



## Town of Dennis

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### **WATER RESOURCE RECOVERY FACILITY (WRRF) PLANNING BOARD SPECIAL REVIEW STAFF REPORT – May 1, 2025**

*Special Review for municipal project, similar to Site Plan Review, for recommendations and conditions.*

<b>APPLICANT:</b>	Richard V. Peter – Dennis Wastewater Superintendent; William McConnell, P.E. Engineer's Representative - CDM Smith Engineers Matthew Munzing – MWH Constructors, Inc.
<b>PROJECT ADDRESS:</b>	120 Theophilus F. Smith Road, South Dennis, MA 02660
<b>MAP &amp; LOT NUMBER:</b>	165-01
<b>APPLICANT ADDRESS:</b>	192 Turnpike St, South Easton, MA 02375
<b>CASE NUMBER:</b>	SPR-25-1
<b>ZONING:</b>	Industrial
<b>MEETING DATE:</b>	May 5, 2025
<b>PROPOSAL</b>	To construct a municipal Water Resource Recovery Facility (WRRF)

1. **Project Summary**
2. **Town Department Comments**
3. **§ 1.4.2.1 - Special Permit Granting Authority – Criteria and Proposal**
4. **§ 4.1.2.5 Design Objectives – Criteria and Proposal**
5. **Correspondence**
6. **Conditions**

1. **PROJECT SUMMARY:** To construct a municipal Water Resource Recovery Facility (WRRF) at 120 Theophilus Smith Road, on part of the Department of Public Works property, as part of Phase 1 of an 8-Phase plan to treat the wastewater effluent of homes and businesses in Dennis in order to remove contaminants, primarily nitrogen and phosphorus, and make it safe to return the water to the environment.
  - a. A Comprehensive Wastewater Management Plan (CWMP) was approved in 2022.
  - b. The facility will disturb about 8 acres of wooded land on the DPW property.
  - c. The construction of the facility to treat the effluent is part of Phase 1 of the 8-phase plan which also includes the first three parts of the collection and conveyance system to connect various parts of town to the sewer. Each one of the three areas in Phase 1 is being constructed by a different company under a different contract.
    - i. Construction of the Water Resource Recovery Facility;
    - ii. Collection & Conveyance south of Route 6, west of the WRRF, north of the bike path with a section south of the bike path west of route 134 and either side of Highbank Road.
    - iii. Collection & Conveyance south of Bass River Lane, mostly west of Main Street along the Bass River to Grand Cove; a second section on either side of Route 28 west of Route 134; and a stretch either side of School Street down to West Dennis Beach.
    - iv. Collection & Conveyance between (roughly) Swan Pond and Rte 134; either side of 134 south of Center Street to properties along Rte 28 west of the Swan River and east of Main

d. **History:**

- i. Dennis & Cape Cod face threats to the health of salt-, fresh- and groundwater resources.
- ii. The health of these water resources, and the environment in general, are recognized as crucial to the vitality of the tourist economy of Cape Cod and the quality of life of all citizens.
- iii. The diverse water resources of Cape Cod and Dennis including Nantucket Sound, Cape Cod Bay, smaller embayment's, beaches, rivers, lakes, Great Ponds, freshwater ponds and the Monomoy Lens of the Cape Cod sole source Aquifer, define the region and the Town. Any threat to the health of the Cape's water resources is thus a threat to the health of the communities at large.
- iv. As described in the CWMP, excessive levels of nutrients, specifically nitrogen and phosphorus, have resulted in algal blooms in several surface water bodies. In 2009, an algal bloom occurred in Swan Pond resulted in fish kills due to depleted oxygen levels in the pond, an odor that permeated the neighborhood for weeks and obviously impaired waters covered with algae.
- v. This and similar events on the Cape and Islands were primarily caused by nitrogen originating from onsite wastewater systems (Title 5 septic systems, cesspool systems, etc.)
- vi. The Bass River and Herring River also have high nitrogen sensitivity.
- vii. Scargo Lake & other freshwater systems have high levels of phosphorus from similar sources.
- viii. From 2014 to 2021, Dennis developed a Comprehensive Wastewater Management Plan (CWMP). Mainly working through the Wastewater Implementation Committee (WIC), formerly the Comprehensive Wastewater Management Task Force (CWMTF) a program was developed to address wastewater management needs, protect drinking water sources, protect freshwater ponds, and restore saltwater estuaries.
- ix. Protection and restoration of these valuable water resources is extremely important to maintaining the quality of life and economic health of the town.
- x. The issue with PFAS and heavy metals has come to the fore since the work of the CWMP.
- xi. The Draft CWMP/ Expanded Environmental Notification Form (EENF) was submitted in 2017, reviewed and approved by Massachusetts Environmental Policy Act (MEPA) in July of 2017.
- xii. In 2021 the Town issued the Final CWMP which was approved by the State in 2022.

e. **Water Resource Recovery Facility - Work covered by the facility Contract Documents.**

- i. Headworks Building; equipment for preliminary treatment and solids handling;
- ii. Sequencing Batch Reactor (SBR) system consisting of four tanks & equipment.
- iii. Post-SBR Equalization Tanks;
- iv. Denitrification Filter system consisting of six filter tanks and process equipment;
- v. UV disinfection system;
- vi. Process Building and gallery spaces to house process and other equipment.
- vii. Operations Building to house admin., operations; other WRRF functional spaces;
- viii. Waste Activated Sludge Storage Tanks;
- ix. Odor control system;
- x. Four infiltration basins for effluent disposal and groundwater recharge;
- xi. Site work; Electrical work; HVAC; plumbing and fire protection;
- xii. The documents also describe in detail Contractor's use of site and premises, including the Contractor shall have limited use of Project site for construction operations with Limits on Use; Do-not disturb-portions of Project site and Coordination with occupant.
- xiii. The documents also describe Sequence of Construction and coordination protocols

f. **Permitting Status:**

- i. Natural Heritage & Endangered Species Program (NHESP) – No impact
- ii. MA Historic Commission (MHC) – Intensive investigations complete
- iii. Groundwater Discharge Permit – Under DEP review

iv. MA Environmental Policy Act (MEPA) – Notice of Project Change (NPC) - Submitted

v. Mass DEP State Revolving Fund (SRF) Project Evaluation Form (PEF) - Submitted

2. **TOWN DEPARTMENTS:** The Town’s water quality and wastewater planning effort was overseen by the Dennis Wastewater Implementation Committee (WIC), created in 2016. The committee consisted of 10 members; five community volunteers appointed by the Select Board, two members of the Select Board, two members of the Board of Health and one member of the Economic Development Committee. There were six permanent staff assigned to support the Committee. There was a representative from the Town Administrators Office, the Town Engineer, the Health Director, a member of the DPW senior management team, and the Conservation Agent. The Dennis Health Director served as the liaison between town staff and the Committee.

**ENGINEERING:** The following comments have been provided for consideration by the Planning Board as part of the Project Special Review scheduled for May 5, 2025.

- Concept Plans (30% Design) for the Water Resource Recovery Facility were presented by the Design Engineer (CDM Smith) to various Town Departments at a Staff Review Meeting on Sept 7, 2023. Staff comment was provided to the Design Engineer.
- Monthly Design Team meetings, attended by Design Engineer (CDM Smith), Town Consultant (GHD), Dennis Engineering, Public Works and Wastewater were held from 10/2022 through 6/2024 to review project status, and provide comment for use in subsequent levels of design.
- A Town of Dennis Stormwater Management Permit (SWMP) will be required for this project due to the level of site disturbance. Engineering has already reviewed the Stormwater Management Report as part of the project design review and intends to recommend issuance of a SWMP for this project, upon request from the Building Commissioner, as part of the Building Permit.
- The Dennis Engineering Department has provided an extensive level of review and comment to the Design Team throughout the process, and continues to be part of all subsequent phases of the project development and construction. A Pre-Construction meeting, attended by the Design Engineer (CDM Smith), OPM (Apex), General Contractor (MHW), Dennis Engineering, Dennis DPW, Dennis Wastewater, MassDEP, and various sub-contractors was held on February 25, 2025.
- General site preparation per the contract plans and specifications is currently in progress.
- Erosion and sedimentation controls have been established in areas of site preparation. These controls appear to be functioning as intended and are being properly maintained by contractor.

**WATER DEPARTMENT:** The Water District was contacted too late to make comment for this staff report. They have been alerted to the Special Review

- According to the Water District Website: Representatives from the District attended a meeting of the Recharge Site Selection Committee in January 2025. During that meeting, the ranking of sites and locations the town intended to pursue were presented. District representatives had concerns with some missing data. They noted the report highlighted four locations for discharge in order as A, B, C and D, with A identified as meeting the most criteria and being the most favorable, but the Town intends to move forward with Site C.
- Site C, on the corner of Bob Crowell Road and Old Bass River Road, is of major concern to the Water District due to its proximity to the wells at the Main Station and Well 5. The District states the site needs to be intensely studied in order to understand what impacts this discharge may have on water quality, decreased pumping capacity or the possible abandonment of Well 5.

**PLANNING:**

- According to the CWMP in §2.2.2. “Dennis buildout results were reviewed with the Town Planner, Dan Fortier, and appropriate adjustments were made.” The Department has no records of this.
  - Now that the WRRF is being built and a significant section of Town will be served by sewer in the coming years, and the Local Comprehensive Plan (LCP) is scheduled to be updated, the

Planning Board and Department, the LCP consultants and working group, need to review the buildout scenarios and consider how that will affect permit application requests for increased density, and impact land use, open space, traffic, development and community character.

- According to the CWMP in §7.4, the study incorporated several Economic Growth Districts including the Exit 9 Growth District (aka MFHO/GIZ); Dennisport, West Dennis and the Hotel Resorts District.
  - However, the map showing the first area for collection and conveyance does not include the largest parcels under consideration for the Growth Incentive Zone/Multi-Family Housing/Mixed-Use District south of Theophilus Smith Road. These parcels should be added to the Phase 1 Collection and Conveyance map.
  - Furthermore, the area the Planning Board is looking at for a Mixed-use Growth Incentive “Smart Growth” Zone; because of its proximity to services, infrastructure, transportation and already being disturbed; is also land the WRRF is looking at for recharge of treated effluent.
- According to the CWMP in §8.4 Buildout Water Usage “...The buildout information used for the MEP reports was developed through collaboration and consultation with the Dennis Town Planner. Based on a meeting with the Town Planner in 2014, the buildout assumptions used for the MEP reports are still considered reasonable (2021) approximations of future buildout within those areas, with the possible exception of flows that may be added in the hotel districts and based on the seasonal community bylaw. The information presented herein is preliminary and only intended to show order of magnitude projected increases”. The WRRF should describe the Buildout Scenarios.
- The WRRF is already being constructed. It has been years in the planning. The Planning Board does not have enough information or time to make any substantial changes to the facility at this time.
- However, the Board should be kept apprised of the effluent recharge site selection process.
- As described at the Select Board last week, the WRRF is focusing on two sites for recharge at this time. The first is the potential Mixed-Use GIZ at the former Lowe’s Property and the second is the corner of Bob Crowell and Bass River Road. The Water District has expressed concern with the latter.
- It is possible a compromise could be worked out for some recharge in a central park surrounded by higher density development at a site that meets the criteria for both recharge and development.
- Given that the Site Selection for Recharge needs more area now and will need much more area over time, the Town should consider alternative, more ecologically sensitive ways to further treat the effluent in a smaller area.
- The WRRF and the Town should consider that the municipality has many goals and interests that are often competing with one another. The highest and best use of land should be considered in light of the multiple interests and goals and not simply the expedient necessity of a single large interest.

**3. PROPOSED CONDITIONS:**

<b>PROPOSED CONDITIONS</b>	<ol style="list-style-type: none"> <li>1. The WRRF shall apply for all required Federal, State and Local permits and will comply with the intent of the Dennis Stormwater By-law, all requirements of the Dennis Conservation Commission and Board of Health and any other permits that are required.</li> <li>2. The addition shall not generate new light, noise, litter, odor or other sources of nuisance. Any new lighting shall be restricted to downward-shielded motion sensitive (when feasible) security lighting that is “Dark-Sky” compliant.</li> <li>3. The Site Selection Committee for effluent recharge should consider alternative methods for further treating the effluent in an ecologically sensitive way.</li> </ol>
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