

City of Palm Coast, Florida Agenda Item

Agenda Date: May 19, 2026

Agenda Item: G.9

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| <p>Department UTILITY Division UTILITY CAPITAL CME</p> | <p>Amount Org/Account #</p> |
| <p>Subject: RESOLUTION 2026-XX APPROVING THE FISCAL SUSTAINABILITY PLAN FOR WASTEWATER TREATMENT FACILITY 2 EXPANSION</p> | |
| <p>Presenter: Brian Roche, Director of Utility</p> | |
| <p>Attachments:</p> <ol style="list-style-type: none"> 1. Resolution 2. Fiscal Sustainability Plan | |
| <p>Background:</p> <p>City Council approved the State Revolving Fund Loan agreement before construction of the Wastewater Treatment Facility 2 (WWTF2) expansion. The Water Resources Reform and Development Act (WRRDA) was signed into law on June 10, 2014. Included, in its provisions, are amendments to Titles I, II, V and VI of the Federal Water Pollution Control Act (FWPCA).</p> <p>The amendments to the FWPCA require all publicly owned treatment works projects funded with a Clean Water State Revolving Loan Fund (CWSRF) loan require the borrower to have a Fiscal Sustainability Plan (FSP) in place by project completion and the final reimbursement request. This report is intended to address the requirements of the WRRDA. Section 603(d) (1) of the FWPCA requires a loan recipient to certify regarding the development and implementation of an FSP.</p> <p>A FSP is a living document that is regularly reviewed, revised, expanded, and implemented as an integral part of the operation and management of the system. This FSP is prepared for WWTF2 and describes how the Utility will manage their infrastructure assets. The City’s original FSP was prepared in 2018 when the first phase of WWTF2 with a treatment capacity of 2.0 million gallons a day (MGD) was completed. The FSP is updated to include the critical assets for the second phase of the WWTF2 – the expansion from 2.0 MGD to 4.0 MGD in 2026. The expansion was funded by SRF with an amount of \$ 32,115,100.00 (SRF WW180431).</p> <p>This FSP is prepared to provide guidance on the maintenance, repair, and replacement of the critical assets associated with the three projects. The benefits of establishing Fiscal Sustainability Plan include:</p> <ul style="list-style-type: none"> · Expanding asset life and establishing efficient and focused operations and maintenance. · Meeting consumer demands while maintaining system sustainability. · Rates based on operational and financial planning. | |

- Budgeting focused on components critical to sustaining performance.
- Adhering to service expectations and regulatory requirements.
- Improving emergency responses.
- Improving security.

Recommended Action:

**ADOPT RESOLUTION 2026-XX APPROVING THE FISCAL SUSTAINABILITY PLAN FOR
WASTEWATER TREATMENT FACILITY 2 EXPANSION**

**RESOLUTION 2026-
WASTEWATER TREATMENT FACILITY 2
STATE REVOLVING FUND FISCAL SUSTAINABILITY PLAN**

A RESOLUTION BY THE CITY COUNCIL OF THE CITY OF PALM COAST, FLORIDA, APPROVING THE FISCAL SUSTAINABILITY PLAN FOR WASTEWATER TREATMENT PLANT 2; PROVIDING FOR CONFLICTS; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Florida Department of Environmental Protection, Clean Water State Revolving Fund requested the City of Palm Coast prepare and adopt a Fiscal Sustainability Plan; and

WHEREAS, the City of Palm Coast prepared a Fiscal Sustainability Plan in accordance with the Florida State Revolving Loan agreement; and

WHEREAS, the State of Florida is requiring the adoption of the approved Fiscal Sustainability Plan by the City Council; and

WHEREAS, the City Council, after due consideration, has determined that the amendment for the State Revolving Fund is in the best interests of the City of Palm Coast.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PALM COAST, FLORIDA, AS FOLLOWS:

SECTION 1. LEGISLATIVE AND ADMINISTRATIVE FINDINGS. The above recitals (whereas clauses) are hereby adopted as the findings of the City Council of the City of Palm Coast.

SECTION 2. APPROVAL OF PLAN. The City Council of the City of Palm Coast hereby approves the terms and conditions of the Wastewater Treatment Facility 2 Fiscal Sustainability Plan, as attached hereto and incorporated herein by reference as Exhibit "A."

SECTION 3. SEVERABILITY. If any section or portion of a section of this Resolution proves to be invalid, unlawful, or unconstitutional, it shall not be held to invalidate or impair the validity, force, or effect of any other section or part of this Resolution.

SECTION 4. CONFLICTS. All resolutions or parts of resolutions in conflict with any of the provisions of this Resolution are hereby repealed.

SECTION 5. IMPLEMENTING ACTIONS. The City Manager is hereby authorized to take any actions necessary to implement the action taken in this Resolution.

SECTION 6. EFFECTIVE DATE. This Resolution shall take effect immediately upon adoption by the City Council.

DULY PASSED AND ADOPTED by the City Council of the City of Palm Coast, Florida, on this 19th day of May 2026.

ATTEST:

CITY OF PALM COAST

KALEY COOK, CITY CLERK

MICHAEL NORRIS, MAYOR

APPROVED AS TO FORM AND LEGALITY

MARCUS DUFFY, CITY ATTORNEY

Attachment: Exhibit "A" City of Palm Coast WWTF #2 Fiscal Sustainability Plan

City of Palm Coast WWTF No. 2 Fiscal Sustainability Plan

Prepared for:

City of Palm Coast WWTF No.2

Palm Coast, Florida

Flagler County

Prepared by:

CPH Consulting, LLC.

CPH Job #: P61286

Date Updated:

March 10, 2026

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1. Executive Summary

A Fiscal Sustainability Plan (FSP) is a living document that is regularly reviewed, revised, expanded, and implemented as an integral part of the operation and management of the system. This FSP is prepared for the City of Palm Coast Wastewater Treatment Facility No.2 (WWTF No. 2) and describes how the Utility will manage their infrastructure assets. The City’s original FSP was prepared in 2018 when the first phase of WWTF No.2 with a treatment capacity of 2.0 million gallons a day (MGD) was completed.

The City’s FSP describes the practices developed to assist in maintaining the desired level of service at the lowest life cycle cost, as illustrated in **Figure 1**. The FSP is enforced through an asset management team and recorded in the asset management plan. The original FSP included the critical assets associated with the following three projects:

1. Matanzas Woods Force Main and Pump Station
2. WWTF No. 2 first phase (2.0 MGD)
3. Reclaimed Water Wetland Discharge System

The Florida Department of Environmental Protection (FDEP) provided a Clean Water State Revolving Fund (SRF WW180430) loan of \$30,100,000.00 to fund the above three projects.

The FSP is updated to include the critical assets for the second phase of the WWTF No.2 – the expansion from 2.0 MGD to 4.0 MGD in 2026. The expansion was funded by SRF with an amount of \$ 32,115,100.00 (SRF WW180431).

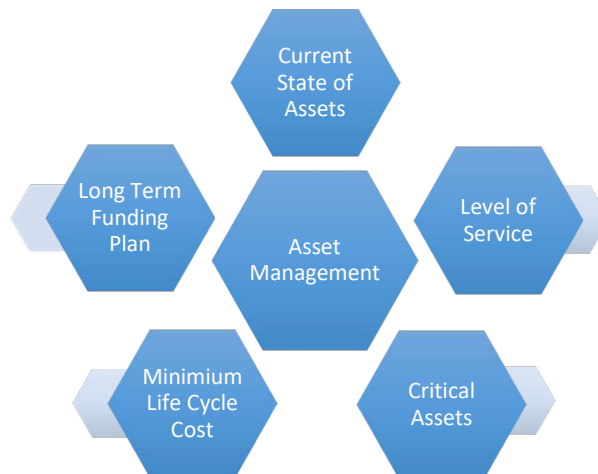


Figure 1: Asset Management Cycle

This FSP is prepared to provide guidance on the maintenance, repair, and replacement of the critical assets associated with the three projects. The benefits of establishing Fiscal Sustainability Plan include:

- Expanding asset life and establishing efficient and focused operations and maintenance.
- Meeting consumer demands while maintaining system sustainability.
- Rates based on operational and financial planning.
- Budgeting focused on components critical to sustaining performance.
- Adhering to service expectations and regulatory requirements.
- Improving emergency responses.
- Improving security.

2. Introduction

The first phase of Palm Coast WWTF No. 2 and the associated force main and reclaimed water wetland discharge system were funded by a SRF loan of \$30,100,000.00 and are put into operation in 2018. The original facility consists of three projects:

1. Matanzas Woods Force Main and Pump Station
2. WWTF No. 2 – 2.0 MGD
3. Reclaimed Water Wetland Discharge System

The second phase of Palm Coast WWTF No. 2 – expansion from 2.0 MGD to 4.0 MGD was funded by a SRF loan of 32,115,100.00 and are put into operation in 2026. The expansion included the following two major components:

1. WWTF No.2 expansion from 2.0 MGD to 4.0 MGD
2. Membrane replacement for the original phase

This FSP describes how the Utility will manage their infrastructure assets. As a result of customer service and regulatory demands, utilities are required to actively manage wastewater assets through careful maintenance, repair and replacement decisions. This plan is an effective tool for combining technical, management, and financial practices to ensure that the level of service required by the community is provided at the appropriate cost. The plan has the following purposes:

- To demonstrate responsible management of the WWTF No. 2 assets
- To communicate and justify funding requirements indicated by the plan
- To provide a management roadmap for the Utility
- To serve as a link between the City of Palm Coast WWTF No. 2 and its customers

This FSP contains an overview of the Utility, mission statement, level of service agreement, critical asset list, operation and maintenance strategy, capital investment program, and financial strategies.

2.1 Mission Statement

The mission statement defines the goals of the City of Palm Coast WWTF No. 2 and is the guide for level of service agreements discussed in **Section 4**. The City of Palm Coast WWTF No. 2 mission statement is as follows:

We commit to improving and maintaining the public health protection and performance of our wastewater plant and distribution/collection utility assets, while minimizing the long-term cost of operating those assets. We strive to make the most cost-effective renewal and replacement investments and provide the highest-quality customer service possible.

2.2 Asset Management Team

Figure 2 presents the management organization chart of WWTF No.2. The City of Palm Coast WWTF No. 2 has enough full-time equivalents (FTEs) staff who perform day-to-day functions to keep the WWTF No. 2 functioning properly. Together, these individuals have volunteered as members of the "the asset management team". The team is responsible for preparing, implementing, and updating this plan. The asset management team is responsible for coordinating such involvement in the developing and implementing this plan. More specific roles and responsibilities are listed in **Table 1**.

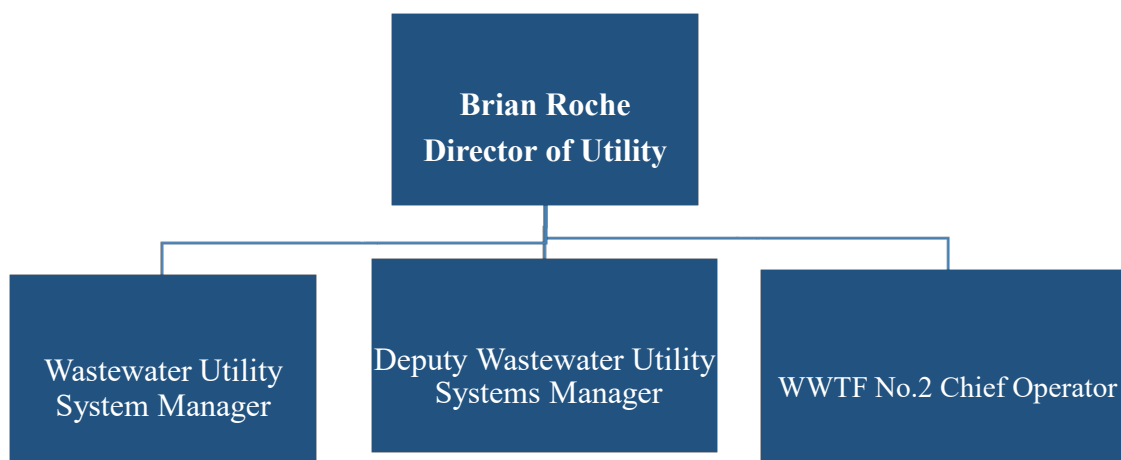


Figure 2: City of Palm Coast WWTF No.2 Organization Chart

Table 1: City of Palm Coast WWTF No. 2 Asset Management Team

| Name | Title | Organization | Role/Responsibility |
|-------------------|-------------------------------------------|--------------------|-------------------------|
| Danny Ashburn | Wastewater Utility System Manager | City of Palm Coast | Facility Manager |
| Patrick Henderson | Deputy Wastewater Utility Systems Manager | City of Palm Coast | Deputy Facility Manager |
| Mike Baldwin | WWTF No.2 Chief Operator | City of Palm Coast | Project Coordinator |

3. Facility Overview

The wastewater collection system for the WWTF No.2 includes approximately 1,035 linear feet of 18-inch force main, 3,465 linear feet of 16-inch force main along Matanzas Woods Pkwy and US 1, and a triplex submersible pump station on Matanzas Woods Pkwy, and approximately 1,760 linear feet of 20" wastewater force main on Peavy Grade to the plant entrance.

Palm Coast's WWTF No. 2 is located at 400 Peavy Grade, Palm Coast and has a permitted capacity of 4.0 MGD annual average daily flow (AADF) with the expansion completed. The Facility's process schematic is presented in **Figure 3**. The Facility meets all Class I Reliability and Advanced Wastewater Treatment (AWT) standards using a flat sheet Membrane Bio-Reactor (MBR) consisting of the following treatment process:

- Headworks
- Flow Equalization Basins
- Anaerobic Basins
- Pre-Anoxic Basins
- Aerobic Basins
- Post-Anoxic Basins
- MBR Basins
- Chlorine Contact Chambers
- Sludge Holding Tanks
- Sludge Dewatering Facility
- Chemical Storage and Feed System
- Reclaimed Water Storage and Distribution System

The reclaimed water wetland discharge system consists of approximately 7,865-ft of new 18" reclaimed water main, 160-ft of new 16" reclaimed water main, and 1,900-ft of new 10" reclaimed water main. Additionally, the new pipeline includes directional drill construction of approximately 50-ft of 12" PE pipeline and 1,550-ft of 20" PE pipeline. A dechlorination facility is constructed to ensure the reclaimed water is dechlorinated before discharging to Hulett Swamp.

The map in **Figure 4** presents the Facility service area. Areas near Facility that are currently outside the City limits but within the wastewater service area are prime areas for future development. In the event that this development occurs, it is likely that the wastewater flows will be conveyed to WWTF No. 2 for treatment. **Table 2** and **Table 3** present general information, as well as, treatment components relevant to WWTF No. 2.

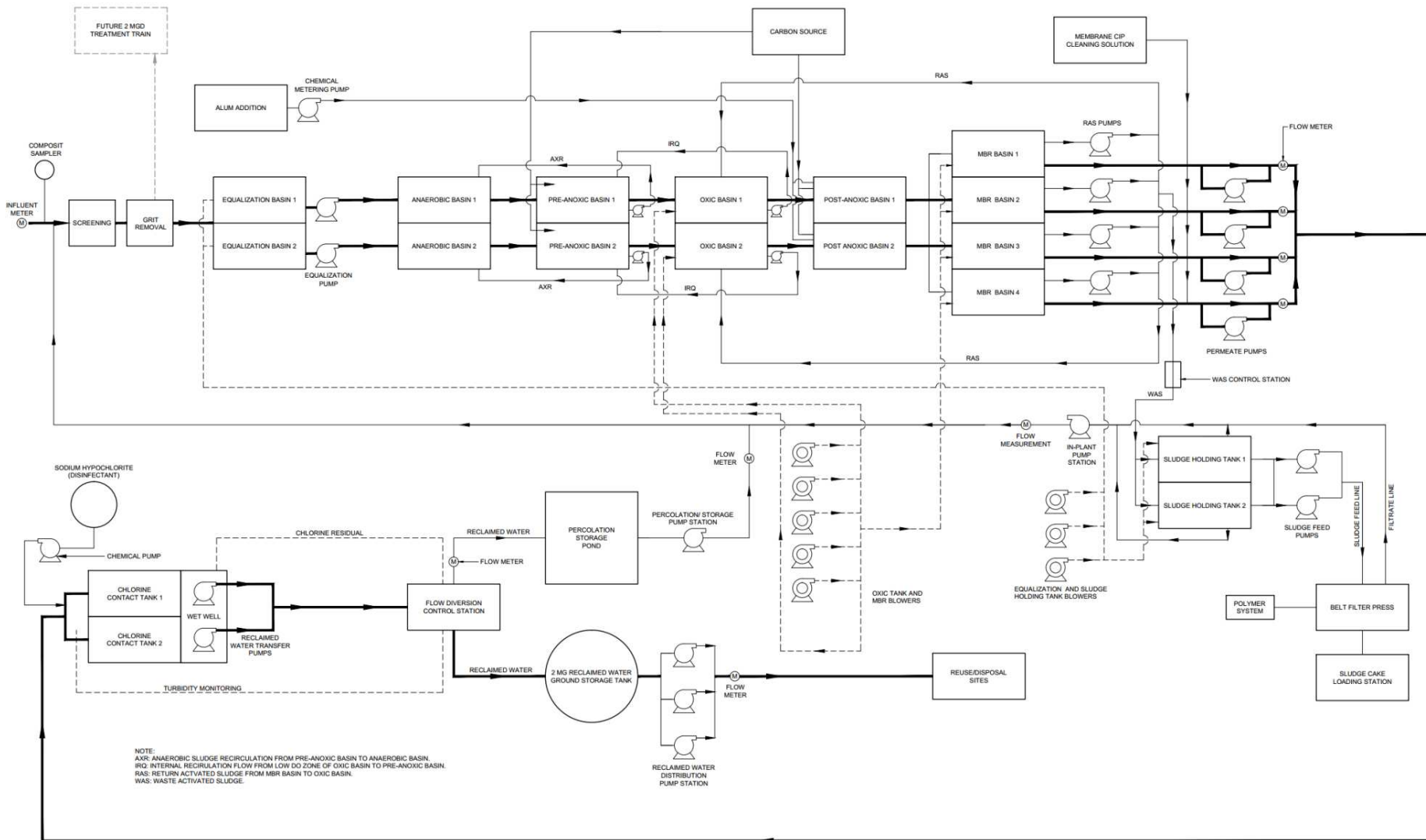


Figure 3: City of Palm Coast WWTf No. 2 Plant Process Schematic

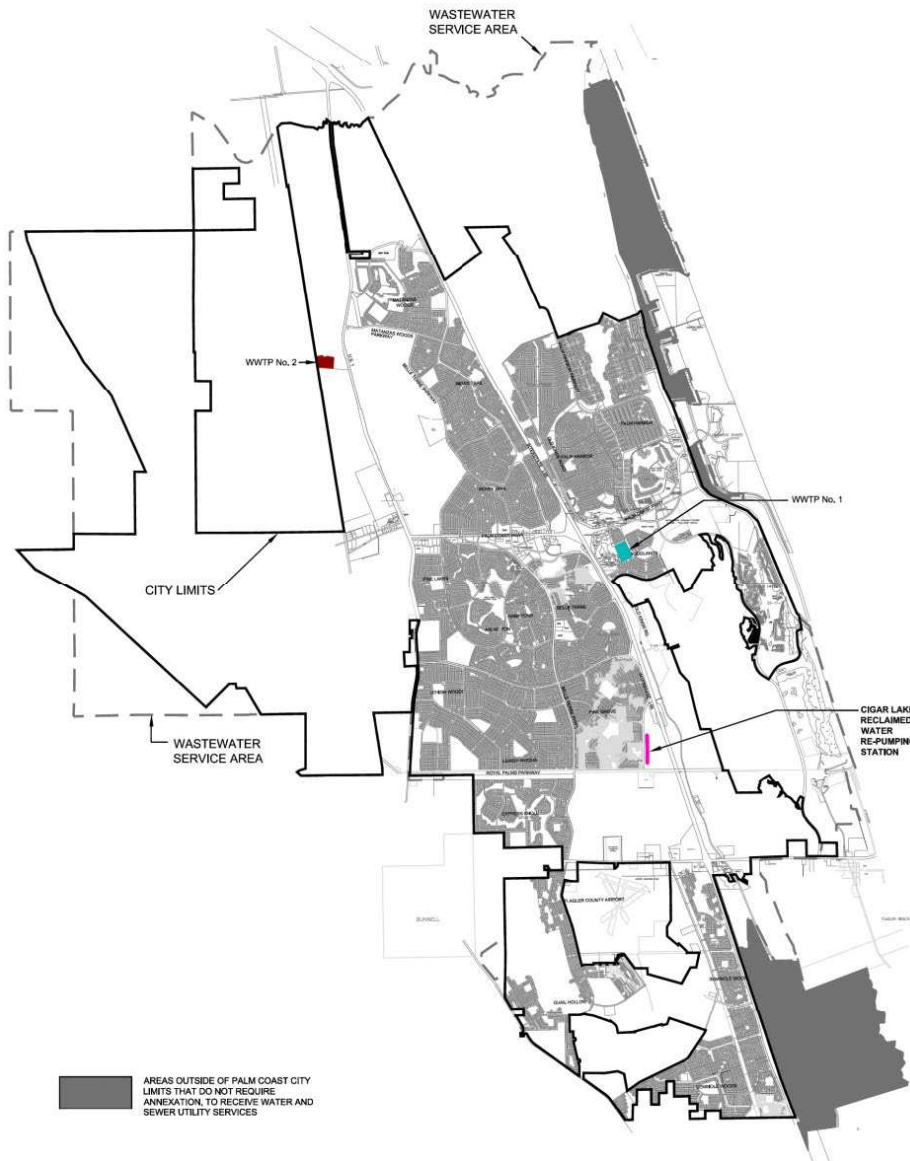


Figure 4: WWT No. 2 Service Area

Table 2: WWTF No. 2 SRF Funded Facility General Information

| | |
|---------------------------|------------------------------------------------------------------------------|
| Collection System | Matanzas Wood Pump Station and Force Main |
| Process for Treatment | Membrane Bio-Reactor (MBR) |
| Treatment Capacity | 4.0, MGD, AADF |
| Discharge /Reuse Capacity | 1.2 MGD, AADF APRICOT Surface Water (Wetland) Discharge; 7.8 MGD, AADF Reuse |
| Treatment Level Obtained | Advanced Wastewater Treatment (AWT) Standards |

Table 3: WWTF No. 2 Major Components

| Matanzas Woods Force Main and Pump Station (Phase 1) | | | |
|------------------------------------------------------|-----|---------------------------------------------|--------------------|
| Matanzas Woods PKWY force main | LF | 4,700 | |
| Matanzas Woods Pump Station | | Submersible, Triplex Pump Station | |
| Pump Design | | 1,820 gpm @ 106' TDH 2,100 gpm @ 69' TDH | |
| Type Of Pump Drive | | Variable Frequency Drive (VFD) | |
| Pretreatment | | | |
| Screen | | | |
| | | Phase 1 | Phase 2 |
| Type Of Screen (Fine) | | Rotary Drum Screen | Rotary Drum Screen |
| Number Of Screens | | 1 duty , 1 standby | 1 duty |
| Screen Capacity, Each | mgd | 7.5 | 7.5 |
| Motor Horsepower Of Drum Screen | HP | 2 | 2 |
| Number Of Screening Conveyor | | 1 | 1 |

| | | | |
|------------------------------------------------------|-----|-------------|-----------------------------------------------------------------------------------|
| Motor Horsepower Of Screen Conveyor | HP | 3 | 3 |
| Number Of Wash Press | | 1 | 1 |
| Horsepower Of Wash Press | HP | 3 | 3 |
| Grit Removal | | | |
| | | Phase 1 | Phase 2 |
| Type Of Grit Removal | | Vortex Type | Vortex Type |
| Number Of Grit Removal System | | 1 | 1 |
| Number Of PD Blower | | 1 | 1 |
| Motor Horsepower Of PD Blower | HP | 3 | 3 |
| Number Regenerative Blower | | 1 | 1 |
| Motor Horsepower Of Regenerative Blower | HP | 3 | 4 |
| Number Of Grit Classifier | | 1 | |
| Motor Horsepower Of Grit Classifier | HP | 0.5 | |
| Odor Control | | | |
| | | Phase 1 | Phase 2 |
| Type Of Odor Control System | | | BioAir |
| Number of biofilter vessel | | | 1 |
| Average Influent H ₂ S Concentration | ppm | | 400 |
| Maximum Influent H ₂ S Concentration | ppm | | 800 |
| Average Influent Methyl Mercaptan (MM) Concentration | ppm | | 5 |
| Maximum Influent Methyl Mercaptan (MM) Concentration | ppm | | 7 |
| Design Removal Efficiency | % | | H ₂ S (avg): 99.5% or < 0.1 ppmv; MM (avg): 90% or < 0.5 ppmv |
| Number of Blowers | | | 1 |

| | | | |
|--------------------------------|---------|---------------------------|---------------------------|
| Motor Horsepower | HP | | 5 |
| Equalization Tanks | | | |
| | | Phase 1 | Phase 2 |
| Number Of Tanks | | 2 | 2 |
| Total Volume | gals | 505,230 | 505,230 |
| Design Volume Per Tank | gals | 252,600 | 252,600 |
| Effective Volume Per Tank | gals | 200,000 | 200,000 |
| Max SWD | ft | 19 | 19 |
| Min SWD | ft | 4 | 4 |
| Tank Height | ft | 20.5 | 20.5 |
| Length/Width Per Tank (Inside) | ft x ft | 45 x 39.5 | 45 x 39.5 |
| Type Of Aeration Equipment | | Coarse bubble diffuser | Coarse bubble diffuser |
| Number Of Diffusers Each Tank | | 16 | 16 |
| Required Air In Each Tank | cfm | 333 | 333 |
| Number Of EQ Blower | | 1 duty | Share with Phase 1 blower |
| EQ Blower Operation Horsepower | HP | 25 | |
| Blower Model | | GM 025S-00 | |
| Number Of EQ Pumps | | 2 duty, 2 standby | 2 duty, 2 standby |
| Type Of EQ Pump Drive | | VFD | VFD |
| Type Of EQ Pump | | Non-clog centrifugal type | Non-clog centrifugal type |
| Capacity Of Each EQ Pump | gpm | 1,085 | 1,085 |
| EQ Pump Motor Horsepower | HP | 15 | 15 |
| Number Of Mixer Per Tank | | 1 | 1 |
| Type Of Mixer | | Submersible propeller | Submersible propeller |

| | | | |
|-------------------------------------------------------|---------|---------------------------|---------------------------|
| Horsepower Of Each Mixer | HP | 10 | 6.2 |
| Anaerobic Tanks | | | |
| | | Phase 1 | Phase 2 |
| Number Of Tanks | | 2 | 2 |
| Maximum SWD | ft | 18.63 | 18.63 |
| Tank Height | ft | 20.5 | 20.5 |
| Length/Width Per Tank (Inside) | ft x ft | 24 x 13 | 24 x 13 |
| Total Anaerobic Tank Volume | gals | 86,000 | 86,000 |
| Volume Of Each Tank | gals | 43,000 | 43,000 |
| Type Of Mixer | | Submersible Propeller | Submersible Propeller |
| Number Of Mixer Per Tank | | 1 | 1 |
| Motor Horsepower Of Each Mixer | HP | 2.7 | 3.5 |
| Pre-Anoxic Tanks | | | |
| | | Phase 1 | Phase 2 |
| Number Of Tanks | -- | 2 | 2 |
| Maximum SWD | ft | 18.63 | 18.63 |
| Tank Height | ft | 20.5 | 20.5 |
| Length/Width Per Tank (Inside) | ft x ft | 24 x 25.5 | 24 x 25.5 |
| Total Volume | gals | 170,554 | 170,554 |
| Volume Of Each Tank | gals | 85,277 | 85,277 |
| Type Of Mixer | | Submersible Propeller | Submersible Propeller |
| Number Of Mixers Per Tank | | 1 | 1 |
| Motor Horsepower Of Each Mixer | HP | 8 | 3.5 |
| Type Of Anoxic-To-Anaerobic Recycle Pumps (AXR Pumps) | | Non-clog centrifugal type | Non-clog centrifugal type |
| Capacity Of Each AXR Pump | gpm | 1,085 | 1,085 |

| | | | |
|------------------------------------------|---------|--------------------------------------|---------------------------------------------|
| Number Of AXR Pumps | | 2 duty, 2 standby | 2 duty, 2 standby |
| Horsepower Of Each AXR Pump | HP | 25 | 15 |
| Type Of Pump Drive | | VFD | VFD) |
| Oxic Tanks | | | |
| | | Phase 1 | Phase 2 |
| Number Of Tanks | | 2 | 2 |
| Maximum SWD | ft | 17.79 | 17.79 |
| Tank Height | ft | 20.5 | 20.5 |
| Length/Width Per Tank (Inside) | ft x ft | 41 x 39.5 | 41 x 39.5 |
| Total Tank Volume (Low DO Zone Included) | gals | 431,000 | 431,000 |
| Volume Of Each Tank | gals | 215,500 | 215,500 |
| Type Of Air Diffusers | | Aerostrip Fine Bubble Diffuser Panel | Sanitare 7" Silver Series Membrane Diffuser |
| Number Of Diffusers Per Tank | | 33 | 988 |
| Type Of Aeration Blower | | Positive Displacement Blowers | Positive Displacement Blowers |
| Number Of Blowers | | 2 duty, 1 common standby with MBR | 2 duty, 1 common standby with MBR |
| Motor Horsepower Of Each Blower | HP | 100 | 125 |
| Type Of Nitrification Mixer | | Submersible Propeller | Submersible Propeller |
| Number Of Mixers | | 2 (1 per basin) | 2 (1 per basin) |
| Horsepower Of Each Mixer | HP | 10 | 6.3 |
| Low-DO Zone in Oxic Tank | | | |
| | | Phase 1 | Phase 2 |

| | | | |
|---------------------------------------|---------|---------------------------|---------------------------|
| Total Design Volume Of Low-DO Zone | gals | 25,000 | 25,000 |
| Volume Of Each Low DO Zone | gals | 12,500 | 12,500 |
| Length/Width Per Low DO Zone | ft x ft | 11 x 10 | 11 x 10 |
| Maximum SWD In Low DO Zone | ft | 17.2 | 17.2 |
| Type Of Internal Recycle Pump | | Non-clog centrifugal type | Non-clog centrifugal type |
| Recycle Flow Rate To Pre-Anoxic Tanks | gpm | 4,862 to 6,000 | 4,862 to 6,000 |
| Number Of Internal Recycle Pumps | | 2 duty, 2 standby | 2 duty, 2 standby |
| Capacity Of Each IRQ Pump | gpm | 3,038 | 3,038 |
| Motor Horsepower Of Each IRQ Pump | HP | 50 | 25 |
| Type Of IRQ Pump Drive | | VFD | VFD |
| Post-Anoxic Tanks | | | |
| | | Phase 1 | Phase 2 |
| Number Of Tanks | | 2 | 2 |
| Maximum SWD | ft | 16.72 | 16.72 |
| Tank Height | ft | 20.5 | 20.5 |
| Length/Width Per Tank | ft x ft | 13.25 x 39.5 | 13.25 x 39.5 |
| Total Design Tank Volume | gals | 121,508 | 121,508 |
| Volume Of Each Tank | gals | 60,754 | 60,754 |
| Type Mixer | | Submersible Propeller | Submersible Propeller |
| Number Of Mixer Per Tank | | 1 | 1 |
| Motor Horsepower Of Each Mixer | | 8 | 3.5 |
| Number of Scum Pumps | | 2 | 2 |
| Motor Horsepower of Each Pump | HP | 7.5 | 7.5 |
| MBR Tanks | | | |
| | | Phase 1 | Phase 2 |

| | | | |
|----------------------------------------|-----------------|-----------------------------------------|-----------------------------------------|
| Number Of Tanks | | 4 | 4 |
| Total Volume Of MBR Tank | gals | 147,444 | 280,545 |
| Volume Of Each Tank | gals | 51,323 | 70,136 |
| Number Of Membrane Cassettes Per Tank | | 10 | 10 |
| Length/Width Per Tank | ft x ft | 32.9 x 19 | 32.9 x 19 |
| Tank Height | ft | 12 | 16 |
| Maximum SWD | ft | 11 | 15 |
| Design MLSS Concentration | mg/L | 10,485 | 11,000 |
| Type And Brand Of Membrane Cassette | | SP450 | SP675-A |
| Number Of Membrane Cassettes | | 36 (9 cassettes per tank) | 40 (12 cassettes per tank) |
| Total Membrane Surface Area | ft ² | 206,667 | 174,375 |
| Type Of Blower | | PD Blower | PD Blower |
| Number Of Blowers | | 2 duty, 1 common standby with oxic tank | 2 duty, 1 common standby with oxic tank |
| Motor Horsepower Of Blower | HP | 100 | 100 |
| Returned Activated Sludge Pumps | | Non-clog centrifugal type | Non-clog centrifugal type |
| Number Of RAS Pumps | | 4 duty | 4 duty |
| Capacity Of Each RAS Pump | gpm | 2,170 | 2,606 |
| Motor Horsepower Of Each RAS Pump | | 25 | 25 |
| Type Of Pump Drive | | VFD | VFD |
| Type Of Permeate Pump | | Non-clog centrifugal type | Non-clog centrifugal type |
| Number Of Permeate Pumps | | 4 | 4 |
| Motor Horsepower Of Each Permeate Pump | HP | 20 | 10 |
| Capacity Of Each Permeate Pump | gpm | 965 | 965 |

| Type Of Permeate Pump Drive | | Constant Speed | Constant Speed |
|--------------------------------------|---------|----------------------------|----------------------------|
| Type Of Permeate Flow Control Valves | | Modulating butterfly valve | Modulating butterfly valve |
| Type Of Permeate Flow Meters | | Magnetic flow meter | Magnetic flow meter |
| Chlorine Contact Tanks | | | |
| | | Phase 1 | Phase 2 |
| Chlorine Doses | mg/L | 5 | 5 |
| Contact Time At Peak Flow | minutes | 12.5 | 12.5 |
| Chlorine Residual | mg/L | 2 | 2 |
| Number Of Tanks | | 2 | 2 |
| Total Effective Tank Volume | gal | 44,318 | 44,318 |
| Effective Volume Of Each Tank | gal | 22,159 | 22,159 |
| Maximum SWD | ft | 6 | 6 |
| Tank Height | ft | 8 | 8 |
| Number Of Channels In Each Chamber | | 3 | 3 |
| Width Of Each Channel | ft | 4.22 | 4.22 |
| Length Of Each Channel | ft | 39 | 39 |
| Transfer Pumps | | | |
| | | Train 1 | Train 2 |
| Type Of Transfer Pumps | | Vertical Turbine | Vertical Turbine |
| Number Of Pumps | | 1 duty 1 standby | 1 duty |
| Motor Horsepower Of Transfer Pump | HP | 40 | 40 |
| Type Of Drive | | VFD | VFD |
| Capacity Of Each Pump | gpm | 2,100 | 2,100 |
| TDH | ft | 45 | 45 |

| Reclaimed Water Distribution Pump Station | | | | |
|-------------------------------------------|-----------------------|-----------------------|------------------------|---------------------------------------------|
| Pump Capacity, Gpm | Number Of Pump | Type | Motor Horsepower, HP | |
| 1,750 | 5 (4 Duty, 1 Standby) | Vertical Turbine, VFD | 125 | 3 installed Phase 1; 2 installed Phase 2 |
| 500 | 1 | Vertical Turbine, VFD | 50 | Phase 1 |
| 200 | 1 | Vertical Turbine, VFD | 30 | Phase 1 |
| Waste Sludge Holding Tanks | | | | |
| | | | Phase 1 | Phase 2 |
| Number Of Tanks | | | 2 | 2 |
| Total Volume Of Tank | | gals | 245,000 | 245,000 |
| Volume Of Each Tank | | gals | 122,500 | 122,500 |
| Length X Width Per Tank | | ft x ft | 35 x 33 | 35 x 33 |
| Maximum SWD | | ft | 14 | 14 |
| Height Of The Tank | | ft | 16 | 16 |
| Number Of Mixer Per Tank | | | 1 | 1 |
| Type Of Mixer | | | Submersible propeller | Submersible propeller |
| Horsepower Of Each Mixer | | | 7.5 | 7.5 |
| Type Of Aeration Equipment | | | Coarse bubble diffuser | Coarse bubble diffuser |
| Number Of Diffusers Each Tank | | | 28 | 28 |
| Air Required In Each Tank | | cfm | 491 | 491 |
| Number Of Blowers | | | 2 duty | 2 Duty |
| Type Of Blower | | | PD | PD |
| Motor Horsepower Of Each Blower | | HP | 40 | 40 |

| Chemical Feed Systems | | | |
|----------------------------------|-----|-------------------------------------------------------------|-------------------------------------------------------------|
| Alum Feed System | | | |
| | | Phase 1 | Phase 2 |
| Type Of Alum Feed Pump | | Duplex Hydraulically Actuated Diaphragm Metering Pump | Duplex Hydraulically Actuated Diaphragm Metering Pump |
| Design Dosing Rate | gph | 6.0 | 6.0 |
| Capacity Per Pump | gph | 15 | 15 |
| Motor Horsepower Of Each Pump | HP | 1 | 1 |
| Number Of Pumps | | 1 duty, 1 standby | 1 duty, 1 standby |
| Micro Cg Feed System | | | |
| | | Phase 1 | Phase 2 |
| Type Of Micro Cg Pump | | Triplex Skid Hydraulically Actuated Diaphragm Metering Pump | Triplex Skid Hydraulically Actuated Diaphragm Metering Pump |
| Design Dosing Rate | gph | 22.7 | 22.7 |
| Capacity Per Pump | gph | 0.8-40 | 0.8-40 |
| Motor Horsepower Of Each Pump | HP | 1 | 1 |
| Number Of Pumps | | 2 duty , 1 standby | 2 duty, 1 standby |
| Sodium Hypochlorite Feed System | | | |
| | | Phase 1 | Phase 2 |
| Type Of Sodium Hypochlorite Pump | | Hydraulically Actuated Diaphragm Metering Pump | Hydraulically Actuated Diaphragm Metering Pump |

| | | | |
|--------------------------------------------------|---------|-----------------------|-----------------------------------|
| Design Dosing Rate | gph | 3.48 | 3.48 |
| Capacity Per Pump | gph | 0.3-15 | 0.3-15 |
| Motor Horsepower Of Each Pump | HP | 1 | 1 |
| Number Of Pumps | | 1 duty, 1 standby | 1 duty added to the existing skid |
| Sludge Dewatering Facilities | | | |
| Number Of Sludge Feed Pumps | -- | 2 (1 duty, 1 standby) | NA |
| Type Of Sludge Feed Pump | | Progressive Cavity | NA |
| Horsepower Of Each Sludge Feed Pump | HP | 13.2 | NA |
| Sludge Feed Pump Control | | VFD | NA |
| Capacity Each Sludge Pump | gpm | 200 | NA |
| Number Of Belt Filter Press | | 1 | NA |
| Belt Width | meter | 2 | NA |
| Motor Horsepower Of BFP Drive | HP | 3 | NA |
| Dry Solids Handling Capacity Of BFP | lbs/hr | 1,200 | NA |
| Type Of Sludge Cake Pump | | Progressive Cavity | NA |
| Capacity Of Sludge Cake Pump | gpm | 12 | NA |
| Number Of Sludge Cake Pump | | 1 | NA |
| Horsepower Of Sludge Cake Pump | HP | 20 | NA |
| Number Of Polymer Feed Pump | | 2 | NA |
| Capacity Of Polymer Feed Pump | gph | 0.04~2.15 | NA |
| Motor Horsepower Of Polymer Feed Pump | HP | 1 | NA |
| Volume Of Polymer Storage Tank | gallons | 1,000 | NA |
| Number Of Wash Water Booster Pumps | | 1 | NA |
| Motor Horsepower Of Each Wash Water Booster Pump | HP | 5 | NA |

| | | | |
|-------------------------------------------------------------|-----|------------------------------------------------|----|
| Capacity Of Each Wash Water Booster Pump | gpm | 120 | NA |
| Wetland Discharge System and Dechlorination Facility | | | |
| Wetland Discharge Piping | LF | 11,000 | NA |
| Number Of Chemical Feed Pumps | -- | 2 (1 duty, 1 standby) | NA |
| Type Of Chemical Feed Pump | | Hydraulically Actuated Diaphragm Metering Pump | NA |
| Horsepower Of Each Chemical Feed Pump | HP | 13.2 | NA |
| Chemical Feed Pump Control | | VFD | NA |
| Capacity Each Chemical Feed Pump | gph | 5.5 | NA |

The reclaimed water is mainly used as public access reuse. **Table 4** contains a list of the major permitted reuse users. Should there be a decrease in reuse demand and/or during wet weather, the Facility is permitted to discharge their reclaimed water to Hulett Swamp through the APRICOT Act. The permitted discharge flow is 0.6 MGD, AADF.

Table 4: Palm Coast WWTF #2 Major Public Access Reuse Users

| Site No. | User Name | User Type | Acreage | Capacity (MGD) |
|----------|-----------------------|--------------------------------------------|---------|----------------|
| 1 | Palm Coast West N-010 | Residential Developments | 118 | 0.41 |
| 2 | Palm Coast West N-020 | Residential Developments | 4 | 0.01 |
| 3 | Palm Coast West N-030 | Business, Commercial, and Industrial Parks | 18.1 | 0.06 |
| 4 | Palm Coast West N-040 | Business, Commercial, and Industrial Parks | 9.2 | 0.03 |
| 5 | Palm Coast West N-050 | Residential Developments | 8.8 | 0.03 |
| 6 | Palm Coast West N-060 | Residential | 27.7 | 0.10 |

| | | Developments | | |
|-------------------------|-----------------------------------------|----------------------------|---------------|-------------|
| 7 | Palm Coast West N-070 | Other Landscape Irrigation | 28.8 | 0.10 |
| 8 | Palm Coast West N-080 | General Service Area | 56.7 | 0.15 |
| 9 | Future Development West of the Railroad | Residential Developments | 424 | 1.15 |
| 10 | Palm Coast West N-Sawmill Creek Course | Golf Courses | 110.7 | 0.34 |
| 11 | Rayonier Property | Other Landscape Irrigation | 787 | 2.14 |
| 12 | Old Brick | Residential Developments | 527 | 1.43 |
| 13 | Three Lakes | Residential Developments | 580 | 1.58 |
| 14 | US Highway 1 (Landscaped area) | Other Landscape Irrigation | 76.3 | 0.27 |
| R-003 CAPACITY = | | | 2776.3 | 7.80 |

4. Level of Service Agreement

The goal of the City of Palm Coast WWTF No. 2 is to confirm wastewater is treated effectively and efficiently by providing services that meet or exceed customer expectations and comply with federal and local regulations. The levels of service (LOS) determine the amount of funding that is required to maintain, renew and upgrade the water infrastructure to provide the customers with the levels of service specified. The LOS goals are defined across the service area and the performance targets are defined for each goal as a measure of the LOS goal. Changes to the LOS goals and how the Utility addresses the issues will affect funding requirements and how well the Utility can provide the proper service to the community.

Per the City's Comprehensive Plan, levels of service for wastewater utilities are specified as the following:

- A. An average daily flow of 82 gallons per capita per day LOS shall be utilized.
- B. A maximum daily flow of 93 gallons per capita per day LOS shall be utilized.
- C. The Equivalent Residential Unit (ERU) shall be based on 2.5 persons per ERU.

5. Critical Assets

Certain assets are considered of greater importance in ensuring the effective treatment of wastewater. Therefore, it is essential to identify and prioritize these assets, as well as, to improve practices used for routine operation and maintenance. This process includes reviewing all assets and recording their conditions (likelihood of failure), criticality to the utility (consequence of failure), and redundancy (the number of back-up assets to help support each asset). This will enable the Utility to deliver the level of service described in the previous section.

The asset evaluation for WWTF No. 2 began at the collection system and continued until the point of final discharge. **Table 5** lists assets critical to maintain the performance of the Utility. The FSP ranks the assets by their respective consequence of failure (CoF) to the Plant: minor, moderate, major, and catastrophic. Minor being the least severe and catastrophic being the most. As time progresses, the status of each asset would require re-evaluation.

Table 5: WWTF No. 2 Critical Asset List

| Asset Name | Category | Asset Type | Year Originally Installed | Current Condition | CoF | Redundancy | Risk | Replacement Date |
|---------------------------|------------------|---------------------------------|---------------------------|-------------------|--------------|------------|-------------------|------------------|
| Phase 1 | | | | | | | | |
| WWTF No. 2 Force Main | Collection | Distribution / Collection Mains | 2017 | Excellent | Catastrophic | 0% | No Immediate Risk | |
| Mantanzas Woods Master PS | Pumping Facility | Pumping Equipment | 2017 | Good | Catastrophic | 100% | No Immediate Risk | |
| WWTF No. 2 Influent Meter | Collection | Meters | 2017 | Good | Major | 0% | No Immediate Risk | |
| In-Plant Pump Station | Pumping Facility | Pumping Equipment | 2017 | Good | Major | 100% | No Immediate Risk | |
| Rotary Drum Screen | Treatment | Pretreatment | 2017 | Excellent | Major | 100% | No Immediate Risk | Rehabed in 2024 |
| Grit Removal Unit | Treatment | Pretreatment | 2017 | Good | Moderate | 0% | No Immediate Risk | |
| EQ Tanks | Treatment | Treatment Equipment | 2017 | Good | Catastrophic | 50% | No Immediate Risk | |
| EQ Tank Mixers | Treatment | Treatment Equipment | 2017 | Good | Major | 50% | No Immediate Risk | |
| EQ Tank Blowers | Treatment | Aeration Pumping | 2017 | Good | Major | 50% | No Immediate Risk | |

| Asset Name | Category | Asset Type | Year Originally Installed | Current Condition | CoF | Redundancy | Risk | Replacement Date |
|--------------------------------|-----------|---------------------|---------------------------|-------------------|--------------|------------|-------------------|------------------|
| | | Equipment | | | | | Risk | |
| EQ Tank Coarse Bubble Aeration | Treatment | Aeration System | 2017 | Good | Major | 50% | No Immediate Risk | |
| EQ Tank Pumps | Treatment | Pumping Equipment | 2017 | Good | Catastrophic | 100% | No Immediate Risk | |
| Anaerobic Basins | Treatment | Treatment Equipment | 2017 | Good | Major | 50% | No Immediate Risk | |
| Anaerobic Mixers | Treatment | Treatment Equipment | 2017 | Good | Minor | 50% | No Immediate Risk | |
| Pre-Anoxic Tanks | Treatment | Treatment Equipment | 2017 | Good | Catastrophic | 50% | No Immediate Risk | |
| Pre-Anoxic Mixers | Treatment | Treatment Equipment | 2017 | Good | Major | 50% | No Immediate Risk | |
| AXR Pumps | Treatment | Pumping Equipment | 2017 | Good | Major | 100% | No Immediate Risk | |
| Oxic Tanks | Treatment | Treatment Equipment | 2017 | Good | Catastrophic | 50% | No Immediate Risk | |
| Oxic Tank Mixers | Treatment | Treatment Equipment | 2017 | Good | Major | 50% | No Immediate Risk | |
| Oxic Tank | Treatment | Aeration | 2017 | Good | Major | 50% | No | |

| Asset Name | Category | Asset Type | Year Originally Installed | Current Condition | CoF | Redundancy | Risk | Replacement Date |
|--------------------------------------|-----------|----------------------------|---------------------------|-------------------|--------------|------------|-------------------|------------------|
| Blowers | | Pumping Equipment | | | | | Immediate Risk | |
| Oxic Tanks Fine Bubble Aeration | Treatment | Aeration System | 2017 | Good | Major | 50% | No Immediate Risk | |
| IRQ Pumps | Treatment | Pumping Equipment | 2017 | Good | Major | 100% | No Immediate Risk | |
| Post-Anoxic Tanks | Treatment | Treatment Equipment | 2017 | Good | Major | 50% | No Immediate Risk | |
| Post-Anoxic Mixers | Treatment | Aeration Pumping Equipment | 2017 | Good | Moderate | 50% | No Immediate Risk | |
| MBR Tanks | Treatment | Treatment Equipment | 2017 | Good | Catastrophic | 0% | No Immediate Risk | |
| MBR Membranes | Treatment | Membranes | 2017 | Excellent | Major | 75% | No Immediate Risk | 2026 |
| MBR Tank Blowers | Treatment | Aeration Pumping Equipment | 2017 | Good | Moderate | 50% | No Immediate Risk | |
| MBR Tank Fine Bubble Aeration System | Treatment | Aeration System | 2017 | Good | Major | 0% | No Immediate Risk | |
| Permeate Pumps | Treatment | Pumping Equipment | 2017 | Good | Moderate | 50% | No Immediate Risk | |

| Asset Name | Category | Asset Type | Year Originally Installed | Current Condition | CoF | Redundancy | Risk | Replacement Date |
|--------------------------------|------------------|------------------------|---------------------------|-------------------|----------|------------|-------------------|------------------|
| RAS Pumps | Treatment | Pumping Equipment | 2017 | Good | Moderate | 100% | No Immediate Risk | |
| Permeate Flow Meters | Treatment | Meters | 2017 | Good | Moderate | 0% | No Immediate Risk | |
| Chlorine Contact Chambers | Treatment | Disinfection Equipment | 2017 | Good | Major | 0% | No Immediate Risk | |
| RCW Transfer Pumps | Treatment | Pumping Equipment | 2017 | Good | Major | 100% | No Immediate Risk | |
| Flow Diversion Control Station | Treatment | Other | 2017 | Good | Major | 0% | No Immediate Risk | |
| 2 MG RCW Ground Storage Tank | Storage | Storage | 2017 | Good | Major | 0% | No Immediate Risk | |
| RCW High Service Pumps | Pumping Facility | Pumping Equipment | 2017 | Good | Major | 100% | No Immediate Risk | |
| RCW Flow Meter | Treatment | Meters | 2017 | Good | Moderate | 0% | No Immediate Risk | |
| Reject Flow Meter | Treatment | Meters | 2017 | Good | Minor | 0% | No Immediate Risk | |
| Percolation Pump Station | Pumping Facility | Pumping Equipment | 2017 | Good | Minor | 0% | No Immediate | |

| Asset Name | Category | Asset Type | Year Originally Installed | Current Condition | CoF | Redundancy | Risk | Replacement Date |
|---------------------------------------------------|-----------|---------------------------------|---------------------------|-------------------|-------|------------|-------------------|------------------|
| | | | | | | | Risk | |
| Reject Return Flow Meter | Treatment | Meters | 2017 | Good | Minor | 0% | No Immediate Risk | |
| Sludge Holding Tanks | Treatment | Digester | 2017 | Good | Major | 50% | No Immediate Risk | |
| Sludge Holding Tank Mixers | Treatment | Treatment Equipment | 2017 | Good | Major | 50% | No Immediate Risk | |
| Sludge Holding Tank Blowers | Treatment | Aeration Pumping Equipment | 2017 | Good | Major | 50% | No Immediate Risk | |
| Sludge Holding Tank Coarse Bubble Aeration System | Treatment | Aeration System | 2017 | Good | Major | 50% | No Immediate Risk | |
| Supernatant Decanter | Treatment | Digesting | 2017 | Good | Major | 0% | No Immediate Risk | |
| Sludge Feed Pumps | Treatment | Pumping Equipment | 2017 | Good | Major | 100% | No Immediate Risk | |
| Belt Filter Press System | Treatment | Solid Waste Handling & Disposal | 2017 | Good | Major | 0% | No Immediate Risk | |
| Dewatered | Treatment | Solid Waste | 2017 | Good | Major | 0% | No | |

| Asset Name | Category | Asset Type | Year Originally Installed | Current Condition | CoF | Redundancy | Risk | Replacement Date |
|---------------------------------|-----------|---------------------------------|---------------------------|-------------------|--------------|------------|-------------------|------------------|
| Sludge Shaftless Screw Conveyer | | Handling & Disposal | | | | | Immediate Risk | |
| Sludge Cake Loading Station | Treatment | Solid Waste Handling & Disposal | 2017 | Good | Major | 0% | No Immediate Risk | |
| Alum Storage Tanks | Treatment | Chemical Feed | 2017 | Good | Major | 0% | No Immediate Risk | |
| Micro-C Storage Tanks | Treatment | Chemical Feed | 2017 | Good | Moderate | 50% | No Immediate Risk | |
| Sodium Hypochlorite Storage | Treatment | Chemical Feed | 2017 | Good | Major | 100% | No Immediate Risk | |
| Alum Feeding Skid | Treatment | Chemical Feed | 2017 | Good | Moderate | 100% | No Immediate Risk | |
| Micro-C Feeding | Treatment | Chemical Feed | 2017 | Good | Major | 50% | No Immediate Risk | |
| Sodium Hypochlorite System | Treatment | Chemical Feed | 2017 | Good | Major | 100% | No Immediate Risk | |
| Polymer Feed System | Treatment | Chemical Feed | 2017 | Good | Moderate | 100% | No Immediate Risk | |
| Motor Control | Treatment | Motor Controls / | 2017 | Good | Catastrophic | 100% | No Immediate | |

| Asset Name | Category | Asset Type | Year Originally Installed | Current Condition | CoF | Redundancy | Risk | Replacement Date |
|--------------------------|-----------|----------------------------|---------------------------|-------------------|--------------|------------|-------------------|------------------|
| Center | | Drives | | | | | Risk | |
| Generator | Treatment | Generators | 2017 | Good | Moderate | 100% | No Immediate Risk | |
| Dechlorination System | Treatment | Dechlorination | 2017 | Good | Major | 100% | No Immediate Risk | |
| Wetland Discharge System | Discharge | RCW Wetland Discharge | 2017 | Good | Moderate | 0% | No Immediate Risk | |
| Phase 2 | | | | | | | | |
| Rotary Drum Screen | Treatment | Pretreatment | 2025 | Excellent | Major | 50% | No Immediate Risk | |
| Grit Removal Unit | Treatment | Pretreatment | 2025 | Excellent | Moderate | 100% | No Immediate Risk | |
| Odor Control System | Treatment | Pretreatment | ?? | | Major | 0% | No Immediate Risk | |
| EQ Tanks | Treatment | Treatment Equipment | 2025 | Excellent | Catastrophic | 50% | No Immediate Risk | |
| EQ Tank Mixers | Treatment | Treatment Equipment | 2025 | Excellent | Major | 50% | No Immediate Risk | |
| EQ Tank Blowers | Treatment | Aeration Pumping Equipment | 2025 | Excellent | Major | 50% | No Immediate Risk | |
| EQ Tank | Treatment | Aeration | 2025 | Excellent | Major | 50% | No | |

| Asset Name | Category | Asset Type | Year Originally Installed | Current Condition | CoF | Redundancy | Risk | Replacement Date |
|------------------------|-----------|----------------------------|---------------------------|-------------------|--------------|------------|-------------------|------------------|
| Coarse Bubble Aeration | | System | | | | | Immediate Risk | |
| EQ Tank Pumps | Treatment | Pumping Equipment | 2025 | Excellent | Catastrophic | 100% | No Immediate Risk | |
| Anaerobic Basins | Treatment | Treatment Equipment | 2025 | Excellent | Major | 50% | No Immediate Risk | |
| Anaerobic Mixers | Treatment | Treatment Equipment | 2025 | Excellent | Minor | 50% | No Immediate Risk | |
| Pre-Anoxic Tanks | Treatment | Treatment Equipment | 2025 | Excellent | Catastrophic | 50% | No Immediate Risk | |
| Pre-Anoxic Mixers | Treatment | Treatment Equipment | 2025 | Excellent | Major | 50% | No Immediate Risk | |
| AXR Pumps | Treatment | Pumping Equipment | 2025 | Excellent | Major | 100% | No Immediate Risk | |
| Oxic Tanks | Treatment | Treatment Equipment | 2025 | Excellent | Catastrophic | 50% | No Immediate Risk | |
| Oxic Tank Mixers | Treatment | Treatment Equipment | 2025 | Excellent | Major | 50% | No Immediate Risk | |
| Oxic Tank Blowers | Treatment | Aeration Pumping Equipment | 2025 | Excellent | Major | 50% | No Immediate Risk | |

| Asset Name | Category | Asset Type | Year Originally Installed | Current Condition | CoF | Redundancy | Risk | Replacement Date |
|-----------------------------------------------|-----------|----------------------------------|---------------------------|-------------------|--------------|------------|-------------------------|------------------|
| Oxic Tanks Fine Bubble Aeration | Treatment | Aeration System | 2025 | Excellent | Major | 50% | No Immediate Risk | |
| IRQ Pumps | Treatment | Pumping Equipment | 2025 | Excellent | Major | 100% | No Immediate Risk | |
| Post-Anoxic Tanks | Treatment | Treatment Equipment | 2025 | Excellent | Major | 50% | No Immediate Risk | |
| Post-Anoxic Mixers | Treatment | Aeration Pumping Equipment | 2025 | Excellent | Moderate | 50% | No Immediate Risk | |
| MBR Tanks | Treatment | Treatment Equipment | 2025 | Excellent | Catastrophic | 75% | No Immediate Risk | |
| MBR Membranes | Treatment | Membranes | 2025 | Excellent | Major | 75% | No Immediate Risk | |
| MBR Tank Blowers | Treatment | Aeration Pumping Equipment | 2025 | Excellent | Moderate | 50% | No Immediate Risk | |
| MBR Tank Fine Bubble Aeration System | Treatment | Aeration System | 2025 | Excellent | Major | 0% | No Immediate Risk | |
| Permeate Pumps | Treatment | Pumping Equipment | 2025 | Excellent | Moderate | 50% | No Immediate Risk | |
| RAS Pumps | Treatment | Pumping Equipment | 2025 | Excellent | Moderate | 100% | No Immediate | |

| Asset Name | Category | Asset Type | Year Originally Installed | Current Condition | CoF | Redundancy | Risk | Replacement Date |
|---------------------------------------------------|-----------|----------------------------|---------------------------|-------------------|----------|------------|-------------------|------------------|
| | | | | | | | Risk | |
| Permeate Flow Meters | Treatment | Meters | 2025 | Excellent | Moderate | 0% | No Immediate Risk | |
| Chlorine Contact Chambers | Treatment | Disinfection Equipment | 2025 | Excellent | Major | 0% | No Immediate Risk | |
| RCW Transfer Pumps | Treatment | Pumping Equipment | 2025 | Excellent | Major | 100% | No Immediate Risk | |
| Sludge Holding Tanks | Treatment | Digester | 2025 | Excellent | Major | 50% | No Immediate Risk | |
| Sludge Holding Tank Mixers | Treatment | Treatment Equipment | 2025 | Excellent | Major | 50% | No Immediate Risk | |
| Sludge Holding Tank Blowers | Treatment | Aeration Pumping Equipment | 2025 | Excellent | Major | 50% | No Immediate Risk | |
| Sludge Holding Tank Coarse Bubble Aeration System | Treatment | Aeration System | 2025 | Excellent | Major | 50% | No Immediate Risk | |
| Supernatant Decanter | Treatment | Digesting | 2025 | Excellent | Major | 0% | No Immediate Risk | |
| Alum | Treatment | Chemical | 2025 | Excellent | Moderate | 50% | No | |

| Asset Name | Category | Asset Type | Year Originally Installed | Current Condition | CoF | Redundancy | Risk | Replacement Date |
|----------------------|-----------|-------------------------|---------------------------|-------------------|--------------|------------|-------------------|------------------|
| Feeding Pumps | | Feed | | | | | Immediate Risk | |
| Micro-C Feeding Skid | Treatment | Chemical Feed | | Excellent | Major | 50% | No Immediate Risk | |
| Sodium Feeding Pump | Treatment | Chemical Feed | | Excellent | Major | 50% | No Immediate Risk | |
| Motor Control Center | Treatment | Motor Controls / Drives | | Excellent | Catastrophic | 100% | No Immediate Risk | |
| | | | | | | | | |

6. Operation and Maintenance Strategy

Operation and Maintenance (O&M) consist of preventive and emergency/reactive maintenance. The strategy for O&M varies by the asset, criticality, condition and operating history. The maintenance program incorporates 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 can reduce the overall risk of the asset failing. The maintenance strategy will be revisited every year.

6.1 Preventative Maintenance

Preventive maintenance pertains to 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. Daily 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

Preventive maintenance is carried out because of a planned maintenance program, such as regularly scheduled asset repairs, and historically problematic operations. Equipment must be maintained according to manufacturers' recommendations to achieve the maximum return on investment. For each task the recurrence time and recurrence frequency will be identified. Generally, the following tasks are defined:

- Daily tasks
 - Plant walk through
 - Check Matanzas Woods Pump Station
 - Visual inspect the screen and grit removal system
 - Check blowers
 - Check DO probes
 - Check recycle pumps
 - Check belt filter press and conveyor
 - Check the membrane performance
 - Check chemicals utilized and storage areas
- Weekly tasks
 - Check and grease mechanical equipment for screen and grit removal
 - Check chemical storage for availability

- Preventative maintenance to chemical feed pump
 - Check scum pump system
 - Digester supernatant sampling
 - Check generator fuel and oil
 - Check available security equipment and emergency response plans
- Monthly tasks
 - Headworks: remove grit and screenings; lube grit conveyor, check / adjust alignment
 - EQ tank: alternate / check the pumps
 - Blowers: alternate blowers; clean intake filters / change as needed
 - Recycling pumps: alternate / check the pumps
 - Sludge pumps: Calculate waste activated sludge
 - Disinfection: preventive maintenance to chlorine feed system; check and replace chemical supply
 - Workshop: preventive maintenance of tools and equipment
- Annual, semi-annual, and quarterly tasks
 - Collection system: check force main and manholes
 - Headworks: lube valves and motors
 - Treatment tanks: preventive maintenance to valves, pumps, mixers, and aerators
 - Recycling pumps: change oil, lube valves, check for leaks in pipes
 - Chlorine Contact Tank: drain / clean contact tank; lube gates; check/calibrate residual analyzer
 - Flow meters: annual calibration
 - Motor Control Center (MCC): Preventive maintenance to all MCCs
 - Dechlorination: check and replace dechlorination chemical supply

This schedule shall be adjusted according to the plant needs. The cost necessary to fully implement the above maintenance program are estimated by the Utility staff. These costs must be budgeted into the annual operating budget in order to achieve the manufacturer's recommended life expectancy and highest return on investment.

6.2 Emergency / 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) is identified by staff inspection.

6.3 Deferred Maintenance

Deferred maintenance is any maintenance, repair, restoration, or replacement work, that should have been accomplished before now, and that has not been performed. Since the facility is brand new and there is no deferred maintenance items currently.

7. Capital Improvement Program

The City of Palm Coast capital improvement program (CIP) plan is the description of future capital projects. Capital improvement projects generally create a new asset that previously did not exist or they upgrade and improve an existing capacity. The projects can result from growth or environmental needs, such as the following:

1. Expenditure that purchases or creates a new asset or in any way improves an asset beyond its original design capacity
2. Upgrades that increase the capacity of the asset
3. Construction designed to produce an improvement in the standard operation of the asset beyond its present capacity

In addition to CIPs, are renewal or rehabilitation strategies. Renewal expenditure is 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 the following:

1. Activities that do not increase the capacity of the asset (i.e., upgrade and enhance the assets restoring them to their original size, condition, and capacity)
2. Rehabilitation involving improvements and realignment or restores the assets to a new or fresh condition

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 are made aware of potential assets that need to be repaired or rehabilitated. Because the expected needs of the Utility will change each year, the CIP plan will be updated to reflect those changes. Greater detail is presented in the City's Utility CIP.

8. Financial Management Strategy

Capital costs are one-time expenses (not including labor) used to replace or upgrade, because of capacity, a part of the utility. Capital costs do not include any O&M costs.

Costs for CIP projects are funded through general rates, targeted rates and fees and charges. The City is also seeking funding through District grants or FDEP SRF loans. For details of capital projects, see the City's CIP plan.

9. Action Plan

The Fiscal Sustainability Plan refers to many objectives, targets, maintenance and improvements for the utility. The City of Palm Coast Utilities staff is scheduled to review this plan annually and update the community on new information and changes.