

RESOLUTION 2019-01

A RESOLUTION OF POLK CITY, FLORIDA, APPROVING THE POLK CITY WASTEWATER UTILITY ASSET MANAGEMENT AND FISCAL SUSTAINABILITY PLAN ("AMFS PLAN"); AUTHORIZING THE CITY 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 municipal utility system improvements; and

WHEREAS, the Florida Department of Environmental Protection State Revolving Fund (SRF) has designated the AMFS Plan Project listed under the Loan Agreement Number WW 531402/SG531403 as eligible for available funding; and

WHEREAS, as a condition of obtaining funding from the SRF, Polk City is required to implement an AMFS Plan; and

WHEREAS, the Authorizing Authority of Polk City 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 City.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF POLK CITY, FLORIDA:

SECTION 1. The City Commission hereby approves the Utility Asset Management & Fiscal Sustainability Plan ("AMFS Plan") attached hereto as Exhibit "A", and incorporated herein by this reference.

SECTION 2. The City Commission hereby authorizes the City Manager 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 Authorizing Authority direction in order to obtain funding from the SRF.

SECTION 3. Consistent with applicable state law, Polk City commits to implement a reoccurring annual Consumer Price Index/Cost of Living Adjustment (CPI/COLA) rate sufficiency increase of 1.5% per annum, for critical utility asset sustainment and preservation, to include present and future years as determined by and subject to a rate sufficiency study by a professional engineer.

SECTION 4. This resolution shall take effect immediately upon adoption.

RESOLVED, PASSED, AND CERTIFIED AS TO PASSAGE THIS 22nd day of January, 2019.

POLK CITY, FLORIDA

By: Joe LaCascia, Mayor

ATTEST:

Patricia R. Jackson, City Manager/Clerk

APPROVED AS TO FORM AND LEGALITY:

Thomas A. Cloud, City Attorney

Polk City Wastewater System Asset Management and Fiscal Sustainability Plan



Prepared for:

**POLK CITY WASTEWATER DEPARTMENT
POLK CITY, FLORIDA**

FLA489093

Prepared by:

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

January 15, 2019



DiamondMaps
com

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Executive Summary

1. AMP Defined

An *Asset Management Plan* (AMP) is the systematic process of maintaining critical assets at the lowest life cycle cost within a predetermined desired level of service (as determined by Utility Staff, Customers, Commissioners, Regulators, etc.). Lowest life cycle cost refers to the best appropriate cost for rehabilitating, repairing or replacing an asset. Asset management is implemented through an ongoing, evolving program which includes a written plan and daily activities by utility staff using dedicated computerized software.

2. 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 rehabilitate/repair/replacement decisions through efficient and focused operations and maintenance.
- Meeting consumer demands with a focus on system sustainability.
- Setting rates based on sound operational and financial planning.
- Budgeting focused on activities critical to sustained performance.
- Meeting service expectations and regulatory requirements.
- Improving response to emergencies.
- Improving security and safety of assets.
- Reducing overall costs for both operations and capital expenditures

3. 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).

4. AMP Development Stakeholders

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

5. Table of Critical Asset, Process, CAPEX, and OPEX Needs

The Schedule of Prior and Parity Liens is shown on Table 5-1. The Historical System Operating Results for the 2012-2017 period is shown on Table 5-2. The Projected System Operating Results are shown on Table 5-3. The City should maintain a minimum operational fund reserve of three months operational expenses. This amounts to \$250,000 approximately. The City should maintain a rate stabilization fund of 10% of the operational revenues generated in a year. This amounts to approximately \$200,000. The renewal, replacement and improvement fund should have approximately 15% of the annual operational expenses (FRWA minimum at 12.5%). This amounts to approximately \$150,000. The total recommended fund balance is \$600,000 exclusive of the water and wastewater impact fee fund. Currently, the City meets each of the recommendations delineated above.

Table 5-4 presents the identified capital projects for both the water and wastewater systems. Note that the totals do not reflect grant or loan funding. The Table 5-4 results were adjusted for grant and/or loan funding when incorporated into Table 5-3.

This asset management funding meets all of the requirements of the asset management plan.

Asset Management Plan

Items recommended by Florida Rural Water Association:

OPEX

All Assets

Begin CMMA Program – Maps and equipment

Lift Stations

- 1) Repair Genset at 822 Two Ponds Road
- 2) Control Panel Replacement at 250 Brooks Lane

Wastewater Plant

- 1) Replace effluent lift station ladder
- 2) Install railings atop effluent lift station
- 3) Repair leaks on vertical turbine pumps on effluent lift station

Collection System

- 1) Expose and inspect 5 paved-over manholes
- 2) Rehabilitate/replace 10 manholes (2/year)
- 3) Remove stuck covers and inspect 4 manholes

Annual Reserve Fund

- 1) The Reserve Funding is sufficient based on the City's Financial Statement

Table 5-1

SCHEDULE OF PRIOR AND PARITY LIENS

List annual debt service beginning two years before the anticipated loan agreement date and continuing at least fifteen fiscal years. Use additional pages as necessary.

IDENTIFY EACH OBLIGATION

#1 8,555,000 City of Polk City Florida Water and Sewer System Refunding Revenue Bonds Series 2017	#2 FDEP Loan	#3 Equipment Lease	#4 FDEP Design Loan- \$36,626.30	#5 Proposed FDEP Construction Loan - \$362,931
Coverage 25%	Coverage 25%	Coverage 0%	Coverage 15%	Coverage 15%
#6 N/A	#7 N/A	#8 N/A	#9 N/A	#10 N/A
Coverage %	Coverage %	Coverage %	Coverage %	Coverage %
Insured (Yes/No)	Insured (Yes/No)	Insured (Yes/No)	Insured (Yes/No)	Insured (Yes/No)

Fiscal Year	Annual Debt Service (Principal + Interest)					Total Non-SRF Debt Service w/coverage #6	Total SRF Debt Service w/coverage #7
	#1	#2	#3	#4	#5		
2015	646,667	174,208	23,485			831,819	217,760
2016	645,517	174,208	23,485			830,381	217,760
2017	644,217	174,208	23,485			828,756	217,760
2018	324,673	174,208	23,485			429,326	217,760
2019	566,425	174,208	23,485	985		731,516	218,893
2020	569,225	174,208	23,485	1,970	9,928	735,016	231,444
2021	571,725	174,208	23,485 ⁽¹⁾	1,970	19,859	738,141	242,863
2022	568,925	174,208		1,970	19,859	711,156	242,863
2023	570,975	174,208		1,970	19,859	713,719	242,864
2024	567,725	174,208		1,970	19,859	709,656	242,863
2025	564,325	174,208		1,970	19,859	711,656	242,863
2026	567,725	174,208		1,970	19,859	709,656	242,864
2027	565,725	174,208		1,970	19,859	707,156	242,863
2028	568,325	174,208		1,970	19,859	710,406	242,863
2029	570,325	174,208		1,970	19,859	712,906	242,864
2030	566,725	174,208		1,970	19,859	708,406	242,863
2031	572,725	174,208		1,970	19,859	715,906	242,863
2032	567,925	174,208		1,970	19,859	709,906	242,864
2033	567,725	174,208 ⁽²⁾		1,970	19,859	709,656	242,863
2034	566,925			1,970	19,859	708,656	25,103
2035	570,525			1,970	19,859	713,156	25,103
2036	568,325			1,970	19,859	710,406	25,104
2037	565,525			1,970	19,859	706,906	25,103
2038	567,125			1,970	19,859	708,906	25,103
2039	571,725			985	19,859	714,656	23,971
2040	565,263				9,929	706,579	11,419
2041	568,162 ⁽³⁾					710,203	0

⁽¹⁾ Last P&I Non-SRF Payment
⁽²⁾ Last FDEP Payment Design
⁽³⁾ Last Lease Payment

Asset Management Plan

**Table 5-2
Historical System Operating Results**

Description	Fiscal Year Ended September 30,					
	2012	2013	2014	2015	2016	2017 ⁽¹⁾
Operating Revenues						
Water and Wastewater Utility	\$1,925,296	\$1,891,475	\$1,965,698	\$2,005,736	\$2,095,911	\$2,051,266
Total Operating Revenues	1,925,296	1,891,475	1,965,698	2,005,736	2,095,911	2,051,266
Total Operating Expenses ⁽²⁾	945,135	938,843	944,547	915,425	899,938	974,158
Net Operating Revenues	980,161	952,632	1,021,151	1,090,311	1,195,973	1,077,108
Non-Operating Revs (Exp)						
Public Service Tax Revenues ⁽³⁾	38,728	43,076	45,248	45,987	48,348	53,016
Total Non-Operating Revs (Exp)	38,728	43,076	45,248	45,987	48,348	53,016
Revenues Avail for Debt Svc.	1,018,889	995,708	1,066,399	1,136,298	1,244,321	1,130,124
Debt Service						
Water and Wastewater Utility	644,393	648,056	645,256	646,668	645,518	644,217
Total Debt Service ⁽⁴⁾	644,393	648,056	645,256	646,668	645,518	644,217
Net Surplus (Deficit)	374,496	347,652	421,143	489,630	598,804	485,907
Other Revenues						
Impact Fees						
Water Utility	40,181	40,181	55,904	66,386	94,051	102,499
Wastewater Utility	97,130	88,300	132,450	167,770	301,379	346,908
Total Impact Fees	137,311	128,481	188,354	234,156	395,430	449,407
Surplus including Impact Fees	\$511,807	\$476,133	\$609,497	\$723,786	\$994,234	\$935,314

Amounts in the table above have been rounded.

Sources: City Finance Department, Consulting Engineer and Independent Auditor.

(1) Unaudited.

(2) Excludes expenses that are not annually recurring, any reserve for renewals and replacements, extraordinary repairs or any allowance for depreciation or bond service requirements.

(3) Public Service Tax Revenues securing the City's Water and Sewer Capital Improvement and Refunding Revenue Bonds, Series 2011A and Series 2011B ("Series 2011 Bonds"); all Outstanding Series 2011 Bonds will be defeased upon the issuance of the Series 2017 Bonds.

(4) Does not include debt service payments on the subordinate FDEP Loan, which are payable from Net Revenues of the System on a subordinate basis to the Bonds. See also the table herein entitled "Historical Debt Service Coverage."

Asset Management Plan

**Table 5-3
Projected System Operating Results**

Description	Fiscal Year Ended September 30,					
	2018 ⁽¹⁾	2019	2020	2021	2022	2023
Operating Revenues						
Water and Wastewater Utility	\$2,678,048	\$2,100,000	\$2,150,000	\$2,210,000	\$2,260,000	\$2,320,000
Total Operating Expenses ⁽²⁾	1,106,519	950,000	930,000	970,000	1,010,000	1,060,000
Net Operating Revenues	971,529	1,150,000	1,220,000	1,240,000	1,250,000	1,260,000
Debt Service						
Water and Wastewater Utility ⁽³⁾	522,366 ⁽⁵⁾	765,103	778,816	791,247	764,962	767,012
Available Funds for Unrestricted Uses	449,163	384,897	441,184	448,753	485,038	492,988
Impact Fees (Restricted)						
Water Utility	222,302	100,000	100,000	100,000	100,000	100,000
Wastewater Utility	616,545	250,000	250,000	250,000	250,000	250,000
Total Impact Fees	838,847	350,000	350,000	350,000	350,000	350,000
Net Capital Projects ⁽⁴⁾	294,491 ⁽⁶⁾	410,000 ⁽⁷⁾	161,000 ⁽⁷⁾	190,000 ⁽⁷⁾	177,000 ⁽⁷⁾	244,000 ⁽⁷⁾
Funds for Unplanned Capital Projects, Contingency, Emergency Reserves and Restricted Growth Projects	993,519	324,897	630,184	608,753	658,038	598,988

Amounts in the table above have been rounded.

Sources: City Finance Department, Consulting Engineer and Independent Auditor.

(1) Unaudited.

(2) Excludes expenses that are not annually recurring, any reserve for renewals and replacements, extraordinary repairs or any allowance for depreciation or bond service requirements.

(3) Does include debt service payments on the subordinate FDEP Loan, which are payable from Net Revenues of the System on a subordinate basis to the Bonds. See also the table herein entitled "Historical Debt Service Coverage."

(4) This amount exceeds the total of 12.5% of annual expenses recommended by FRWA.

(5) Single year impact of debt refinancing.

(6) Funds spent in FY 2018, Planned projects thereafter.

(7) Projects from Rate Revenue – See Table 5-4.

Asset Management Plan

Table 5-4

Polk City
 EF Capital Improvements Program (CIP) - Department Requested - Summarized by Fund
 Fiscal Years 2018 - 2023

Sewer CIP								
Project Name	Project Task	GL Acct	FY18	FY19	FY20	FY21	FY22	FY23
Buildings - Sewer Oper	FY17 - 20 x 20 Smithbuilt Shed FY18 - Purchase New PW/Utilities Operations Building - Split with PW and Sewer, A/C Units	05-535-620	\$80,363.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Improvements Other than Building - Sewer Oper	FY18 - Major Improvements to Ruth Rd. Lift Station	05-535-630	\$43,373.47	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00
Machinery and Equipment - Sewer Operations	Flygt Pump	05-535-640	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machinery and Equipment - Sewer Operations	FY18 - By-pass for Voyles Loop and Installation	05-535-640	\$16,325.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machinery and Equipment - Sewer Operations	FY18 - Install By-pass pump and Valve Insert at Dewey Rd.	05-535-640	\$4,837.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machinery and Equipment - Sewer Operations	FY19 - New F250 Utility Truck (Split w/Water), Jetter Truck, Camera, WWTP 1/2 HP Fountain FY20 - New F250 Utility Truck (Split w/Water)	05-535-640	\$29,587.75	\$50,000.00	\$30,000.00	\$0.00	\$0.00	\$50,000.00
Machinery and Equipment - Sewer Operations	Rural Water Recommendations	05-535-640	\$0.00	\$14,500.00	\$17,500.00	\$8,000.00	\$8,000.00	\$8,000.00
Machinery and Equipment - Sewer Operations	Bond/Engineer Recommendations	05-535-640	\$0.00	\$21,500.00	\$22,500.00	\$32,000.00	\$32,000.00	\$32,000.00
Machinery and Equipment - Sewer Operations	New fencing to enclose Cardinal Hill WWTP property - \$54,000.00. *\$25,000.00 of cost was set aside in FY18, and the fencing will be purchased in FY19, Sludgemate system - \$50,000	05-590-942 / 05-535-641	\$25,000.00	\$104,000.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction In Progress - Sewer Oper	FY18, FY19, FY2 , & FY21 - FDEP Project # WW53140	05-535-650	\$149,783.00	\$800,000.00	\$800,000.00	\$100,000.00	\$20,000.00	\$10,000.00
Total Sewer Fund CIP Per Fiscal Year			\$199,486.22	\$1,000,000.00	\$880,000.00	\$150,000.00	\$70,000.00	\$110,000.00

Asset Management Plan

Table 5-4 Continued

Polk City
 EF Capital Improvements Program (CIP) - Department Requested - Summarized by Fund
 Fiscal Years 2018 - 2023

Water CIP								
Project Name	Project Task	GL Acct	FY18	FY19	FY20	FY21	FY22	FY23
Buildings - Water Oper	FY17 - 20 x 20 Smithbuilt Shed FY18 - Purchase New PW/Utilities Operations Building - Split with PW and Sewer, A/C Units	05-533-620	\$50,910.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Improvements Other than Building - Water	FY18 - Major Improvements to Grimes Rd. Project	05-533-630	\$11,953.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machinery and Equipment - Sewer Operations	New Equipment	05-533-640	\$0.00	\$10,000.00	\$10,000.00	\$10,000.00	\$15,000.00	\$15,000.00
Machinery and Equipment - Water Operations	FY18 - New F150 & F250 Utility Trk (Split w/SW) FY19 - 2 New F250 Utility Truck (Split w/SW) FY20 - New F250 Utility Truck (Split w/Sewer)	05-533-640	\$28,688.77	\$30,000.00	\$30,000.00	\$2,500.00	\$3,000.00	\$30,000.00
Machinery and Equipment - Water Operations	Meter Replacements	05-533-640	\$0.00	\$10,000.00	\$11,000.00	\$12,500.00	\$13,000.00	\$14,000.00
Machinery and Equipment - Water Operations	Hydrants, valves, and pipe replacement	05-533-640	\$0.00	\$30,000.00	\$40,000.00	\$50,000.00	\$60,000.00	\$70,000.00
Mt. Olive WTP - Machinery and Equipment - Water Operations	FY19 - Replacement of Hydromatic water tanks at Jacobs Rd. WTP (Mt. Olive)	05-533-641	\$0.00	\$130,000.00	\$0.00	\$0.00	\$10,000.00	\$5,000.00
Other Capital Assets - Water Operations	FY18 - Purchase an updated locating device	05-533-660	\$3,452.23	\$0.00	\$0.00	\$0.00	\$8,000.00	\$0.00
Total Water Fund CIP Per Fiscal Year			\$95,004.60	\$210,000.00	\$91,000.00	\$75,000.00	\$107,000.00	\$134,000.00
Total Enterprise Fund CIP Per Fiscal Year			\$294,490.82	\$1,210,000.00	\$971,000.00	\$225,000.00	\$177,000.00	\$244,000.00

6. 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:

1. 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)
2. Engage 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.
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 these and other water utility funding programs can be found at <http://www.frwa.net/funding.html> and <http://efcnetwork.org/wp-content/uploads/2017/05/FL-Water-Wastewater-Funds-2017.pdf>).
 - a. FDEP-State Revolving Fund
 - b. Water Management District
 - c. Community Development Block Grant
 - d. Community Budget Issues Request
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 (CMMS)
6. Continue to build your asset management program by:
 - a. Collecting critical field data and attributes on any 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 and guidelines for critical processes
 - g. Identify responsible persons or groups to implement critical assets and processes
 - 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 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 reimbursement*, an asset management plan must:

- A. Be adopted by ordinance or resolution;
- B. Have written procedures in place to implement the plan;
- C. 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:
 - a. Age
 - b. Condition and
 - c. 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:
 - a. Renewal
 - b. Replacement
 - c. Repair of asset as necessary and
 - d. A risk-benefit analysis to determine optimum renewal or replacement timing;
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 and;
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 WWS assets. It assists in determining such things as:

- a. Asset maintenance, repair, or replacement cost
- b. Accurate and timely capital improvement project budgeting
- c. Forecasting near and long-term capital improvement needs
- d. Whether the WWS is equipped for projected growth
- e. Adequate reserves exist to address emergency operations.

Fiscal sustainability analysis requires a thorough understanding of the WWS'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, because 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 AMFSP in place will also benefit Polk City in determining which assets are to be insured and for what amount. *Additionally, the Clean Water State Revolving Fund (CWSRF) requires a WWS to adopt and implement an AMFSP to qualify for loan interest rate reduction.* An AMFSP helps a system more effectively and efficiently identify its capital improvement needs and solutions.

The AMFSP's intended approach is to assist the WWS with conducting a basic inventory and condition assessment of its current assets. It is expected the WWS 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. 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 revision as necessary, resulting in a practical and useful tool for Polk City Staff.

Data collection and inspections were performed using Diamond Maps, our tool of choice for this purpose as well as CMMS and work order creation.

2 Asset Management Plan

2.1 Asset Management Defined

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 will give the utility documentation that aids in understanding what assets they have, how long these assets will last, and how much it will cost to maintain or replace these assets. It also provides financial projections which show the utility if rates and other revenue mechanisms are sufficient to supply the utility's needs for the future, 5, 10, even 20 years ahead.

Asset Management Plan

Asset Management is made up of five core questions. They are:

1. What is the current status and condition of the utility's assets?
2. What is Level of Service required?
3. What assets are considered critical to meeting the required Level of Service?
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?

2.2 Why is Asset Management so Important?

There are many benefits when an Asset Management Plan is adopted and adhered to. These include:

- Better operational decisions
- Improved emergency response
- Greater ability to plan and pay for future repairs and replacements
- Increased knowledge of asset locations
- Increased knowledge of which assets are critical to the utility and which are not
- More efficient operation
- Better communication with customers
- Rates based on sound operational information
- Increased acceptance of rates
- Capital improvement projects that meet the true needs of the system

2.3 Implementation

Asset Management and Work Order Software (Required):

Asset Management (AM) and Work Order (WO) development requires dedicated software to manage the ongoing program. Without dedicated software, Utility Staff will be unable to access any infrastructure attribute data and maintenance management activities, hence rendering the entire AM and WO process unusable. The Utility may use an AMP and WO software of their choice. Florida Rural Water Association (FRWA) utilizes Diamond Maps software to collect data within your system. Should a Utility choose to use an alternate software, integration of the attributes collected and populated by FRWA Staff, within Diamond Maps, may require an integrator/developer to transfer the data.

Polk City contracts with the Central Florida Regional Planning Council for GIS mapping services and other asset tracking.

2.4 Level of Service (LOS)

As a provider of water and/or wastewater service, a utility must decide what Level of Service (LOS) is required for its customers. Polk City maintains its Level of Service Goals in their Comprehensive Plan's Utility Element.

There are four key elements regarding LOS:

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

Targets must be set for individual parameters and metrics put in place to 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.

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

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 Polk City Level of Service standards for water and wastewater are 300 gpd (Water) and 250 gpd (Sewer).
- 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. Adequate time must be included to meet the target. However, too much time can lead to apathy and affect the utility's performance.

The idea is to set goals and meet them. They should not be terribly easy. Effort should be involved. They should also include areas that have been lacking and a need exists. If the bar is set too low, the process is pointless.

As examples, the following are worthwhile Level of Service goals. Each plays a role in improving the performance of the utility and is beneficial to both the utility and the utility's customers.

- Reduce lift station pump failures due to preventable issues (rags, debris, etc.) by 50 %
- Reduce sludge hauling costs by 10%
- Receive no preventable regulatory violations during routine FDEP inspections.
- Reduce inflow by 20% over five years.

2.5 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.

3 System Description

3.1 Overview

Polk City is located in Polk County Florida. It is approximately 15 miles northeast of Lakeland. The City provides wastewater service for both residential and commercial districts.

3.2 Staffing

Polk City's government is comprised of the Mayor, Vice Mayor, and three Commissioners. They are:

Mayor	
Joe LaCascia	
Vice Mayor	Commissioner
Don Kimsey	Mike Blethen
Commissioner	Commissioner
Wayne Harper	Randy Carroll

City administrative staff includes:

- City Manager/City Clerk – Patricia Jackson
- Asst. to City Manager - Sheandolen Dunn
- Finance Administrator – Joanna Knowles
- Public Works Director – Keith Prestage

Polk City's Wastewater Department is under the direction of Public Works Director Keith Prestage. His staff performs day-to-day functions to enable a properly functioning utility. These individuals and Polk City Administration effectively become the "the asset management team." The City Manager and her appointees perform asset management planning responsibilities. The team is also responsible for preparing, implementing, and updating this plan.

To the extent that other staff such as the Mayor, Vice Mayor, City Commissioners, City Manager, and Finance Administrator are involved with this or other projects, the asset management team is responsible for coordinating such involvement in the AMFSP adoption, as well as ongoing development and implementation.

4 Current Asset Conditions

4.1 Assets Critical to Sustained Performance

Every water and wastewater system is made up of assets. Some you can see, some you can't. These are the physical items such as valves, pipes, tanks, motors, manholes, buildings, etc. Each is important in its own way and serves a function to make the system operate as it should.

One trait common to all assets is that they lose value over time. With age comes deterioration. With deterioration comes a lessened ability to provide the appropriate level and type of service to the utility's customers. Another trait common to assets is that they must be maintained. Maintenance costs increase as these assets age. Operation costs can rise with age as equipment becomes worn and less efficient. Increased equipment failure can lead to issues such as customer problems and negative environmental impacts. At some point, it is wise to replace components rather than continue with ever more frequent and costly repairs. Managing these assets properly helps a utility make better decisions regarding their system's many parts.

Another unfortunate fact is that all assets will fail if not properly maintained. How the utility manages the consequences of these failures is vital. Not every asset presents the same failure risk. Not every asset is equally critical to the performance of the utility. For example, a fence surrounding a well site or lift station, though important, is not as vital or 'critical' to the utility as a well pump or lift station pump.

Factors that contribute to asset failure are numerous and include age, environment (weather, corrosive environments), excessive use, improper maintenance, etc.

Replacement versus rehabilitation is always a consideration. What is best for the utility? What is best for the customer? The proper decision must be made based on information gleaned from all available resources.

Implementing CMMS at this stage will ensure the City's assets last longer, perform better, and provide more reliable service.

Utilizing data contained in Diamond Maps, maintenance schedules can be created following both manufacturer's recommendations as well as those of industry professionals. Work orders can be created and scheduled to make sure the work is assigned and completed. FRWA staff

can assist the City in creating these lists as well as provide training in Diamond Maps to make the City's staff self-sufficient.

4.2 Current Needs

4.2.1 Collection System/manholes

The collection system appears to be in good condition overall. 88 manholes were visited during our data collection efforts. Of these, 20 were rated poor to very poor and are in need of attention. These poor to very poor are scheduled for rehabilitation (See Tables 5-4).

Ten were found to have issues such as structural problems (largely due to deterioration from hydrogen sulfide and age), potential inflow issues, blockages, etc. These are candidates for replacement or refurbishment.

Five were paved over and could not be inspected. These covers should be cleared and the manholes inspected as soon as possible.

Four of the manhole covers could not be removed. As with the paving issues listed above, these covers should be cleared and the manholes inspected as soon as possible.

One manhole could not be found.

4.2.2 Lift Stations

12 lift stations were inspected and cataloged by FRWA staff. These stations were found to be generally well maintained.

Some issues were observed:

250 Brooks Lane – The control panel at this station needs to be replaced per the utility's staff. Estimated cost: \$7,500

201 North Citrus Grove – Schedule 40 PVC piping on the station discharge shakes when the pumps are running. This warrants closer inspection.

1071 Motor Coach Drive – Concrete supports for the control panel are cracking. This should be watched closely as corrective action may be needed in the near future.

822 Two Ponds Road – The Genset at this station needs repair. Estimated cost: \$1,500.

447 Nolane Lane – Piping in the wet well is showing signs of corrosion and should be inspected regularly.

221 Layne Wade Road – Piping in the wet well is showing signs of corrosion and should be inspected regularly.

9826 West HWY 33 / Voyles Loop – Piping in the wet well is showing signs of corrosion and should be inspected regularly.

Mount Olive Road / Fountain Park - Piping in the wet well is showing signs of corrosion and should be inspected regularly.

5552 Golden Gate Blvd. – Per utility staff, the manhole adjacent to this station backs up regularly. This situation should be investigated and the cause identified and corrective action planned.

All improvements stated above are programmed for implementation.

4.2.3 Wastewater Plant

The wastewater plant was in good condition overall. As with the lift stations, assets appeared to be generally well maintained. Some issues were observed:

The vertical turbine pumps and piping at the effluent lift station need addressing. Some minor leaks are present on each pump. These should be corrected. The piping and valves should be scraped and painted to prevent further deterioration from the weather.

The ladder used to reach these pumps is difficult to use and should be replaced.
Estimated cost: \$1,000

Proper handrails are needed atop this lift station. Estimated cost: \$2,500

The stairs used to access the chlorine contact chamber should be replaced. Estimated cost: \$2,500

The handrails atop the chlorine contact chamber should be scraped and painted to prevent further damage from weather.

Surface rust was found in one section of piping atop the plant. This should be scraped and painted when possible.

These projects will be implemented or are currently being implemented.

4.2.4 Effluent Disposal

Due to effluent disposal concerns, Polk City conducted a study in 2017 to resolve these issues. Planning, engineering, and design costs of \$160,000 were obtained through a CWSRF loan (\$128,000 converted to grant resulting in a \$32,000 final loan amount). Construction costs are \$1,645,200 (\$1,282,269 converting to grant resulting in a final loan amount of \$362,931).

This project is awaiting the final FDEP-City agreement.

5 Operations and Maintenance Strategies (O&M)

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

All assets have a certain failure risk associated with them. 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 by Polk City staff.

5.1 Preventive Maintenance

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

1. Regular and ongoing annual tasks necessary to keep the assets at their required service level.
2. Day-to-day and general upkeep designed to keep the assets operating at the required levels of service
3. Tasks that provide for the normal care and attention of the asset including repairs and minor replacements
4. The base level of preventative maintenance is defined in the equipment owner's manual. These preventative maintenance guidelines are supplemented by industry accepted best management practices.

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. Communities that have eliminated preventive maintenance practices from their operating budget can achieve positive returns from a relatively small additional investment. Deferred maintenance tasks that have not historically been performed because of inadequate funding or staffing must be projected into future operating budgets to achieve life expectancy projected by the manufacturer and engineer.

Table 5.1 is a basic 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 Polk City staff based on their historical knowledge and information gleaned from plant O&M Manuals and other sources. Input from the City's operations and maintenance staff is vital.

Polk City staff will schedule maintenance tasks. Recurring items (such as annual flow meter calibrations for instance) can be set up in advance. In fact, all maintenance activities can be coordinated in a work order format.

Table 5.2 is a generic example of a spreadsheet created using information FRWA will make available to Polk City to create a simple maintenance schedule. Such a schedule could be used to create work orders for employees for Asset Management tasks.

Asset Management Plan

A Master Inventory Spreadsheet will be provided to Polk City containing all data collected during our work in the wastewater system. This will be useful in creating a myriad of tools needed for performing Asset Management tasks.

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.

Asset Management Plan

O=Operations Staff / M=Maintenance Staff / O/M= can be performed by either			
Task Name	Frequency	Task Name	Frequency
Visually inspect site. Check for damage or tampering (fence, tanks, equipment, etc) O/M	Once each visit	Make sure unnecessary equipment is properly decommissioned. O/M	As it occurs.
Check all on site equipment for proper operation. Note any issues (piping leaks, equipment issues, lighting, etc.) and schedule repairs accordingly O/M	Once each visit	Check freeze protection measures in winter months O/M	Once each visit during appropriate months
Calibrate chlorine and PH meters and enter data on calibration sheets or in log book . O	Once each visit	Respond to any collection system issues M	As they occur
Check chlorine residual and PH at designated sampling point. Make adjustments as necessary O	Once each visit	Collect lab samples O	As required per Operating Permit
Record all readings on plant worksheets and in log book (ETMs, electric meter, etc) O	Once each visit	Exercise Genset M	Monthly
Calculate wastewater treated, note any irregularities and respond accordingly. O	Once each visit	Thoroughly inspect gas chlorination system and perform any routine maintenance O/M	Every six months
Clean/tidy plant and grounds. O/M	Weekly / as needed	Exercise all valves at Plant and Lift Stations M	At least annually per the valve exercising plan
Confirm submittal of monthly reports within required timeframe O	Monthly	Perform preventive maintenance on lift station equipment M	per manufacturers recommendation
Perform preventive maintenance on treatment plant and buildings. M	Annually or as needed	Perform preventive maintenance on treatment plant equipment M	per manufacturers recommendation
Prepare a demand forecast. Identify and evaluate energy conservation measures (for your utility). Identify and evaluate collection system problems. Establish/update I&I mitigation program. Establish/update customer knowledge (FOG letters, etc.) O/M	Annually	Update My FSAMP plan O/M	Annually
Inspect and certify (or verify certification) of all backflow devices in the system O/M	Annually	Have effluent flow meter tested for accuracy and repaired or replaced as necessary M	Annually
Pull and visually inspect (impeller, wear plate, cables, wiring, etc.)and clean all lift station pumps M	Every six months	Waste sludge, utilize belt press O/M	As needed
Clean all tank exteriors M	Annually or as needed	Haul ODS to disposal site O/M	As needed

5.2 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 WW AMP, FRWA Utility Asset Management (UAM) intends to upload Polk City's asset data definition file into "Diamond Maps", described in Section 2.3, and populate with field data.

5.3 Staff Training

Utility maintenance is quite unique. It can involve water and sewer main repairs, customer service issues, lift station troubleshooting and repair, blower and motor repairs, and even tank repairs. This skill set is not common. Training staff, whether they are new or long-term employees, is very important. It is recommended that the City initiate a training program for its employees. Electrical safety, troubleshooting panel boxes, trenching and shoring, confined space, etc. are just a few of the topics that could benefit the City and its staff.

FRWA personnel can provide some of this. Other options are also possible. For example, local municipalities might allow shadowing of their lift station crews to gain knowledge and experience.

You cannot receive too much training. A more knowledgeable and capable staff makes the City even better.

The City is continuing its training program.

6 Capital Improvement Plan

A Capital Improvement Plan must be developed by Polk City. This will be a short-range plan, typically 4 to 10 years, which identifies future capital projects. Capital improvement projects generally create a new asset that previously did not exist or upgrades or improves an existing component's capacity. The projects can result from growth or environmental needs, such as:

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 capacity.

Capital improvement projects, such as the manhole linings, lift station rehabs, and others mentioned previously, will populate this list.

Renewal expenditures are anything that does not increase the asset's design capacity but restores an existing asset to its original capacity. Any improvement projects that require more than simply restoring an asset to its original capacity are deemed to be a renewal project, 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)
2. Any rehabilitation involving improvements and realignment or anything that restores the assets to a new or fresh condition.

In making renewal decisions, the utility considered 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.

Table 5-4 presents the identified CIP.

7 Financial

7.1 Population and Growth

Population of Polk City in 2014:	1,838
Population change since 2000:	+21.2%
Median resident age:	38.9 years

Estimated median household income in 2016: \$48,774 (it was \$32,083 in 2000)

Estimated per capita income in 2016: \$23,589 (it was \$14,108 in 2000)

Source: <http://www.city-data.com/city/Polk-City-Florida.html>

7.2 Income Streams / Financial Planning

An enterprise fund should be established to separate the wastewater account/budget category from other City operations. WWTP and WWCS CIPP, O&M/PM and R&R required reserve budgeting worksheets are traditionally prepared and can help determine appropriate amounts for these funds. Items considered are:

- WWS annual revenues from fees, loans and grants, interest from any accounts, and other sources of income.
- The City's annual expenditures on maintenance, utilities, salaries and benefits, office supplies, professional services, taxes, and loan payments.
- The City's net income.
- How much additional funding the City will need to continue to operate and maintain the WWS and replace and repair WWS assets.

These worksheets should be completed/updated annually. They would provide an accurate assessment of the City's financial situation and help properly plan for future needs. The budgeting worksheets would help understanding the financial position of the City's WWS and forecast any potential shortfalls. They would help determine whether or not the WWS reserve account is adequately funded and whether or not the City should begin searching for additional funding sources.

The City annually performs financial planning (See Table 5-3).

7.3 Rates

A 'rule of thumb' we subscribe to regarding rates is that base charges pay for operational expenses and usage charges fund the CIPP/R&R/PM/and O&M reserves. Usage fluctuates and does not always provide a reliable funding source for operations.

If a large rate increase is implemented, rate shock can occur and lead to issues with customers. We recommend a stepped approach featuring gradual increases spread out over a specified timeframe. This allows customers to acclimate themselves to each increase. Positive advertising such as notifying customers that the City is complying with the LOS agreement and success stories related to the Asset Management Plan will certainly help. Keeping customers informed is always a worthwhile endeavor. Using bill inserts or mailings that advertise utility accomplishments and successes with LOS items and listing any system improvements that have been made will demonstrate the City's commitment to proper system stewardship.

After reviewing the current rate structure and given that the water and wastewater utility are profitable, the rates appear to be sufficient.

The City of Polk City's water and wastewater rates are comparatively high even though they have been the same for almost nine (9) years. (See Table 7-1). With additional customer growth over the years either the existing rates will be maintained or possibly reduced to some extent.

**Table 7-1
Comparative Combined
Water and Sewer Rates
For 4,000 gal/mo. and 8,000 gal/mo.**

<u>Entity</u>	<u>4,000 gal/mo.</u>	<u>8,000 gal/mo.</u>
Polk County	80.63	110.35
Auburndale	49.34	57.22
Lakeland	54.37	80.26
Lake Alfred	53.49	55.49
Lake Wales	58.61	94.65
Frostproof	74.67	113.75
Eagle Lake	56.95	85.75
Polk City	101.23	155.88

8 Conclusions

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

Areas needing attention (detailed in Section 4.2) include:

Collection system

Lift stations:

Wastewater Plant:

General:

A CMMS program must begin to maintain assets efficiently and effectively.

Rates must be examined to make sure they continue to provide adequate funding for operations and system improvements.

An automatic Consumer Price Index (CPI) rate increase of 1.5% annually is recommended by the FRWA and should be reviewed by Polk City and the Utility's Engineer.

Energy Management is recommended as well. Even small changes in energy use can result in large savings. Additional information can be found in Section 9.3.

The Asset Management Plan must be adopted by resolution or ordinance. This demonstrates the utilities commitment to the plan.

After adoption, implementation of the AMP will occur.

8.1 Implementing the Asset Management Plan

Implementing an Asset Management Plan requires several items:

1. **Assign specific personnel** to oversee and perform the tasks of Asset Management.
2. **Develop and use a CMMS program (Computerized Maintenance Management System)**. The information provided in this AMP 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 huge savings for the utility. Diamond Maps is one example among many options that are available. FRWA can help with selection, set up, and implementation.
3. **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.

4. **Develop specific Change Out/ Repair/ Replacement Programs.** As is the case with the Polk City wastewater system, manholes need work, inflow issues need to be addressed, and plant equipment needs to be repaired or replaced. All of these represent large monetary outlays. Examples might include budgeting for five manhole refurbishments each year or Phase 1 of a collection system inflow study to control I&I (Inflow and Infiltration).
5. **Modify the rate existing structure** as recommended to make sure adequate funds are available to properly operate and maintain the facility. 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.** This can be especially useful in the beginning stages of Asset Management since budget shortfalls likely exist and high cost items may be needed quickly.
7. **Revisit the AMP 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 occurred since our last AMFSP update?”

8.2 Closing

This Asset Management and Fiscal Sustainability Plan is presented to Polk City for adoption. Its creation would not be possible without the cooperation of Keith Prestage and his staff. Their assistance was invaluable and is greatly appreciated. The Florida Rural Water Association will assist in making a 'plan of action' to help make Polk City's Asset Management Plan a success.

9 Additional Information

9.1 Level of Service (LOS) Table

The City must decide what level of service it will provide. The following table shows *examples* of what might be included. The LOS items for Polk City must be specific to the system and 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 is a demonstration of the accountability of the utility in meeting the customer's needs and its commitment to do so.

Service Area	Levels of Service		Achieved
	Goal	Performance Targets	
Health, Safety and Security	Reduce the number, frequency and duration of boil advisories.	Reduce the number of water leaks by 20%. Reduce the average length of utility outage to less than a day.	Major performance deficiencies
Asset Preservation and Condition	Improve Preventative Maintenance	Complete all scheduled preventative maintenance tasks within 10 days.	Considerable performance deficiencies
Asset Preservation and Condition	Establish a Predictive Maintenance program	Complete all scheduled monitoring tasks within 10 days. Escrow \$1,445 monthly for predictive maintenance expenses.	Major performance deficiencies
Asset Preservation and Condition	Development an Asset Replacement Strategy	Escrow \$25,500 annually for Asset Replacement.	Major performance deficiencies
Service Quality and Cost	Increase utility rate to improve sustainability and absorb the up-front cost of asset management planning.	Utility Rate Adjustment Pending	Major performance deficiencies
Service Quality and Cost	Enact automatic inflationary rate adjustments	Utility Rate Adjustment Pending	Major performance deficiencies
Service Quality and Cost	Minimize life-of-asset ownership cost	Begin monitoring the cost of unplanned (emergency) repairs relative to scheduled preventative maintenance.	Meets no performance objectives
Conservation, Compliance and Enhancement	Improve reliability of water distribution through the distribution system	Hire engineer to perform preliminary engineering report and begin project design. Prepare project funding applications for construction start in fall of 2011.	Major performance deficiencies

9.2 Maintenance Plan

Maintaining assets is obviously important. As the number of assets grows, scheduling, performing, and tracking this work becomes complicated. Having a system in place to ensure staff knows what is due, how often it must be done, and a means of tracking this is vital.

Asset Management can seem overwhelming. However, most of the tasks are being done now. The key is scheduling the work and documenting that it was completed.

9.3 Energy Conservation and Cost Savings

Energy Management

Energy costs often make up 25 to 30 percent of a utility's total operation and maintenance (O&M) costs. They also represent the largest controllable cost of providing water and wastewater services. EPA's [Energy Management Guidebook for Wastewater and Water Utilities](#) provides details to support utilities in energy manage 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.

Also available from the EPA in support of energy efficiency, "Ensuring a Sustainable Future": An Energy Management Guidebook for Wastewater and Water Utilities. [Ensuring a Sustainable Future: An Energy Management Guidebook for Wastewater and Water Utilities \(PDF\)](#)

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

1. Load management
2. Replace weather-stripping and insulation on buildings.
3. Installation of insulated metal roofing over energy inefficient shingle roofing
4. On-demand water heaters
5. Variable frequency driven pumps and electrical equipment
6. Energy efficient infrastructure
7. LED lighting
8. Meg electric motors
9. MCC electrical lug thermal investigation
10. Flag underperforming assets for rehabilitation or replacement

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 cost through physical or 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. An audit of an individual wastewater

treatment plant (WWTP) is an attempt to pinpoint wasted or unneeded facility energy consumption. With the cost of electricity on the rise, reducing energy use should be a priority for municipalities. A key part of energy audits is thorough analysis of the effects of overdesign 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 basis for addressing aging infrastructure related energy waste is also included in the energy audit process. It is recommended to perform an energy audit every 2-3 years to analyze return on investment.

9.4 Energy Conservation Measures

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

High Energy Using Operations	Energy Saving Measures
Pumping	<ul style="list-style-type: none"> • Reduce load • Manage load • Water to wire efficiency • Pump selection • Motor and drive selection • Automated control
Aeration	<ul style="list-style-type: none"> • Fine bubble • Improved mechanical surface aerators • Premium motors • High efficiency motor drive • Blower variable frequency drives • Automatic DO control
Dewatering	<ul style="list-style-type: none"> • Replace vacuum systems • Premium motors • Variable frequency drives for plant water pump
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

9.5 Energy Audit Approach Checklist

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.

Water System Energy Audit Approach Checklist

Determine type of audit

Pumping, HVAC, lighting, and/or process

Determine audit team members, everyone will have different goals

Engineers - reduce energy cost

Plant staff - reduce disruption to system

Electric utility - reduce peak demand

Collect data

Power bills - get actual bills that show energy use, demand charges, cost adjustments, etc

Electric rate schedules - get current rate schedules

Alternative rate schedules - are alternate rates available that will benefit the water system?

Flow data - include booster stations, wells, high service pumps, anything with a flow meter

Meter data - sold vs produced, bulk purchases or sales, water loss data

Pump curves - collect pump curves to verify pumps are operating near their design point

Process flow diagrams, design summary - useful to help understand operation of the system

Water quality standards - any unique processes required?

Previous audit findings - have energy audits been performed in the past?

System pressure - operating pressures with distribution system

Pressure zones - how are different zones operated, how is water moved around the system?

PRVs - amount of head removed, number in the system, any way to limit wasting head?

Reservoirs - storage capacity, elevation, head range

Compressed air systems - horsepower, receiver tank size, devices consuming compressed air

HVAC - efficiency and performance of existing equipment

Gas bills - HVAC audit

Lighting - efficiency and performance of existing lights

Conduct Site Visit

Meet with staff and operators

Q&A session - discuss operations, gain understanding of how system is operated

Seek input from operators and those familiar with the system

Walk through - tour facilities, more Q&A

Obtain any missing info, check motor sizes, observe valve positions

Focus on big power consumers, they will offer best payback opportunity

Raw water pumping, wells, HSP, air compressors - typically largest power consumers

Seek energy efficiency ideas from plant staff

Develop Energy Conservation Measures

Estimate energy or cost savings

Determine capital cost

Consider operational impacts to the plant

Look for rebates or incentives

RESOLUTION NO. 2019-01

A RESOLUTION OF POLK CITY, FLORIDA, APPROVING THE POLK CITY WASTEWATER UTILITY ASSET MANAGEMENT AND FISCAL SUSTAINABILITY PLAN ("AMFS PLAN"); AUTHORIZING THE CITY 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 municipal utility system improvements; and

WHEREAS, the Florida Department of Environmental Protection State Revolving Fund (SRF) has designated the AMFS Plan Project listed under the Loan Agreement Number WW 531402/SG531403 as eligible for available funding; and

WHEREAS, as a condition of obtaining funding from the SRF, Polk City is required to implement an AMFS Plan; and

WHEREAS, the Authorizing Authority of Polk City 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 City.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF POLK CITY, FLORIDA:

SECTION 1. The City Commission hereby approves the Utility Asset Management & Fiscal Sustainability Plan ("AMFS Plan") attached hereto as Exhibit 'A', and incorporated herein by this reference.

SECTION 2. The City Commission hereby authorizes the City Manager 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 Authorizing Authority direction in order to obtain funding from the SRF

SECTION 3. Consistent with applicable state law, Polk City commits to implement a recurring annual Consumer Price Index/Cost of Living Adjustment (CPI/COLA) rate sufficiency increase of 1.5% per annum, for critical utility asset sustainment and preservation, to include present and future years as determined by and subject to a rate sufficiency study by a professional engineer.

SECTION 4. This resolution shall take effect immediately upon adoption.

RESOLVED, PASSED, AND CERTIFIED AS TO PASSAGE THIS 22nd day of January, 2019.

POLK CITY, FLORIDA

By: Joseph LaCascia, Mayor

ATTEST:

Patricia R. Jackson, City Manager/Clerk

APPROVED AS TO FORM AND LEGALITY:

Thomas A. Cloud, City Attorney