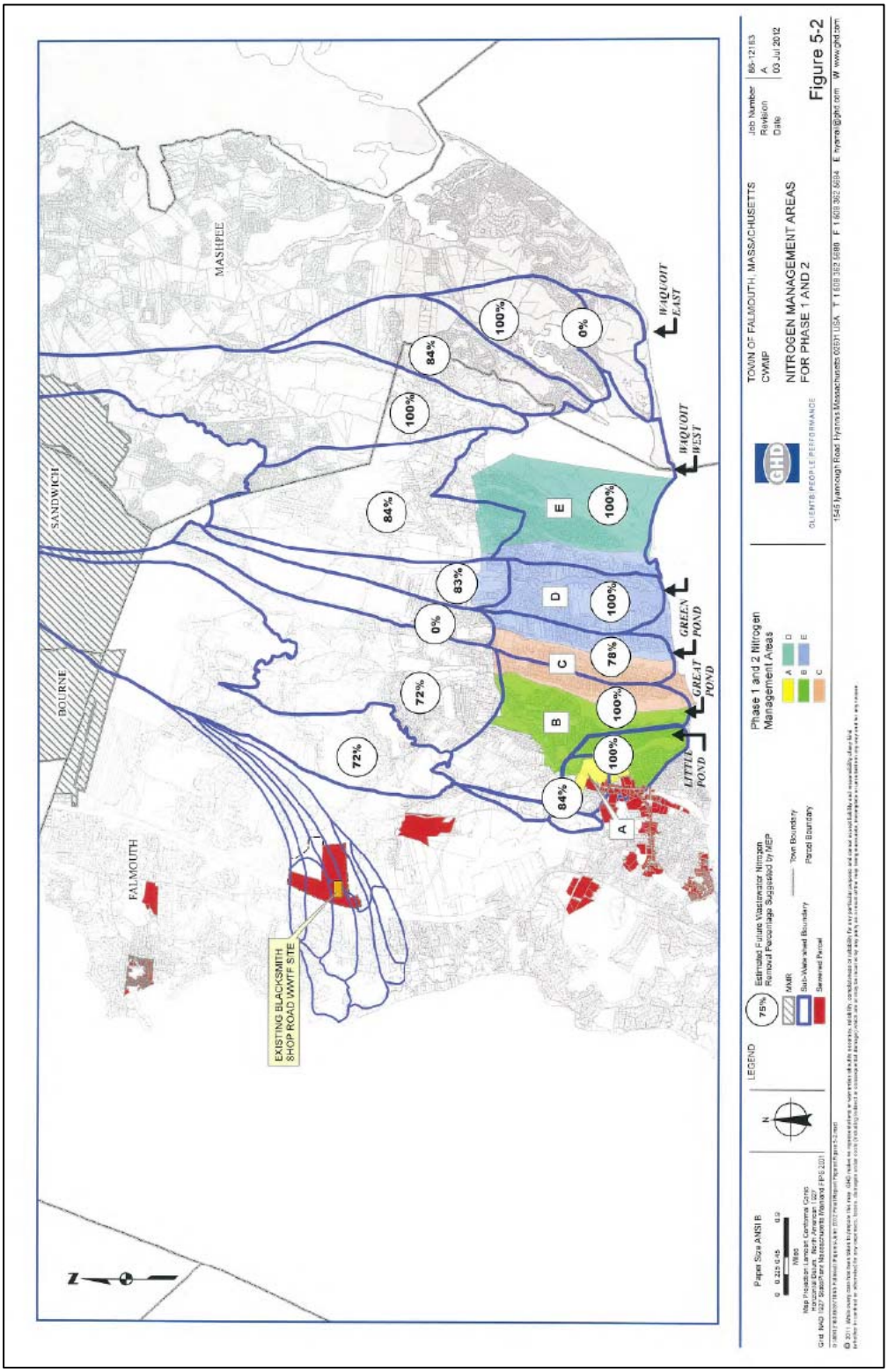
MASHPEE
SANDWICH
BOURNE
FALMOUTH
EXISTING BLACKSMITH SHOP ROAD WWTF SITE
LITTLE POND
GREAT POND
GREEN POND
WAQUOIT WEST
WAQUOIT EAST
A
B
C
D
E
84%
72%
72%
0%
83%
84%
100%
84%
100%
0%
100%
100%
78%
100%
100%
LEGEND
Estimated Future Wastewater Nitrogen Removal Percentage Suggested by MEP
MMR
Sub-Watershed Boundary
Sewered Parcel
Town Boundary
Parcel Boundary
Phase 1 and 2 Nitrogen Management Areas
TOWN OF FALMOUTH, MASSACHUSETTS
CWMP
NITROGEN MANAGEMENT AREAS FOR PHASE 1 AND 2
Job Number 86-12183
Revision A
Date 03 Jul 2012
Figure 5-2

TABLE 2

Projected Future Flows for Scenario 1E

SOURCE	WASTEWATER FLOW (MGD[1])	FUTURE SEWER UNITS[2]
Existing WWTF[3]	0.38	N/A
Infilling for Existing Collection Area[4]	0.09	530
Sewer Service Area A[5]	0.08	470
Sewer Service Area B[6]	0.40	2,350
Sewer Service Area C[7]	0.22	1,290
Sewer Service Area D[7]	0.30	1,760
Sewer Service Area E[8]	0.23	1,350
Allowance for I/I[9]	0.37	N/A
Total	**2.1**	**7,750**

Notes:

1) Million gallons per day rounded to two significant digits.
2) Based on Future Wastewater Flow for the Phase 1 and 2 sewershed areas divided by 170 gpd/residential property similar to Table 4-3 in the Draft CWMP/DEIR (rounded to the nearest 10).
3) From the October 2007 Needs Assessment Report.
4) From the 2001 WWFP/FEIR.
5) Based on water consumption evaluations dated September 2010 and projections to 2035.
6) Based on projections in Table 4-3 in the December 2009 Draft CWMP/DEIR and reductions for the Falmouth Heights area outside the Little Pond Watershed.
7) From Table 4-3 in the December 2009 Draft CWMP/DEIR.
8) Based on projection in Table 4-3 and reductions for the properties east of Seapit Peninsula that were removed from this service area.
9) Estimated at 30% of the Planning Area flow as discussed in the Needs Assessment Report.