TRAPPE AREA SEWERAGE SYSTEM

DRAFT

Resolution 281, as amended
Adopted by the Talbot County Council:
Approved by MDE: November 4, 2020

As identified within the goals of Chapter One of this Plan, growth of the County is to be encouraged and directed in concentrated centers around existing centers of population that presently have adequate or potentially adequate water and sewer services. To plan sewer service to meet the needs of future growth, the sewer service provider, the Town of Trappe, is proposing to create sanitary sewer service districts. The sewer service presently being provided in the Town of Trappe would be referred to as the Trappe Sewer District. To address the sanitary sewer needs in the growth area around the Town of Trappe, two sewer service districts are being proposed.

The proposed Trappe East Sewer District will serve parcels located in the Town on the east side of US Route 50. On the northern end of Town, a second sewer service district, White Marsh Sewer District, is being proposed to serve parcels annexed into the Town of Trappe.

The delineated development area around the Town of Trappe is shown on Figure 23. The factors that influence the size of development areas for the Town of Trappe includes the growth potential of the Town, the presence of natural growth constraints such as wetlands, the Chesapeake Bay Critical Area, and the availability of water and sewer service. As land is annexed into the Town of Trappe, these areas would be reclassified as immediate priority status for sewer service after amending the Talbot County Comprehensive Water and Sewer Plan. Once the area has been reclassified as immediate priority status this will mean that the area is to be served by the Town of Trappe that will progress to being under final design and/or construction phase or existing.

An enhanced Nutrient Removal ("ENR") 0.50 million gallon per day (MGD) Membrane Bio-Reactor ("MBR") wastewater treatment plant ("WWTP") and collection system will be designed and constructed in phases and operated to serve the proposed Lakeside development within the Trappe East Sewer District. The proposed MBR ENR WWTP will be designed such that it can be constructed in phases or as presented as a modular MBR WWTP. In accordance with the discharge permit 19-DP-3460 issued by MDE on October 27, 2022, the Town of Trappe will need to seek a major permit modification when increasing the discharge volume by 100,000 gallons per day. The WWTP will be expanded in phases as the capacity of the then-existing Lakeside (Trappe East Sewer District) WWTP approaches 80% of the design hydraulic capacity.

Treated effluent from the Lakeside WWTP will be disposed of by spray irrigation on lands within the Trappe East Sewer District. The initial section of the Lakeside project consisting up to 120 equivalent dwelling units are served by the existing Town of Trappe wastewater system. Wastewater flow from the initial section of the Lakeside project will be directed to the Trappe East Sewer District once the Trappe East WWTP has been constructed.

The Trappe East WWTP discharge permit, 19-DP-3460 consists of Enhanced Nutrient Removal (ENR) permit with the method of disposal being spray irrigation. The ENR permit requirements are:

Table 1 – Trappe East Wastewater Treatment Plant Discharge Permit Requirements

Effluent Parameter	Effluent Limitations			Monitoring Requirements	
	Loading		Concentration	Monitoring Frequency	Sample Type
	Yearly Average	Monthly Average	Monthly Average		
Flow	100,000 gpd	N/A	N/A	Continuous	Recorded
BOD_5	N/A	N/A	10 mg/l	Weekly	8 hr. Comp
Suspended Solids	N/A	N/A	10 mg/l	Weekly	8 hr. Comp
Nitrite + Nitrate	N/A	N/A	Monitor Only	Weekly	8 hr. Comp
Total Nitrogen (N)	N/A	N/A	3 mg/l	Weekly	8 hr. Comp
Total Phosphorus	N/A	N/A	0.3 mg/l	Weekly	8 hr. Comp
Escherichia coli (E. coli)	N/A	N/A	3 MPN/100ml	Weekly	Grab

Within I. Special Conditions A. Water and Wastewater of the discharge permit, the permitted flow is 100,000 gallons per day (gpd). As noted in the special conditions, "the 100,000 gpd will allow for approximately 400 residential units to be built." This section of the permit also notes "an initial discharge of 37,500 gpd has already been authorized to discharge to the existing Trappe Wastewater Treatment Plant. Once the wastewater treatment plant associated with this permit is constructed and operational, the 37,500 gpd flow must be discharged via this permit. The 37,500 gpd is part of the 100,000 gpd authorized in this permit." The first footnote indicates that "a major permit modification is required for any future expansion of" the Trappe East Wastewater Treatment Plant.

The information presented in Figure 23 is for planning purposes. The Sewer Districts have been defined using a blue line with various colors, shading and hatches defining areas of the existing sewer service and future sewer service areas and the Priority Funding Areas as defined by the Town of Trapp and the County and those Priority Funding Areas approved by the State. This map does not impose an obligation on Talbot County or the Town of Trappe to provide sewer service into the growth areas., the Town of Trappe would assure that the existing sewer system has capacity to serve the growth areas and the safely and adequacy of its public sewer supply system maintained for all its users.

Financial Management of Trappe East Sewer District

The Trappe East Seer District WWTP will be constructed by the developer of the Lakeside community and owned and operated by the Town of Trappe. All Trappe East Sewer District collection infrastructure will be planned, designed and constructed by the developer of the Lakeside community and maintained by the developer until it is decided to and accepted by the Town of Trappe.

Charges and Assessments

(a) *Connection Charges.* The Town, b ordinance or resolution, may make a charge for each water and sewer connection. The funds derived from these charges may be used for payment of principal and interest on and debt financing, accumulating funds for growth-

related capital improvements, and for the purchase of large capital equipment for the systems. The Town intends to evaluate the fee structure for these connections prior to commencement of construction of the Lakeside development.

(b) *Front Foot Benefit Assessments.* As of December, 2019, the Town has no front foot benefit assessments in place. The Town may elect to assess front foot charges if there is placement of water or sewer service lines along Town or State roads which would enable the property owner to elect connection to Town water or sewer service at a future date. This charge is used to recover the cost of constructing the water and sewer lateral lines and is paid annually from the inception of service for a period of years.

(c) *Usage Charges*. For the purpose of providing funds to maintain and operate its water supply and sewerage systems, and for the payment of any indebtedness, the Town may assess charges which shall consist of either a base charge for service and a variable charge based on water consumption, or a minimum ready-to-serve charge. These charges are due when presented and late account accrue interest and are subject to enforcement action, including suspension of service. For the purpose of providing funds to finance the design, engineering, construction and extension of water supply or sewerage system, the Town is authorized to borrow money through the issuance and sale upon the full faith and credit of the Town of its general obligation bonds. However, all new infrastructure to serve the Lakeside development will be constructed at the development's expense and may be financed through bond issuance(s) by the Town that would be repaid through assessments upon the Trappe East special tax district.

SCHEDULE FS – FINANCIAL MANAGEMENT STATISTICS

Trappe East (Lakeside Sewer District)

	Buildout*
Sewer Charge Revenue:	$2,300,000
Connection Charge Revenue:	$-
Front Foot Assessment Revenue:	$-
Other (Interest & other reimbursements):	$-
Total Revenue:	$2,300,000
Operation & Maintenance Expense:	$560,000
Administration Allocation:	$ 30,000
Capital Reserve:	$335,000
Total Expense:	$925,000
Operating Income or (Loss):	$1,105,000

**Projection based on flow, revenue and operational assumptions. O7M expenses and appropriate capital reserves will be re-evaluated by the Town upon issuance of the construction permit for the Trappe East Sewer District WWTP and reflected in an updated Financial Management Plan submitted to MDE.*

Trappe Sewer District

The Sewerage System Plan for existing and planned sewer service for the Town of Trappe is presented in Figure 23. The Trappe Sewer District wastewater treatment plant is a Biological

Nutrient Removal system using Biolac, Wave Oxidation Process with chlorination/de-chlorination and sand filtration prior to discharging the effluent into an unnamed tributary of La Trappe Creek. The wastewater treatment system has a design and permit limitation of 200,000 gallons per day (gpd).

Left out the indebtedness paragraph.

The existing 0.2 MGD WWTP is approaching 20-years of service for the Town of Trappe and is in need of upgrades to achieve Enhanced Nutrient Removal (ENR) discharge permit limitations and to continue to serve the Town. In cooperation with the State of Maryland, the Town of Trappe has entered into an ENR Agreement for funding assistance to upgrade the existing facility to ENR standards and reduce the nutrient load to the Chesapeake Bay. The WWTP upgrade has been initiated with a Preliminary Engineering Report (PER) on 2019 to identify the upgrade scope of work and budgetary estimate. The PER remains under negotiations with MDE and is anticipated for approval in 2020. With agreement by MDE and the Town on the PER, the design of the upgrade is schedule to proceed in 2020 with bidding and construction for 2021.

Treatment Plant
Biolac, Wave Oxidation Process for Biological Nutrient Removal – 200,000 gpd
Disinfection – Chlorination/De-chlorination
Point of discharge – Unnamed Tributary of La Trappe Creek

Flow Data Wastewater Treatment Plants									
Design Parameters				**Flow**		Development Occupancy Units			
Name or Service Area	Hydraulic Design Flow (MGD)	Organic (mg/l)		Avg. Day* (MGD)	Max. Day (MGD) And Date**	Existing*	Anticipated*** BPI		
		BOD	TSS				UC	NUC	PWA
Trappe Sewer District (Existing Service Area)	0.200	210	450	0.140	0.363 (4/15/04)	438	3	0	0

* Per Effective Date of Plan
** During Previous Fiscal Year
*** Future Estimate
BPI – Building Permits Issued per Effective Date of Plan
UC – Building Permits Issued per Effective Date of Plan for Units under Construction
NUC - Building Permits Issued per Effective Date of Plan for Units Not Under Construction
PWA - Building Permits for Unexpired Public Works Agreements per Effective Date of Plan

Pumping Stations

Inventory and Summary of Existing Pump Station

Location	Description
1. South Main Street & Route 50	Two pumps each 5 HP, 255 gpm and a 4-inch diameter force main, equipped with an emergency generator
2. Greenfield Avenue	Two pumps each 7.5 HP, 350 gpm and 8-inch and 6-inch diameter force mains, equipped with an emergency generator shared with water wells
3. White Marsh School	Two pumps each 3 HP, 80 gpm and a 6-inch diameter force main
4. Lakeview Drive	Two pumps each 85 gpm and a 4-inch diameter force main
5. Rumsey Drive	Two grinder pumps each 125 gpm and a 4-inch diameter force main
6. Marvel Drive South	Two grinder pumps
7. Marvel Drive North	Two grinder pumps
8. Shelby Acres	Two grinder pumps

TABLE 21. TRAPPE SEWERAGE SYSTEM

CAPITAL IMPROVEMENT PROJECTS

Project Description	Proposed Fiscal Year	Comments
New Phased 0.50 MGD WWTP, storage and spray irrigation for Trappe East Sewer District	2020	WWTP, storage and spray irrigation construction will be phased
Construct Phases 1 and 2 sewer collection and pumping systems for Trappe East Sewer District	2020	Collection system, including regional pump stations, will be phased
Construct additional phases of sewer collection and pumping system for Trappe East Sewer District	2023-2030	
Extend sewer collection system along Howell Point Road	2022/2023	
Extend sewer collection system to White Marsh Village District	2025-2030	
Upgrade the Trappe Sewer Area existing 0.20 MGD WWTP to ENR Treatment	2023	Initiate design. $4,376,823.00. Upgrade the existing 200,000 gpd WWTP to Enhanced Nutrient Removal treatment to reduce nutrient discharge to the Chesapeake Bay and remove sludge in existing lagoon.
Functional replacement of existing pump stations and gravity sewer lines	2023-2028	$1,975,500.00. Repair and replace 7 existing pump stations and gravity sewer lines throughout the Town of Trappe