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Mrs. Lynn Aibejeris, Chairman
Taylor Coastal Water and Sewer District
18820 Beach Road
Perry, FL 32348
tcwsd@fairpoint.net

Re: Draft Wastewater Fiscal Sustainability Analysis & Asset Management Plan – Taylor Coastal Water and Sewer District -Taylor County, Permit # FLA325864

Mrs. Aibejeris,

The Florida Rural Water Association is pleased to submit the following Wastewater System Asset Management and Fiscal Sustainability Plan (AMFS) to Taylor Coastal Water & Sewer District. FRWA prepared this Plan for the District in partnership with the FDEP Clean Water State Revolving Fund (CWSRF) Program to identify your wastewater system's most urgent and critical needs.

Please review the proposed AMFS thoroughly. We look forward to receiving your comments and discussing your wastewater utility assets' sustainability. We wish to finalize the report and present findings to the Commission in a workshop setting followed by a presentation at a regular meeting for adoption and implementation.

This report assesses the current conditions of your wastewater fixed capital assets (wastewater treatment plant, collection system, and disposal system) and more importantly provides recommendations, procedures, and tools to assist with long range asset protection and wastewater utility reinvestment. FRWA will be available to support AMFS recommendations and implementation. The following report is considered a living document with tools for your use and must be updated at least annually (recommended quarterly updates) by the District's utility management. We provide electronic copies for your use and future modification. FRWA is available to assist in updating and revising the District's AMFS.

Taylor Coastal Water & Sewer District is a valued FRWA member and it is our goal to help make the most effective and efficient use of your limited resources. This tool is an unbiased, impartial, independent review and is solely intended for achievement of wastewater system fiscal sustainability and maintaining your valuable wastewater utility assets. Florida Rural Water Association has enjoyed serving you and wishes your wastewater system the best.

Respectively,
George Glover,
FRWA Utility Asset Management

Copy: Timothy Banks, FDEP Clean Water State Revolving Fund
Gary Williams, FRWA Executive Director
Lynette Senter, Office Manager Taylor Coastal Water & Sewer District

TAYLOR COASTAL WATER SEWER DISTRICT



Wastewater Water System Asset Management and Fiscal Sustainability Plan

Date May 1, 2020

Prepared for:
Taylor Coastal Water and Sewer District
18820 Beach Road
Perry, FL 32348

Prepared by:
FLORIDA RURAL WATER ASSOCIATION
Asset Management Program
In partnership with
Florida Department of Environmental Protection
&
Clean Water State Revolving Fund Program



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Executive Summary:

Asset Management Plan Defined

Asset Management Plan (AMP) The International Infrastructure Management Manual defines an asset management plan as; "a plan developed for the management of one or more infrastructure assets that combines multi-disciplinary management techniques (including technical and financial) over the life cycle of the asset in the most cost effective manner to provide a specific level of service." Lowest life cycle cost refers to the best appropriate cost for rehabilitating, repairing, or replacing an asset. Asset management is implemented through an asset management program and includes a written asset management plan.

Benefits of an AMP

Implementing and maintaining an active Asset Management Plan: Will provide numerous benefits to the Utility and its Customers:

- Prolonging asset life and aiding in rehabilitation/repair/replacement decisions through informed, efficient and focused operations and maintenance.
- Increased operational efficiencies
- Informed operational and management decisions
- Increased knowledge of asset criticality; thus improving the response to emergencies
- Meeting consumer demands with a focus on system sustainability and improved communication
- Setting rates based on sound operational and financial planning
- Budgeting by focusing on activities critical to sustained performance
- Meeting system service expectations and regulatory requirements
- Reducing overall costs for both operations and capital expenditures
- Improving security and safety of assets
- Capital improvement projects that meet the true needs of the system and community

State Revolving Fund Requirement

An active **Asset Management Plan (AMP)** is a requirement for participation in the State Revolving Fund Program (SRF). Asset Management and Fiscal Sustainability (AMFS) program details are identified in the Florida Administrative Code (FAC) 62-503.700(7).

AMP Development Stakeholders

The development of this AMFS plan involved the collective efforts of the District's Management and Staff, Florida Department of Environmental Protection State Revolving Fund (FDEP-SRF), and Florida Rural Water Association (FRWA). FRWA resources include: Engineers, Certified Operators and Rate Sufficiency Analysts.

Table of Critical Asset, Process, CAPEX, and OPEX Needs:

The following tables contains a listing of Critical Assets and Processes needing Capital and/or Operational funding to operate as designed and within Regulatory Compliance. A five (5) year estimated cost is provided for consideration. Also provided is the associated rate sufficiency, per customer per year, for the proposed activity. Please see the Rev Plan for this information.

Taylor Coastal Water and Sewer District	
Asset Statistics	
Total Replacement Cost of System	
Drinking Water	\$465,709.39
Wastewater	\$2,176,780.17
Percent of Assets in Need of Replacement	
Drinking Water	7.51%
Wastewater	0.83%
Cost of Replacing All Assets Needing Replacement	
Drinking Water	\$34,991.99
Wastewater	\$18,035.76
Annual Replacement Cost of Entire System	
Drinking Water	\$16,994.45
Wastewater	\$90,464.79

Critical Assets in need of Rehab/Replacing						
Name	Installed	Design Life	Condition	COF	EOL	
LS1 Bypass Check Valve LS1	2007	25	Poor	Moderate	2028	
LS1 Discharge bypass Check	2007	25	Poor	Moderate	2028	
LS1 Discharge Connection	2007	25	Poor	Moderate	2028	
Return Mixer Motor	2007	20	Poor	Moderate	2026	
Eye wash WWTP	2007	15	Poor	Moderate	2025	
Spay Field pump 1	2007	20	Poor	Major	2026	
Spray Field Pump 2	2007	20	Poor	Major	2026	

Taylor Coastal WSD					
Fiscal Year: 2020					
Wastewater Revenue Requirements					
	2020	2021	2022	2023	2024
Revenue Requirements:					
Operating Expenses	\$252,200	\$259,700	\$267,500	\$275,600	\$283,800
Debt Service	\$57,700	\$57,700	\$57,700	\$57,700	\$57,700
Other Expenses/Transfers	\$28,300	\$29,100	\$30,000	\$30,900	\$31,800
Capital Expenditures	\$0	\$19,000	\$30,000	\$60,000	\$90,500
Gross Revenue Requirements	\$338,200	\$365,600	\$385,300	\$424,200	\$463,800
Less: Miscellaneous Revenue	\$146,100	\$146,100	\$146,100	\$146,100	\$146,100
Net Revenue Requirements	\$192,100	\$219,500	\$239,200	\$278,100	\$317,800
Existing Rate Sufficiency:					
Revenue from Existing Rates	\$264,100	\$264,100	\$264,100	\$264,100	\$264,100
Revenue Surplus/(Deficiency)	\$72,000	\$44,600	\$24,900	-\$14,000	-\$53,700
Proposed Rate Sufficiency:					
Revenue from Proposed Rates	\$274,700	\$285,700	\$297,100	\$309,000	\$321,400
Increase in Revenue	\$10,600	\$21,600	\$33,000	\$44,900	\$57,200
Cumulative %	4.00%	8.16%	12.49%	16.99%	21.67%
Current Year %	4.00%	4.00%	4.00%	4.00%	4.00%
Revenue Surplus/(Deficiency)	\$82,600	\$66,200	\$57,900	\$30,900	\$3,600

A 4% per year wastewater rate increase is recommended

Fiscal Strategy and AMP Process Recommendations:

Based on this asset management and fiscal sustainability study, specific recommended action items related to Capital Expenditures (CAPEX) and Operating Expenditures (OPEX) and over the next five years are as follows:

- Adopt this Asset Management and Fiscal Sustainability (AMFS) study in the form of a Resolution (see *Appendix A* for an example AMFS Resolution at the end of this document)
 - Continue to engage with a Florida Registered Engineer to support the Utility in review, funding, planning, design, permitting, and construction of critical CAPEX and OPEX as recommended in this AMFS study.
 - Make funding applications to the following programs/agencies in support of Utility System Upgrades/Improvements as recommended by this AMFS study (a synopsis of water utility funding programs can be found here <http://www.frwa.net/funding.html> and <http://efcnetwork.org/wp-content/uploads/2017/05/FL-Water-Water-Funds-2017.pdf>.
 - FDEP-State Revolving Fund (SRF)
 - Water Management District
 - Community Development Block Grant (CDBG)
 - Community Budget Issues Request
 - FDEO Rural Infrastructure Fund Grant (RIF)
2. Evaluate and Adopt a Utility rate structure that will ensure rate sufficiency as necessary to implement capital improvements.
 3. Begin using Diamond Maps for Asset Management Planning (AMP), and Computerized Maintenance Management System (CMMS), or an equivalent software program.
 4. Continue to build your asset management program by:
 - Collecting critical field data and assessments on any remaining assets
 - Improving on processes which provide cost savings and improved service
 - Implementing a checklist of routine maintenance measures
 - Benchmarking critical processes, annually
 - Develop policies that will support funding improvements
 - Develop manuals and guidelines for critical processes
 - Identify responsible persons or groups to implement critical assets and processes
 - Attend Asset Management training; annually.

Introduction:

In accordance with FDEP Rule 62-503.700(7), F.A.C., State Revolving Fund (SRF) recipients are encouraged to implement an asset management plan to promote utility system long-term sustainability. To be accepted for the financing rate adjustment and to be eligible for principal forgiveness/reimbursement, an asset management plan must:

1. Be adopted by ordinance or resolution.
2. Have written procedures in place to implement the plan.
3. Be implemented in a timely manner.

The plan must include each of the following:

1. Identification of all assets within the project sponsor's (utility) system.
2. An evaluation of utility system assets' current age, condition and anticipated useful life of each asset.
3. Current value of utility system assets.
4. Operation and maintenance cost of all utility system assets.
5. A Capital Improvement Program Plan (CIPP) based on a survey of industry standards, life expectancy, life cycle analysis and remaining useful life.
6. An analysis of funding needs.
7. The establishment of an adequate funding rate structure.
8. An asset preservation plan to include renewal, replacement, repair as necessary and a risk assessment to identify risks and consequences of failure as it pertains to replacement.
9. An analysis of population growth and water treatment demand projections for the utility's planning area and an impact fee model, if applicable, for commercial, industrial and residential rate structures.
10. A threshold rate set to ensure proper water system operation and maintenance; **if the potential exists for the project sponsor to transfer any of the system proceeds to other funds, rates must be set higher than the threshold rate to facilitate the transfer and maintain proper operation of the system.**

Fiscal Sustainability represents the accounting and financial planning process needed for proper management of DWS assets. It assists in determining such things as:

1. Asset maintenance, repair, or replacement cost
2. Accurate and timely capital improvement project budgeting
3. Forecasting near and long-term capital improvement needs
4. Whether the WWTS is equipped for projected growth
5. Adequate reserves exist to address emergency operations.

Fiscal sustainability analysis requires a thorough understanding of the District's WWTS's assets' current condition and needs. Therefore, fiscal sustainability follows asset management and is improved by sound management procedures and a sound process of communication between the two areas. Therefore, asset management requires a healthy fiscal outlook, considering the costs are high to properly operate and maintain the assets of a water system. Timely expenditures for proper servicing and care of current assets are relatively small when compared to emergency repair and replacement expenditures when a component failure due to neglect.

Having this solid AMFS in place will also benefit the District in determining which assets are to be insured and for what amount. Additionally, the State Revolving Fund (SRF) requires a DWS to adopt and implement an AMFS to qualify for loan interest rate reduction. An AMFS helps a system more effectively and efficiently identify its capital improvement needs and solutions.

While creating the AMFS's the intended approach by FRWA to assist the District with conducting a basic inventory and condition assessment of its current assets. It is expected that TCWSD will periodically re-evaluate the condition of its assets (suggested at least annually) to determine asset remaining useful life. A reminder/tickler can be established to remind staff that a given component is nearing time for servicing, repair, or replacement. This will give TCWSD the necessary tool to track and record how the system function allowing for an aggressive approach to addressing problem areas.

Furthermore, major capital improvement needs can be reassessed periodically as they are met or resolved. In short, this plan is not designed to be set in stone, but is intended to be a living, dynamic, evolving document. It is prudent for annual review and revise as necessary, resulting in a practical and useful tool for the District.

Asset Management Plan:

Asset Management

Asset Management can be defined in a variety of ways, but at its core it is a business plan for the services that a city, county, state, district and federal organizations provide to their communities at a desired level of service. In other words, we need to know what we've got, how much it costs to repair, maintain and operate it, at the desired level of service and how to do so in a cost-effective manner as we move forward. Asset Management provides the methodologies and tools to answer these questions.

Components of Asset Management

Three main components of basic asset management include:

- Building and assessing an inventory of the utility's assets.
- Developing and implementing a program that schedules and tracks all maintenance tasks, generally through work orders.
- Developing a set of financial controls that will help manage budgeted and actual annual expenses and revenue

Asset Management is made up of five core questions:

- What is the current status and condition of the utility's assets?
- What is the desired Level of Service? (LOS)
- What assets are considered critical to meeting the required LOS?
- What are the utility's Capital Improvement Program Plan (CIPP), Operations and maintenance plan (O&M), and asset's Minimum Life Cycle Cost strategies?
- What is the utility's long term financial strategy?

Implementation:

In developing this plan, FRWA has collected information on most all of the District's water system assets. The information has been entered into Diamond Maps, a cloud based geographical information system (GIS) this is the preferred method of FRWA. The FRWA, in partnership with FDEP has contracted with Diamond Maps to develop Asset Management software specifically for small systems at an affordable cost. Continuing with Diamond Maps will cost \$19 per month for a single license, or as many licenses as necessary at the rates listed in the following table. The software is easy to use, as it is set up for small communities and for water/water systems. It is not required for the District to obtain and use this particular system. However it is highly recommended by FRWA due to before mentioned details.

Meter Count	Unlimited-Use Subscription
250	\$15/month
500	\$20/month
1,000	\$30/month
2,000	\$45/month
3,000	\$60/month
4,000	\$75/month
5,000	\$90/month
10,000	\$165/month

TCWSD currently uses RVS, a computerized billing system with printable work order capabilities. Being able to keep Data current is critical for a utility as they move forward as they plan for different funding opportunities to rehabilitate and or replace assets throughout the system. In daily operations issuing work orders for maintenance or new repairs and assigning the tasks to staff along with then recording it into the system is a timely often overlooked burden. By upgrading the District will become more cost effective and have complete records at the tips of your fingers.

In addition to the CMMS tool, Diamond Maps, The Florida Rural Water Association (FRWA) has partnered with the Florida Department of Environmental Protection (FDEP) State Revolving Loan (SRF) program and Raftelis Financial Consultants to create an online financial tracking and revenue sufficiency modeling tool, RevPlan.

RevPlan is designed to enhance asset and financial management for small/medium Florida water and wastewater utilities. It provides a free-to-member online tool to achieve financial resiliency, and to maintain utility assets for long-term sustainability. Additionally, RevPlan is programmed to populate asset information directly from Diamond Maps. By inputting your accurate budgetary, O&M, CIP, existing asset and funding information, this tool assists the user in identifying any rate adjustments and/or external funding necessary to meet the utility finance requirements, and the impact rate increases/borrowing may have on customers.

There are a few important elements of a successful RevPlan outcome

- The tool is only as accurate as the information used.
- One person should be assigned the task of annual RevPlan updates.
- Updating asset information in Diamond Maps is essential.

Level of Service (LOS)

The required level of service is a set of features that describe the utility's short-and long-term performance standards, as well as the customer's expectations. Quality, quantity, reliability, environmental, health and cost associated with delivering the product at those standards are elements that can define level of service and associated system performance goals.

Why should a utility need to determine LOS?

It helps the utility...

- Concentrate (focus) efforts and resources
- On agreed on service levels
- Less service-level-defined-by-notion
- Communicate service expectations and choices
- Increased services equal increased costs
- Discussion of trade-offs and risks
- Negotiate (regulators and council/commission/board)
- Costs and budgets
- Rate impacts
- Reinvestments for renewal
- Level of risk

As a Provider of Water and or Wastewater service, a Utility must decide what level of service is required for its customers.

Questions to ask in determining Level of Service:

- What requirements are set by State and/or Federal Regulatory agencies?
- What are the utility's performance goals?
- What level of service do the utility's stakeholders and customers demand or expect?
- What are the physical capabilities of the utility's assets in relation to the Level of Service?

Knowing your utility's required level of service and what your systems are capable of producing will help implement your asset management plan. Communicate to stakeholders what is being done and where your Goals are set. Information about customer demand and data from utility commissions or boards, and information from other stakeholders can be used to develop the statement.

To achieve the desired Goals, targets should be set, by assessing individual parameters and metrics that when put in place will help the utility direct their efforts and resources towards a previously agreed on goal. These goals are set in an agreement between the utility and its customers.

Analyze customer demand and satisfaction, use this to develop **S.M.A.R.T.** goals.

Think **S.M.A.R.T.** when developing level of service goals.

Set targets and goals for your system, by being **S.M.A.R.T.** you will not only be setting Goals; you will be achieving them as well.

Guidelines for setting these goals include:

- Make the goals **Specific** and well defined. It should be clear to anyone with even a basic knowledge of the utility.
- Make the goals **Measurable**. You have to know if you are successful or not and must be able to see where completion lies ahead. You must also be able to determine when success is achieved.
- The goals must be **Attainable**. Setting a goal to have no water outages whatsoever is great but unrealistic. A better choice would be to set a goal that no outage would exceed six hours, for example.
- The goals must be **Realistic**. The staff and resources of the utility must be considered when setting goals. Available personnel, equipment, materials, funds, and time play a huge part in setting realistic targets.
- The goals must be **Time based**. There must be a deadline for reaching the goal. Adequate time must be included to meet the target. However, too much time can lead to apathy and negatively affect the utility's performance.

The goals that are established should take into account costs, budgets, rates, service levels, and level of risk.

The LOS items for the District must be specific to the District’s water system and would be discussed and agreed upon by management and staff. Ideally, these goals would be conveyed to the utility’s customers via a ‘Level of Service Agreement’. This document demonstrates the utility’s accountability in meeting the customer’s needs and its commitment to do so. The table below demonstrates what a LOS could represent.

Taylor Coastal Water & Sewer District Level of Service Goals			
Service Area	Goals	Performance Target	Reporting
Service Quality	Continue to monitor Effluent TSS.	20.0 mg/L or lower	FDEP and Office Manager
Fiscal Sustainability	Assure that the utility is financially self-sustaining	Perform an annual utilities rate analysis and make any needed rate adjustments every three to five years.	Board of Commissioners
Asset Preservation and Condition	Improve system wide preventive maintenance (PM)	Develop a comprehensive Preventive Maintenance weekly schedule for equipment and wastewater system components and complete all preventative maintenance tasks as scheduled.	Office Manager
Asset Preservation, Condition and Costs	Have a location of Assets, track O/M, work orders and conditions of the waste water system.	Implement a program such as Diamond Maps to keep an understanding of the system and what improvements are needed.	Office Manager

This is a draft only at this time and it should be edited and modified to better fit Taylor Coastal Water & Sewer District

System Description:

Taylor Coastal Water and Sewer District provides water and wastewater services to coastal communities in Taylor County. The District includes the unincorporated communities of Keaton Beach, Cedar Island, Dekle Beach, Dark Island and Ezell Beach in Taylor County. Formed in October 2000 by Ordinance 2000-10 by the Taylor County Board of County Commissioners for the purpose of providing safe drinking water and wastewater services to the residents and visitors of the southern coastal region of Taylor County. The population of TCWSD is 1305 and represents 5.78% of 22570 the overall population of Taylor County. TCWSD owns and operates water and wastewater treatment plants along with the collection and distribution systems associated with each. With this they are tasked with providing a quality of service to the residents and visitors of the District, while ensuring the fragile coastal ecosystem is not adversely effected. This Asset Management and Fiscal Sustainability Plan will be focusing on the wastewater system.

Government

Taylor Coastal Water and Sewer District is a Commission-Manager form of Government. The Board of Commissioners is comprised of a Chairman, Vice-Chairman and five Commissioners who are elected to a four year term by the residents of the District. The Commission is the legislative body of the District with the power to adopt ordinances (including the annual budget), policies, resolutions and regulations. The Chairman and Vice-Chairman are appointed by the Commission each October and serve one year terms.

TAYLOR COASTAL WATER AND SEWER DISTRICT	
BOARD OF COMMISSIONERS	
Chairman	Lynn Aibejeris
Vice-Chairman	Steve Brown
Commissioner	Steve Spradley
Commissioner	Willi Huxford
Commissioner	Diane Carlton
Commissioner	Vacant

Management

Daily operations of the District is overseen by the Office Manager that is hired by the Board of Commissioners. The Office Manager runs the daily general operations of the District in accordance with local ordinances, laws and policies that were put into place by the Board of Commissioners. The Office Manager serves at the pleasure of the Board of Commissioners as the administrative head of the District. The Office Manager will manage and administer this AMFS plan.

Staff

Taylor Coastal Water and Sewer District's Water and Sewer Department consists of two Part-time employees who share duties related to Drinking Water and Wastewater. Taylor Coastal Water and Sewer District's Water/Wastewater Department staff work together to perform day-to-day functions while ensuring the plants are operating at or above standards set by State and Federal regulations. Please see the staff chart below.

TAYLOR COASTAL WATER AND SEWER DISTRICT	
EMPLOYEE LIST	
Lynette Senter	Office Manager/Board Secretary
Kristi Hathcock	Billing Clerk
Ronald Bennett	Water Operator/Field Supervisor
David Morgan	Wastewater Operator

Mission Statement

The Mission of the Taylor Coastal Water and Sewer District is:

- To provide safe, clean, and adequate water at a cost effective rate to the residents within the Taylor Coastal Water and Sewer District.
- To preserve, enhance and restore, if needed, the quality of Taylor County's coastal water resources.
- To ensure the proper allocation and efficient use of our coastal water resources for the benefit of present and future generations by promoting water conservation and water source protection through environmental awareness education and conservation usage pricing.
- To maintain good public relations and treat our customers with respect.

- To provide good, safe working conditions for our employees.
- To eliminate all wastewater sources from the fragile coastal marshland and surface waters by adopting the following:
 - Plan for current and future development and monitor and control all new developments to insure they are in compliance with State and Federal Regulations and meet or exceed TCW&SD's Mission Statement and Standards of Construction.
 - Protect the fragile coastal environment and its freshwater and saltwater estuaries by removing and transferring all wastewater discharge to a safe processing site outside the Coastal High Hazard Zone and flood area.
 - Promote the development and maintenance of a wastewater treatment system that will provide an environmentally sound and cost effective processing of wastewater.

System Overview:

Taylor Coastal Water and Sewer District WWTF is an existing 0.080 million gallons per day (MGD) annual average daily flow (AADF) permitted capacity wastewater treatment facility (FLA325864) with Modified Ludzack-Ettinger biological nutrient removal process operating as extended aeration. The plant and collection system is operated and maintained by the part-time Class C Operator working 20 hours per week. Any issues or complaints that may arise with in the plant or collection system are tended to by the wastewater operator and water plant operator. Each one sharing in the responsibility of each respected field. The current permit issued on 12/12/2013 is scheduled to expire on 12/11/2020 and the Application to FDEP for a renewal is scheduled to be submitted on or before 06/14/2020. The wastewater system was totally rehabilitated in 2007 with a new wastewater treatment plant and collection system. It was noted on the last Compliance Evaluation Inspection dated April 10, 2020 that the Total Suspended Solids, were twice in twelve months over the permitted ranges.

System Components

Wastewater Treatment Plant

The WWTP consists of an influent bar screen, one 26,000-gallon flow equalization tank, one 20,000-gallon anoxic chamber, one 70,000-gallon aeration basin, two 9,866-gallon clarifiers, two 3,200-gallon chlorine contact tanks with a liquid chlorination system, and one 15,000-gallon aerobic digester.

Bio Solids

Bio solids are transported by American Pipe and Tank to 412 Bio solids Processing Facility, and/or a Class I solid waste landfill for further treatment and final disposal.

Spray Field

An existing 0.080 MGD AADF permitted capacity slow-rate restricted public access system, consisting of one lined 329,000-gallon holding pond, and a spray irrigation field with four zones located approximately at latitude 29° 49' 18.37" N, longitude 83°33' 34.80" W.

Stand-By Emergency Generator

There is an installed stand by generator at the WWTP that is capable of keeping the WWTP operational during a natural disaster or other event in that power is lost.

Collection System

The Collection System is composed of a network of Valves, Air Release Valves, Clean Outs, Grinder Pump Stations and two Lift Stations that all work in unison to form the Wastewater Collection System. This is a sealed system that utilizes grinder pumps and force mains for collection. There is no District owned gravity flow lines with in Taylor Coastal Water & Sewer District.

Collection System

The 504 Grinder pump stations are installed at each customer connection. The station is composed of one electrical control/alarm panel, a ball valve, check valve, air release check valve and a 1 horsepower submersible pump. Each customer pays a \$12.50 a month fee for the pump and if any issues arise the Staff attends to it promptly, there for the Grinder Pump Stations are in average condition throughout the system. All System Valves, Air Release Valves were found to be in average working condition.

Current Asset Condition:

Wastewater Treatment Plant

As stated the treatment plant was installed in 2007 and thus is in Average condition. The tanks all seem to be average with the coatings still in place. Electrical boxes were locked and sealed properly at the time of data collection. Please see below for recommendations at the WWTP.

- The Return mixer motor has a lot of rust on the housing and seems to be in poor condition consider replacing the motor.
- The top of the wet well for the spray field pumps should be repainted as the paint is very thin and rust is showing.
- The pumps for the spray field have a lot of rust at the housings. The housings are starting to separate at the inspection windows at the top bearings on both pumps. This issue should be addressed as soon as possible to prevent further damage.
- Some irrigation heads at the spray field are not functioning properly. These should be lubricated and tested to ascertain what ones should be replaced.
- As suggested in the Energy audit from FRWA installing a VFD on the blowers would help lower energy usage at the WWTP and therefor lower treatment costs.

Lift Station #1

- The Valve Box for the bypass connection has had a lot of water inside of it. All valves, check valves and the connection for the bypass is extremely rusted and the paint is peeling away. It would be recommended to locate the source from the infiltrating water and repair it.
- Valves and bypass connection consider cleaning off old paint and repainting and lubricating them to ensure proper operation if they are needed.

Best Management Practices: (BMP)

Utility owners, managers, and operators are expected to be good stewards of the system. Every decision must be based on sound judgment. Using Best Management Practices (BMP) is an excellent tool and philosophy to implement. BMP can be described as utilizing methods or techniques found to be the most effective and practical means in achieving an objective while making optimum use of the utility's resources.

The purpose of an Asset Management Plan (AMP) is to help the utility operate and maintain their system in the most effective and financially sound manner. An AMP is a living document and is not intended to sit on a shelf. It must be maintained, updated, and modified as conditions and situations change. Experience will help the utility fine tune the plan through the years.

Operations and Maintenance Strategies (O&M):

O&M consists of preventive and emergency / reactive maintenance. The strategy for O&M varies by the asset, criticality, condition, and operating history.

All assets have a certain risk associated with their failure. This risk must be used as the basis for establishing a maintenance program to make sure that the utility addresses the highest risk assets. In addition, the maintenance program should address the level of service performance objectives to ensure that the utility is running at a level acceptable to the customer.

Unexpected incidents could require changing the maintenance schedule for some assets. This is because corrective action must be taken in response to unexpected incidents, including those found during routine inspections and O&M activities. Utility staff will record condition assessments when maintenance is performed, at established intervals, or during scheduled inspections. As an asset is repaired or replaced, its condition will improve and therefore it can reduce the overall risk of the asset failing. The maintenance strategy will be revisited annually.

Two important considerations in planning O&M strategies are:

- Unplanned repairs should be held at 30% or less of annual maintenance activities
- Unplanned maintenance in excess of 30% indicates a need to evaluate causes and adjust strategies

Staff Training:

Utility maintenance is quite unique. It can involve one or a combination of water and sewer main repairs, customer service issues, lift station troubleshooting and repair, blower and motor repairs, and even tank repairs and other technical work. This skill set is not common. Training staff, whether they are new or long-term employees, is very important. It can be said it is better to have trained an employee and have them leave than to never have trained them and have them retire. It is recommended that the District initiate a training program for its employees. In addition to technical training, safety training is also necessary. Treatment plants and distribution/collection systems can be dangerous places to work. Electrical safety, troubleshooting panel boxes, trenching and shoring, confined space entry, etc. are just a few of the topics that could benefit the District and its staff.

FRWA personnel can provide some of the training needed by District staff members. Some of the training services that we offer to members include online training, onsite training, Focus on Change and the Apprenticeship Program. For a full list of the training opportunities offered by FRWA please visit our website <http://www.frwa.net/> under the Training Tab.

Failing to prepare is preparing for failure, there is no such thing as too much training. The more your staff knows, the more capable, safe, and professional they become. This enhanced sense of professionalism will improve the quality of overall service and accountability to the community.

Preventive Maintenance:

Preventive maintenance is performing the day-to-day work necessary to keep assets operating properly, which includes the following:

- Regular and ongoing annual tasks necessary to keep the assets at their required service level
- Day-to-day and general upkeep designed to keep the assets operating at the required levels of service
- Tasks that provide for the normal care and attention of the asset including repairs and minor replacements
- The base level of preventative maintenance as defined in equipment owner's manuals

These preventative maintenance guidelines are supplemented by industry accepted best management practices (BMPs).

Equipment must be maintained according to manufacturer's recommendations to achieve maximum return on investment. By simply following the manufacturer's suggested preventive

maintenance the useful life of equipment can be increased 2 to 3 times when compared to “run till failure” mode of operation. Deferred maintenance tasks that have not historically been performed due to inadequate funding or staffing must be programmed into future operating budgets. Proper funding provides staffing and supplies to achieve life expectancy projected by the manufacturer and engineer.

The Table below is a sample O&M Program for this system and is based on BMPs, manufacturers’ recommended service intervals, staff experience, and other sources. This schedule is only an example. The true schedule must be created by District staff based on their historical knowledge and information gleaned from the plant O&M Manuals.

Task name	Frequency	Task name	Frequency
Check all on site equipment for proper operation. Note any issues (piping leaks, valves, equipment issues, lighting, etc.) and schedule repairs.	Per Visit	Respond to any complaints	As they occur
Perform general housekeeping on grounds and building.	Weekly	Prepare a demand forecast. Identify and evaluate energy conservation measures.	Annually
Calibrate all meters and necessary equipment	Per Visit	Confirm submittal of monthly reports	Monthly
Exercise valves throughout the system and at lift stations	Per manufacture’s recommendation	Perform P/M on pumps and motors	Manufacturer recommendation
Collect all samples	As required by Permit	Update FSAMP	Annually

Proactive vs Reactive Maintenance:

Reactive maintenance is often carried out because of customer requests or sudden asset failures. The required service and maintenance to fix the customer's issue(s) or asset failure is identified by staff inspection and corrective action is then taken.

Proactive maintenance consists of preventive and predictive maintenance. Assets are monitored frequently and routine maintenance is performed to increase asset longevity and prevent failure.

Upon adoption of this Asset Management Plan or any DEP-approved DW AMP, FRWA Utility Asset Management (UAM) intends to upload the District's asset data definition file into "Diamond Maps", described earlier in this DWAMP, and populate with field data. The appropriate District personnel will be trained on Diamond Maps functionality and can immediately begin using it for scheduling and tracking DWS asset routine and preventive maintenance.

Capital Improvement Plan:

Capital improvement projects generally create a new asset that previously did not exist or upgrades or improvements to an existing component's capacity. These projects are the consequence of growth, environmental needs, or regulatory requirements. Included in a CIP are typically:

- Any expenditure that purchases or creates a new asset or in any way improves an asset beyond its original design capacity.
- Any upgrades that increase asset capacity.
- Any construction designed to produce an improvement in an asset's standard operation beyond its present ability.

Capital improvement projects, such as the Ground Water Storage Tank being installed, will populate this list. Renewal expenditures do not increase the asset's design capacity, but restores an existing asset to its original capacity, such as:

- Any activities that do not increase the capacity of the asset. (i.e., activities that do not upgrade and enhance the asset but merely restore them to their original size, condition and capacity, for example, rebuilding an existing pump).
- Any rehabilitation involving improvements and realignment or anything that restores the assets to a new or fresh condition (for example, distribution main repair or hydrant replacement)

In making renewal decisions, the utility considers several categories other than the normally recognized physical failure or breakage. Such renewal decisions include the following:

- Structural
- Capacity
- Level of service failures
- Outdated functionality
- Cost or economic impact

The utility staff and management typically know of potential assets that need to be repaired or rehabilitated. Reminders in the Diamond Maps task calendar let the staff members know when the condition of an asset begins to decline according to the manufacturer's life cycle recommendations. The utility staff members can take these reminders and recommendations into account.

Because the anticipated needs of the utility will change each year, the CIP is updated annually to reflect those changes.

Financial:

Budget/Financial Sufficiency

Taylor Coastal Water and Sewer District FY 2019 budget had a total revenue of \$657,569.16 with exponders of \$514,418.71 thus showing a gain of \$44,185.93. The Rates were adjusted in 2018 at 2.5%. A rate increase of 4% per year and doing so annually will ensure sustainability of the System while ensuring funding will be available to make the needed repairs to the System.

Reserves

An important funding line item for a water utility is reserves, which should be funded annually as a percentage of the operating budget, more specifically as 7.5% of annual operating expenses for Major Capital Improvement Program Reserves and 5% of annual operating expenses for Contingency/Emergency Reserves. Increasing the annual reserve funding to at least meet the recommended amount would help to build adequate reserves moving forward. We have included a line item for the recommended annual reserve funding in the REV Plan portion of this Plan.

Rates

A 'rule of thumb' we subscribe to regarding rates as that base charges that pay for operational expenses. With usage charges fund the Capital Improvement Plan, Renewal & Replacement, Preventive Maintenance, Operation, Maintenance, and Reserves. Usage fluctuates and does not always provide a reliable funding source for operations.

A threshold rate should be set to ensure proper water system operation and maintenance revenue. A rate study was conducted by Southeast Rural Community Assistance Project in 2014.

This study being six years old, we would suggest a new rate study or evaluation. FRWA can assist with a rate study if the District wishes to do so.

The Districts has a single rate structure for Wastewater services provided to customers system wide. In addition to the usage rates, each customer is also required to pay a grinder pump fee of \$12.50 per month. The usage rate information is as follows.

Taylor Coastal Water & Sewer District Wastewater and Grinder Pump Rates			
Base Rate			
0-2999 Gallons	\$36.60	Total	\$49.10
Grinder Pump Fee	\$12.50		
3000 + \$7.16 per 1000 gallons			

Energy Conservation:

Energy Conservation and Cost Savings

The District should ensure all assets, not just those connected to a power source, are evaluated for energy efficiency. The following are common energy management initiatives the District should implement going forward:

- Load management
- Replace weather-stripping and insulation on buildings.
- On-demand water heaters
- Variable frequency driven pumps and electrical equipment
- Energy efficient infrastructure
- Meg electric motors
- MCC electrical lug thermal investigation
- Flag underperforming assets for rehabilitation or replacement

The above 8 energy saving initiatives are just a start and most can be accomplished in-house. The primary goal is reducing power consumption and cost through physical or operational changes.

Energy Audit

In December 2018 FRWA conducted an energy audit at the Wastewater Treatment Plant and recommended changing the florescent lights in the office to LED. The lighting has since been updated to LED. It was also recommended to install VFD drives to the Blowers at the WWTP, this has not been done at the time of this AMP.

With the cost of electricity rising, the reduction of energy use should be a priority for the District. As the assets age and or conditions change opportunities to reduce energy use or cost changes and opportunities within the power provider's rate schedules. Energy audits will attempt to pinpoint wasted or unneeded facility energy consumption, and provide recommendations to lower consumption. It would be recommended to have an energy audit done at minimum every 2 years.

General Conclusions:

Our conclusions are based on our observations during the data collection procedure, discussions with Taylor Coastal Water and Sewer District staff, reports from the Districts engineer, regulatory inspection data, and our experience related to similar assets.

The overall condition of the WWTS is in average condition. However the following should be addressed.

- The Valves at Lift Station #1 should be attended to.
- The leaking valve box at Lift Station #1 needs to be repaired.
- The Spray Field Pumps should be repaired.
- The wet well top and Irrigation heads should be repaired.
- An AM and CMMS program must be implemented to maintain assets efficiently and effectively.
- Staff training on maintenance, safety, and use of the AM/CMMS tool must be completed.
- Rates must be monitored to ensure adequate funding for operations and system improvements.
- An automatic Consumer Price Index (CPI) rate increase is strongly recommended moving forward. A small increase of 3% annually is manageable for customers and provides the utility with much needed financial resources.
- Continue Energy Management is recommended as well. Even small changes in energy use can result in large savings.

The Asset Management Plan must be adopted by resolution or ordinance. This demonstrates the utility's commitment to the plan. After adoption, implementation of the AMP must occur.

Implementing this Asset Management and Fiscal Sustainability Plan:

Implementing an Asset Management and Fiscal Sustainability Plan requires several items:

Assign specific personnel to oversee and perform the tasks of Asset Management.

Develop and use a CMMS program (Computerized Maintenance Management System). The information provided in this AMFS plan will give the utility a good starting point to begin this. Properly maintaining assets will ensure their useful life is extended and will ultimately save money. Asset maintenance tasks are scheduled and tracked, new assets are captured, and assets removed from service are retired properly using CMMS. Transitioning from reactive to preventive and predictive maintenance philosophies will net potentially large savings for the utility. Diamond Maps is one example among many options that are available. FRWA can help with selection, set up, and implementation.

Develop specific Level of Service items. Create a LOS Agreement and inform customers of the Utility's commitment to providing the stated LOS. Successes can be shared with customers. This can dramatically improve customer relations. This also gives utility employees goals to strive for and can positively impact morale. We have included a DRAFT LOS list

Develop specific Change Out/ Repair/ Replacement Programs. The District does budget for R&R and should continue to evaluate the system to adjust the annual budgeted amount accordingly. An example includes budgeting for a certain number of stepped system refurbishments each year.

Explore financial assistance options. The District has already done this, so you understand the benefits of applying for available funding. Financial assistance is especially useful in the beginning stages of Asset Management since budget shortfalls likely exist and high cost items may be needed quickly. See below.

Revisit the AMFS plan annually. An Asset Management Plan is a living document. It can be revised at any time but must be revisited and evaluated at least once each year. Updates may be needed such as changes to your asset management team, asset inventory, updating condition and criticality ranking charts, asset condition and criticality assessment procedures may need to be revisited, evolving O&M activities may warrant changes, financial strategies and long-term funding plan may need to change, etc. The annual review should begin by asking yourself:

“What changes have we made since our last AMFS plan update?”

Funding Sources for Water Systems:

Below is a table of common funding sources, including web links and contact information. All municipal systems should be making the effort to secure funding, which can be in the form of low or no interest loans or grants or a combination.

Agency/Program	Website	Contact
FDEP Drinking Water State Revolving Fund Program (DWSRF)	https://floridadep.gov/wra/srf/content/dwsrf-program	Shanin Speas-Frost shanin.speasfrost@dep.state.fl.us 850-245-2991
FDEP Clean Water State Revolving Fund Loan Program (CWSRF)	https://floridadep.gov/wra/srf/content/cwsrf-program	Tim Banks Timothy.Banks@dep.state.fl.us 850-245-2969
USDA Rural Development- Water and Water Direct Loans and Grants	https://www.rd.usda.gov/programs-services/rural-economic-development-loan-grant-program https://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program	Michael Langston michael.langston@fl.usda.gov 352-338-3440
Economic Development Administration- Public Works and Economic Adjustment Assistance Programs	https://www.eda.gov/resources/economic-development-directory/states/fl.htm https://www.grants.gov/web/grants/view-opportunity.html?oppld=294771	Greg Vaday gvaday@eda.gov 404-730-3009
National Rural Water Association- Revolving Loan Fund	https://nrwa.org/initiatives/revolving-loan-fund/	Gary Williams Gary.Williams@frwa.net 850-668-2746
Florida Department of Economic Opportunity- Florida Small Cities Community Development Block Grant Program	http://www.floridajobs.org/community-planning-and-development/assistance-for-governments-and-organizations/florida-small-cities-community-development-block-grant-program	Roger Doherty roger.doherty@deo.myflorida.com 850-717-8417
Northwest Florida Water Management City- Cooperative Funding Initiative (CFI)	https://www.nfwwater.com/Water-Resources/Funding-Programs	Christina Coger Christina.Coger@nfwwater.com 850-539-5999

Closing:

This Asset Management and Fiscal Sustainability plan is presented to Taylor Coastal water and Sewer District for adoption. Its creation would not have been possible without the cooperation from the District staff, and the Florida Department of Environmental Protection State Revolving Fund (FDEP-SRF). If needed FRWA will assist Taylor Coastal water and Sewer District in creating "a plan of action" to ensure your Asset Management Plan is a success. Taylor Coastal Water and Sewer District is a small utility system with critical infrastructure issues that appear to be in need of prompt strategic action. A Proactive Maintenance Plan would greatly benefit the rate payer over time. The District should seek Alternative Funding as pledged revenue in support of CIP and R&R program improvements. Continual rate analysis and collection of rates is paramount for rate stability.

DRAFT

Appendix A:

Example Resolution:

EXAMPLE RESOLUTION NO. 2020-_____

A RESOLUTION OF TAYLOR COASTAL WATER AND SEWER DISTRICT ("THE DISTRICT") OF TAYLOR COUNTY FLORIDA, APPROVING UTILITY ASSET MANAGEMENT AND FISCAL SUSTAINABILITY PLAN ("AMFS PLAN"); AUTHORIZING THE OFFICE MANAGER TO TAKE ALL ACTIONS NECESSARY TO EFFECTUATE THE INTENT OF THIS RESOLUTION; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, Florida Statutes provide for financial assistance to local government agencies to finance construction of the utility system improvements and

WHEREAS, the Florida Department of Environmental Protection State Revolving Fund (SRF) has designated the Taylor Coastal Water and Sewer Districts Utility System Improvements, listed under Project Number 2020-_____, as eligible for available funding; and

WHEREAS, as a condition of obtaining funding from the SRF, the District is required to implement an AMFS Plan for the District's Utility System Improvements; and

WHEREAS, the Board of Commissioners of Taylor Coastal Water and Sewer District has determined that approval of the attached AMFS Plan for the proposed improvements, in order to obtain necessary funding in accordance with SRF guidelines, is in the best interest of the District.

NOW, THEREFORE, THE BOARD OF COMMISSIONERS OF TAYLOR COASTAL WATER AND SEWER DISTRICT, TAYLOR COUNTY FLORIDA HEREBY RESOLVES:

Section 1. That the Utility Asset Management & Fiscal Sustainability Plan ("AMFS Plan"), attached hereto as Exhibit A, is hereby approved and incorporated herein by this reference.

Section 2. That the Office Manager is authorized to take all actions necessary to effectuate the intent of this resolution and to implement the AMFS Plan in accordance with applicable Florida law and Board direction in order to obtain funding from the SRF.

Section 3. That the District will implement an automatic annual rate increase equal to the Consumer Price Index or 2%, whichever is greater.

Section 4. That this resolution shall become effective immediately upon its adoption.

PASSED AND ADOPTED on this _____ day of _____, 2020.

Chairman, Taylor Coastal Water and Sewer District

Secretary, Taylor Coastal Water and Sewer District

(Municipal Seal)

Appendix B:

Preliminary Action List

Action Items	Responsible Parties	Target Date	Completion Date
Pass Resolution supporting AMFS Plan	Commission	Within 60 days receipt of final AMFS Plan	
Decide on AMFS Tools (Diamond Maps or other) for AM & CMMS	Office Manager, Commission and Operators	Within 60 days receipt of final AMFS Plan	
Train District Staff in AM/CMMS	FRWA (if Diamond Maps is used)	Within 30 days of selecting Diamond Maps	
Determine LOS goals, targets, and metrics and prepare LOS Agreement	Public, Office Manager, Commission and Operators	Within 120 days	
Prepare Capital Improvement Program Plan	Office Manager	Within 120 Days	
Conduct Rate Sufficiency Study & Adjust as Needed	Office Manager, Consultant, and Commission	Within 180 Days	
Develop O&M Program using selected AM/CMMS software	Operators	Within 120 Days	
Update Wastewater System mapping	Operators	On going	
Collect data on new components installed in WWT collection system	Office Manager, Operators,	On going	

Appendix C:
Master Asset List

Taylor Coastal Water & Sewer District Master Asset List

Asset Name	Installed	Design Life	Repl. Cost	Condition	COF	Con. EOL
Main Power Supply WWTP	2007	25	5000	Average	Catastrophic	2033
Standby Generator	2008	30	19500	Good	Major	2034
Transfer Sw5tch	2009	25	5000	Good	Major	2041
Panel Box A	2009	25	5000	Good	Major	2041
Panel box B	2009	25	6000	Good	Major	2041
Control Panel Sprayfield Pumps	2007	25	10000	Average	Major	2033
Plant Control Panel	2007	25	5000	Average	Catastrophic	2033
Main power disconnect	2007	25	2500	Average	Major	2033
Lift Station Control Panel	2007	25	5000	Good	Major	2038
Grinder Pump Control Panel	2012	20	345	Average	Moderate	2032
Grinder Pump Control Panel	2012	20	345	Average	Moderate	2032
Grinder Pump Control Panel	2012	20	345	Average	Moderate	2032
Grinder Pump Control Panel	2012	20	345	Average	Moderate	2032
Grinder Pump Control Panel	2012	20	345	Average	Moderate	2032
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Grinder Pump Control Panel	2012	20	345	Average	Moderate	2032
Grinder Pump Control Panel	2012	20	345	Average	Moderate	2032
Grinder Pump Control Panel	2012	20	345	Average	Moderate	2032
Grinder Pump Control Panel	2012	20	345	Average	Moderate	2032
Main Power	2007	25	2500	Average	Major	2033
Control Panel	2007	25	5000	Average	Major	2033
Grinder Pump Control Panel	2010	20	345	Average	Moderate	2028
Grinder Pump Control Panel	2015	20	345	Average	Moderate	2025
Panel Box Lights	2007	25	200	Average	Minor	2033
Grinder Pump Control Panel	2010	20	345	Average	Moderate	2030
Grinder Pump Control Panel	2010	20	345	Average	Moderate	2033
Grinder Pump Control Panel	2012	20	345	Good	Moderate	2032
Grinder Pump Control Panel	2012	20	345	Good	Moderate	2032
Grinder Pump Control Panel	2012	20	345	Average	Moderate	2032
Grinder Pump Control Panel	2015	20	345	Average	Moderate	2030
Grinder Pump Control Panel	2015	20	345	Average	Moderate	2035
Grinder Pump Control Panel	2015	20	345	Average	Moderate	2030
Grinder Pump Control Panel	2010	20	345	Average	Moderate	2030
Grinder Pump Control Panel	2015	20	345	Average	Moderate	2028
Grinder Pump Control Panel	2015	20	345	Average	Moderate	2028
Grinder Pump Control Panel	2016	20	345	Average	Moderate	2028
Grinder Pump Control Panel	2016	20	345	Average	Moderate	2028
Grinder Pump Control Panel	2016	20	345	Average	Moderate	2032
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Grinder Pump Control Panel	2016	20	345	Average	Moderate	2032
Grinder Pump Control Panel	2016	20	345	Average	Moderate	2032
Grinder Pump Control Panel	2016	20	345	Average	Moderate	2032
Grinder Pump Control Panel	2016	20	345	Average	Moderate	2032

Grinder Pit	2010	50	3085	Average	Moderate	2060
Grinder Pit	2010	50	3085	Average	Moderate	2060
Grinder Pit	2010	50	3085	Average	Moderate	2060
Grinder Pit	2010	50	3085	Average	Moderate	2060
Grinder Pit	2010	50	3085	Average	Moderate	2060
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Grinder Pit	2010	50	3085	Average	Moderate	2060
Grinder Pit	2010	50	3085	Average	Moderate	2060
Grinder Pit	2010	50	3085	Good	Moderate	2060
Grinder Pit	2010	50	3085	Average	Moderate	2060
Grinder Pit	2010	50	3085	Average	Moderate	2060
Grinder Pit	2010	50	3085	Average	Moderate	2060
Lift Station 2 Wet Well	2007	50	27000	Average	Major	2047

Asset Name	Install Year	Design Life	placement Cr	Condition	COF	EOL
Sparfield pump 1	2007	20	8000	Poor	Major	2026
SprayField Pump 2	2007	20	8000	Poor	Major	2026
EQ Pump #1	2007	15	1000	Average	Moderate	2028
Digester Sludge Pump	2007	15	1500	Average	Major	2028
Return Pump	2007	20	1500	Average	Moderate	2030
Grinder Pump	2015	20	1655	Average	Moderate	2030
Grinder Pump	2015	20	1655	Average	Moderate	2032
Grinder Pump	2015	20	1655	Average	Moderate	2032
Grinder Pump	2015	20	1655	Average	Moderate	2032
Grinder Pump	2015	20	1655	Average	Moderate	2032
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Grinder Pump	2015	20	1655	Average	Moderate	2032
Grinder Pump	2015	20	1655	Average	Moderate	2032
Grinder Pump	2015	20	1655	Average	Moderate	2032
Grinder Pump	2015	20	1655	Average	Moderate	2032
Grinder Pump	2015	20	1655	Average	Moderate	2032
Grinder Pump	2015	25	1655	Very Poor	Insignificant	2022
Grinder Pump	2015	25	1655	Average	Moderate	2032
Grinder Pump	2015	25	1655	Average	Moderate	2032
Grinder Pump	2015	25	1655	Average	Moderate	2032
Grinder Pump	2015	25	1655	Average	Moderate	2032
Lift Station 2 Pump 1	2015	20	10000	Average	Major	2030
Lift Station 2 Pump 2	2007	20	10000	Average	Major	2030
Lift Station 1 Pump #1	2012	20	20000	Average	Moderate	2030
Lift Station 1 Pump #2	2012	20	20000	Average	Moderate	2030
EQ Pump #2	2007	15	1000	Average	Moderate	2028
Return Pump #1	2007	20	1500	Average	Moderate	2030

Asset Name	Install Year	Design Life	placement Cr	Condition	COF	EOL
air release	2007	25	500	Average	Catastrophic	2033
Air Release Keaton Bch	2007	25	500	Average	Moderate	2032
Air Release Keaton Beach Bridge W	2007	25	1000	Average	Major	2032
Keaton Beach Bridge E	2007	25	1000	Average	Major	2032
Air Release Valve	2007	25	500	Average	Moderate	2032
Air Release Valve	2007	25	500	Average	Moderate	2032
Air release	2007	25	500	Average	Moderate	2032
Air Release	2007	25	500	Average	Major	2032
Air Release	2007	25	500	Average	Moderate	2028
Air Release	2007	25	500	Average	Moderate	2028
Check Vent	2017	20	220	Average	Moderate	2030
Air Release Valve	2007	25	500	Average	Moderate	2030
Air Release Valve	2007	25	500	Average	Moderate	2030
Air Release Valve	2007	25	500	Average	Moderate	2030
Air Release Valve	2007	25	500	Average	Moderate	2030
Air Release Valve	2007	25	500	Average	Moderate	2030
Air Release Valve	2007	25	1000	Average	Moderate	2030
Air Release Valve	2007	25	500	Average	Moderate	2030
Air Check Valve	2017	20	220	Average	Moderate	2030
Air Check Valve	2017	20	220	Average	Moderate	2030
Air Check Valve	2017	20	220	Average	Moderate	2030
Air Check Valve	2017	20	220	Average	Moderate	2030
Air Check Valve	2017	20	220	Average	Moderate	2030
Air Check Valve	2017	20	220	Average	Moderate	2028
Air Check Valve	2017	20	220	Average	Moderate	2028
Air Check Valve	2017	20	220	Average	Moderate	2028

Air Release Spray Field Pumps						
Asset Name	Install Year	Design Life	Repl Cost	Condition	COF	EOL
Spray Head	2007	20	500	Average	Minor	2030
Spray Heads	2007	20	500	Average	Minor	2030
Spray head	2007	20	500	Average	Minor	2030
Spray Head	2007	20	500	Average	Minor	2030
Spray Head	2007	20	500	Average	Minor	2030
Spray Head	2007	20	500	Average	Minor	2030
Spray Heads	2007	20	500	Average	Minor	2030
Spray Head	2007	20	500	Average	Minor	2030
Spray Head	2007	20	500	Average	Minor	2030
Spray Head	2007	20	500	Average	Minor	2030
Spray Head	2007	20	500	Average	Minor	2030
Spray Head	2007	20	500	Average	Minor	2030
Spray Head	2007	20	500	Average	Minor	2030
Spray Field	2007	20	500	Average	Minor	2030
Spay Head	2007	20	500	Average	Minor	2030
Spray Head	2007	20	500	Average	Minor	2030
Spray Head	2007	20	500	Average	Minor	2030
System Valves						
Asset Name	Install Year	Design Life	placement Cr	Condition	COF	EOL
Gulfview	2007	25	600	Average	Moderate	2033
Dark Island	2007	25	600	Average	Major	2033
Fiddler Ln Osprey Cir	2007	25	600	Average	Major	2033
Osprey Cir Fiddler Ln	2007	25	600	Average	Major	2033
L/S 2 Inflow	2007	25	800	Average	Major	2033
Bypass L/S2	2007	25	800	Average	Major	2033
Discharge L/S2	2007	25	800	Average	Major	2033
Discharge Valve	2007	25	800	Average	Major	2033
Bypass Valve	2007	25	800	Average	Major	2033
Intake Valve	2007	25	800	Average	Major	2033
Valve	2007	20	600	Average	Moderate	2030
Valve	2007	25	600	Average	Major	2033
Valve	2007	20	600	Average	Moderate	2030
Valve	2007	20	800	Average	Moderate	2030
Asset Name	Install Year	Design Life	Repl Cost	Condition	COF	EOL
Sprayfield pump1 Motor	2007	20	9000	Average	Major	2030
SprayField Pump 2 Motor	2020	20	9000	Excellent	Major	2038
Return Mixer Motor	2007	20	1000	Poor	Moderate	2026
EQ Blower Motor #1	2007	20	275	Average	Moderate	2030
EQ Blower Motor #2	2007	20	275	Average	Major	2030
Aeration Blower Motor #1	2007	20	500	Average	Moderate	2030
Aeration Blower Motor #2	2007	20	500	Average	Moderate	2030
Aeration Blower Motor #3	2007	20	500	Average	Moderate	2030
Asset Name	Install Year	Design Life	Repl Cost	Condition	COF	EOL
MWC1	2005	30	3000	Average	Major	2035
Asset Name	Install Year	Design Life	Repl Cost	Condition	COF	EOL
Retention Pond	2008	30	50000	Average	Major	2040
Asset Name	Install Year	Design Life	Repl Cost	Condition	COF	EOL
Wet Well Sprayfield	2007	20	5000	Average	Major	2030
Clarifier	2007	30	29598	Average	Catastrophic	2035
Chlorine Contact Chamber 2	2007	30	9600	Average	Catastrophic	2035
Flow Equalization Tank	2007	30	78000	Average	Catastrophic	2035
Aerobic Digester Tank	2007	30	45000	Average	Catastrophic	2035
Anoxic Chamber	2007	30	60000	Average	Catastrophic	2035
Aeration Tank	2007	30	210000	Average	Catastrophic	2035
Clarifier Tank 2	2007	30	29598	Average	Catastrophic	2035
Chlorine Contact Chamber 1	2007	30	11840	Average	Catastrophic	2035

Asset Name	Install Year	Design Life	Repl Cost	Condition	COF	EOL
Stationary Fuel Tank	2006	50	7000	Average	Moderate	2045
Eye wash	2007	15	650	Poor	Moderate	2025
Asset Name	Install Year	Design Life	Repl Cost	Condition	COF	EOL
Sprayfield Pump 1 Check Valve	2009	20	3500	Average	Major	2030
Sprayfield Pump 2 Check Valve	2007	20	3500	Average	Major	2030
Effluent Valve to Sprayfield	2007	20	800	Average	Major	2030
Plant Effluent Valve	2007	20	800	Average	Catastrophic	2030
Influent Valve to Plant	2009	30	1600	Average	Catastrophic	2035
Discharge Valve for bypass		25	800	Average	Major	2033
Spray Field Valve #1	2007	20	800	Good	Moderate	2034
Spray Field Valve #2	2007	20	800	Good	Moderate	2034
Spray Field Valve #3	2007	20	800	Good	Moderate	2034
Inflow Valve for bypass	2007	25	800	Average	Moderate	2033
Valve By Pass Hook up	2007	20	800	Average	Moderate	2030
Discharge connection bypass	2007	25	800	Poor	Moderate	2028
Asset Name	Installed	Design Life	Replace Cost	Condition	COF	EOL
Shop Area and Office	2007	50	50000	Good	Moderate	2055
Electrical Room	2007	50	15000	Average	Major	2045
Chlorine Room	2007	50	15000	Average	Major	2045
Pole Barn Storage	2007	50	8500	Average	Moderate	2045
Asset Name	Install Year	Design Life	placement Cr	Condition	COF	EOL
Auto Dialer	2015	10	500	Average	Moderate	2025
Effluent Flow Meter	2019	15	2500	Good	Moderate	2031
Actuator Valve #1	2007	20	3500	Average	Moderate	2030
Actuator Valve #2	2007	20	3500	Average	Moderate	2030
Actuator Valve #3	2007	20	3500	Average	Moderate	2030
Asset Name	Install Year	Design Life	Repl Cost	Condition	COF	EOL
Head Works	2007	30	5000	Average	Catastrophic	2035
Chlorine System	2018	10	2500	Average	Moderate	2025
EQ Blower #1	2007	20	900	Average	Moderate	2030
EQ Blower #2	2007	20	900	Average	Moderate	2030
Aeration Blower #1	2007	20	1600	Average	Moderate	2030
Aeration Blower #2	2007	20	1600	Average	Moderate	2030
Aeration Blower #3	2007	20	1600	Average	Moderate	2030

Appendix D

Energy Audit

Taylor Coastal Water & Sewer District Wastewater Treatment Plant Energy Efficiency Assessment

This assessment is prepared by Mark Hallett, Energy Efficiency Circuit Rider.

Thank you for being a member of our rural water association!



Committed to the future of rural communities.



Executive Summary

Florida Rural Water Association (FRWA) strives to help its members in every possible way. Thanks to funding received from the United States Department of Agriculture (USDA), FRWA now provides free energy assessments to its members. Energy use is often the largest part of a water system's total operating cost. Thus this program will benefit water utilities by identifying equipment and strategies to improve energy efficiency. As energy efficiency improves, the cost of energy purchasing will decrease resulting in lower costs for utilities. These lower costs can maximize profits, create capital for improvements, and allow utilities to save customers money. FRWA is committed to helping systems improve their energy efficiency through training, engineering services, and help in securing funding.

This report was prepared for Taylor Coastal Water & Sewer District Wastewater Treatment Plant following the on-site visit on December 14, 2018.

1.1 At-a-Glance Findings

Project Item	Energy Conservation Measure Description	Annual Energy Savings (kWh)	Annual Cost Savings (\$)	Estimated Cost of Improvement (\$)	Rebate Total (\$)	Payback (Years)	Reference Pages
VFDs Installed on Blowers	Install VFDs on blowers to help reduce demand and consumption.	3371	\$4,146.00	\$8,708.50		2.10	3
LED Lighting Upgrade	Install LED bulbs instead of fluorescent bulbs.	2628	\$253.86	\$95.84		0.38	3
		5999	\$4,399.86	\$8,804.34	\$0.00		

1.2 Scope

This assessment will detail information concerning Taylor Coastal Water & Sewer District Wastewater Treatment Plant and how it can improve. To begin, the report will introduce a baseline energy usage. This data is collected from electrical bills, name plate information on motors, and through an on-site survey. Operators are asked essential questions about operation and maintenance. After this, suggestions are made on how the system can improve efficiency. Each suggestion will also be broken down to show how quickly your savings could pay back investing in that option. This report will also highlight aspects where the system does well in already conserving energy.

This report is fair and impartial. Any products named are solely named as examples of potential investments for the system to use. This report is not advertising any product.

Section 2: Initial Findings and Baseline

2.1 Electric Bills

The electric bills reveal a major issue that the system has to address: demand charges. Demand is a measure of how much electricity a consumer needs at any given point in time, usually during a fifteen minute window. Demand is on average 30% of a water system's monthly electric bill. The average monthly percentage for this system is 36.8%. The system should try to reduce their demand; more information can be found in Section 3.1.

2.2 Operations and Facility

The wastewater plant is in excellent condition and well maintained. The system uses a proven method for wastewater treatment. The oxidation system and aeration help remove nutrients from the waste to reduce its impact on the environment. The system runs a few motors non-stop; while this is not always advisable, the motors are of low enough horsepower that consumption is not a problem. The facility has no HVAC system. The facility lighting will be mentioned later in this report in Section 3.2.

2.3 Baseline

The monthly average from the past twelve months spent on electricity is \$1,275.52, with an average of 7043 kWh purchased each month. The average cost per kWh is \$0.18, which is higher than the State average of \$0.10 per kWh. These figures will be used to calculate the estimated savings in this report.

Section 3: Suggested Improvements and Potential Savings

3.1 VFD Installation on Blowers

The system generates a large demand. This is most often caused by multiple motors turning on at the same time. Electric motors use up to 3 times their running amperage when they start. This large but short amount of energy consumption is what electric providers try to avoid. While there are several solutions to reducing demand, the most common one is variable frequency drive (VFD) installation.

VFDs, sometimes called variable speed drives (VSDs), allow control over the running speed of a motor. Most motors have only two speeds: on and off. With the help of a VFD, the motor can run at speeds in between its max speed and 50% of its max speed. VFDs allow a motor to start at a much lower speed and slowly build up to an optimal running speed. This reduces the demand created by motor start up and reduces the electrical consumption of the motor.

When installing VFDs, it is important to consult a specialist. Manufacturers such as Siemens or ABB have such specialists and will work with you on sizing and installing VFDs to fit your exact needs. The estimates contained below are for parts only and do not include installation fees. The purpose of this estimate is to help guide decision making and give a general figure for costs.

To equip each of the three blowers with a VFD would cost an estimated \$8,078.50. The VFDs, set to 80% max speed, would create an estimated annual cost savings of \$4,146, yielding an estimated simple payback period of 2 years and 2 months. Of this savings, 56% come from demand reduction. A VFD table has been included below to show other estimates for other running speeds; the table shows the estimated annual savings for a **single motor**.

Hp HP	/Eff. Eff.	Eff Hp	Conver. to kW	kW Kw	Q Flow	2.3 ^o kW	Oper Hours	Day kW hr	Days week	kWh Week	Wks WkYr	Yr.kWh kWh Yr.	kWh \$ Cost	kWh Year	kW D Fee	kW	Month Demand	Year Demand	Total	Saved Yr.
10	0.865	11.6	0.746	8.6	100%	8.62	4.25	36.7	7	257	x 52	13,388	\$0.18	\$2,410	\$7.00	37	\$257	\$3,079	\$5,489	
10	0.865	11.6	0.746	8.6	97%	8.04	4.4	35.2	7	247	x 52	12,868	\$0.18	\$2,316	\$7.00	35	\$247	\$2,959	\$5,276	\$213
10	0.865	11.6	0.746	8.6	95%	7.66	4.5	34.3	7	240	x 52	12,524	\$0.18	\$2,254	\$7.00	34	\$240	\$2,880	\$5,135	\$354
10	0.865	11.6	0.746	8.6	90%	6.77	4.7	32.0	7	224	x 52	11,674	\$0.18	\$2,101	\$7.00	32	\$224	\$2,685	\$4,786	\$703
10	0.865	11.6	0.746	8.6	80%	5.16	5.3	27.4	7	192	x 52	10,017	\$0.18	\$1,803	\$7.00	27	\$192	\$2,304	\$4,107	\$1,382
10	0.865	11.6	0.746	8.6	70%	3.8	6.1	23.1	7	161	x 52	8,421	\$0.18	\$1,516	\$7.00	23	\$161	\$1,937	\$3,452	\$2,036
10	0.865	11.6	0.746	8.6	60%	2.66	7.1	18.9	7	132	x 52	6,891	\$0.18	\$1,240	\$7.00	19	\$132	\$1,585	\$2,825	\$2,663
10	0.865	11.6	0.746	8.6	50%	1.75	8.5	14.9	7	104	x 52	5,437	\$0.18	\$979	\$7.00	15	\$104	\$1,250	\$2,229	\$3,260

Another option, and often less expensive, is to use soft starts. Soft starts offer the same motor start-up benefits discussed above, but do not grant the speed control capabilities of a VFD. This solution can also help offset or reduce demand.

3.2 LED Lighting Upgrade

The system currently uses fluorescent bulbs in the wastewater offices. These bulbs are more efficient than their incandescent predecessors but technology continues to advance. New LED lighting technology offers a more efficient alternative to fluorescent bulbs. LED bulbs require a rewiring of most fluorescent fixtures. This rewiring can be done by any electrician and removes the ballast required to use fluorescent bulbs. The ballast is the largest consumer of energy in a fluorescent fixture. The estimate

below accounts **only** for the bulb replacement cost and **does not** include the cost of hiring an electrician to rewire the fixtures.

During the on-site visit, a total of 8 4ft fluorescent bulbs were observed. To replace these bulbs with LED bulbs, there is an estimated cost of \$95.84 with an estimated annual energy cost savings of \$253.86 and an estimated simple payback period of 6 months.

Section 4: Financing Options

4.1 USDA Rural Development Loan

The USDA Rural Development Loan program loans rural communities the funds to finance installations of and improvements to water, sanitary sewerage, solid waste, and storm wastewater facilities. Taylor Coastal Water & Sewer District is eligible to apply. FRWA can help your system apply to the program. Contact your circuit rider for more information. You can also contact the State Rural Development Office with the information below:

LAKE CITY AREA OFFICE

971 W Duval St, Suite 190
Lake City, Florida 32055-3736
Telephone: (386) 719-5590
Fax: (855) 474-6983



4.2 State Revolving Fund

Taylor Coastal Water & Sewer District can apply for a loan from the State Revolving Fund (SRF) managed by the Department of Environmental Protection (DEP). This program helps communities and municipalities install and improve their water systems. FRWA can help your system apply to the program. Contact your circuit rider for more information.

Appendix E:

REVPLAN

Taylor Coastal WSD					
Fiscal Year: 2020					
Wastewater Revenue Requirements					
	2020	2021	2022	2023	2024
Revenue Requirements:					
Operating Expenses	\$252,200	\$259,700	\$267,500	\$275,600	\$283,800
Debt Service	\$57,700	\$57,700	\$57,700	\$57,700	\$57,700
Other Expenses/Transfers	\$28,300	\$29,100	\$30,000	\$30,900	\$31,800
Capital Expenditures	\$0	\$19,000	\$30,000	\$60,000	\$90,500
Gross Revenue Requirements	\$338,200	\$365,600	\$385,300	\$424,200	\$463,800
Less: Miscellaneous Revenue	\$146,100	\$146,100	\$146,100	\$146,100	\$146,100
Net Revenue Requirements	\$192,100	\$219,500	\$239,200	\$278,100	\$317,800
Existing Rate Sufficiency:					
Revenue from Existing Rates	\$264,100	\$264,100	\$264,100	\$264,100	\$264,100
Revenue Surplus/(Deficiency)	\$72,000	\$44,600	\$24,900	-\$14,000	-\$53,700
Proposed Rate Sufficiency:					
Revenue from Proposed Rates	\$274,700	\$285,700	\$297,100	\$309,000	\$321,400
Increase in Revenue	\$10,600	\$21,600	\$33,000	\$44,900	\$57,200
Cumulative %	4.00%	8.16%	12.49%	16.99%	21.67%
Current Year %	4.00%	4.00%	4.00%	4.00%	4.00%
Revenue Surplus/(Deficiency)	\$82,600	\$66,200	\$57,900	\$30,900	\$3,600

Taylor Coastal WSD
Fiscal Year: 2020
Water Revenue Requirements

	2020	2021	2022	2023	2024
Revenue Requirements:					
Operating Expenses	\$160,400	\$165,200	\$170,200	\$175,300	\$180,600
Debt Service	\$26,000	\$26,000	\$26,000	\$22,400	\$21,300
Other Expenses/Transfers	\$18,000	\$18,600	\$19,100	\$19,700	\$20,300
Capital Expenditures	\$0	\$35,000	\$17,000	\$17,000	\$17,000
Gross Revenue Requirements	\$204,400	\$244,800	\$232,300	\$234,400	\$239,200
Less: Miscellaneous Revenue	\$16,200	\$16,200	\$16,200	\$16,200	\$16,200
Net Revenue Requirements	\$188,200	\$228,600	\$216,100	\$218,200	\$223,000
Existing Rate Sufficiency:					
Revenue from Existing Rates	\$193,600	\$193,600	\$193,600	\$193,600	\$193,600
Revenue Surplus/(Deficiency)	\$5,400	-\$35,000	-\$22,500	-\$24,600	-\$29,400
Proposed Rate Sufficiency:					
Revenue from Proposed Rates	\$199,400	\$205,300	\$211,500	\$217,900	\$224,400
Increase in Revenue	\$5,800	\$11,800	\$17,900	\$24,300	\$30,800
Cumulative %	3.00%	6.09%	9.27%	12.55%	15.93%
Current Year %	3.00%	3.00%	3.00%	3.00%	3.00%
Revenue Surplus/(Deficiency)	\$11,200	-\$23,200	-\$4,600	-\$400	\$1,400

Taylor Coastal WSD
Fiscal Year: 2020
Debt Service Coverage

	2020	2021	2022	2023	2024
Revenue:					
Revenue from Proposed Drinking Water Rates	\$199,400	\$205,300	\$211,500	\$217,900	\$224,400
Revenue from Proposed Wastewater Rates	\$274,700	\$285,700	\$297,100	\$309,000	\$321,400
Subtotal - Rate Revenue	\$474,100	\$491,000	\$508,600	\$526,900	\$545,700
Miscellaneous Revenue - Drinking Water	\$16,200	\$16,200	\$16,200	\$16,200	\$16,200
Miscellaneous Revenue - Wastewater	\$146,100	\$146,100	\$146,100	\$146,100	\$146,100
Total Revenue	\$636,300	\$653,300	\$670,900	\$689,100	\$708,000
Operating Expenses:					
Drinking Water	\$160,400	\$165,200	\$170,200	\$175,300	\$180,600
Wastewater	\$252,200	\$259,700	\$267,500	\$275,600	\$283,800
Total Operating Expenses	\$412,600	\$425,000	\$437,700	\$450,800	\$464,400
Net Revenue	\$223,800	\$228,300	\$233,200	\$238,300	\$243,700
Debt Service:					
Drinking Water	\$26,000	\$26,000	\$26,000	\$22,400	\$21,300
Wastewater	\$57,700	\$57,700	\$57,700	\$57,700	\$57,700
Total Debt Service	\$83,700	\$83,700	\$83,700	\$80,100	\$79,000
Debt Service Coverage	2.67	2.73	2.79	2.97	3.08
Net Revenue Less Debt Service	\$140,100	\$144,700	\$149,500	\$158,100	\$164,600
Other Expenses/Transfers:					
Drinking Water	\$18,000	\$18,600	\$19,100	\$19,700	\$20,300
Wastewater	\$28,300	\$29,100	\$30,000	\$30,900	\$31,800
Total Other Expenses/Transfers	\$46,300	\$47,700	\$49,200	\$50,600	\$52,200
Revenue Surplus/(Deficiency)	\$93,700	\$96,900	\$100,400	\$107,500	\$112,500

Taylor Coastal WSD					
Fiscal Year: 2020					
Unrestricted Fund Balance					
	2020	2021	2022	2023	2024
Utility Reserve Funds:					
Beginning of Year Balance	\$1,371,300	\$1,465,000	\$1,508,000	\$1,561,300	\$1,591,900
Addition to Current Year	\$93,700	\$42,900	\$53,400	\$30,500	\$5,000
End of Year Balance	\$1,465,000	\$1,508,000	\$1,561,300	\$1,591,900	\$1,596,900

Taylor Coastal WSD						
Fiscal Year: 2020						
CIP Schedule						
Description	Funding Source	2020	2021	2022	2023	2024
Water Distribution	Water Revenues	\$0	\$35,000	\$17,000	\$17,000	\$17,000
Wastewater Collection	Wastewater Revenues	\$0	\$19,000	\$30,000	\$60,000	\$90,500
	Funding Source	2020	2021	2022	2023	2024
	Water Revenues	\$0	\$35,000	\$17,000	\$17,000	\$17,000
	Wastewater Revenues	\$0	\$19,000	\$30,000	\$60,000	\$90,500
	Total	\$0	\$54,000	\$47,000	\$77,000	\$107,500

Taylor Coastal WSD								
Fiscal Year: 2020								
Debt Service Schedule								
Debt	2020	2021	2022	2023	2024	2025	2026	2027
Existing Debts:								
Ford F-150 Pickup	\$4,600	\$4,600	\$4,600	\$1,100	\$0	\$0	\$0	\$0
USDA 91-03	\$21,300	\$21,300	\$21,300	\$21,300	\$21,300	\$21,300	\$21,300	\$21,300
USDA 92-01	\$35,900	\$35,900	\$35,900	\$35,900	\$35,900	\$35,900	\$35,900	\$35,900
USDA 92-05	\$21,800	\$21,800	\$21,800	\$21,800	\$21,800	\$21,800	\$21,800	\$21,800
Anticipated Debts:								
Total	\$83,700	\$83,700	\$83,700	\$80,100	\$79,000	\$79,000	\$79,000	\$79,000
Drinking Water	\$26,000	\$26,000	\$26,000	\$22,400	\$21,300	\$21,300	\$21,300	\$21,300
Wastewater	\$57,700	\$57,700	\$57,700	\$57,700	\$57,700	\$57,700	\$57,700	\$57,700

Sewer	Maintenance	100% Wastewater	Sewer Tractor maintenance	\$0	\$800	\$800	\$800	\$800	\$800	\$900
Water	Other	100% Water	Water Travel/Mileage	\$0	\$600	\$600	\$600	\$600	\$700	\$700
Sewer	Other	100% Wastewater	Sewer Travel/Mileage	\$0	\$600	\$600	\$600	\$600	\$700	\$700
Water	O&M	100% Water	Water Utilities (Electrical Service)	\$4,300	\$5,500	\$5,700	\$5,800	\$6,000	\$700	\$700
Sewer	O&M	100% Wastewater	Water Utilities (Electrical Service)	\$17,600	\$24,000	\$24,700	\$25,500	\$26,200	\$27,000	\$27,000
Water	Maintenance	100% Water	Water Vehicle Maintenance	\$30	\$1,500	\$1,500	\$1,600	\$1,600	\$1,700	\$1,700
Sewer	Maintenance	100% Wastewater	Sewer Vehicle Maintenance	\$3,700	\$3,000	\$3,100	\$3,200	\$3,300	\$3,400	\$3,400
Water	Maintenance	100% Water	Water Warranty & Maintenance	\$0	\$2,900	\$3,000	\$3,100	\$3,200	\$3,300	\$3,300
Sewer	Maintenance	100% Wastewater	Sewer Warranty & Maintenance	\$0	\$700	\$700	\$700	\$800	\$800	\$800
Water	Maintenance	100% Water	Water Tank Maintenance	\$6,200	\$7,100	\$7,400	\$7,600	\$7,800	\$8,000	\$8,000
Sewer	Other	100% Wastewater	WW Department Other	\$1	\$0	\$0	\$0	\$0	\$0	\$0
District	Personnel	Water 50% Wasten	Retirement Contribution	\$1,400	\$0	\$0	\$0	\$0	\$0	\$0
Undlass	Other	100% Water	Uncategorized Expenses	\$200	\$0	\$0	\$0	\$0	\$0	\$0
District	Other	Water 50% Wasten	Reconciliation Discrepancies	\$30	\$0	\$0	\$0	\$0	\$0	\$0
District	Professional	Water 50% Wasten	Accounting	\$8,200	\$2,800	\$2,900	\$3,000	\$3,100	\$3,200	\$3,200
District	Other	Water 50% Wasten	Advertising	\$600	\$400	\$400	\$400	\$400	\$400	\$500
Undlass	Other	Water 50% Wasten	Bank Charges/Set	\$600	\$400	\$400	\$400	\$400	\$500	\$500
District	Other	Water 50% Wasten	Computer Software	\$80	\$0	\$0	\$0	\$0	\$0	\$0
District	Other	Water 50% Wasten	Dues/Subscriptions	\$7,000	\$4,000	\$4,100	\$4,200	\$4,400	\$4,500	\$4,500
District	O&M	Water 50% Wasten	Freight	\$90	\$700	\$700	\$700	\$800	\$800	\$800
District	O&M	Water 50% Wasten	Inland Marine Insurance	\$300	\$100	\$100	\$100	\$100	\$100	\$100
District	O&M	Water 50% Wasten	Auto Insurance	\$200	\$80	\$80	\$80	\$80	\$90	\$90
District	O&M	Water 50% Wasten	Bonds Liability Insurance	\$2,600	\$0	\$0	\$0	\$0	\$0	\$0
District	O&M	Water 50% Wasten	General Liability Insurance	\$1,900	\$1,300	\$1,300	\$1,400	\$1,400	\$1,500	\$1,500
District	O&M	Water 50% Wasten	Pollution (WW/TP Diesel Tank)	\$5,000	\$800	\$900	\$900	\$900	\$1,000	\$1,000
District	O&M	Water 50% Wasten	Property Insurance	\$700	\$0	\$0	\$0	\$0	\$0	\$0
District	O&M	Water 50% Wasten	Legal/Professional	\$1,900	\$800	\$800	\$800	\$800	\$800	\$900
District	Professional	Water 50% Wasten	Miscellaneous Expense	\$300	\$1,000	\$1,000	\$1,100	\$1,100	\$1,100	\$1,100
District	O&M	Water 50% Wasten	Mowing	\$200	\$0	\$0	\$0	\$0	\$0	\$0
District	O&M	Water 50% Wasten	Retirement Contribution-FRS	\$200	\$0	\$0	\$0	\$0	\$0	\$0
District	Other	Water 50% Wasten	Salaries & Wages Admin	\$200	\$0	\$0	\$0	\$0	\$0	\$0
District	O&M	Water 50% Wasten	Taxes-Payroll	\$200	\$0	\$0	\$0	\$0	\$0	\$0
District	Personnel	Water 50% Wasten	Postage	\$3,500	\$3,600	\$3,700	\$3,800	\$4,000	\$4,100	\$4,100
District	Personnel	Water 50% Wasten	Property/Equip Upgrades	\$46,100	\$47,400	\$48,800	\$50,300	\$51,800	\$53,300	\$53,300
District	Personnel	Water 50% Wasten	Repair/Main District Office	\$3,500	\$3,600	\$3,700	\$3,800	\$4,000	\$4,100	\$4,100
District	O&M	Water 50% Wasten	Supplies/Cleaning & Mis.	\$2,500	\$1,000	\$1,000	\$1,100	\$1,100	\$1,100	\$1,100
District	O&M	Water 50% Wasten	Telephone	\$400	\$2,000	\$2,100	\$2,100	\$2,200	\$2,300	\$2,300
District	O&M	Water 50% Wasten	Taxes-Other	\$30	\$0	\$0	\$0	\$0	\$0	\$0
District	Maintenance	Water 50% Wasten	Utilities (Electrical Servic)	\$200	\$0	\$0	\$0	\$0	\$0	\$0
District	O&M	Water 50% Wasten	Freight	\$1,100	\$1,600	\$1,600	\$1,700	\$1,700	\$1,800	\$1,800
Undlass	Other	Water 50% Wasten	Office Exp.	\$1,900	\$2,100	\$2,200	\$2,200	\$2,300	\$2,400	\$2,400
District	Professional	Water 50% Wasten	Workers Comp	\$10	\$0	\$0	\$0	\$0	\$0	\$0
District	Other	Water 50% Wasten	Engineering Services	\$300	\$0	\$0	\$0	\$0	\$0	\$0
District	Other	Water 50% Wasten	Landscaping	\$0	\$1,500	\$1,500	\$1,600	\$1,600	\$1,700	\$1,700
District	Other	Water 50% Wasten	Safety Equipment	\$0	\$700	\$700	\$700	\$800	\$800	\$800
District	Other	Water 50% Wasten	Travel/Mileage	\$0	\$100	\$100	\$100	\$100	\$100	\$100
District	Professional	100% Water	AskMy/Accountant	\$0	\$300	\$300	\$300	\$300	\$300	\$300
Sewer	O&M	100% Wastewater	Sewer Safety Equipment	\$9,500	\$0	\$0	\$0	\$0	\$0	\$0
Water	Other	100% Water	Dues & Subscriptions	\$20	\$1,200	\$1,200	\$1,300	\$1,300	\$1,400	\$1,400
Sewer	Maintenance	100% Wastewater	Dues & Subscriptions	\$200	\$0	\$0	\$0	\$0	\$0	\$0
Sewer	Other	100% Wastewater	Customer Repairs	\$700	\$0	\$0	\$0	\$0	\$0	\$0
Sewer	Other	100% Wastewater	Sewer Adjustments RVS Billing	\$500	\$0	\$0	\$0	\$0	\$0	\$0
Water	Other	100% Water	Water Adjustments RVS Billing	\$700	\$0	\$0	\$0	\$0	\$0	\$0
			Total	\$421,900	\$458,900	\$472,700	\$486,900	\$501,500	\$516,500	\$516,500

Taylor Coastal WSD					
Fiscal Year: 2020					
Typical Monthly Bill, Residential Rates Inside City, 5,000 Gallons					
	2020	2021	2022	2023	2024
Drinking Water					
Base Charge	\$31.83	\$32.78	\$33.77	\$34.78	\$35.82
Usage Charge, 5,000 Gallons	\$3.98	\$4.10	\$4.22	\$4.34	\$4.47
Subtotal	\$35.80	\$36.88	\$37.98	\$39.12	\$40.30
Wastewater					
Base Charge	\$45.51	\$47.33	\$49.22	\$51.19	\$53.24
Usage Charge, 5,000 Gallons	\$14.89	\$15.49	\$16.11	\$16.75	\$17.42
Subtotal	\$60.40	\$62.82	\$65.33	\$67.95	\$70.66
Combined Bill	\$96.21	\$99.70	\$103.32	\$107.07	\$110.96

Taylor Coastal WSD

Fiscal Year: 2020

Rate Schedule

2020 2021 2022 2023 2024

Drinking Water

Residential Rates

Base Charges Inside City

5/8-inch	\$31.83	\$32.78	\$33.77	\$34.78	\$35.82
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Usage Charges Inside City

3,001 to 6,000 gallons	\$1.99	\$2.05	\$2.11	\$2.17	\$2.24
6,001 to 9,000 gallons	\$2.33	\$2.40	\$2.47	\$2.54	\$2.62
9,001 to 15,000 gallons	\$2.95	\$3.03	\$3.13	\$3.22	\$3.32
15,001 to 21,000 gallons	\$3.51	\$3.62	\$3.73	\$3.84	\$3.95
21,001 to 27,000 gallons	\$4.25	\$4.38	\$4.51	\$4.65	\$4.79
27,001 to 33,000 gallons	\$5.11	\$5.26	\$5.42	\$5.58	\$5.75
33,001 to 39,000 gallons	\$5.96	\$6.14	\$6.33	\$6.52	\$6.71
39,001 to 45,000 gallons	\$6.82	\$7.02	\$7.23	\$7.45	\$7.67
45,001 to 51,000 gallons	\$7.67	\$7.90	\$8.14	\$8.39	\$8.64
51,001 gallons or more	\$8.53	\$8.78	\$9.05	\$9.32	\$9.60

Wastewater

Residential Rates

Base Charges Inside City

5/8-inch	\$45.51	\$47.33	\$49.22	\$51.19	\$53.24
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Usage Charges Inside City

3,001 gallons or more	\$7.45	\$7.74	\$8.05	\$8.38	\$8.71
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Taylor Coastal WSD

Fiscal Year: 2020

Rate Revenue

Base Charge Revenues	Meter Sizes	Base Charge	Number of Connections	Annual Revenue
Drinking Water Residential Rates				
Base Charges Inside City	5/8-inch	\$30.90	522	\$193,557.60
Subtotal				\$193,557.60
Wastewater Residential Rates				
Base Charges Inside City	5/8-inch	\$43.76	503	\$264,135.36
Subtotal				\$264,135.36
Total				\$457,692.96
Usage Charge Revenues	Average Monthly Usage per Customer (kgal)	Usage Charge for Average Monthly Usage	Number of Connections	Annual Revenue
Drinking Water				
Residential Rates				
Usage Charges Inside City	2.03	\$0.00	522	\$0.00
Subtotal				\$0.00
Wastewater Residential Rates				
Usage Charges Inside City	2.10	\$0.00	503	\$0.00
Subtotal				\$0.00
Total				\$0.00
Combined Revenues				Annual Revenue
Drinking Water				
		Base Charge Revenue		\$193,557.60
		Usage Charge Revenue		\$0.00
		Other Revenue		\$16,220.00
Subtotal				\$209,777.60
Wastewater				
		Base Charge Revenue		\$264,135.36
		Usage Charge Revenue		\$0.00
		Other Revenue		\$146,060.00
Subtotal				\$410,195.36
Total				\$619,972.96