

Summary - TWWTP Rehab Projects

Project Cost Estimates	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	Total 10YR Budget
Planning	\$263,000	\$55,000	\$55,000	\$268,000	\$55,000	\$55,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$1,051,000
Land Acquisition	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$400,000	\$1,664,000	\$450,000	\$450,000	\$1,664,000	\$1,664,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$8,792,000
Equip/Furnishings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Contingencies	\$50,000	\$176,400	\$55,000	\$55,000	\$176,400	\$176,400	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$989,200
Project Total	\$713,000	\$1,895,400	\$560,000	\$773,000	\$1,895,400	\$1,895,400	\$620,000	\$620,000	\$620,000	\$620,000	\$620,000	\$10,832,200

Funding Sources From Enterprise Fund	
Enterprise Fund	100%

[illegible]

Funding Expected Revenue from SDF	
2020	100
2021	100
2022	100
2023	100
2024	100
2025	100
2026	100
2027	100
2028	100
2029	100
2030	100
2031	100
2032	100
2033	100
2034	100
2035	100
2036	100
2037	100
2038	100
2039	100
2040	100
2041	100
2042	100
2043	100
2044	100
2045	100
2046	100
2047	100
2048	100
2049	100
2050	100
2051	100
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2063	100
2064	100
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2067	100
2068	100
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2070	100
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2073	100
2074	100
2075	100
2076	100
2077	100
2078	100
2079	100
2080	100
2081	100
2082	100
2083	100
2084	100
2085	100
2086	100
2087	100
2088	100
2089	100
2090	100
2091	100
2092	100
2093	100
2094	100
2095	100
2096	100
2097	100
2098	100
2099	100
2100	100

[illegible]

Collection System Rehabilitation (SE051)

Project Cost Estimates	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	Total 10YR Budget
Planning	\$50,000	\$55,000	\$ 55,000	\$ 55,000	\$ 55,000	\$ 55,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$625,000
Land Acquisition			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0
Construction	\$400,000	\$450,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$5,150,000
Equip/Furnishings			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0
Other			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0
Contingencies	\$50,000	\$55,000	\$ 55,000	\$ 55,000	\$ 55,000	\$ 55,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$625,000
Project Total	\$500,000	\$560,000	\$560,000	\$560,000	\$560,000	\$560,000	\$620,000	\$620,000	\$620,000	\$620,000	\$620,000	\$6,400,000

Funding Sources From Enterprise Fund

Regular Revenue (sewer usage, inspection fees, etc.)	\$500,000	\$560,000	\$53,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,113,000
System Development Fee Revenue	\$0	\$0	\$507,000	\$560,000	\$560,000	\$560,000	\$620,000	\$620,000	\$620,000	\$620,000	\$620,000	\$5,287,000
Funding Total	\$500,000	\$560,000	\$560,000	\$560,000	\$560,000	\$560,000	\$620,000	\$620,000	\$620,000	\$620,000	\$620,000	\$6,400,000

Function: Enterprise Fund

Department: Engineering

Project Description: Durham County owns and maintains more than 100 miles of sewer main with thirteen pump stations. The sewer main is constructed of several different types of materials, including vitrified clay, concrete, concrete lined ductile iron pipe, epoxy lined ductile iron pipe, and plastic pipe. The pipe systems deteriorate at different rates dependent upon the sewage quality passing through them and the pipe material. Similarly, the pump stations deteriorate and repair parts become obsolete. This project provides for the evaluation of the sewer system and pump stations, the rehabilitation of the sewer system and pump stations based upon the risk of failure, the installation of systems which reduce the generation of corrosive gases which increases the longevity of the installed sewer system. The rehabilitation project has resulted in reduced sewer spills and is ongoing.

Biological Nutrient Removal Aeration Upgrade

Project Cost Estimates	FY18	FY19 ¹	FY20	FY21	FY22 ¹	FY23 ¹	FY24	FY25	FY26	FY27	FY28	Total 10YR Budget
Planning	\$213,000	\$0	\$ -	\$ 213,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$426,000
Land Acquisition	\$0	\$0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0
Construction	\$0	\$1,214,000	\$ -	\$ -	\$ 1,214,000	\$ 1,214,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$3,642,000
Equip/Furnishings	\$0	\$0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0
Other	\$0	\$0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0
Contingencies	\$0	\$121,400	\$0	\$0	\$121,400	\$121,400	\$0	\$0	\$0	\$0	\$0	\$364,200
Project Total	\$213,000	\$1,335,400	\$0	\$213,000	\$1,335,400	\$1,335,400	\$0	\$0	\$0	\$0	\$0	\$4,432,200

Funding Sources From Enterprise Fund												
Regular Revenue (sewer usage, inspection fees, etc.)	\$213,000	\$1,335,400	\$0	\$0	\$335,400	\$335,400	\$0	\$0	\$0	\$0	\$0	\$2,219,200
System Development Fee Revenue	\$0	\$0	\$0	\$213,000	\$1,000,000	\$1,000,000	\$0	\$0	\$0	\$0	\$0	\$2,213,000
Funding Total	\$213,000	\$1,335,400	\$0	\$213,000	\$1,335,400	\$1,335,400	\$0	\$0	\$0	\$0	\$0	\$4,432,200

Function: Enterprise Fund

Department: Engineering

Project Description: The initial Aeration System Improvements for the TWWTP includes the replacement of existing mechanical aeration rotors in oxidation ditch number two with a diffused aeration system consisting of two 125 horsepower blowers with variable frequency drives and two membrane disc diffuser grids. Additional work in oxidation ditch number two includes removing settled solids from the basin, repairing an expansion joint spanning the basin, and replacing all mixers within the basin. Provided the new system for oxidation ditch number two performs as anticipated, oxidation ditch number one and number three will transition from surface aeration to diffused aeration in FY 2022 and FY 2023

Notes:

1. Bids were received on August 16, 2018. The lowest bid was \$1,912,000. However, the CIP reflects the rate that was reviewed by WithersRavenel when preparing the System Development Fee Analysis in Spring of 2018.