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Elaboration on the
Cape Cod Environmental Summit Consensus Statement

Necessary State Action

The Association to Preserve Cape Cod (APCC) convened an environmental summit to provide a vehicle for the Cape Cod environmental nonprofit community to speak with one voice, call our environmental organizations to action and petition our governmental officials to be more proactive in addressing the impacts of nutrients on Cape Cod's water resources. A copy of the summit consensus statement is attached. There is a sense of frustration across Cape Cod that we have allowed ourselves to create a serious region-wide environmental challenge, yet the difficult decisions that are required to resolve this challenge in an equitable, efficient and timely manner have been slow to come and are still on the horizon.

There are a number of actions that the Commonwealth can and should take to provide leadership, wisdom, expertise and solutions to address the following summit finding:

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.

This document outlines some of the potential actions APCC believes the Commonwealth can take.

Water/Wastewater Infrastructure Funding Gap

In February of 2012, the Commonwealth published MASSACHUSETTS'S WATER INFRASTRUCTURE: TOWARD FINANCIAL SUSTAINABILITY. Key findings of that report included:

1. The Commonwealth faces an \$11.2 billion gap between necessary investment and available resources for wastewater projects statewide over the next 20 years. This estimate did not include evolving regulatory requirements or growth.
2. There is an \$18 billion gap between necessary investment and available resources for stormwater projects. This estimate is predicated upon expected and reasonable changes to federal stormwater regulations and permits.
3. Failure to act immediately and definitively will widen the gaps and make the solutions even more expensive.

The authors recommended a \$200 million trust fund, funded annually. The Cape alone needs \$20 million of state aid each year to begin to confront our wastewater challenges. And, this 20 million will do nothing to address potable water and stormwater infrastructure challenges. The state needs to creatively and aggressively close these funding gaps. Closing the wastewater funding gap will create jobs, clean the environment and promote sustainability for one of New England's top destinations. Providing such funding is significantly more of an investment than an expense. A 2012 College of William and Mary study¹ reported that over 20 years, for every dollar invested in wastewater infrastructure, \$2.03 is returned in state and federal taxes.

Title 5

The summit found:

Septic systems are the major contributor of nutrients in groundwater, ponds and coastal waters.

Revised regulations and/or legislation are needed to address nutrient problems caused by continued use of cesspools and on-site septic systems, including Title 5 systems.

There is a common public perception that Title 5 systems treat nutrients. While there might be some nutrient attenuation between flush and ultimate receiving water, the Department of Environmental Protection's (DEP) Title 5 website overstates this small attenuation. Title 5 systems are effective in preventing the spread of pathogens, but even properly functioning conventional septic systems do pollute groundwater with nutrients, pharmaceuticals and household chemicals. This is particularly a problem on Cape Cod where all water is connected, and our toilets flush into the same sole source aquifer from which we draw our drinking water, and which eventually drain into our freshwater ponds and coastal embayments. This general misconception about the treatment capability of Title 5 has provided the public with a false sense of the treatment effectiveness of on-site conventional systems. This leads to a common opinion that "I am not part of the problem

¹ Isabelle Cohen, Thomas Freiling & Eric Robinson, THE ECONOMIC IMPACT AND FINANCING OF INFRASTRUCTURE SPENDING, College of William and Mary Thomas Jefferson Program in Public Policy (2012).

because I have a Title 5 septic system.” The DEP should at a minimum correct its narrative related to Title 5.

Under Title 5, DEP not only has the authority but the responsibility to designate nitrogen sensitive embayments. Despite ample scientific evidence that the south coastal embayments across Cape Cod are all receiving nitrogen significantly above established total maximum daily loads, not a single embayment has been designated. As early as 2000, the Massachusetts Estuaries Project identified the need for stepped up action of management, land use planning and improved wastewater technologies for these embayments. In the past dozen years, the regulatory landscape has stood stagnant while these sensitive embayments continued to nutrify and turn eutrophic. The Commonwealth should begin designating nitrogen sensitive embayments, declare moratoriums on the introduction of new sources of nitrogen and require planning to bring these embayments into compliance with established total maximum daily loads.

While having only a minimal impact on nutrients, there currently is no permanent phase out of cesspools under Title 5. According to DEP, “Only those cesspools that exhibit signs of hydraulic failure, are located extremely close to private or public water supplies, or otherwise fail to protect or pose a threat to public health, safety or the environment will need to be upgraded ([310 CMR 15.303](#)). Also, cesspools must be upgraded prior to an increase in design flow (e.g., the addition of a bedroom to a home or seats to a restaurant).” This approach is woefully inadequate. Most hydraulic failures occur out of sight. Because many homes on Cape Cod remain with a single family for generations, many residences with cesspools are never inspected. A permanent phase out date should be established. This helps send a message that homeowners need to think about where their flush ends up. Because of higher rate of failure, the impact of cesspools on overall water quality is significantly underestimated.

Septic system inspectors are not required to determine accurate groundwater elevation, and in DEP’s own description, such information is “rarely” determined. According to DEP, the number one cause of septic system failure is groundwater infiltration. Yet DEP does not require accurate determinations, “At the present time the most reliable method of determining the high ground water elevation is to excavate a deep test hole and have it evaluated by a certified soil evaluator. This method is probably beyond a routine system inspection and should be used only in rare cases where there is disagreement among the inspector, the homeowner and the Board of Health and then only after consultation with the homeowner and the Board of Health.” Considering that sea level rise will have an added negative impact on groundwater elevation a better, more economic and regularly used determination of high ground water must be established and required for all inspections. There is virtually no nutrient attenuation from failing systems and pathogen

challenges reemerge. Title 5 systems present a host of problems and Title 5 regulations should protect the public and not provide a false sense of security.

There are no special requirements for pumping on-site septic systems located in flood plains. Septic systems in flood plains are susceptible to inundation during a flooding event releasing large quantities of untreated, pathogen laden and nutrient rich septage into the environment. Septic systems located in flood plains should be required to be pumped annually to minimize the volume of released septage during flooding events.

Local Comprehensive Wastewater Management Plans

The summit found:

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.

and

Environmental modeling and monitoring on local and regional levels are important tools for evaluating the success of nutrient/wastewater management.

The state has not only encouraged individual towns to go it alone; it has thus far required them to develop their own unique plans. Watershed-based plans on Cape Cod make sense, since most watersheds do not follow or respect municipal boundaries. Local plans on Cape Cod that stick to municipal boundaries should not simply be discouraged, but should instead be outright rejected. State Revolving Fund support should be denied to communities that do not engage in inter-municipal watershed-based planning and construction. The Cape is fortunate to have a capable regional planning agency that has been heavily focused on regional wastewater solutions. The state should maximize and facilitate the Cape Cod Commission's efforts to regionalize solutions including updating legislation to encourage and incentivize inter-municipal cooperation.

Great Ponds

Great Ponds are state assets/property that are poorly monitored and poorly protected. These unique assets need added protection. The Cape should be a showcase for these incredible public assets. The Commonwealth needs to immediately develop nutrient plans for its Great Ponds and begin systematically addressing eutrophication of these critical water bodies. A Great Ponds Protection Act should be seriously evaluated and considered.

Additional Regulatory Reform

The Executive Office of Energy and Environmental Affairs (EOEEA) is lauded for its initiative to look at alternative tools for nutrient reduction in embayments, e.g. aquaculture, dredging and inlet widening. Some tools are merely means of dilution, while others have ecological impacts. New technologies and innovation are part of the long term solution. The Commonwealth needs to do more to promote not only new ideas but also the means to objectively evaluate these technologies. The use of gray water, limits on treated effluent discharge and restrictions on the use of innovative/alternative technologies all place brakes on potential improvements. The Commonwealth should expand the focus of the current EOEEA working group to develop strategies and regulations that encourage innovation while protecting the environment and public health. As noted herein, more focus must also be placed on regulations, tools and technologies to protect and restore our ponds. These changes should recognize that failure and unintended consequences must be anticipated and effectively dealt with promptly.

Stormwater Management

The summit found:

Nutrients come from different sources, including septic systems, fertilizers, surface run-off, and atmospheric deposition.

Estimates place between 5 and 15 percent of the nutrient load challenge upon stormwater related runoff. Ponds on Cape Cod are particularly vulnerable to stormwater runoff pollution and nutrient loading because vegetative buffers have frequently been developed. In 2012, APCC conducted a review of governmental stormwater practices across the Cape. The review showed that some Cape communities have aggressively attempted to deal with stormwater issues, while others have not. There has been a consistent lackluster approach to stormwater management from the Commonwealth itself, particularly with regard to treating stormwater within the state's transportation infrastructure. While the state currently provides a positive voice for stormwater management, it doesn't aggressively practice and implement best management practices or even the best snow and ice removal practices, e.g. minimization of chemical applications. While the state has tinkered with meadowscaping, it has not employed simple landscaping and streetscaping practices that in the end require less maintenance, are more aesthetically pleasing and help clean up the environment.

State fertilizer regulation has largely been influenced by the landscaping and chemical industries and not by the common good. Recent legislative changes have given the state essentially complete control on the use and application of fertilizers, taking local regulation of fertilizer use out of the hands of municipalities. The Commonwealth needs to exercise

this sole authority in way that promotes water protection, ecology and the common good. Under the authority the state now possesses, more stringent regulation of fertilizer use in nutrient-impaired watersheds should be pursued. There are sound ecological methodologies that promote healthy landscapes without shortcut chemical applications that add to the Cape's nutrient loading challenge.

Areas of Critical Environmental Concern (ACEC).

The state has recognized certain areas throughout the Commonwealth as unique resources. According to the Commonwealth, "Areas of Critical Environmental Concern (ACECs) are places in Massachusetts that receive special recognition because of the quality, uniqueness and significance of their natural and cultural resources. These areas are identified and nominated at the community level and are reviewed and designated by the state's Secretary of Environmental Affairs. ACEC designation creates a framework for local and regional stewardship of critical resources and ecosystems." Two ACECs on Cape Cod are dominated by nutrient impaired embayments – Pleasant Bay and Waquoit Bay. These areas should be prioritized for action by the state. Both of these ACECs cross municipal boundaries, and regional solutions are both necessary and vital.

Conclusion:

The Commonwealth has ample tools and authority that it has been reluctant to exercise in the resolution of the Cape's number one economic and environmental challenge. The citizens of Cape Cod and the entire Commonwealth benefit from a pristine Cape Cod with water, light and air for all to enjoy and share with their children.