

**TOWN OF PLYMOUTH CAPITAL IMPROVEMENT PLAN REQUEST FORM
FY25 ANNUAL TOWN MEETING REQUEST FORM**

Department: SEWER DIVISION		FIVE
Project Title and Description: WWTP Effluent Tertiary Filter	Total Project Cost:	\$9,492,000.00

Department/Division Head: **Doug Pinard Wastewater Superintendent**

Cost estimate was developed: Internally ☐ Externally ☒

Basis of Estimated Costs (attach additional information if available)			If project has impact on 5 Year Plan and future operating budgets, insert estimated amounts.		
Capital:	Cost	Comments	Fiscal Year:	Capital	O & M
<i>Planning and Design</i>			<i>FY26</i>		
<i>Labor and Materials</i>			<i>FY27</i>		
<i>Administration</i>			<i>FY28</i>		
<i>Land Acquisition</i>			<i>FY29</i>		
<i>Equipment</i>			<i>FY30</i>		
<i>Other</i>					
<i>Contingency</i>	30%				
Total Capital	\$9,492,000.00				

Possible sources and amounts of funding, if known: _____

Project Justification and Objective: ___ The proposed project will add a tertiary filter which will allow the facility to meet more stringent permit limits and to ensure greater protection to the harbor, ELL river and these sensitive resource areas. This includes lower discharge pollutant targets for TSS, BOD, Nitrogen, Phosphorus, and pathogens amongst other pollutants. The WWTF will be more reliable and resilient with the added filter.

For Capital Project Requests:

Will this project be phased over more than one fiscal year? If yes, enter it on the next 5 Year Plan Yes ☐ No ☒

Can this project be phased over more than one fiscal year? Yes ☐ No ☒

For Capital Equipment Requests:

☐ Check if equipment requested is replacement and enter the year, make & model, VIN and present condition of existing equipment

Attach additional information, estimates, or justification.



TECHNICAL MEMORANDUM

TO: Doug Pinard, Wastewater Manager
CC:
FROM: Jack Troidl, P.E.
DATE: November 14, 2023
RE: **Plymouth WWTF – Tertiary Filter Project**

Introduction

The proposed tertiary filter will provide an additional layer of protection prior to the Plymouth WWTF effluent discharging into Plymouth Harbor or the Eel River. The proposed filter will remove suspended solids, and the design of the system also includes provisions for chemical addition to precipitate phosphorus for removal by the filter.

Tertiary Filter

The proposed tertiary filter will treat decant from the SBRs, and the filtered effluent will discharge to the Chlorine Contact Tanks (CCTs). While there is a substantial height difference between the decanting water level in the Sequencing Batch Reactor (SBR) tanks and the water level in the CCTs, the height is not sufficient to allow the tertiary filter to process the SBR decant ahead of disinfection without additional pumping. Therefore, the planning costs, which were revised to reflect recent cost inflation spurred by the pandemic, also now include a pumping station downstream of the new filter but part of the new filter building.

The updated Opinion of Probable Costs is presented in Table 1, including the anticipated HUD federal earmark in the amount of \$2,750,000. Based on this updated OPC, the Town should seek to secure \$7 million to fund the project. It is recommended that the total project costs be inflated 5% per year for each additional year if the project does not proceed in 2024.

Table 1. Opinion of Probable Cost³

Item	Tertiary Filter	Pumping Station ²	Total Project
Construction	\$4,700,000	\$900,000	\$5,600,000
Construction Contingency (30%)	\$1,400,000	\$270,000	\$1,680,000
Engineering, Permitting & Bidding (10%)	\$470,000	\$90,000	\$560,000
Construction Administration & Observation (15%)	\$705,000	\$135,000	\$840,000
Escalation ¹	\$681,500	\$130,500	\$812,000
Total Project Cost	\$7,966,500	\$1,525,500	\$9,492,000
Available Funding (Community Grant)			\$2,750,000
Project Contingency			-\$258,000
Additional Funding Needed			\$7,000,000

¹ Escalation to midpoint of construction in 2024 based on COVID/current market conditions.

² Assumes pumping station is constructed with tertiary filter project.

³ Costs prepared as of August 2023.