Memorandum

To: Rebecca McEnroe, P.E.
Superintendent
Sudbury Water District
199 Raymond Rd
P.O. Box 111
Sudbury, MA 01776

Date: June 6, 2016

Project #: 13125.00

From: Karen F. Staffier, PE

Re: Response to Sudbury Water District Comment Letter
526 & 528 Boston Post Road Redevelopment

VHB has prepared this memorandum on behalf of BPR Development LLC and Sudbury Avalon, Inc, the Proponents of the 526 & 528 Boston Post Road Redevelopment (the Project) to provide the supplemental information regarding water usage requested in your comment letter dated May 9, 2016. Each of your comments are listed below in italics, followed by a detailed response for each element with the overall project. As you will see below, each development area with the Project will involve a focused approach on limiting the amount of potable water that will be needed and on minimizing impact to the Sudbury Water District.

***Comment**: The District would prefer to see all irrigation water come from onsite irrigation wells. Irrigation systems should include moisture sensors as this will help to insure overwatering does not occur. Drip irrigation should also be utilized to maximum extent possible.*

Response: The landscaping approach for the project includes the planting of native, drought tolerant plants which will minimize the irrigation demand for the site. All irrigation systems will be designed with rain sensors. The Proponents intend to install irrigation wells for irrigation to support landscape irrigation within the site. Drip irrigation will be implemented where practical. The installation of irrigation wells on the site is anticipated to be feasible; however, particularly in the Active Adult Residential Condo area (which is currently subject to an RTN under MassDEP's MCP program), the Proponent reserves the right to use potable water if an irrigation well is not feasible due to environmental water quality issues or, if the irrigation wells that are installed for any particular project component do not provide sufficient volumes to support typical irrigation systems.

It is important to note that the central and largest landscape feature of the entire site (the pond) will be landscaped and maintained in a naturalistic manner requiring little or no irrigation.

***Comment**: The district would like more information on the "efficient water heating systems which utilize less water".*

Response: Each development area within the Project will have a unique approach to the selection of water heating systems.

Within the Avalon portion of the project, each Apartment Home will be outfitted with its own gas powered, tanked water heater. These systems are individually controlled and both water and gas usage is billed back to the resident which provides some level of additional conservation. Sub-metering of water for each apartment tends to decrease water consumption by end users.

Similarly, each Active Adult Residential Condominium (both townhouses and apartments) will have its own gas powered, high efficiency tankless water system. As with Avalon the systems will be individually controlled and both water and gas usage is paid for by the residents (in this case, the unit owners).

***Comment**: The District would like to review the low flow plumbing and high efficient appliance with flow rates listed per item that will be installed in the development. EPA Water Sense Labeled Fixtures should be installed. Use of high efficient spray nozzles and dishwashers and horizontal axis washing machines will also lower water use. Automatic flush toilets should not be utilized as they tend to cause multiple flushed per use.*

Response: Automatic flush toilets are not proposed for this project. The Table below lists the anticipated appliances and plumbing fixtures anticipated for multifamily and age restricted housing portions of the project.

Development Area	Energy Star Appliances	Plumbing Fixtures
Avalon Multi-family	**Dishwasher**: GE® Dishwasher with Hidden Controls (Model GDT535PSJSS or similar) **Washer**: 27" Front Load Washer Duet® 4.0 cu. ft. I.E.C. (Model GFWN1600JWW or similar)	**Waterclosets**: Sterling Windham Low-Flow – 1.28gpf **Showers**: 1.75 gpm **Bathroom Lavatory**: 1.5 gpm **Kitchen Faucet:** 1.5 gpm
Active Adult Residential	The exact specifications of the appliances will be identified in future design phases (and listed in the Building Permit Application drawings); All of the appliances will be Energy Star certified, including dishwasher and clothes washer.	**Watercloset**: High Efficiency, Low Flow 1.28 gpf (Gerber/Maxwell or equal) **Shower**: 2.5 gpm (Moen or equal) **Bathroom Faucet**: 1.5 gpm (Moen or equal) **Kitchen Faucet**: 2.2 gpm (Moen or equal)

Village Commercial and Grocery Store

At this time, the Whole Foods Market is the only tenant that the Proponent has identified and secured for the retail component of the Project. As part of their corporate culture and core values, Whole Foods Market has historically been and continues to be committed to sustainability and responsible use of natural resources both in the design of new buildings and daily operations. The amount of water conservation in the grocery and food service business is obviously limited by the nature of the operation and sanitation and health regulations. Nonetheless, with respect to water conservation efforts at the Sudbury store, Whole Food's tenant fit-up will include the use of low-flow / ultra-low-flow plumbing fixtures including:

- Low-flow toilets at 1.28 gallons per flush using manual flush valves.
- Low-flow urinals at 0.5 gallons per flush using manual flush valves.
- Ultra-low flow lavatory faucets at 0.38 gallons per minute using metering sensor faucets in customer restrooms. (low flow faucets at 0.5 GPM on the employee lavatories)

In addition, Whole Foods will be installing a compost digester on the property that will divert organic materials from the standard trash compactor and, in so doing, greatly minimize the amount of water that is needed to keep loading and trash removal areas safe and clean.

With each signed lease for future retail tenants, the Proponent will work with each tenant prior to the preparation of tenant-fitout building permit application drawings to achieve the project goals of minimizing water use through water conserving fixtures and high efficiency appliances. Also, the Proponent will separately meter each retail tenant, which will incentivize the tenant to minimize water use.

Finally, as indicated on the Master Development Plan and in support of the goal of making the retail component of the Project a "village" retail center, the Proponents are committed to having the areas around and between the retail buildings consist of various hardscape treatments (in lieu of excessive lawns and landscape beds) in order to encourage passive outdoor activities and activate the public realm enhance the pedestrian connectivity.

Memory Care Senior Living

Pursuant to Title V's water demand for elderly housing (110 gpd for 1 beds and 150 gpd for 2 beds) – which is based on peak demand requirements, the memory care assisted living facility would require approximately 5,520 gallons per day of water usage. In the Applicant's experience, the actual demand is often significantly less than the Title V projections in part because shared commercial cooking facilities can result in more efficient water use than individual kitchens. The Applicant will make a good faith effort to use Water Sense (or equivalent) fixtures where reasonably possible without compromising the health and operational requirements of the assisted living facility. In the Applicant's experience, typically stretch code compliant fixtures represent the limit on what is operationally practical in memory care assisted living facilities. It is important to note that the facility will be staffed 24/7/365 (including maintenance staff trained in all areas of building operations and maintenance on site during business hours and available for on all duty 27/7). The onsite staff will be responsible not only for the safety and well-being of all of the residents, but also for ensuring that the facility and building systems are operating properly and efficiently (including in terms of water usage).

Comment: *In 2015 the Sudbury Water District came within 0.2 MGD of its WMA permit allotment. The District would like to see estimated usage reduced to the maximum extent possible.*

Response: The Proponents understand and appreciate the importance of conserving water and minimizing the need for potable water from the District. The use of low flow plumbing fixtures and high efficiency appliances, as well as utilizing irrigation wells for landscape irrigation will serve to minimize the use of the Sudbury Water District's potable water supply and demonstrate the Proponent's commitment to water conservation. Related benefits to the District associated with the Project include increased

stormwater recharge through infiltration and reduction of impervious surfaces (accomplished in part from the relief provided by the zoning overlay (the Mixed Use Overlay District) that serves as the foundation for the Project's proposed Master Plan from excessive setback and formal buffer requirements in the base zoning) as well as increased discharge of treated wastewater on site, which is located within the Zone II of the public drinking water supply. Collectively these will help the aquifer which contributes to the District's water supply.