

RESOLUTION NO. 2025- 003

A RESOLUTION OF THE AMERICAN BEACH WATER AND SEWER DISTRICT, APPROVING THE WASTEWATER SYSTEM ASSET MANAGEMENT AND FISCAL SUSTAINABILITY PLAN; AUTHORIZING THE DISTRICT 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 and public systems to finance construction of utility system improvements; and

WHEREAS, the Florida Department of Environmental Protection State Revolving Fund {SRF} has designated the American Beach Water and Sewer District wastewater system improvements, identified in the Asset Management and Fiscal Sustainability Plan, as potentially eligible for available funding; and

WHEREAS, as a condition of obtaining funding from the SRF, the system is required to implement an Asset Management and Fiscal Sustainability Plan for the System's Wastewater System Improvements; and

WHEREAS, the Board for the American Beach Water and Sewer District has determined that approval of the attached Asset Management and Fiscal Sustainability Plan for the proposed improvements, in order to obtain necessary funding in accordance with SRF guidelines, is in the best interest of the System.

NOW, THEREFORE, BE IT RESOLVED BY THE AMERICAN BEACH WATER AND SEWER DISTRICT BOARD the following:

Section 1. That the American Beach Water and Sewer District Board hereby approves the American Beach Water and Sewer District Asset Management and Fiscal Sustainability Plan, attached hereto and incorporated by reference as a part of this Resolution.

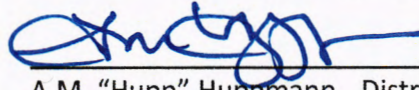
Section 2. That the District Manager is authorized to take all actions necessary to effectuate the intent of this Resolution and to implement the American Beach Water and Sewer District Asset Management and Fiscal Sustainability Plan in accordance with applicable Florida law and Board direction in order to obtain funding from the SRF.

Section 3. That the American Beach Water and Sewer District will annually evaluate existing rates to determine the need for any increase and will increase rates in accordance with the financial recommendations found in the American Beach Water and Sewer District Asset Management and Fiscal Sustainability Plan or in proportion to the System's needs as determined by the Board in its discretion.

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

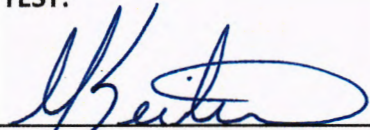
PASSED AND ADOPTED on this 13th day of January, 2025.

AMERICAN BEACH WATER AND SEWER DISTRICT



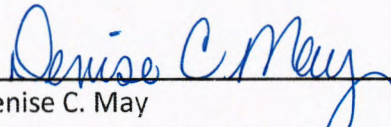
A.M. "Hupp" Huppmann, District Chair,
Board of County Commissioners

ATTEST:



Mitch L. Keiter, District Clerk

APPROVED AS TO FORM:



Denise C. May
American Beach Water and Sewer District
Attorney

FLORIDA RURAL WATER ASSOCIATION

2970 WELLINGTON CIRCLE • TALLAHASSEE, FL 32309-7813 ¹

(850) 668-2746

BOARD of DIRECTORS

BRUCE MORRISON
Niceville
President

SCOTT Kelly
Atlantic Beach
Vice President

POONAM KALKAT
Boynton Beach
Secretary/Treasurer

ROBERT MUNRO
Orlando
National Director

JOHN BOSTIC III
Zephyrhills

MELISSA PILCHER
Santa Rosa Beach

RANDY WILKERSON
Chiefland

*EXECUTIVE
DIRECTOR*

ALICIA KEETER
Tallahassee



EMAIL
frwa@frwa.net

WEBSITE
www.frwa.net

December 2, 2024

John F. Martin, District Chair
American Beach Water and Sewer District Advisory Board
96135 Nassau Place
Yulee, FL 32097

Dear Manager Pope:

The Florida Rural Water Association is pleased to submit the Wastewater System Asset Management and Fiscal Sustainability Plan (AMFS) to the American Beach Water and 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.

This report assesses the current conditions of your wastewater fixed capital assets (collection 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 plan recommendations and implementation.

The following report is considered a living document with tools for your use and must be updated at least annually (quarterly updates are recommended) by the District's utility management. FRWA will provide electronic copies for your use and future modification and will be available to assist in updating and revising the District's AMFS plan.

American Beach 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 system the best in all its future endeavors.

Respectively,

Matthew Bouchard
FRWA Utility Asset Management

Copy: Mike Chase, FDEP Clean Water State Revolving Fund
Gary Williams, FRWA Executive Director

American Beach Water and Sewer District Wastewater System Asset Management and Fiscal Sustainability Plan



Prepared for:
American Beach Water and Sewer District
WW450501

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





Table of Contents

Executive Summary: 4

1. Introduction: 100

2. Asset Management Plan: 111

3. System Description: 18

4. Current Asset Conditions: 200

5. Operations and Maintenance Strategies: (O&M) 233

6. Capital Improvement Plan 266

7. Financial: 28

8. Energy Conservation: 31

9. Conclusions: 333

Closing: 377

APPENDIX A: Sample Resolution 388

APPENDIX B: Master Asset List 40

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 most appropriate cost for rehabilitating, repairing, or replacing an asset. While the level of service is determined by the utility consisting of its staff, customers, board members and regulators. 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, such as:

- 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.
- 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.
- Improving responses to emergencies.
- Improving security and safety of assets.
- Capital improvement projects that meet the true needs of the system and community.
- Provides an impartial unbiased report to help explain rate sufficiency to the 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 Rulemaking Authority FS. Law Implemented 403.8532 (FS. History–New 4-7-98,

Amended 8-10-98, 7-17-17) and in Florida Administrative Code (FAC) 62-503.700(7). To be accepted for the interest rate adjustment and to be eligible for reimbursement, an asset management plan must be adopted by ordinance or resolution and written procedures must be in place to not only implement the plan, but to do so in a timely manner.

The plan must include each of the following:

- (a) Identification of all assets within the project sponsor's system;
- (b) An evaluation of the current age, condition, and anticipated useful life of each asset;
- (c) The current value of the assets;
- (d) The cost to operate and maintain all assets;
- (e) A capital improvement plan based on a survey of industry standards, life expectancy, life cycle analysis, and remaining useful life;
- (f) An analysis of funding needs;
- (g) An analysis of population growth and drinking water use projections, as applicable, for the sponsor's planning area, and a model, if applicable, for impact fees; commercial, industrial and residential rate structures;
- (h) The establishment of an adequate funding rate structure;
- (i) A threshold rate set to ensure the proper operation of the utility; if the sponsor transfers any of the utility proceeds to other funds, the rates must be set higher than the threshold rate to facilitate the transfer and proper operation of the utility;
- (j) A plan to preserve the assets; renewal, replacement, and repair of the assets, as necessary; and a risk-benefit analysis to determine the optimum renewal or replacement time.

AMP Development Stakeholders:

The development of this AMFS plan involved the collective efforts of the District Management and Staff, the Florida Department of Environmental Protection State Revolving Fund (FDEP-SRF), and the Florida Rural Water Association (FRWA). Resources included Engineers (technical and financial), Certified Operators (operation and maintenance), Rate Sufficiency Analysts and utility staff with first-hand experience with the system.

Critical Assets and Priority Action List:

A critical asset and priority list for American Beach Water and Sewer District's Wastewater system is not necessary to provide due to the system being so newly installed. There were 21 manholes that were not able to be assessed due to construction still being in process. These manholes that were not evaluated were listed as Good, with a note that they must still be assessed once they were fully installed and operational. Please see Section 4 for a detailed description of the asset improvements listed below.

Based on the State requirements for participation in the State Revolving Fund Program (SRF), a Priority Action Plan was developed to help the District prioritize action items and establish target dates for timely completion. The Priority Action Plan is found on the following page.

DISTRICT OF AMERICAN BEACH PRIORITY ACTION LIST				
Action Item	Target Date(s)	Cost Type	Cost	Responsible Party or Parties
1. Pass Resolution Adopting AMFS Plan and Rate Schedule	Within 60 Days from Receipt of Final Plan	Administrative	No Cost	Board of County Commissioners - District Board
2. Determine Level of Service (LOS) Attributes, Goals, Targets, and Metrics and Prepare LOS Agreement	90 Days after Adoption	Planning	No Cost *	Board of County Commissioners - District Board, Staff and Public
3. Purchase, Train Staff and Begin Using AMFS Tools (Diamond Maps or similar)	90 Days after Adoption	Equipment	Equipment - \$2,500 Annual Cost - \$240 + local provider charge Training – No Cost * (provided by equipment manufacturer)	Board of County Commissioners - District Board, Staff or Designee
4. Update Energy Audit	Every 2-3 Years	Planning	No Cost *	Staff
5. Develop Operation and Maintenance Program and Procedures	Within 1 Year after Adoption	Administrative	No Cost *	Supervisor of Maintenance and Staff
6. Develop Capital Improvement Plan	Within 1 Year after Adoption	Planning	No Cost *	Public and Staff
7. Wastewater Collection System				
➤ Develop Manhole Inspection and Maintenance Program	Within 1 Year after Adoption	Planning	Professional Service Cost Based on Project Scope	Operator and Staff
➤ Install Inflow Dishes	On-going beginning FY 25-26	Capital	\$1,400 per year for 5 years	

DISTRICT OF AMERICAN BEACH PRIORITY ACTION LIST				
Action Item	Target Date(s)	Cost Type	Cost	Responsible Party or Parties
8. Provide Additional Staff Training Opportunities	On-going	Administrative	Cost May Vary *	Staff
9. Conduct Rate Sufficiency Study and Adjust Rate Structure as Needed with RevPlan	Annually	Planning	No Cost *	Board of County Commissioners - District Board
10. Revise AMFS Plan	Annually	Administrative	No Cost *	Board of County Commissioners - District Board and Staff

* As a member of the Florida Rural Water Association, FRWA is able to assist the American Beach Water and Sewer District with this Service.

Fiscal Strategy and AMP Process Recommendations:

Based on this asset management and fiscal sustainability study, **specific recommendations** related to capital expenditures and operating expenditures over the next five years found in the Preliminary Action List are as follows:

1. Adopt this Asset Management and Fiscal Sustainability Plan (AMFS) study in the form of a Resolution. Appendix A contains a sample AMFS Resolution for the American Beach Water and Sewer District.
2. Engage a Florida Registered Engineer to support the Utility in review, funding, planning, design, permitting, and construction of critical capital and operational action items as recommended in this AMFS study.
3. Make funding applications to the following programs/agencies in support of Utility System Upgrades/Improvements as recommended by this AMFS study. A synopsis of utility funding programs can be found at the following link: <http://www.frwa.net/funding.html>
 - a. FDEP-State Revolving Fund (SRF)
 - b. Regional Water Management District
 - c. Florida Department of Economic Opportunity Community Development Block Grant (CDBG)
 - d. USDA Rural Development Direct Loan/Grant (USDA RD)
 - e. FDEO Rural Infrastructure Fund Grant (RIF)
 - f. Local Funding Initiative Requests
4. Evaluate and Adopt a Utility rate structure that will ensure rate sufficiency as necessary to implement capital improvements.
5. Begin using Diamond Maps for Asset Management Planning (AMP) and Computerized Maintenance Management System (or another CMMS of your choice).
6. Continue to build your asset management program by:
 - a. Collecting critical field data and attributes on any new or remaining assets.
 - b. Improving on processes which provide cost savings and improved service.
 - c. Implementing a checklist of routine maintenance measures.
 - d. Benchmarking critical processes annually.
 - e. Develop policies that will support funding improvements.
 - f. Develop manuals, standard operating procedures and guidelines for critical processes.
 - g. Identify responsible persons to implement processes to protect critical assets.
 - h. Attend asset management training annually.

1. Introduction:

In accordance with FDEP Rule 62-503.700(7), F.A.C., State Revolving Fund (SRF) recipients are required 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 assesment to identify risks and consequences of failure as it pertains to replacement.
9. An analysis of population growth and wastewater 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 wastewater 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 system 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 system is equipped for projected growth; and
5. Adequate reserves exist to address emergency operations.

Fiscal sustainability analysis requires a thorough understanding of the system's assets' current condition and needs. Therefore, fiscal sustainability follows asset management and is improved by sound asset management. Conversely, asset management requires a healthy fiscal outlook, since servicing and care of current assets is not free. Timely expenditures for proper servicing and care of current assets are relatively small when compared to repair and replacement expenditures that inevitably occur with component failure due to neglect.

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

This AMFSP's intended approach is to assist the American Beach Water and Sewer District with conducting a basic inventory and condition assessment of its current assets. It is expected that the District will periodically re-evaluate the condition of its assets, at least annually, to determine asset remaining useful life. A reminder can be established for staff that a given component is nearing time for servicing, repair, or replacement. 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 recommended that the District conduct at least an annual plan review and revise it as necessary throughout the year, resulting in a practical and useful tool for staff.

2. Asset Management Plan:

Components of Asset Management:

Asset Management can be described as 'a process for maintaining a desired level of customer service at the best appropriate cost'. Within that statement, 'a desired level of service' is simply what the utility wants their assets to provide. 'Best appropriate cost' is the lowest cost for an asset throughout its life. The goal is providing safe, reliable service while at the same time being conscious of the costs involved both short and long term.

Asset Management includes building an inventory of the utility's assets, developing and implementing a program that schedules and tracks all maintenance tasks, generally through work orders, and developing a set of financial controls that will help manage budgeted and actual annual expenses and revenue. By performing these tasks, targeting the system's future needs will be much easier.

Asset Management provides documentation that helps the utility understand the assets they have, how long these assets will last, and how much it will cost to maintain or replace these assets. The Plan also provides financial projections which show the utility whether rates and other revenue mechanisms are sufficient to supply the utility's future needs, 5, 10, even 20 years ahead.

Asset Management is made up of five core questions:

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

Implementation

In developing this plan, FRWA has collected information on most of the wastewater system assets. The information has been entered into Diamond Maps, a cloud based geographical information system (GIS). 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.

Meter Count	Unlimited Use Subscription
250	\$15/month
500	\$20/month
1000	\$30/month
2000	\$45/month
3000	\$60/month
4000	\$75/month
5000	\$90/month
10,000	\$165/month

The software is easy to use, as it is set up for small communities and for water/wastewater systems. Since the American Beach has around 310 connections, the cost would be close to \$20/month for unlimited users. Diamond Maps pricing is based off the drinking water meters that are present throughout the district and allows for both Drinking Water and Sewer to be added to the same account, without an additional charge.

There is no obligation to continue this service if the American Beach Water and Sewer District desires to purchase alternative software. Diamond Maps can be explored at <http://diamondmaps.com>. If the District decides to use Diamond Maps as their asset management tool, it will be easy to move the data collected by FRWA to the District's account.

Having an asset management tool to keep data current is essential for tracking the utility's assets into the future, to assist with planning and funding for asset rehabilitation or replacement, to schedule and track asset maintenance by issuing work orders and assigning tasks to personnel who will perform the work and update in the system.

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, operation and maintenance costs, capital improvement plan costs, 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.

FRWA staff has entered a preliminary model into RevPlan to help the utility get started. The assets collected along with financial information provided by the system were entered to create the model. Each year (or as projects come about) the system is encouraged to update RevPlan and use it to help understand the impacts of future projects and rate increases. Details from the model are located in the financial section of the plan.

Level of Service (LOS):

As a provider of wastewater services, a utility must decide what Level of Service (LOS) is required for its customers. When setting these goals, most importantly, the utility must decide the level of service it will provide. 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.

There are four key elements regarding LOS:

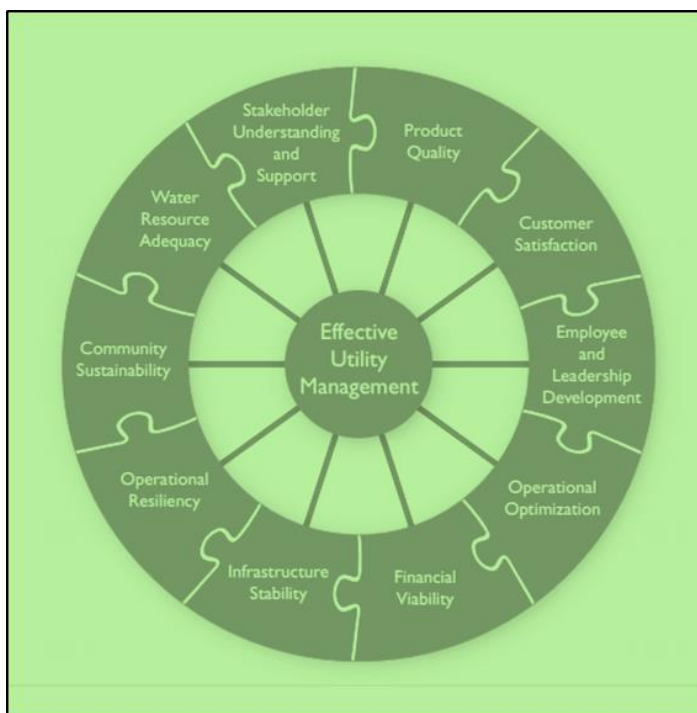
1. Provide safe and reliable service while meeting regulatory requirements;
2. Budget improvement projects focused on assets critical to sustained performance based on sound operational and financial planning;
3. Maintain realistic rates and adjust as necessary to ensure adequate revenue reserves for targeted asset improvement; and,
4. Ensure long-term system resilience and sustainability.

Targets must be set for individual parameters. Metrics should be created to help the utility direct efforts and resources toward predetermined goals. The established goals must include consideration of costs, budgets, rates, service levels, and level of risk. These goals are set in an agreement between the utility and its customers.

In 2008, a unique coalition representing the "Collaborating Organizations," which include the U.S. Environmental Protection Agency and a growing number of major water sector associations, supported an approach developed by water sector leaders for water utility management. This approach can be used by the wastewater sector as well and is based around the Ten Attributes of an Effectively Managed Utility and Five Keys to Management Success—known as Effective Utility Management (EUM). These Attributes provide a clear set of reference points and are intended to help utilities maintain a balanced focus on all important operational areas rather than reactively moving from one problem to the next or focusing on the "problem of the day."

The Ten Attributes of an Effectively Managed Utility provide useful and concise goals for utility managers seeking to improve organization-wide performance. The Attributes describe desired outcomes that are applicable to all water and wastewater utilities. They comprise a comprehensive framework related to operations, infrastructure, customer satisfaction, community sustainability, natural resource stewardship, and financial performance.

Water and wastewater utilities can use the Attributes to select priorities for improvement, based on each organization's strategic objectives and the needs of the community it serves. The Attributes are not presented in a particular order, but rather can be viewed as a set of opportunities for improving utility management and operations.



To begin, the utility will assess current conditions by ranking the importance of each Attribute to the utility, based on the utility's vision, goals, and specific needs. The ranking should reflect the interests and considerations of all stakeholders (managers, staff, customers, regulators, elected officials, community interests, and others). Once you have chosen to improve one or more Attributes, the next step is to develop and implement a plan for making the desired improvements. Improvement plans support the implementation of effective practices in your chosen attribute area(s). An effective improvement plan will:

1. Set Near- and Long-term Goals: Set goals as part of the improvement plan to help define what is being worked toward. Near- and long-term goals for the utility should be linked to the strategic business plan, asset management plan, and financial plan. Goals should also be "SMART."
 - **S – Specific:** What exactly will be achieved? Make the goals specific and well defined. Each goal should be clear to anyone with even a basic knowledge of the utility.
 - **M – Measurable:** Can you measure whether you are achieving the objective? You must be able to tell how close you are to achieving the goal. You must also be able to determine when success is achieved.
 - **A – Assignable and Attainable:** Can you specify who is responsible for each segment of the objective? Is the goal attainable? Setting a goal to have zero sewer overflows is great, but perhaps unrealistic, knowing operators do not have control over when

and where overflows happen in systems. A better choice might be to set a goal that states the utility will undertake an extraneous flow reduction project to reduce the impact of illegal storm connections.

- **R – Realistic:** Do you have the capacity, funding, and other resources available? The staff and resources of the utility must be considered when setting goals. Available personnel, equipment, materials, funds, and time play a role in setting realistic targets.
 - **T – Time-Based:** What is the timeframe for achieving the objective? 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.
2. **Identify Effective Practices:** Each Attribute area for improvement will be supported by effective practices implemented by the utility. A substantial number of water sector resources exist that detail effective utility practices for each of the Attributes.
 3. **Identify Resources Available and Resources Needed:** For each practice/activity to be implemented as part of the improvement plan, identify resources (financial, informational, staff, or other) that exist on-hand, and those that are needed, to support implementation.
 4. **Identify Challenges:** For the overall improvement plan and for specific practices/activities to be implemented, identify key challenges that will need to be addressed.
 5. **Assign Roles and Responsibilities:** For each improvement action, identify roles and responsibilities for bringing the implementation to completion.
 6. **Define a Timeline:** Establish start date, milestones, and a completion target for each activity/improvement action.
 7. **Establish Measures:** Establish at least one (or more) measure of performance for items to be implemented under the improvement plan.

More information and resources on Effective Utility Management (EUM) can be found at www.WaterEUM.org.

The idea is to set goals and meet them. Reaching the goals should not be overly easy. Effort should be involved. The goals should target areas where a need exists. If the bar is set too low, the process is pointless. Most importantly, the utility must decide the level of service it will provide.

The table below shows examples of what might be included as Level of Service goals. The LOS items for the American Beach Water and Sewer District must be specific to the system and ideally, 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.

American Beach Wastewater (WW) Level of Service Goals Examples			
Attribute and Service Area	Goal	Performance Targets	Timeframe/ Reporting
Service Delivery - Health, Safety and Security	Reduce the number and duration of sewer overflows	Provide employees with training necessary to be proactive in system maintenance and to rapidly and efficiently make emergency system repairs.	Monthly report to Operations Manager
Infrastructure Stability - Asset Preservation and Condition	Improve system wide preventive maintenance (PM)	Develop a comprehensive Preventive Maintenance weekly schedule for equipment and system components and complete all preventative maintenance tasks as scheduled.	Monthly report to Operations Manager
Infrastructure Stability - Asset Preservation and Condition	Establish a Predictive Maintenance Schedule (PdMS)	Develop a weekly PdMS to continuously monitor equipment for signs of unexpected problems. Adjust the PdMS as needed.	Monthly report to Operations Manager
Infrastructure Stability - Asset Preservation and Condition	Develop an Asset Replacement Strategy	Develop an asset replacement strategy to be updated at least annually, including financing options.	Annual report to District Manager
Financial Viability - Service Quality and Cost	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.	Annual report to District Manager
Financial Viability - Service Quality and Cost	Enact automatic inflationary rate adjustments	Annual evaluation of the adequacy of inflationary rate adjustments	Annual report to District Manager
Financial Viability - Service Quality and Cost	Minimize Life of Asset Ownership costs	Bi-annual evaluation of unexpected equipment repairs compared to the Preventive Maintenance Schedule (PMS). Adjust the PMS if warranted.	Annual report to Operations Manager
Infrastructure Stability - Conservation, Compliance, Enhancement	Improve reliability of the collection system	Annual evaluation of the collection system, including piping, manholes, and lift stations. Develop a long-range plan for replacements and improvements with timelines and funding options.	Annual report to Operations Manager
Infrastructure Stability - Asset Preservation and Condition	Identify Inflow and Infiltration	Smoke test specific sections of the collection system	Annual report to Operations Manager

Best Management Practices: (BMP)

Utility owners, managers, and operators are expected to be responsible stewards of the system. Every decision must be based on sound judgment. Using Best Management Practices (BMPs) is an excellent tool and philosophy to implement. BMPs 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 and Fiscal Sustainability plan is to help the utility operate and maintain their system in the most effective and financially sound manner. An AMFS plan 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.

3. System Description:

American Beach Water and Sewer District Overview

American Beach is a community located in northeastern Florida on Amelia Island, which resides in Nassau County, just north of Jacksonville. The area was co-founded in 1935 by a man named Abraham Lincoln Lewis, who was Florida's first African American millionaire. He purchased the 216-acre area with the purpose of it being an area for African Americans to rest and relax without humiliation. During the time of purchase, segregation was still present throughout the United States and Lewis viewed American Beach as a haven for African Americans to enjoy the beach. Despite this being the main reason for its purchase, it was still an area that was welcome to all, and quickly attracted many families, churches, and celebrities. The area was listed on the National Register of Historic Places in 2002.

In 2022, American Beach began a construction project that was identified as The American Beach Water and Sewer District Well and Septic Tank Abandonment. The central sewer system includes manholes, force main lines, gravity main lines, and 2 lift stations.

Per the construction agreement, the project's final completion date was scheduled for January 2024. Due to delays associated with the gopher tortoises and unknown buried utilities, the project's projected substantial completion date is still being determined.

Form of Government

American Beach Water and Sewer District is governed by the Board of County Commissioners of Nassau County. As a supporting force, the district created an American Beach Water and Sewer

District Advisory Board, with the responsibility to keep the community apprised of the design and construction progress and to present questions and concerns from the district property owners within the district Boundaries. Below are the employees that make up both the Board of County Commissioners and the Advisory Board, with each employee's job title included.

Board of County Commissioners	
John F. Martin	Chairman
A.M. Huppmann	Vice-Chairman
Jeff Gray	Board Member
Alyson R. McCullough	Board Member
Klynt A. Farmer	Board Member

District Water and Wastewater Staff

The Advisory Board works together with the District Staff in the County Manager's Office. In addition, the American Beach Water and Sewer assets will be maintained and operated by US Water Services Corporation. FRWA appreciates the assistance of those employees that helped in the preparation of this Plan.

District Staff	
Taco E. Pope	County Manager
Marshall Eyerman	Assistant County Manager
Amy Bell	Senior Management Analyst
Katie Brock	Administrative Specialist
Teresa Irby-butler	Capital Project Manager

System Overview:

During the assessment of American Beach's Sewer System, the Wastewater Treatment Plant (WWTP) was not assessed. This is because the treatment plant is not located within the community. Rather, it is located in Nassau County, and American Beach sends this wastewater to the plant.

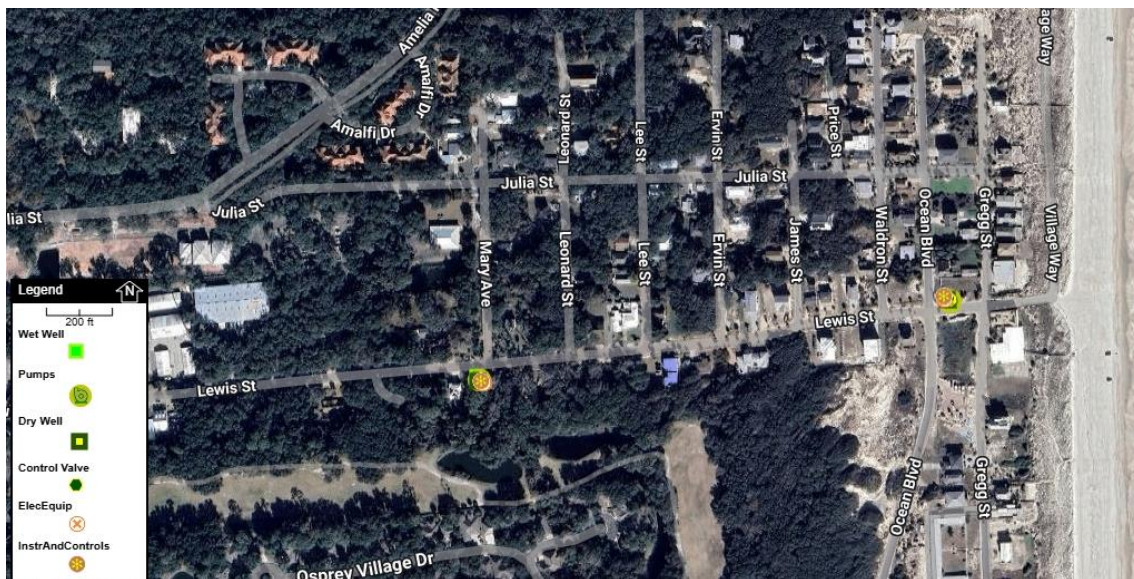
There are two (2) lift stations, both of which are newly installed. The septic tank phase out portion of the project includes 12,705' (2.4mi) of 8-in sewer main, 39 manholes, 2 lift stations, sewer laterals to existing homes and empty properties, and pavement restoration. The system consists of PVC lines.

It is important to note that the SRF loan submitted by American Beach Water and Sewer District stated there are 48 manholes throughout the system. Nine of these 48 manholes were unable to be located during the field assessment.

4. Current Asset Conditions:

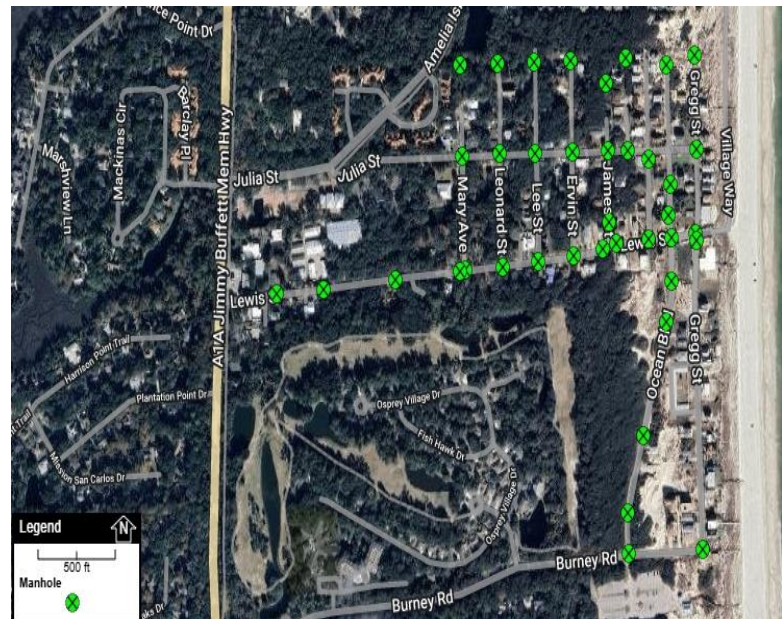
Lift Stations:

The District owns and operates two lift stations. These lift stations were installed in 2024 and are in good condition. Both house two pumps with all appropriate controls and instrumentation.



Manholes

FRWA located 39 of the 48 manholes that are reported to be in the newly installed system. Of these 39, 19 were assessed and evaluated. All the manholes that were assessed were found to be in good condition. The remaining were regarded as being in good condition, but still need to be assessed and are listed in the table below. The lack of assessment on these manholes was simply due to on-going construction occurring in the area during field visits.



The manholes were installed between 2023 and 2024 and have an expected life cycle of 50 years or more with proper routine maintenance. Manholes serve as an important part of the collection system allowing cleaning, inspection, connections, and repairs to the system. Manholes should be inspected at least every two to three years. Records of the inspections and any maintenance can then be updated into Diamond Maps to create a historic database and a good record of work that has been or needs to be done. The work order feature in Diamond Maps may be utilized for the task of creating an inspection and maintenance program.

As the system ages, damage to these manholes is something that must be considered. When it comes to damaged or aging manholes, rehabilitation may be a cost-effective solution for many systems. Rather than replacing manholes, the District should explore rehabilitation processes that involve returning the structural integrity to the existing manhole without the purchase of an entirely new manhole.

Additionally, evaluations of each manhole should continue. For the District's edification, manholes that are trending towards being considered in poor condition are done so when they are found to have at least one of the following deficiencies: moderate to heavy corrosion, being sealed or buried, blockages, moderate cracks in the wall or chimney, infiltration of any amount, ring or lid deficiencies or mortar failure.

Cost estimates for each manhole improvement can vary from a few hundred dollars to a few thousand dollars. This stresses the importance of proper maintenance and rehabilitation.

The unassessed manholes are listed below:

Asset Name	Condition	GPS Latitude	GPS Longitude
Manhole	Good	30.5749529	-81.4457265
Manhole	Good	30.5736585	-81.446252
Manhole	Good	30.574013	-81.446112
Manhole	Good	30.5758415	-81.446175
Manhole	Good	30.5749473	-81.4461398
Manhole	Good	30.5749313	-81.4468642
Manhole	Good	30.5761262	-81.4469085
Manhole	Good	30.5735662	-81.4468379
Manhole	Good	30.5734952	-81.4475747
Manhole	Good	30.574919	-81.4476382
Manhole	Good	30.5761174	-81.4476675
Manhole	Good	30.5760984	-81.4484041
Manhole	Good	30.574907	-81.4483672
Manhole	Good	30.5734182	-81.4483129
Manhole	Good	30.5733729	-81.4490767
Manhole	Good	30.5733549	-81.4491915
Manhole	Good	30.5760764	-81.4491818
Manhole	Good	30.5748701	-81.4491429
Manhole	Good	30.5732461	-81.4505074
Manhole	Good	30.5731202	-81.4520027
Manhole	Good	30.5730598	-81.452968

Gravity and Force Mains

During data collection, FRWA staff did not evaluate the condition of the sewer and force mains. System maps indicate that the gravity mains are eight inches, and the force mains are four inches, totaling approximately 2.4 miles of pipe. The system is comprised of PVC pipe.

Due to concerns with inflow/infiltration and manhole failures, the District should start to set aside an annual allocation in the Capital Improvement Plan for renewal and replacement of the collection system, when the time is appropriate. FRWA encourages the District to begin budgeting for the construction practice of rehabilitation, relining or replacement of pipes when they become older or problematic. Annual evaluations on the sewer mains are already conducted by the District.

Inflow and Infiltration

As is common with systems, inflow and infiltration can become an issue for the collection system. This issue is often left unaddressed simply because the problems lie underground and out of sight. Left unattended, inflow and infiltration can lead to higher flows at the treatment plant, increased treatment costs, increased wear and maintenance on equipment, and ultimately

decreased life expectancy. The less inflow and infiltration sent to the lift stations and wastewater plant, the lower the treatment cost and wear on critical assets.

Often, where there is infiltration, there is also exfiltration. This means that untreated wastewater can “leak” out of the collection system and into the surrounding ground. This may lead to collapsed sewer mains or blockages due to the buildup of dirt/mud or sand producing backups and sanitary sewer overflows (SSOs).

It is recommended that the District begin the practice of system improvements by setting aside funding for smoke testing of critical or problematic areas of the collection system. While the District would need to purchase the liquid smoke, the smoke testing equipment can be borrowed from FRWA to help defray some of this cost. In addition to smoke testing, FRWA also recommends inspection and cleaning of the collection system. With the help of an engineering firm, the District can begin to develop additional future capital repair projects that identify and record the location and severity of any defects. This is a results-driven approach which seeks to maximize the effectiveness of the investigation through total system maintenance along with inflow and infiltration removal.

In addition, FRWA recommends considering the purchase of Inflow Dishes to assist in low lying or flood prone areas of the system. These dishes start around \$150.00 and can be installed in phases by staff when funding is available. The total cost for installing inflow dishes in all the manholes is around \$7,200.

5. 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, 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 wastewater system repairs, customer service issues, troubleshooting and repair, pump and motor 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 is recommended that the District initiate or enhance their 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, and confined space entry 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 the American Beach Water and Sewer District. Training services that we offer to members are listed on our website <http://www.frwa.net/> under the Training Tab.

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 the 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 two to three times when compared to "run till failure" mode of operation. Communities that have disregarded preventive maintenance practices can achieve positive returns from a relatively small additional investment. 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.

Table 5.A is a sample O&M Program for this system and is based on best management practices, manufacturers' recommended service intervals, staff experience, and other sources. This schedule is only an example. The true schedule must be created by American Beach Water and Sewer District staff, based on their historical knowledge and information gleaned from the O&M Manuals and other sources.

Table 5.A: Sample O&M Program. This schedule is only an example.

Task Name	Frequency	Task Name	Frequency
Ensure proper operation of equipment (note any issues)	Per Visit	Decommission unnecessary equipment	As they occur
Calibrate all meters and necessary equipment	Per Visit	Perform P/M on pumps and motors	Manufacturer recommendation
Complete all log work	Per Visit	Exercise vales in system and at lift stations	Annually
Collect all samples	As required by Permit	Inspect storage tanks	Annually
Perform general housekeeping	Weekly	Calibrate meter and backflows	Annually
Exercise Generator	Monthly	Inspect manholes	Annually
Confirm submittal of monthly reports	Monthly	Update FSAMP	Annually

Diamond Maps can be used to schedule maintenance tasks. Recurring items can be set up in advance. In fact, all maintenance activities can be coordinated in Diamond Maps using its work order feature. Table 5.B is a sample of work orders that are specific to the American Beach Water and Sewer District.

Table 5.B: Sample Work Orders – Diamond Maps

WO#	Status	Title	Description	Recurring	GIS Point	Date Started	Date Completed
W1023	Planned	Basic Work Order	Assess Manhole		30.5736585 -81.4462520		
W1024	Planned	Basic Work Order	Assess Manhole		30.5749473 -81.4461397		
W1025	Planned	Basic Work Order	Assess Manhole		30.5733548 -81.4491915		
W1026	Planned	Basic Work Order	Assess Manhole		30.5734952 -81.4475747		
W1027	Planned	Basic Work Order	Assess Manhole		30.5734182 -81.4483129		
W1028	Planned	Basic Work Order	Assess Manhole		30.5735661 -81.4468379		
W1029	Planned	Basic Work Order	Assess Manhole		30.5760764 -81.4491818		
W1030	Planned	Basic Work Order	Assess Manhole		30.5760984 -81.4484041		
W1031	Planned	Basic Work Order	Assess Manhole		30.5761174 -81.4476675		
W1032	Planned	Basic Work Order	Assess Manhole		30.5761262 -81.4469084		
W1033	Planned	Basic Work Order	Assess Manhole		30.5758415 -81.4461750		

Performing the work is important. Tracking the work is also important. Being able to easily check on when specific maintenance tasks were performed or are scheduled will make the utility run more efficiently and prolong the life of critical equipment.

Proactive vs Reactive Maintenance

Reactive maintenance is often carried out by customer requests or sudden asset failures. 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. Reactive maintenance is sometimes performed under emergency conditions, such as a lift station failing causing a sewer backup. As mentioned above, if your system is responding to and performing reactive/emergency maintenance more than 30% of the time, you will need to adjust your maintenance schedules and increase proactive maintenance schedules.

Proactive maintenance consists of preventive and predictive maintenance. Preventive maintenance includes scheduled tasks to keep equipment operable. Predictive maintenance tasks try to determine potential failure points. An example of predictive maintenance is infrared analysis of electrical connections. Using special equipment, a technician can “see” loose or corroded connections that would be invisible to the naked eye. This allows the utility to “predict” and correct a potential problem early. Assets are monitored frequently, and routine maintenance is performed to increase asset longevity and prevent failure.

Upon adoption of this AMFSP, or any DEP-approved AMP, the FRWA Utility Asset Management (UAM) team intends to upload the American Beach Water and Sewer District’s asset data definition file into “Diamond Maps,” described in [Section 2 - Implementation](#), and will populate the field data. The appropriate District personnel will be trained in Diamond Maps functionality and can immediately begin using it for scheduling and tracking system asset routine and preventive maintenance.

6. Capital Improvement Plan

A Capital Improvement Plan is a multi-year financial planning tool that looks into the future to forecast the System's asset needs. It encourages the system and the community to forecast not only what expenditures they intend and expect to make, but also to identify potential funding sources in order to more properly plan for the acquisition of the asset. The CIP is designed to be a flexible planning tool and is updated and revised on an annual basis.

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

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

Capital improvement projects 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:

1. 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).
2. Any rehabilitation involving improvements and realignment or anything that restores the assets to a new or fresh condition (e.g. 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:

1. Structural
2. Capacity
3. Level of service failures
4. Outdated functionality
5. 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.

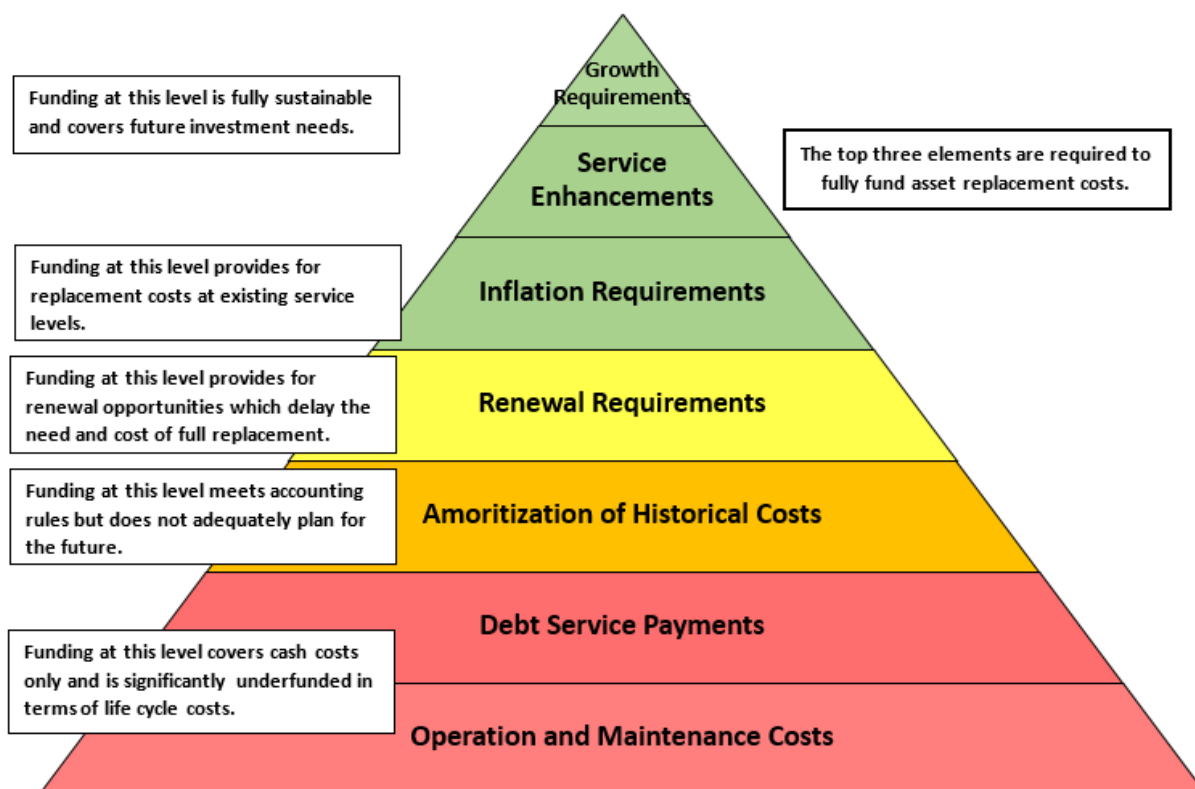
Due to the system being newly installed, a comprehensive CIP had not been prepared at the time of this report. It is recommended that a comprehensive CIP be developed for the system. Asset recommendations from this Plan can be incorporated into the process of developing and approving a Capital Improvement Plan as part of the annual budget process.

7. Financial:

Budget/Financial Sufficiency

In order for an Asset Management Plan to be effectively put into action, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow American Beach to identify the financial resources required for sustainable asset management based on existing asset inventories, desired levels of service, and projected growth requirements.

The pyramid below depicts the various cost elements and resulting funding levels that should be incorporated into Asset Plans that are based on best practices.



This report, with the assistance of RevPlan, helps develop such a financial plan by presenting several scenarios for consideration and culminating with final recommendations.

Once enough financial information for the system is available, it is suggested that American Beach create a preliminary financial sufficiency model. Each year the system is encouraged to update RevPlan and use it to help understand the impacts of future projects and rate increases.

The use of RevPlan allows the system to input current financial data and develop their own financial planning projections based on various timeframes. The System will have the ability to modify the rate structure to determine which proposed rate scenarios may support current and upcoming debt and expenses. Members of FRWA staff are available to assist the System with RevPlan and updating financial models.

Asset Statistics

The Asset Statistics for American Beach are non-existent due to no RevPlan being created. This is a section that American Beach should pay attention to when they decide to utilize this program.

Total Replacement Cost of System	
Wastewater	\$1,772,841.14
Percent of Assets Needing Replacement	
Wastewater	0%
Cost of Replacing All Assets Needing Replacement	
Wastewater	\$0.00
Annual Replacement Cost of System	
Wastewater	\$36,943.90

Please note that the \$1,772,841.14 replacement cost of the wastewater system documented above, along with the annual replacement cost of \$36,943.90 for the system is low. These figures do not include certain assets such as large equipment, vehicles, and some property improvements normally associated with maintaining a utility system. As a result, any proposed rate adjustments suggested by FRWA should be considered a minimum or a starting point for review and consideration by the System.

Based on the findings of the Asset Management Plan, it is important for American Beach Water and Sewer District to start setting aside reserves for the replacement of its assets, to make sure that the base charge is adequately covering fixed costs and that its usage charges are sufficient to fund its variable costs.

Reserves

Reserve balances for utility systems are funds set aside for a specific cash flow requirement, financial need, project, task, or legal covenant. All types of reserves can play a significant role in addressing current and future challenges facing utility systems, such as demand volatility, water supply costs, large capital requirements, asset replacements, natural disasters and potential liabilities from system failures associated with aged infrastructure. All utilities should establish formal financial policies relative to reserves. Such policies should articulate how these balances are established, their use, and how the adequacy of each respective reserve fund balance is determined. Once reserve targets are established, they should be reviewed annually during the budgeting process.

While there is not a one size fits all approach to building reserves, FRWA cautions utilities about dropping below 90 days and encourages them to work towards a balance of cash on hand equal to or greater than 270 days. Cash reserves are essential to ensure a utility's long-term financial sustainability and resiliency. Each utility system has its own unique circumstances and considerations that should be factored into the selection of the types of reserves and corresponding policies that best meet its needs and objectives.

Rates

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

Each year the system is encouraged to update RevPlan and use it to help understand the impacts of future projects and rate increases. The use of RevPlan allows the system to input current financial data and develop their own financial planning projections based on various time frames. The District will have the ability to modify the rate structure to determine which proposed rate scenarios may support current and upcoming debt and expenses. Members of FRWA staff are available to assist the District with RevPlan and updating financial models.

Rate Recommendation:

According to the SRF application supplied by American Beach Water and Sewer District, the Project Sponsor shall establish, maintain, and collect Special Assessments which will be sufficient to pay the costs of collecting such assessments and to provide, in each Fiscal Year, Pledged Revenues equal to or exceeding 1.15 times the sum of the Semiannual Loan Payments due in such Fiscal Year. At the time of this report, American Beach did not have separate financial documents from Nassau-Amelia Utilities available. Therefore, FRWA was unable to provide a rate recommendation other than what was provided for in the SRF agreement.

8. Energy Conservation:

Energy Conservation and Cost Savings

Energy costs often make up twenty-five to thirty percent of a utility's total operation and maintenance costs. They also represent the largest controllable cost of providing water and wastewater services. EPA's "Ensuring a Sustainable Future: An Energy Management Guidebook for Wastewater and Water Utilities" provides details to support utilities in energy management and cost reduction by using the steps described in this guidebook. The Guidebook takes utilities through a series of steps to analyze their current energy usage, use energy audits to identify ways to improve efficiency and measure the effectiveness of energy projects.

Energy Conservation Measures

The District should ensure all assets, not just those connected to a power source, are evaluated for energy efficiency. It is highly recommended that staff conduct an energy assessment or audit. The following are common energy management initiatives the District should implement going forward:

1. Load management
2. LED lighting
3. Meg electric motors
4. Flag underperforming assets for rehabilitation or replacement

The above 4 energy saving initiatives are just a start and most can be accomplished in-house. A more comprehensive energy audit, conducted by an energy consultant/professional, is recommended to evaluate how much energy is consumed system-wide and identify measures that can be taken to utilize energy more efficiently.

With the cost of electricity rising, the reduction of energy use should be a priority for municipalities. A key deliverable of an energy audit is a thorough analysis of the effect of oversize on energy efficiency. Plants are designed to perform at maximum flow and loading conditions. Unfortunately, most plants are not efficient at average conditions. Aging infrastructure is another source of inefficient usage of energy in WWTPs across the country. The justification for addressing aging infrastructure related energy waste is also included in the energy audit process.

The table below provides typical water and wastewater high-use energy operations and associated potential energy saving measures.

High Energy Using Operations	Energy Saving Measures
Lighting	<ul style="list-style-type: none"> • Motion sensors • T5 low and high bay fixtures • Pulse start metal halide • Indirect fluorescent • Super-efficient T8s • Comprehensive control for large buildings
Heating, Ventilation, Air Conditioning (HVAC)	<ul style="list-style-type: none"> • Water source heat pumps • Prescriptive incentives for remote telemetry units • Custom incentives for larger units • Low volume fume hood • Occupancy controls • Heat pump for generator oil sump

Energy Audit Approach

An energy audit is intended to evaluate how much energy is consumed and identify measures that can be taken to utilize energy more efficiently. The primary goal is reducing power consumption and costs through physical and operational changes.

Each system will have unique opportunities to reduce energy use or cost depending on system specific changes and opportunities within the power provider's rate schedules. For example, an audit of an individual wastewater treatment plant (WWTP) will attempt to pinpoint wasted or unneeded facility energy consumption. It is recommended to perform an energy audit every two to three years to analyze a return on investment.

A wastewater system energy audit approach checklist, similar to the one below, can be a useful tool to identify areas of potential concern and to develop a plan of action to resolve them. The FRWA offers Energy Assessments to our members and SRF recipients that are participating in the AMFSP program. Please contact your local Circuit Rider or the FRWA office to participate.

Minimum Equipment Information to Gather	Additional Equipment Information to Gather	Conditions to Consider
<ul style="list-style-type: none"> • Pump style • Number of pump stages • Pump and motor speed(s) • Pump rated head (name plate) • Motor rated power and voltage (name plate) • Full load amps • Rated and actual pump discharge • Operation schedules 	<ul style="list-style-type: none"> • Pump manufacturer's pump curves • Actual pump curve • Power factor • Load profile • Analysis of variable frequency drives (vfd's) if present • Pipe sizes • Water level (source) • Motor current • Pump suction pressure • Discharge pressure 	<ul style="list-style-type: none"> • Maintenance records • Consistently throttled valves • Excessive noise or vibrations • Evidence of wear or cavitation on pump, impellers or pump bearings. • Out-of-alignment conditions • Significant flow rate/pressure variations • Active by-pass piping • Restrictions in pipes or pumps • Restrictive/leaking pump shaft packing

9. Conclusions:

General

Our conclusions are based on our observations during the data collection procedure, discussions with District of American Beach staff, regulatory inspection data, and our experience related to similar assets.

Areas needing attention are detailed in [Section 4](#) and include:

Sewer Mains:

- Begin budgeting for the eventual renewal and replacement of collection system and rehabilitation, relining or replacement of sewer lines as the system ages.
- Conduct smoke testing of the system to identify critical or problematic areas of the collection system.
- Begin practice of inspecting and cleaning of the collection system.
- Develop additional future capital repair projects that identify and record the location and severity of any defects.

Manholes:

- Unassessed manholes should be opened and inspected by staff to determine true condition.
- Consider the purchase of inflow dishes.

Lift Stations:

- Start budgeting for eventual rehabilitation, relining or replacement of the lift stations, pumps and components.

Implementing this Asset Management and Fiscal Sustainability Plan:

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

1. **Assign specific personnel** to oversee and perform the tasks of Asset Management.
2. **Develop and use a Computerized Maintenance Management System (CMMS) program.** The information provided in this FSAMP plan will give the utility a good starting point to begin. 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 set up and implementation.
3. **Develop specific Level of Service items.** Create a Level of Service (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 in [Section 2 – Level of Service](#).
4. **Develop specific Change Out/Repair/Replacement Programs.** The District budgets for Repair and Replacement and should continue to evaluate the system to adjust the annual budgeted amounts accordingly. An example includes budgeting for a certain number of stepped system refurbishments each year.
5. **Modify the existing rate structure.** The District should make changes to their rate structure to capture all possible revenue and share the burden of maintaining the system among all classes of users. Continue to make sure adequate funds are available to properly operate and maintain the facilities. Rate increases, when required, can be accomplished in a stepped fashion rather than an 'all now' approach to lessen the resulting customer impact.
6. **Explore financial assistance options.** 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. For a table of common funding sources, see [Funding Sources for Water and Wastewater Systems](#).

7. **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. Common updates or revisions include:
 - Changes to your asset management team;
 - Updates to the asset inventory;
 - Updates to asset condition and criticality ranking charts;
 - Updates to asset condition and criticality assessment procedures
 - Updates to operation and maintenance activities;
 - Changes to financial strategies and long-term funding plans.

The annual review should begin by asking yourself:

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

Funding Sources for Water and Wastewater Systems

On the following page 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, grants or a combination of both.

Agency/Program	Website	Contact
FDEP Drinking Water State Revolving Fund Program (DWSRF)	https://floridadep.gov/wra/srf/content/dwsrf-program	Eric Meyers eric.v.meyers@FloridaDEP.gov 850-245-2991
FDEP Clean Water State Revolving Fund Loan Program (CWSRF)	https://floridadep.gov/wra/srf/content/cwsrf-program	Mike Chase Michael.Chase@FloridaDEP.gov 850-245-2969
USDA Rural Development- Water and Wastewater 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	Jeanie Isler pamela.isler@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.doc.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 Commerce - 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	Shauita Jackson shauita.jackson@deo.myflorida.com 850-717-8416
Northwest Florida Water Management System - 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 the American Beach Water and Sewer District for consideration and final adoption. Its creation would not have been possible without the cooperation of the District staff and the Florida Department of Environmental Protection State Revolving Fund (FDEP-SRF).

As a valued FRWA member, it is our goal to help make the most effective and efficient use of your limited resources. The Asset Management and Fiscal Sustainability Plan is an unbiased, impartial, independent review and is solely intended for achievement of drinking water and wastewater system fiscal sustainability and maintaining your valuable utility assets. The Florida Rural Water Association has enjoyed serving you and will happily assist the American Beach Water and Sewer District with any future projects to ensure your Asset Management Plan is a success.

APPENDIX A: Sample Resolution

RESOLUTION NO. 2024-_____

A RESOLUTION OF THE AMERICAN BEACH WATER AND SEWER DISTRICT, APPROVING THE WASTEWATER SYSTEM ASSET MANAGEMENT AND FISCAL SUSTAINABILITY PLAN; AUTHORIZING THE DISTRICT 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 and public systems to finance construction of utility system improvements; and

WHEREAS, the Florida Department of Environmental Protection State Revolving Fund (SRF) has designated the American Beach Water and Sewer District wastewater system improvements, identified in the Asset Management and Fiscal Sustainability Plan, as potentially eligible for available funding; and

WHEREAS, as a condition of obtaining funding from the SRF, the system is required to implement an Asset Management and Fiscal Sustainability Plan for the System's Wastewater System Improvements; and

WHEREAS, the Board for the American Beach Water and Sewer District has determined that approval of the attached Asset Management and Fiscal Sustainability Plan for the proposed improvements, in order to obtain necessary funding in accordance with SRF guidelines, is in the best interest of the System.

NOW, THEREFORE, BE IT RESOLVED BY THE AMERICAN BEACH WATER AND SEWER DISTRICT BOARD the following:

Section 1. That the American Beach Water and Sewer District Board hereby approves the American Beach Water and Sewer District Asset Management and Fiscal Sustainability Plan, attached hereto and incorporated by reference as a part of this Resolution.

Section 2. That the District Manager is authorized to take all actions necessary to effectuate the intent of this Resolution and to implement the American Beach Water and Sewer District Asset Management and Fiscal Sustainability Plan in accordance with applicable Florida law and Board direction in order to obtain funding from the SRF.

Section 3. That the American Beach Water and Sewer District will annually evaluate existing rates to determine the need for any increase and will increase rates in accordance with the financial recommendations found in the American Beach Water and Sewer District Asset Management and Fiscal Sustainability Plan or in proportion to the System’s needs as determined by the Board in its discretion.

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

PASSED AND ADOPTED on this _____ day of _____, 2024.

AMERICAN BEACH WATER AND SEWER DISTRICT

John F. Martin, District Chair, Board of County Commissioners

ATTEST:

APPROVED AS TO FORM:

Amy Bell, Administrative Manager

American Beach Water and Sewer District Attorney

Gravity main	2023	71505	50	Good	Moderate	2073
Gravity main	2023	71460	50	Good	Moderate	2073
Gravity main	2023	36050	50	Good	Moderate	2073
Gravity main	2023	13975	50	Good	Moderate	2073
Gravity main	2023	18550	50	Good	Moderate	2073
Gravity main	2023	19590	50	Good	Moderate	2073
Gravity main	2023	11230	50	Good	Moderate	2073
Gravity main	2023	26515	50	Good	Moderate	2073
Gravity main	2023	12480	50	Good	Moderate	2073
Gravity main	2023	8940	50	Good	Moderate	2073
Gravity main	2023	60925	50	Good	Moderate	2073
Gravity main	2023	94905	50	Good	Moderate	2073
Gravity main	2023	63520	50	Good	Moderate	2073
Gravity main	2023	24615	50	Good	Moderate	2073
Gravity main	2023	72985	50	Good	Moderate	2073
Gravity main	2023	8280	50	Good	Moderate	2073
Gravity main	2023	26180	50	Good	Moderate	2073
Gravity main	2023	20470	50	Good	Moderate	2073
Gravity main	2023	23125	50	Good	Moderate	2073
Gravity main	2023	49530	50	Good	Moderate	2073
Asset Name	Install Year	Replacement Cost	Design Life	Condition	COF	Age EOL
LS 2 Wet Well	2024	38723.27	50	Good	Moderate	2074
LS1 Wet Well	2024	43668.77	50	Good	Moderate	2074
Asset Name	Install Year	Replacement Cost	Design Life	Condition	COF	Age EOL
LS2 Pump 1	2024	4250	20	Good	Moderate	2044
LS2 Pump 2	2024	4250	20	Good	Moderate	2044
LS1 Pump 1	2024	4250	20	Good	Moderate	2044
LS1 Pump 2	2024	4250	20	Good	Moderate	2044
Asset Name	Install Year	Replacement Cost	Design Life	Condition	COF	Age EOL
LS2 Dry Well	2024	15000	50	Good	Moderate	2074
LS1 Dry Well	2024	15000	50	Good	Moderate	2074
Asset Name	Install Year	Replacement Cost	Design Life	Condition	COF	Age EOL

LS2 Check valve 1	2024	800	25	Good	Moderate	2049
LS2 Check valve 2	2024	800	25	Good	Moderate	2049
LS1 Check Valve 2	2024	800	25	Good	Moderate	2049
LS1 Check Valve 1	2024	800	25	Good	Moderate	2049
Asset Name	Install Year	Replacement Cost	Design Life	Condition	COF	Age EOL
LS2 Meter Power Supply	2024	2000	20	Good	Moderate	2044
LS2 Disconnect Switch	2024	1000	20	Good	Moderate	2044
LS2 Power Distribution	2024	2000	20	Good	Moderate	2044
LS2 Pump Control Panel	2024	3000	20	Good	Moderate	2044
LS2 Control Panel	2024	3000	20	Good	Moderate	2044
LS1 Pump Control Panel	2024	3000	20	Good	Moderate	2044
LS1 Distribution Panel	2024	2000	20	Good	Moderate	2044
LS1 Disconnect Switch	2024	1000	20	Good	Moderate	2044
LS1 Meter Box	2024	2000	20	Good	Moderate	2044
LS1 Control Panel	2024	3000	20	Good	Moderate	2044
Asset Name	Install Year	Replacement Cost	Design Life	Condition	COF	Age EOL
LS2 RTU	2024	750	20	Good	Moderate	2044
LS1 RTU	2024	750	20	Good	Moderate	2044