



Via electronic delivery

February 19, 2014

Jonathon Idman, Esquire
Chief Regulatory Officer
Cape Cod Commission
PO Box 226
Barnstable, MA 02630

**Re: Falmouth Comprehensive Wastewater Management Plan
Development of Regional Impact**

Dear Mr. Idman:

On behalf of the Association to Preserve Cape Cod (APCC), the Cape's leading environmental advocacy and educational organization, I offer a few general comments on Cape Cod Comprehensive Wastewater Management Plans (CWMPs), and specifically the town of Falmouth's CWMP currently under review as a DRI. While the Falmouth plan is proactive and revolutionary in its multifaceted approaches, APCC is concerned that CWMPs continue to be developed and submitted based on town boundaries rather than on shared watersheds. APCC believes that this is a shortsighted approach that will cost the taxpayers of Cape Cod more and will result in less than optimum results. The Cape Cod Commission published its Regional Wastewater Management Plan (RWMP) well in advance of submission of the plan currently being reviewed. The Clean Water Act Section 208 planning process is underway and some of the tools and stakeholder input has not been included in the Falmouth FEIR and CWMP. APCC believes that the Falmouth CWMP and all Cape Cod CWMPs must be measured against these plans for both consistency and regional benefit. In our view the Targeted Watershed Management Plan (TWMP) approach by Falmouth appears to be more a tool to help the town delay dealing with regional challenges, watershed based approaches and inter-municipal cooperation envisioned for TWMPs in the Regional Wastewater Plan – notably, the Waquoit Bay Area of Critical Environmental Concern (ACEC) and the northern Buzzards Bay estuaries are excluded. The purpose of Section 208 of the Clean Water Act is the “development and implementation of areawide waste treatment management plans.” The current town-by-town approach is contrary to this purpose and the Commission should begin considering only “areawide” plans. Falmouth did not include a consistency chapter/section following the Guidance for Cape Cod Commission Review of Local Wastewater Management Plans detailing consistency of the local plan with the Regional Wastewater Management Plan (RWMP) and the Regional Policy Plan (RPP). A condition of the DRI permit should be that Falmouth submit a consistency check within 90 days of adoption of a draft 208 plan by the Commission.

Founded in 1968 and representing more than 5,000 members, the mission of APCC is to promote policies and programs that enhance the protection of the natural resources of Cape Cod. Underlying all of the work that APCC does is the understanding that Cape Cod is a single geographic and hydrogeological unit, and that the Cape's natural resources and economic vitality cannot be adequately protected based on arbitrary political borders.

APCC has long-maintained that protection of the Cape's water resources requires a regional approach. In the 1980s, APCC advocated for the creation of a regional authority to protect water resources. In 2003, APCC, in coordination with the Cape Cod Business Roundtable, called for the creation of a regional authority to address the lack of adequate wastewater infrastructure on Cape Cod. APCC later served on the task force created by Barnstable County to address the Business Roundtable's recommendation. For many years, APCC has collaborated with partners on numerous public education forums about this issue. In 2010, APCC co-sponsored the development of a report, "Comparison of Costs for Wastewater Management Systems Applicable to Cape Cod," to assist communities in making decisions about wastewater infrastructure. In 2012, APCC convened an environmental summit of all of Cape Cod's nonprofit environmental organizations. Two noteworthy findings of that summit were:

Nutrient loading of Cape Cod's groundwater, ponds, and coastal waters caused by human activity and waste is the region's number one environmental priority. Immediate action on the part of government, business, and every citizen across Cape Cod is necessary.

A regional wastewater plan would encourage and enable communities to work cooperatively with each other to reach and maintain total maximum daily loads (TMDLs) of nutrients and/or other objective water quality criteria for each watershed.

While Falmouth clearly has taken a more comprehensive approach and demonstrated a willingness to test technologies across a broad spectrum of challenges and situations than other Cape communities, being innovative does not guarantee success or imply better. Proven solutions have greater predictability than some of Falmouth's innovative approaches. The challenge for Falmouth is to avoid investing into failing innovations and to possess the ability to acknowledge failure when an innovative approach does not produce satisfactory results. During the public hearing on the FEIR the town made the case that the innovation alternatives were cost driven and not results driven. Obviously cost is an important consideration, but ultimately the plan must attain the desired water quality standards. As noted throughout the FEIR, it is difficult to measure the actual effectiveness of some actions. There is always the temptation to invest a little more into a program heavily backed by hope, ownership and financial investment. As acknowledged by Falmouth, it is going to be especially difficult to assess the success of some of these so-called innovative technologies due to factors such as difficulty in quantifying stormwater and fertilizer contributions to TMDL, decreasing amounts of reactive nitrogen in the atmosphere, and ocean acidification. There are portions of the Falmouth plan that require

additional reflection, monitoring and evaluation before declaring success or even potential success. This does not mean that these innovative technologies should not be attempted or evaluated; only that there should be means to determine whether those technologies will work and continue to work on a sustained basis.

The following are comments to specific approaches and technologies included in the CWMP:

1. All solutions must operate in a changing climate and take into account an ever-rising sea level. While the FEIR acknowledges changes, there is no analysis within the FEIR of the impacts of rising air temperatures, rising sea temperatures, changes in precipitation, increases in sea level including impacts on the aquifer, or ocean acidification. In-ground solutions and biologic solutions in particular will be impacted by these changes. Properly anticipating and accounting for these changes is essential to an effective adaptive management plan.
2. Site 7 – From an adaptive management perspective, Site 7 poses the most likely area to err from modelling predictions. The engineering is at the edge of the models for the path of the discharge flow. It is quite likely that Crocker Pond will be impacted in some form despite optimism to the contrary – including added freshwater flow and nutrients. It is also possible that the addition of treated discharge at Site 7 may impact groundwater flow in the area– when large volumes of water are pumped into the groundwater there will likely be unanticipated consequences. APCC is particularly concerned about phosphorus levels increasing in Crocker Pond. APCC is constantly reminded of the limitations of modeling and the town must be ready to respond whenever results on the ground differ with the modeling projections. Added monitoring safeguards need to be in place before work commences. The Staff Report dated February 10, 2014 begins to address some of these concerns with recommendations for technical oversight and aggressive monitoring. The problem is that there is no backup or alternative should Site 7 prove to be a poor choice as a discharge site. The town does not articulate any potential alternative except Site 10, which the town already rejected on environmental grounds. The town should articulate a plan B should Site 7 prove to behave differently as a disposal site than the modeling indicates. Thresholds should be established prior to work commencing that would require shifting to an alternative if exceeded.
3. Fertilizer management – The Falmouth fertilizer management bylaw is extremely weak, with no enforcement mechanism. It was enacted with limited baseline information. It is virtually impossible to quantify the impact of the bylaw on water quality. The Cape Cod Commission's recent efforts to develop a model bylaw/regulations and institutionalize best management practices for turf uncovered wide inaccuracies in the sale and use of fertilizers across the Cape. More importantly, the Cape Cod Commission effort identified huge gaps between actual landscaping practices and the best management practices for turf management, e.g., mulch mowing not practiced by professional landscapers who claim to use best management practices, and great discrepancies in the quantities of product used. In its present form, the fertilizer management bylaw is a good first step in educating consumers, but it is totally immeasurable in its impact on, or value in, measuring water quality improvement. Falmouth will have to step up public education

and ultimately incorporate strict enforcement standards in fertilizer use, especially in proximity to wetlands and water bodies. Significant additional steps are necessary in fertilizer management. Contrary to the town's assertion at the DRI hearing, there is still more work to be done by the town in the area of fertilizer management.

4. Inlet widening – Bournes Pond – First and foremost, inlet widening is not a treatment technology. Inlet widening is simply transferring the nutrient load from one water body and to a larger water body (dilution). APCC raised a number of issues concerning inlet widening as a water quality tool when an ENF was filed for Bourne's Pond. According to the FEIR analysis of the ENF, "little quantitative information was provided on benefits and cost of such a project. The regulatory community raised many questions about the proposed project and the ENF was withdrawn." At a minimum, the FEIR should have contained a benefits/detriments analysis. The FEIR failed to satisfactorily answer those concerns previously raised by APCC and regulators. From an adaptive management perspective it is likely that inlet widening may have a positive impact on salt marsh restoration—fringing marsh along Bournes Pond with room to migrate. The town must be prepared to monitor the full range of ecological impacts including impact of nutrients on the receiving waters and quantifying the independent effect of salt marsh restoration on improved water quality. Low-lying property flooding and onsite septic failures are potential negative outcomes that must be modeled, monitored and addressed in a timely fashion. Bournes Pond is currently a shellfish resource area. Conditions for inlet widening should include collection of shellfish baseline data and monitoring of the shellfish population for changes in population and health (disease).
5. Shellfish and aquaculture – APCC believes that every Cape community should actively promote shellfishing and aquaculture as a tool for better water quality, and as part of the Cape's sense of place. However, APCC is especially concerned that oyster farming is being proposed by a number of citizens as the ultimate solution to our embayment water quality challenges. No two embayments are alike across a broad range of variables including tidal range, salinity, acidity, nitrogen, freshwater interface and stormwater runoff. Additionally, each embayment is susceptible to alteration from storms and hurricanes. Embayment-specific studies are needed before investing in aquaculture as a water quality solution. The lack of controls and number of variables will make it difficult to quantify the efficacy and optimization of using shellfish as a nitrogen-removal tool. The limitations and variations of using shellfish for this purpose are well documented. An excellent overview was presented by Reitsma and Murphy at the Cape Coastal Conference and is available at: http://www.waquoitbayreserve.org/wp-content/uploads/A-01_Reitsma-Murphy-Nitrogen-in-Shellfishsmallpdf.com1_.pdf. Falmouth's non-reef approach will likely not result in denitrification of the sediment, and actual nitrogen removal will depend on harvest. Harvests will have to be closely monitored to determine actual nitrogen removal. Disease could destroy any water quality gains made. The Division of Marine Fisheries (DMF) will have to address the issue of monitoring aquaculture in areas closed to shellfishing, depuration, and what testing will be required before permitting the shellfish to enter the food supply. APCC has previously raised the concern that DMF's current practices and procedures are inadequate to protect public health from a number of contaminants that are currently not properly monitored.

Additionally, oyster theft has become the focus of sophisticated criminal enterprises. The town will have to step up law enforcement's role and presence in shellfish growth and harvesting. Until just recently, Falmouth had devoted minimal resources to its shellfish program—considerably less than it collected in shellfish fees. Lastly, shellfish have been declining in size over time. The reasons are unclear. If this trend continues, the efficacy of nitrogen reduction will also decline.

6. Composting toilets – APCC does not believe that composting and urine diverting toilets will have any wide-scale appeal until the environmental, building and plumbing regulatory framework are dramatically changed. At this point, we know there will be wide-scale nutrient reduction in our groundwater only with properly maintained devices; public acceptance remains low; retrofitting existing houses is expensive; and proper/optimal maintenance is unlikely. This is an issue in which the Commonwealth will have to take a leadership role. APCC is particularly concerned that a Falmouth selectman recently stated that composting toilets are good for affordable housing. This raises a question of economic justice. If composting toilets are to be part of the solution, they must not be targeted solely for the disadvantaged.
7. Stormwater management – Falmouth needs to be more aggressive in dealing with direct stormwater discharges under their control, especially considering the close relationship between stormwater runoff, shellfish and beach closures. Falmouth should evaluate creation of a stormwater utility as a means of sustaining stormwater management. In 2012, APCC did an evaluation of stormwater management across Cape Cod. Our conclusion was that Falmouth had a good plan but lacked the resources to carry out and maintain the plan. This conclusion is not unique to Falmouth. Effective stormwater management will allow leveraging other benefits, not just nitrogen. The DRI should insure resources are made available for this purpose.
8. Ocean outfall – APCC believes that the Secretary of Energy and Environmental Affairs should establish clear guidelines, treatment standards (including emerging pollutants such as pharmaceuticals) and environmental standards for the siting and use of ocean outfalls prior to any legislative action that makes outfalls a potential tool for the Cape. APCC is especially concerned about impacts ocean outfall will have on groundwater elevations, stream flows and vernal pools. According to the U.S. Geological Survey switching to ocean outfall will significantly lower groundwater elevation. Ocean outfall should be off the table at this point in time.
9. Sea level rise – Along with the U.S. Geological Survey, Cape Cod Commission and others, APCC recently embarked on a three-year study to model of the impacts of sea level rise on the Monomoy and Sagamore lenses of the Cape's sole source aquifer. We know that a rise in sea level will have a measurable impact on the aquifer, salt water/freshwater interface, elevation of groundwater, stream flow, and stream velocity. These impacts will affect the efforts outlined in the FEIR. At this point it appears there will be an increased failure of onsite Tile 5 systems because of insufficient distance between discharge point and groundwater. More underground infrastructure will be

exposed to groundwater. While the FEIR acknowledges sea level rise, the CWMP does not appear to account for the challenges that sea level rise will bring to wastewater management.

10. Zoning and land use reform – While the FEIR points out the importance of zoning and land use changes, Falmouth has shown an inability to craft creative land use reform initiatives. This includes the failure to adopt smart village-oriented plans for East Falmouth and North Falmouth, to make cluster development by right, or to consider natural resource protection zoning. The town has exhibited a record of allowing/promoting liberal expansion of nonconformities and granting general zoning relief. Without a change of town government culture, it is unlikely that Falmouth can formulate real nutrient reduction through this vehicle.
11. In-ground infrastructure –The CWMP requires a significant reliance on in-ground infrastructure, including the addition of the Little Pond collection system. Leakage from in-ground infrastructure continues to be a wastewater problem that is overlooked and/or minimized in the FEIR. Sea level rise and changes in groundwater will make this issue worse. Again, this is not a challenge unique to Falmouth, and is an issue area that calls for state and regional leadership.
12. Cesspools – Cesspools are the lowest hanging fruit that the regulatory community continues to ignore. APCC recently raised the issue of cesspools with the Commissioner of DEP. Any action on this issue is missing from the FEIR.
13. Paying for Plan B. – At the public MEPA hearing, Falmouth officials announced that the town is committed to doing no more than it can afford within the current tax and debt environment. The proper priority goal is water quality, and spending only what the current fiscal climate will fund is an unrealistic expectation by the town.
14. APCC supports adaptive management as a flexible and pragmatic model to embrace in wastewater treatment. However, documented failures of adaptive management across the country dictate a cautious and measured approach. Literature supports that all too often, adaptive management is either simply a buzzword, or utilized as a means to protect bad decision-making. APCC recommends that performance-based goals and early intervention be used as hallmarks to achieve a successful adaptive management plan. In order to better manage the project, nitrogen, phosphorus and emergent contaminant data need to be collected throughout the process. APCC recommends an intense monitoring program be established to identify any unanticipated impacts, and that it include automatic steps such as growth and flow controls. We support the Cape Cod Commission staff report on adaptive management.

There is no question that many aspects of this CWMP “require additional analysis of technical details” as acknowledged in the plan. Our concern is whether the many uncertainties identified throughout the FEIR can be appropriately and adaptively managed to protect the environment in

a timely fashion, and whether the town has the resources to effectively implement "Plan B" mitigation strategies if and when those alternative strategies prove necessary. The permitting agencies must condition the various components of the plan to provide incentives, both positive and negative, to make this CWMP satisfy the mandates of attaining swimmable and drinkable water and "to minimize environmental damage; any adverse short-term and long-term environmental consequences which cannot be avoided should the project be undertaken; and reasonable alternatives to the proposed project and their environmental consequences." Implementation of a successful CWMP will require extensive monitoring, reevaluation and maintenance as well as a willingness to admit that elements of this plan are not succeeding.

APCC thanks the Commission for this opportunity to comment.

Sincerely,

A handwritten signature in blue ink, appearing to read 'EDWITT', with a long horizontal flourish extending to the right.

Edward DeWitt
Executive Director

