

MIDDLETOWN WASTEWATER TREATMENT ENHANCED NUTRIENT REMOVAL UPGRADE – PROJECT OVERVIEW

East WWTP State Discharge Permit #13-DP-3182, NPDES Permit #MD0067628

West WWTP State Discharge Permit #18-DP-0462, NPDES Permit #MD0024406

Middletown has two (2) Wastewater Treatment Plants:

1. East Wastewater Treatment Plant (250,000 Gallons Per Day): Built in 2000, for a total cost of \$4M. Treats approximately half of the Town’s wastewater. Debt service completed in 2020.
2. West Wastewater Treatment Plant (250,000 Gallons Per Day): Built in 1976, for a total cost of \$250k. In the late 1960s, MDE mandated that all municipal treatment facilities install “secondary treatment” to replace communal septic tanks. Aerated lagoons were a popular and low-cost option to meet the mandate.

MDE Permit Mandate:

- MDE’s Surface Discharge Division administers “discharge permits” for municipal utilities discharging cleaned water into state waterways (CB Watershed). The permits have 5-year terms and set limits for discharge of nitrogen, phosphorous, suspended solids, etc. (pollution levels). When a 5-year permit cycle ends, MDE issues a new 5-year permit, sometimes with tightened discharge limits that necessitate (mandate) a treatment process upgrade to comply with new limits.
- At the recommendation of the MDE Surface Discharge Division, Middletown applied and was approved for BRF funding and a preliminary engineering report for the decommissioning/replacement of the West Lagoon Plant.
- The preliminary engineering report is 90% complete and indicated a more complex and expensive project, than originally anticipated. Difficult logistics, expansive scope, and extensive ancillary infrastructure drive the \$40M total cost. Using MDE’s BRF Eligibility Criteria, our engineer calculates the Town’s cost share to be \$10M.
- With the new understanding that an ENR Upgrade would be cost prohibitive, we requested formal notification/guidance about our next permit from MDE, to determine if the 2026 discharge permit would require an upgrade and to provide official notification to our elected officials.
- MDE Surface Discharge Division provided letter, explaining that the West Lagoon Plant would not meet the agency’s newly adopted criteria for total Ammonia (Nitrogen) discharged, when our current permit expires in 2026, and that the forthcoming permit includes a “climate change resiliency” requirement, obligating the Town mitigate the risk of flood and potential contamination of the receiving stream.

Difficult Logistics & High Cost:

- The West Lagoon Plant is partially positioned in a high-risk flood zone (FEMA Flood Zone AE), which has a 26% chance of flooding over a 30-year period. New construction in a high-risk flood zone is cost prohibitive and requires significant ancillary infrastructure and earthwork, to elevate the facility out of the flood zone and/or protect it from flooding. The same applies to the notion that we can upgrade the lagoon plant to meet permit requirements. Also, the lagoon is antiquated technology, 48 years old, a dead asset, and cannot be upgraded to increase treatment performance levels. These concepts/alternatives were given considerable attention and evaluation by staff and our engineer, when developing the preliminary engineering report.
- The West Lagoon’s surrounding areas, owned by the Town, are also predominantly in the floodplain. Our best-and-only option is to decommission the lagoon and build a pump station on a small piece of town-owned land, right outside the flood zone. The pump station will direct sewer flows away from the flood zone to our East Wastewater Treatment Plant. Please note, two flooding events have occurred at the West Lagoon Plant, in 1998 and 2004, but didn’t reach the sewage ponds.
- The East Treatment Plant isn’t equipped or permitted to treat 100% the Town’s wastewater. To accommodate the decommissioning and consolidation of treatment, the East Plant must subsequently and prematurely undergo a complete overhaul, and an ENR Upgrade if we’re to benefit from MDE’s BRF Subsidy Funding. This is a very important point! MDE and the BRF will only subsidize ENR Upgrades and we absolutely need the subsidy to make the project affordable and long-lasting. It is complex... it is expensive... BUT, it is our BEST and ONLY option. The downstream effects of a more stringent 2026 discharge permit for the West Lagoon Plant are many and come with high cost, BUT they are all absolutely necessary.

Cost of Lagoon Decommissioning, Relocation of Sanitary Flows, and Senate Bill 726:

DESCRIPTION	COST	BRF Eligibility %	BRF Subsidy \$	Senate Bill 726
Lagoon Decommissioning	\$1.5M	50%	\$750K	\$750K
West Pump Station	\$1.4M	68%	\$952K	\$448K
Force Main (Pipe to East Plant)	\$2.8M	68%	\$1.9M	\$900K
Advanced Oxidation for East Discharge	\$3.0M	68%	\$2.0M	\$1.0M
Contingency Cost (30%)	\$2.6M	68%	\$1.7M	\$900K
TOTAL	\$11.3M	64%	\$7.3M	\$4 Million