



Lead, Talerman & Costa, LLC  
Attorneys at Law

30 Green Street  
Newburyport, MA 01950  
Phone 978.463.7700  
Fax 978.463.7747

www.mtclawyers.com

TO: James McCarthy, Chair  
Members of the Planning Board  
FR: Lisa L. Mead, Esq. *JLM*  
Steven Sawyer, P.E.  
Thomas Hughes, BS, MA  
DA: June 26, 2017  
RE: Evergreen Commons / Water Resource Protection District Criteria Further Information

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Reference is made to the above captioned matter and the prior submission for the Evergreen Commons Water Resource Protection District Special Permit and Definitive Subdivision. In that connection, as you are aware, the Applicant addressed the design standards found in section XIX-I (6) and (7) in the filing last month and generally addressed the criteria. By this memorandum, the Applicant is providing more information to specifically further address the items in section XIX-J-3(a) and (b) as follows:

a. The proposed Open Space Residential Development ("OSRD") in no way adversely affects the existing or potential quality or quantity of water that is available for on-site recharge in the water resource protection district, during or after construction.

Quantity: The current use as a golf course includes the use of an irrigation system which draws water directly from the ground water through various means to water the golf course. As you are aware, the OSRD Special Permit prohibits the use of an irrigation system drawing from the ground water to water the lawns and other maintained landscaping at the proposed subdivision. Specifically, currently there are 21 acres irrigated with the ground water. Following development, there will be no use of the groundwater for irrigation and therefore there will be an immediate improvement, not an adverse effect, on the potential quantity of ground water on site. Further, "The project provides for the required groundwater recharge volume per Standard 3-Recharge to Groundwater of the Massachusetts Stormwater Standards." This is achieved by the water held and directly infiltrated in the five bioretention areas. The proposed OSRD therefore meets the current Standard 3-Recharge to Groundwater standard and greatly reduces the actively managed areas of the site thereby improving the quantity of groundwater both through ceasing use and improving recharge and certainly not adversely affecting it.

Quality: Currently storm water from the Boyd Drive catchment area runs untreated onto the golf course into the open clay lined storm water ponds. As the Board is aware, the Boyd Drive stormwater will now be treated by Constructed Stormwater Wetlands in accordance with the DEP Zone II Water Resource Protection District treatment requirements. Thereafter, the fully treated water will end up on the wetland pond area. The Applicant is proposing to increase the size of the wetland pond from 36,233 to 70,929 square feet.

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Millis Office  
730 Main Street, Suite 1F  
Millis, MA 02054  
Phone 508.376.8400

The increase in the size of the wetland in addition to the restoration of a wetland soil profile will also improve water quality. Notwithstanding the fact that the water entering the wetland from the rain gardens and stormwater basins will be treated for 90% Total Suspended Solids removal through the use of five bioretention areas, given the plants and soils added to the improved wetland, there will be an additional natural treatment of any other water entering the wetland.

Further, currently the golf course treats 915,000 square feet of maintained turf with various herbicides, fungicides and pesticides. While it is true said treatment is governed by certain conditions of the original special permit, there is no oversight from the city. Much of this area drains into the wetland area with no treatment. The wetland, in its current state, lacks a natural organic layer of soil and provides minimal treatment prior to infiltrating into the groundwater table.

Once developed, the OSRD Special Permit has required and the Applicant has agreed that any landscape maintenance be accomplished by a single licensed lawn care professional and that the landscape treatment plan as well as the snow removal plan be approved annually by the Department of Public Services. Further, active notice is required to be provided to the homeowners through each deed and the home owners association documents notifying them of the fact that the development is in a Zone II public water supply area – unlike any other private residence in the Zone II area. The stormwater treatment that is proposed, along with the creation of a buffer zone of native plants around the wetland area will eliminate the discharge of untreated stormwater runoff from discharging to the isolated wetland, improving the quality of water that ultimately infiltrates into the groundwater.

Based upon the foregoing, given the design, notices, control over landscape treatment and maintenance, the surface water quality on site will be improved and therefore the quality of ground water will not be adversely affected.

- b. The proposed OSRD is designed to avoid substantial disturbance of the soils, topography, drainage, vegetation, and other water related natural characteristics of the site to be developed, in adherence to the practices outlined in "Guidelines for Soil and Water Conservation in Urbanizing Areas of Massachusetts" (USDA Soil Conservation Services, October 1977).

In 1982 after the third printing of the foregoing resource, the Soil Conservation Services began to update and revise the publication. Eventually, the State Commission for Conservation of Soil, Water and Related Resources developed a revision of the handbook. According to the Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas. The Best Management Practices were later incorporated in 1996, into the Massachusetts Department of Environmental Protection Stormwater Policy that established Stormwater Management Standards aimed at encouraging recharge and preventing stormwater discharges from causing or contributing to the pollution of the surface waters and groundwaters of the Commonwealth.<sup>1</sup> That policy and accompanying standards have been revised and made more stringent through a number of

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<sup>1</sup> See Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas, MassDEP Original Print 1997 Reprint May 2003 and Massachusetts Stormwater Handbook.

amendments, the most recent of which was January 2008. The proposed OSRD was designed to exceed the Massachusetts Stormwater Policy in the following ways:

- Provides full water quality treatment for the existing Boyd Drive stormwater system, providing 80% required Total Suspended Solids(TSS) for the existing paved surfaces on Boyd Drive that drain to this Zone II area.
- The new development provides 90% TSS removal through the use of the Bioretention areas. Also the Bioretention areas are sized to hold a more stormwater runoff than the 1" water quality volume required in Standard 6 –Critical Areas in the MA Stormwater Standards. The standards require 80% removal of TSS, the provided Bioretention treatment areas provided 90% TSS removal.

As a result, the proposed OSRD definitive plan not only adheres to but exceeds the 1977 Guidelines for Soil and Water Conservation in Urbanizing Areas of Massachusetts and more importantly, exceeds the current iteration of those standards which govern stormwater discharge in Massachusetts.

Additionally, as you are aware there is little to no natural topography, vegetation or drainage left to the site. In 1978, the site was operating as a gravel pit (see the 1978 aerial photograph attached) and the entire site was disturbed and the soil profile altered in a significant way. The site was further altered in its development as a golf course. The project seeks to restore a more natural soil profile site wide, and restores a wetland soil profile to the isolated wetland that serves as the ultimate destination on site for surface water. The Applicant is introducing much needed indigenous vegetation, introducing more plantings around the wetlands, restoring a natural organic soil to the wetlands, planting pollinator meadows and encouraging a natural use of most of the open space. Unlike the current conditions which is predominantly maintained turf, (number of acres) the proposed OSRD will include 23 acres of natural vegetation, 8 acres of maintained vegetation and 4.9 Acres of building footprints and paved surfaces.

To that end, there is no substantial disturbance of natural features and the standards set forth for design are exceeded.

We look forward to discussing this with you next week.

