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Falmouth Water Quality Group Addresses Septic Plan For Oyster Pond

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Edward Leonard, senior project manager for Wright-Pierce, presents the latest version of the Oyster Pond Wastewater Management Plan before the Falmouth Water Quality Management Committee.

ELIANNA SPITZER/ENTERPRISE

The Falmouth Water Quality Management Committee is eyeing special nitrogen-reducing septic systems, rather than sewer hook-ups, for homes near Oyster Pond.

The water quality of the 63-acre watershed in Falmouth was declared “impaired” in 2006 by the Massachusetts Department of Environmental Protection.

Oyster Pond’s nitrogen load averages 5.2 kilograms per day, which is far above the state’s target of 1.44 kilograms per day. The watershed is just one of the five ponds along the town’s southern coast that requires a wastewater management plan.

Edward Leonard, senior project manager for Wright-Pierce, initially designed six composite wastewater management options for addressing the high levels of nitrogen flowing into Oyster Pond. A working group narrowed the pool of composites to two options. The primary plan moving forward is to have homeowners install special nitrogen-reducing septic systems.

There are more than 200 dwelling units surrounding the pond, 70 percent of which were built since the late 1970s. Mr. Leonard anticipates at least eight more dwelling units will be added to that number in the future.

“These sites are quite distant from the sewer... [and] the lots in this watershed are fairly large, generally speaking,” he told the work group at its August 1 meeting. “The town... has a significant nitrogen wastewater problem town-wide.” The committee had trouble finding capacity to extend sewer access to Oyster Pond residents.

“The town really needs a non-sewered option in many places in the town. This was a ‘good fit’ watershed to push this issue with DEP and get approval for this kind of approach,” Mr. Leonard said.

Sewering will remain a backup plan, Mr. Leonard added.

Moving forward with a “non-traditional” plan will require a watershed permit from MassDEP, “a fairly new concept in Massachusetts,” Mr. Leonard said. He designed the implementation plan to meet guidelines for the permit.

“We’ve been trying to come up with a framework that was reasonable, that was managed by the town, so that we could demonstrate to DEP that this was a good approach to take,” Mr. Leonard said.

Under the implementation plan presented by Mr. Leonard, the town will be the “responsible management entity” or the “RME” for the project, which will be implemented in two phases. The closest parcels to Oyster Pond and south of Woods Hole Road will be part of the first phase. The rest of the units will be part of the second phase.

As the RME, the town would issue a start date for the first phase. Within a year, homeowners would be required to submit a design and get a permit for installation of an advanced septic system. They would be required to install the system within three years. The town would then monitor phase one and its impact on the pond for three years.

Overall, the town would be responsible for monitoring operations and maintenance of the septic systems. This means homeowners would need to grant an easement to allow town workers on their property.

If the town were to fall back on the traditional approach, the same properties within the boundaries outlined for phase one would be connected to a low-pressure sewer system with small grinder pump stations on individual properties. Effluent would be pumped 6,000 feet to Shivericks Pond Lift Station. Wastewater flow would then be directed to the Blacksmith Shop Road Treatment Facility.

Implementation of either option would not begin until 2026 at the earliest.

In preparing cost estimates, the working group used an approach consistent with the South Coastal Watershed Comprehensive Wastewater Management Program. The working group also looked at loans that might be available to homeowners for financing installation of an advanced system or grinder pump.

The estimated costs were compared side by side “in 2026 dollars.” According to the chart, installing advanced systems and connecting units to the sewer will result in similar annual costs. Phase one, which impacts 189 dwelling units, will cost of about \$5,000 per year for each unit over the course of about 20 years. That totals about \$100,000 per unit.

While the capital costs of the advanced system will be lower than a sewer system, \$9.1 million compared to \$14.4 million, the annual operating costs will be greater: \$536,000 compared to \$248,000.

“So you’ve saved money up front and spent more over the years and ultimately you have two options that are reasonably close to each other from a present cost perspective,” Mr. Leonard said.

Mr. Leonard broke down cost allocation. For the advanced systems the town would contribute to the cost of the system itself but the homeowner would cover costs related to design, landscaping and installation. Buying advanced systems in bulk may help drive down the cost to homeowners. For a sewer system, the town would cover 100 percent of infrastructure costs serving multiple watersheds and 30 percent of infrastructure costs serving the specific neighborhood. The homeowners would cover all costs associated with landscaping and septic system abandonment. An allocation for increased capacity at Blacksmith Shop Road Wastewater Treatment Facility was included in the cost summary, Mr. Leonard said.

Under both plans, operating costs would be paid by the homeowner and all watershed property owners would share monitoring costs.

Stephen Leighton, a member of the board, noted that the “present worth costs can be adjusted quite widely depending on the lifespan... and the interest rates that you assume.”

The components of advanced septic systems last varying amounts of time, Mr. Leonard said. The mechanical equipment added for treatment only lasts 15 to 25 years. This means that phase one equipment may have to be redone by the time phase two of the project is set to begin. Mr. Leonard noted that all septic systems have limited lifespans. Grinder pumps also require a certain level of maintenance.

Some members of the community noted that nitrogen levels in the pond could change if a storm surge or rise in sea level opens Oyster Pond to new levels of water flow in the next 20 years. Others expressed concern that the technology might not work well enough to decrease nitrogen levels.

John Waterbury, a member of the board, said that the proposed systems are already in testing.

“I think by the time this decision is made, we’re going to have a pretty good idea of whether we can depend on these systems or not. Ultimately the community is going to need to decide in 2024, given the data set, and what we’ve got, and the possible availability of discharge capacity in West Falmouth... do we want to put our eggs in the [advances system] business or do we want to say we’ll wait until we can hook up to the sewer?”

Mr. Leonard noted that it will be important to take advantage of changes in technology over the next couple of years “to make sure that if there’s some new way that costs less to treat nitrogen on site that we take advantage of that.”

In order for the comprehensive wastewater management plan to move forward, it will have to obtain approvals from the Massachusetts Environmental Policy Act office, the Massachusetts Department of Environmental Protection, and the Cape Cod Commission. The wastewater management committee and the board of selectmen will also have to get on board with the project. It will have to be approved for a watershed permit and be approved at Town Meeting in 2024.

“We don’t have the option of no action. This is going to cost a lot of money... but obviously we’re at the point where something needs to be done,” said committee member Tom Duncan.