



BOARD OF WATER COMMISSIONERS

Cotuit Fire District Water Department

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COTUIT, MASS. 02635

The Board of Water Commissioners Recommendations Regarding the Cotuit Elementary School

At the request of the Prudential Committee, the Board of Water Commissioners and the Superintendent and staff of the Cotuit Water Department would like to go on the record with the following recommendations regarding the Cotuit Fire District's future use of the property located at 140 Old Oyster Road.

We are grateful for the considerable efforts made by the Prudential Committee, the school subcommittee, Town Councilor Jessica Rapp Grasseti, and the voters of the district for acquiring the property to protect the public drinking water supply from future development.

Prohibited Use of the Property

The school lies within an area of the watershed designed "Zone II" by the Massachusetts Department of Environmental Protection's regulations governing drinking water supplies: 310 CMR 22.00 – that *"promote the public health and general welfare by preventing the pollution and securing the sanitary protection of all such waters used as sources of water supply..."*

Zone I is a circle with a radius extending 400 feet away from a well. Zone II – which encompasses nearly all the school property – is defined by MassDEP as *"...that area of an aquifer that contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at approved yield, with no recharge from precipitation)."*

Cotuit's groundwater generally flows underground from the northwest to the southeast. The school is located on 9.63 acres of land accessed from 705 Main Street, 800-feet directly "upstream" of the oldest of the water department's five operating wells (designated Station 3).¹ This well, despite being located in "downtown" Cotuit, has good quality, is part of the supply, and is an important alternate supply if the main wellfield ever went down.

The Massachusetts Drinking Water Regulations, 310 CMR 22.21 (2)(a) and (b) identify the activities prohibited by the state on Zone II-designated properties. Banned uses range from the obvious (landfills, open dumps, junkyards, and stockpiles of snow and ice containing road salt, etc.) to the unprotected storage of commercial fertilizers, manure, and the storage of hazardous materials such as petroleum products and other toxic materials. Whatever the District decides to do with the school property, any future activities on the land must conform to 310 CMR 22.00 for Station 3 to remain in good standing as a licensed source of drinking water for the Fire District.²

¹ Station 3 was developed in 1951.

² See attached copy of 310 CMR 22.00 for full details.

Suggested Uses of the Property

If demolished:

If the district decides to demolish the buildings, the Board of Water Commissioners expects all demolished materials will be removed from the site and not buried *in situ*. We understand the town has removed the underground heating oil tank with no detection of leaks into the surrounding soil.

If the building is retained:

Heating: it is our understanding that the school's existing HVAC system may need to be replaced or modified before the building can be heated, and that asbestos is present in the existing system. Whatever the district may decide regarding the heating plant, the Water Commissioners recommend not continuing to use heating oil as a fuel source, but an alternative which could include natural gas, electrical heat, or a sustainable solution (such as heat pump) that would not involve the underground storage of petroleum products.

Septic: we assume the septic system now on site is Title 5 compliant but have no knowledge about the age or location of the tank, distribution box, leaching field, and the system's overall condition. Should the district retain the building and decide to replace the septic system, the Water Commissioners recommend an "Innovative/Alternative" or "IA" system with sufficient capacity to handle the future use of the property. The latest generation of enhanced IA systems utilize passive woodchip bioreactors and have demonstrated 80 – 90% removal of nitrates as well as a range of "chemicals of emerging concern" including pharmaceuticals and flame retardants that are found in residential wastewater. We believe that the use of such a system would serve as an effective pilot or demonstration project to Cotuit residents.

Irrigation: if the district ever decides to install an irrigation system on the property for the upkeep of the landscaping, or a possible community garden, it will need to have its own well installed on the property per the 2021 prohibition of connecting new irrigation systems into the public drinking water supply. Such a private irrigation well would have the beneficial impact of a "fertigation" system that draws nitrogen-enriched groundwater from the aquifer, which is then absorbed and refiltered through the turfgrass/soil, reducing nitrate levels that ultimately contribute to the eutrophication of Cotuit's coastal waters.

Nitrogen Loading: we recommend using the Cape Cod Commission's performance standard of 5 mg/liter for drinking water areas to assess the overall nitrogen loading from any proposed re-use of the property.

Potential Relocation of the Water Department

The Present Location:

Since its inception in 1936, the Water Department's offices and primary storage facilities have been located at 4300 Falmouth Road (Route 28) adjacent to Little River on nearly 30 acres of land that extend north to Lovells Pond, and west to Newtown Road and the site of the Santuit water tower. The brick office building and three outbuildings are used for the offices of the department's superintendent and administrator, as well as for receiving, storing, and preparing the chemicals used to treat the district's water supply. Those chemicals include hydrated lime and sodium hypochlorite. The chemicals are stored and prepared on site in a structure equipped with containment bulkheads to prevent any accidental spills, as well as safety equipment for the rapid decontamination of the department's personnel in the event of an accident and contact with eyes or skin. The chemicals are delivered by truck – eighteen-wheeler and panel truck – and the amount stored on the premises fluctuates with seasonal demand.

There isn't a suitable location at the Cotuit school property that can now accommodate the storage of bulk chemicals and perform the regular preparation of the chemical "slurry" which is then transported to the five well stations by water department staff in the department's tank truck on a daily basis. Recreating such a facility would, in the opinion of one engineering consultant, cost nearly \$1 million, and place a considerable amount of chemicals 800 feet "upstream" of Station 3.

Office Space for Water Department

We believe moving the offices of the superintendent and administrator from 4300 Falmouth Road to the school would present a management challenge with the staff split between two locations. The fiber-optic connection needed for the department's VOIP phone system, Internet connectivity, SCADA and security system would also need to be rerouted to the school.

Future Water Treatment Plant Location

The Water Department anticipates the potential need to treat Cotuit's water to remove contaminants such as PFAS chemicals at some point in the future. Given the dispersed locations of the five wells, the most economical location for a treatment facility will be adjacent to stations 1, 2, and 4 located south of Sampson Mill Road and the powerlines. Locating a water treatment plant at the school property would require running a water main from Station 5 at 4936 Falmouth Road (across Route 28 from Polar Cave) down Main Street and Old Oyster Road, as well as a new high capacity main down Main Street from stations 1, 2, and 4. It is premature to estimate the cost impact of locating a future water treatment plant at the school versus somewhere adjacent to stations 1, 2, and 4, but we believe the school property should be taken off the table as the site of a possible water treatment plant due to its distance from four of the district's five well, the cost of installing mains and the disruption of the streets.

Final Recommendation

We believe the conservation restrictions applied to the town's portion of the property could and should apply to the Fire District's portion as well, with modifications made to the list of prohibited activities depending on the fate of the school building and whatever future use the voters of the district determine for the property, either for the use of the district, or if the building or a portion of the building is leased to a tenant in the future.

We look forward to collaborating with the residents of the district and its elected officials to ensure the best possible use of the property and the continued protection of the district's water supply.