



UTILITIES DIVISION

February 1, 2024

Moira Homann
Florida Department of Environmental Protection
13000 N Telecom Parkway
Temple Terrace, FL
Via E-mail: BMAPProgram@floridadep.gov

RE: *Wastewater Treatment Plan Submittal in response to OGC Case No. 23-0112 to 0135 Final Order*

Dear Ms. Homann:

Pursuant to the Final Order regarding OGC Case No. 23-0112 to 0135: Determination Regarding Necessity of Wastewater Treatment Plans and Onsite Sewage Treatment and Disposal System Remediation Plans for Certain Nutrient Basin Management Action Plans (BMAP), FDEP requires local governments, within a BMAP, to submit a draft plan by February 1, 2024. In response to this Final Order, Polk County Utilities (PCU) submits the enclosed Wastewater Treatment Plan, which outlines remediation plans for the three (3) wastewater treatment facilities operated within the following BMAPs:

Wastewater Treatment Facility	Basin Management Action Plan
Crooked Lake WWTF	Lake Okeechobee
Northeast Regional WWTF	Upper Ocklawaha
Sun Ray WWTF	Lake Okeechobee

Should you have any questions or need additional information please contact me at (863)298-4195 or via e-mail at krystalazzarella@polk-county.net.

Sincerely,
POLK COUNTY UTILITIES

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REFERENCE NO.: CSA 18-059-09; DEWBERRY 50159721

POLK COUNTY UTILITIES
DRAFT WWTF PLAN

FEBRUARY 01, 2024



ORIGINAL

SUBMITTED BY
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SUBMITTED TO
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Table of Contents

1. Introduction	1
1.1 Purpose	1
1.2 Required Content per Final Order	3
1.3 WWTF Plan Submittal Requirements	3
2. PLAN APPROACH	3
2.1 Data Sources	3
2.2 Jurisdiction	3
3. Polk County's Service Areas within BMAP Watersheds	5
4. NERUSA Description	5
4.1 Northeast Regional Wastewater Treatment Facility (NERWWTF), Final Order Required Information	5
4.1.1 Permitted Capacity	7
4.1.2 The facility's permitted TN and TP effluent limits	7
4.1.3 Capacity analysis considering future growth over the next 20 years	7
4.1.4 A list and ranking of facility construction, expansion, or upgrades necessary to meet applicable nutrient water quality requirements, and the estimated costs of these facility improvements	9
4.1.5 A projected timeline of the dates by which the construction of any facility improvements, including new/extended sewer lines, will begin and be completed and the date by which operations of the improved facility will begin	9
5. SERUSA Description	10
5.1 Sun Ray WWTF (SRWWTF), Final Order Required Information	10
5.1.1 Permitted Capacity	12
5.1.2 The facility's permitted TN and TP effluent limits	12
5.1.3 Capacity analysis considering future growth over the next 20 years	12
5.1.4 A list and ranking of facility construction, expansion, or upgrades necessary to meet applicable nutrient water quality requirements, and the estimated costs of these facility improvements	13
5.1.5 A projected timeline of the dates by which the construction of any facility	

improvements, including new/extended sewer lines, will begin and be completed and the date by which operations of the improved facility will begin	13
5.2 Crooked Lake Park Sewerage Company, Final Order Required Information	14
5.2.1 Permitted Capacity	16
5.2.2 The facility's permitted TN and TP effluent limits	16
5.2.3 The annual TN and TP loads (showing both flow and concentrations) discharged from the facility over the past five years, estimated if necessary	16
5.2.4 Capacity analysis considering future growth over the next 20 years	17
5.2.5 A list and ranking of facility construction, expansion, or upgrades necessary to meet applicable nutrient water quality requirements, and the estimated costs of these facility improvements	17
5.2.6 A projected timeline of the dates by which the construction of any facility improvements, including new/extended sewer lines, will begin and be completed and the date by which operations of the improved facility will begin	18
6. Funding	18

1. Introduction

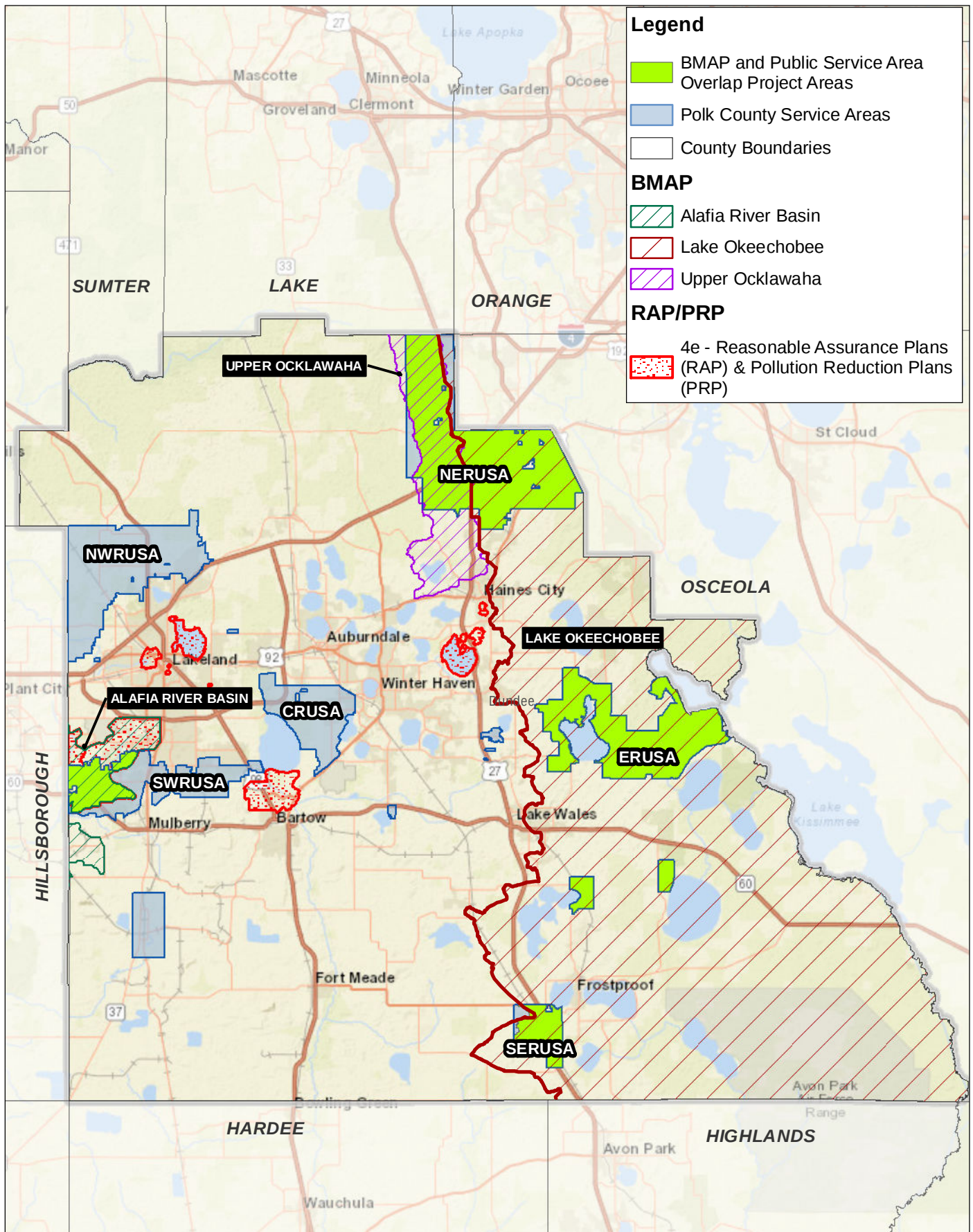
1.1 Purpose

Subparagraph 403.067(7)(a)9., Florida Statutes, specifies that local governments within a Basin Management Action Plan (BMAP) must develop a **wastewater treatment plan** and/or onsite sewage treatment and disposal system (OSTDS) remediation plan containing certain information, **if** the Florida Department of Environmental Protection (Department or FDEP) “identifies domestic wastewater treatment facilities or onsite sewage treatment and disposal systems as contributors of at least 20 percent of point source or nonpoint source nutrient pollution **or if** the Department determines remediation is necessary to achieve the total maximum daily load (TMDL)”.

On June 12, 2023, the Department issued a **Final Order** for OGC Case No. 23-001 to 0135 signed by Secretary Shawn Hamilton. In this Final Order, FDEP determined “**domestic wastewater treatment facilities** and/or OSTDS sources within specified BMAPs meet the 20 percent contribution threshold and/or remediation of these sources is necessary to achieve the BMAP for a nutrient TMDL pursuant to 403.067(7)(a)9”. The BMAPs specified in the order overlapping with portions of Polk County’s service areas are the Alafia River Basin (23-0112), Lake Okeechobee (23-0119), and the Upper Ocklawaha River Basin (23-0125) (**Figure 1-1**). **Table 1-1** provides a reference and the water quality objective for each of the BMAPs. Although FDEP did not provide a determination for the percent contribution of either wastewater treatment and/or OSTDS in the BMAPs overlapping Polk County, FDEP staff indicated the requirement for a plan is “necessary to achieve the total maximum daily load.” Additional BMAP information and links are provided in the following table:

Table 1-1: BMAP Reference Information

BMAP	FDEP Reference	Water Quality Objective
Alafia River Basin	https://floridadep.gov/sites/default/files/alafia-bmap.pdf	- Alafia River TMDL requires 54% reduction of MS4 and nonpoint source loads - Tampa Bay Reasonable Assurance Plan includes allocation to Polk County’s MS4 of 67.5 tons/year of TN
Lake Okeechobee	https://floridadep.gov/sites/default/files/LakeO-BMAP-APR-2015.pdf	- Requires wastewater treatment facilities (WWTFs) with reuse to meet TP of 6 mg/L and TN of 10 mg/L - TMDL established load limit for TP only (140 metric tons/year), and required reductions for nonpoint sources are for TP only
Upper Ocklawaha River Basin	https://floridadep.gov/sites/default/files/AdoptedUpOcklawahaBMAP.pdf	BMAP focuses on TP and required reductions vary by waterbody



1.2 Required Content per Final Order

“Wastewater Treatment Plans: In cooperation with the Department, water management districts, and public and private domestic wastewater facilities, each local government **within the above referenced BMAPs** that **either contains a domestic wastewater facility within its jurisdictional boundaries**, or has a demonstrated need to establish a domestic wastewater treatment facility within its jurisdiction to improve water quality in order to achieve the water quality objectives of the BMAP, must develop a wastewater treatment plan containing the following information **for each domestic wastewater** facility in the local government’s jurisdiction.”

Paragraphs 1-6 of the Final Order describes the Wastewater Treatment Plan’s required content including:

- 1) The facility’s permitted capacity in average annual gallons per day;
- 2) The facility’s permitted TN and TP effluent limits for the facility;
- 3) The annual TN and TP loads (showing both flow and concentrations) discharged from the facility over the past five years, estimated if necessary;
- 4) A capacity analysis for the facility, considering future growth over the next 20 years;
- 5) A list and ranking of facility construction, expansion, or upgrades necessary to meet applicable nutrient water quality requirements (for example, to meet nutrient effluent limits in BMAPs and TMDLs, section 403.064(17), Florida Statutes, requirements, or other statutory or regulatory requirements), and the estimated costs of these facility improvements; and,
- 6) A projected timeline of the dates by which the construction of any facility improvements, including new/extended sewer lines, will begin and be completed and the date by which operations of the improved facility will begin.

1.3 WWTF Plan Submittal Requirements

To comply with the Final Order, the County will submit this draft wastewater treatment plan for the Department’s review by February 1, 2024. By August 1, 2024, the County will submit a complete wastewater treatment plan that addresses Department comments received on the draft. The draft and complete plan will be electronically submitted to the Department to Moira Homann at BMAPProgram@floridadep.gov.

2. PLAN APPROACH

A review was conducted to identify Polk County owned and operated domestic WWTFs within the jurisdictional boundaries of Polk County. The BMAP areas were then compared to the location of each facility to determine which WWTFs, if any, were within the BMAP boundary. Once these locations were identified, data acquisition and information reviews were conducted.

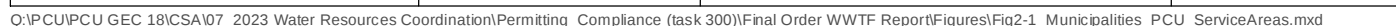
2.1 Data Sources

County information was gathered from a variety of sources and included:

- Data available from required reports
- Permitting information from FDEP Oculus
- Planned expansions and/or new sewer infrastructure
- Available growth information
- Recent Capacity Analysis Reports

2.2 Jurisdiction

The County has land use jurisdiction over unincorporated areas and does not have authority to plan or provide water or sewer service inside a Municipal Chapter 180 service area. As seen in **Figure 2-1**, approximately 50% of the County is under the control of local municipalities/utilities.



3. Polk County's Service Areas within BMAP Watersheds

Polk County has four regional utility service areas within a BMAP listed in the Final Order. The service areas are the Southwest Regional Utility Service Area (SWRUSA), Northeast Regional Utility Service Area (NERUSA), East Regional Utility Service Area (ERUSA), and Southeast Regional Utility Service Area (SERUSA). Of these service areas, only NERUSA and SERUSA have WWTFs within a listed BMAP. In addition to these areas, Polk County is in receivership of the Crooked Lake Park Sewerage Company WWTF located with the Lake Okeechobee BMAP. **Table 3-1** below and **Figure 2-1** above illustrate the service areas and WWTFs within the relevant BMAPs.

Table 3-1: Service Areas and Associated BMAPs

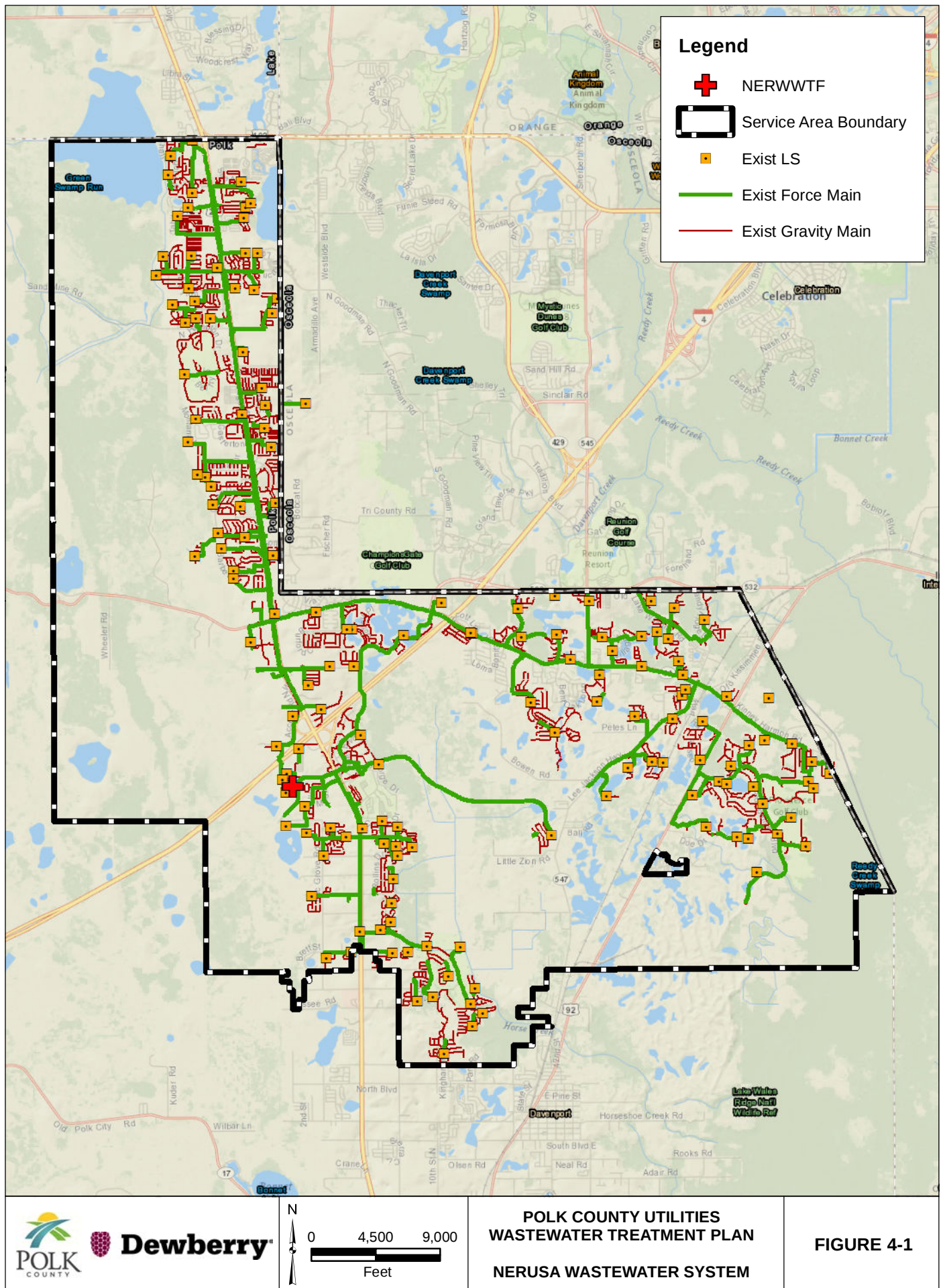
Service Area	WWTF	BMAP	Description
NERUSA	Northeast Regional WWTF FLOA00002	Upper Ocklawaha	42.5% of the NERUSA falls within the Upper Ocklawaha watershed. 49.8% of the NERUSA falls within the Okeechobee BMAP watershed; however, there are no WWTFs in this area. The remainder of the NERUSA is outside of a BMAP boundary.
SERUSA	Sun Ray WWTF FLA012949	Lake Okeechobee	The SERUSA falls completely within the Lake Okeechobee BMAP watershed
Crooked Lake Park	Crooked Lake Park Sewerage Company WWTF FLA013038	Lake Okeechobee	Receivership project and is being converted to a master lift station to then convey wastewater to the City of Lake Wales system. This includes construction of new force main.

4. NERUSA Description

The NERUSA is approximately 72 square-miles in the northeast corner of Polk County and neighbors Lake, Orange, and Osceola Counties. Within NERUSA there are over 23,000 wastewater connections; PCU owns and operates approximately 990 miles of wastewater force mains, 210 miles of wastewater gravity mains, 160 lift stations, and one regional wastewater treatment facility known as the Northeast Regional Wastewater Treatment Facility.

4.1 Northeast Regional Wastewater Treatment Facility (NERWWTF), Final Order Required Information

The NERWWTF is located at 200 Westview Drive, Davenport, Florida and treats the wastewater flows from the NERUSA. The facility currently operates under permit FLOA00002 with an effective date of April 16, 2021, a revision date of January 18, 2024, and expiration date of April 15, 2026. **Figure 4-1** depicts the NERWWTF location, lift stations, force mains, and the service area boundary.



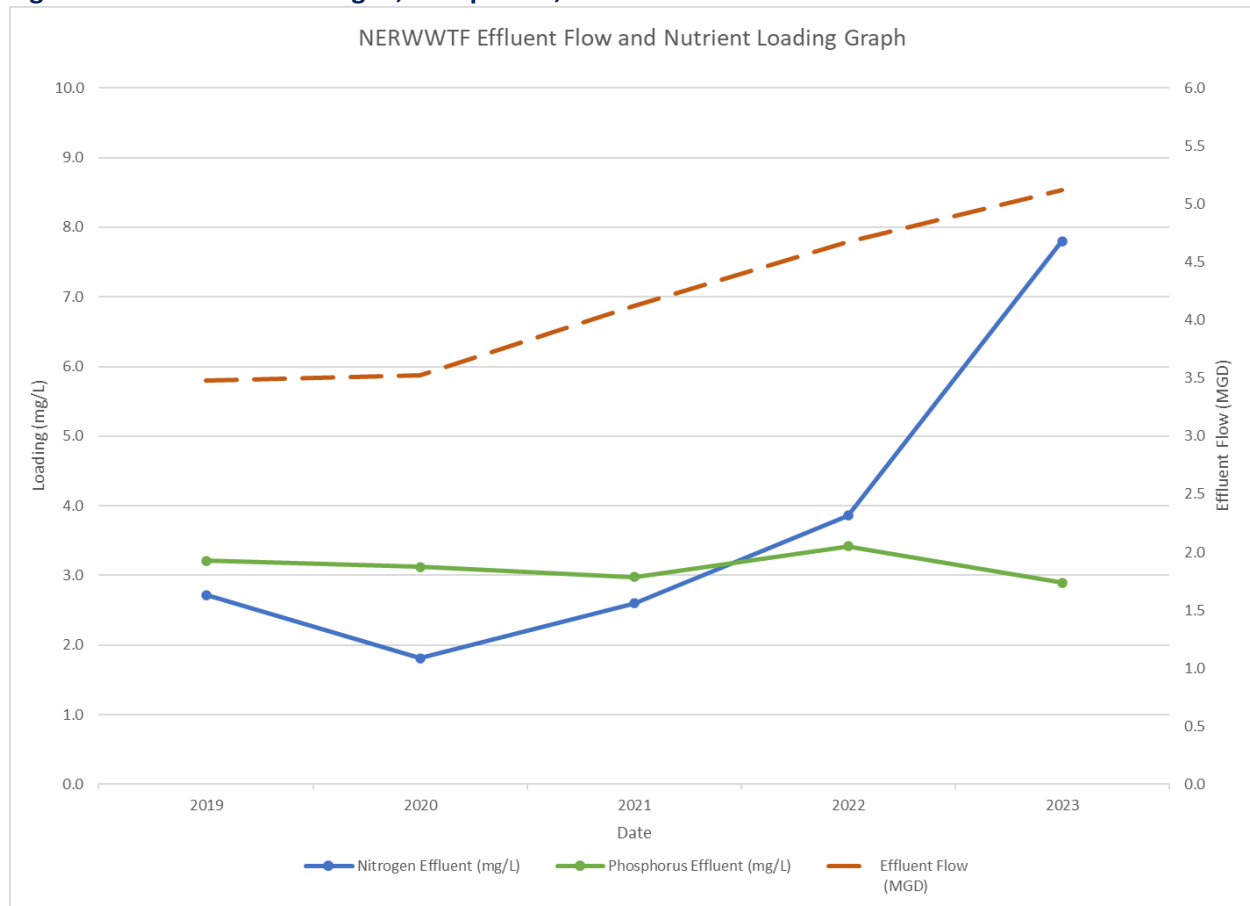
4.1.1 Permitted Capacity

The NERWWTF has a design treatment capacity of 6.0 million gallons per day (MGD), based on an annual average daily flow (AADF).

4.1.2 The facility's permitted TN and TP effluent limits

The current permit includes limits of 'report only' for total nitrogen (TN) and total phosphorus (TP). The annual TN and TP loads (showing both flow and concentrations) discharged from the facility over the past five years are shown in **Figure 4-2**.

Figure 4-2: NERWWTF Nitrogen, Phosphorus, and Effluent Flow

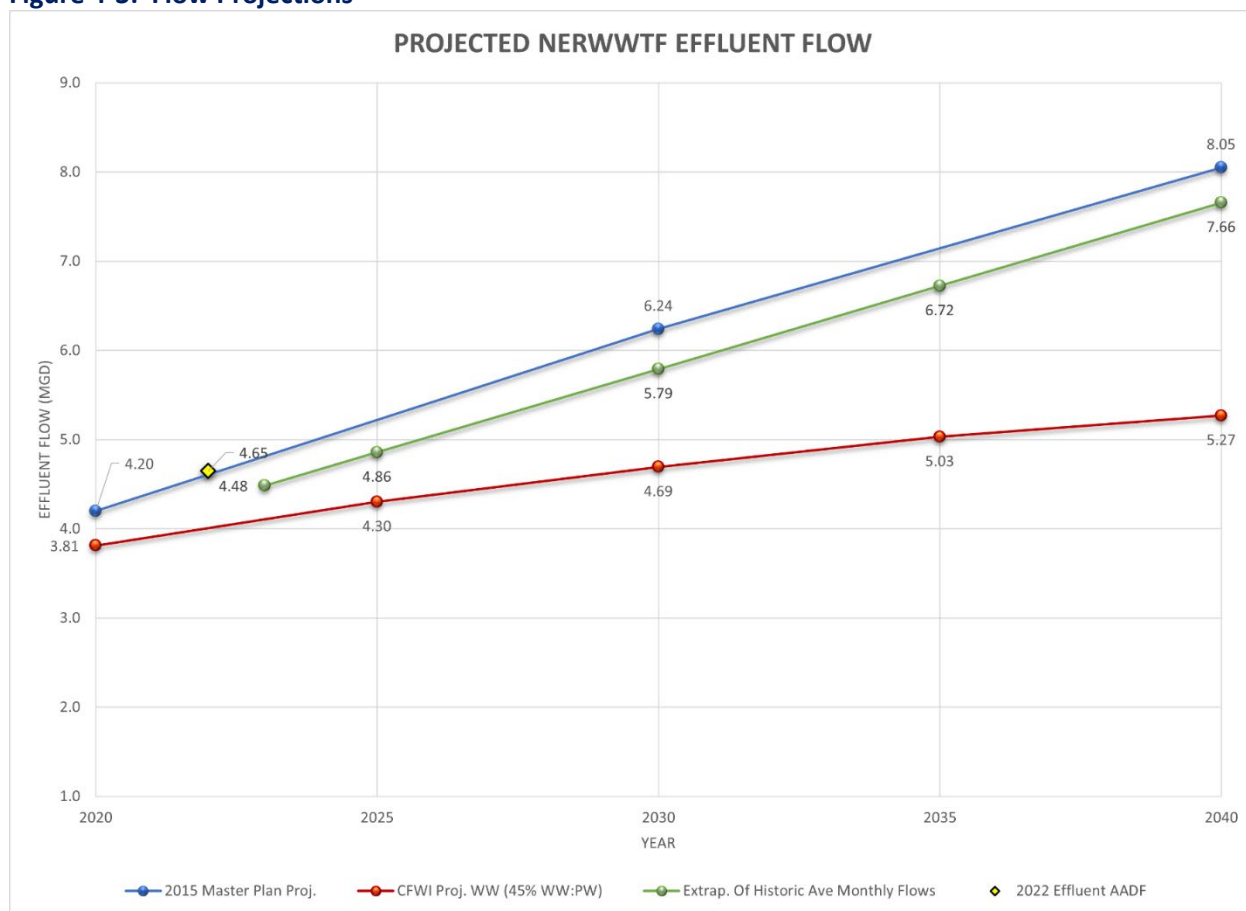


4.1.3 Capacity analysis considering future growth over the next 20 years

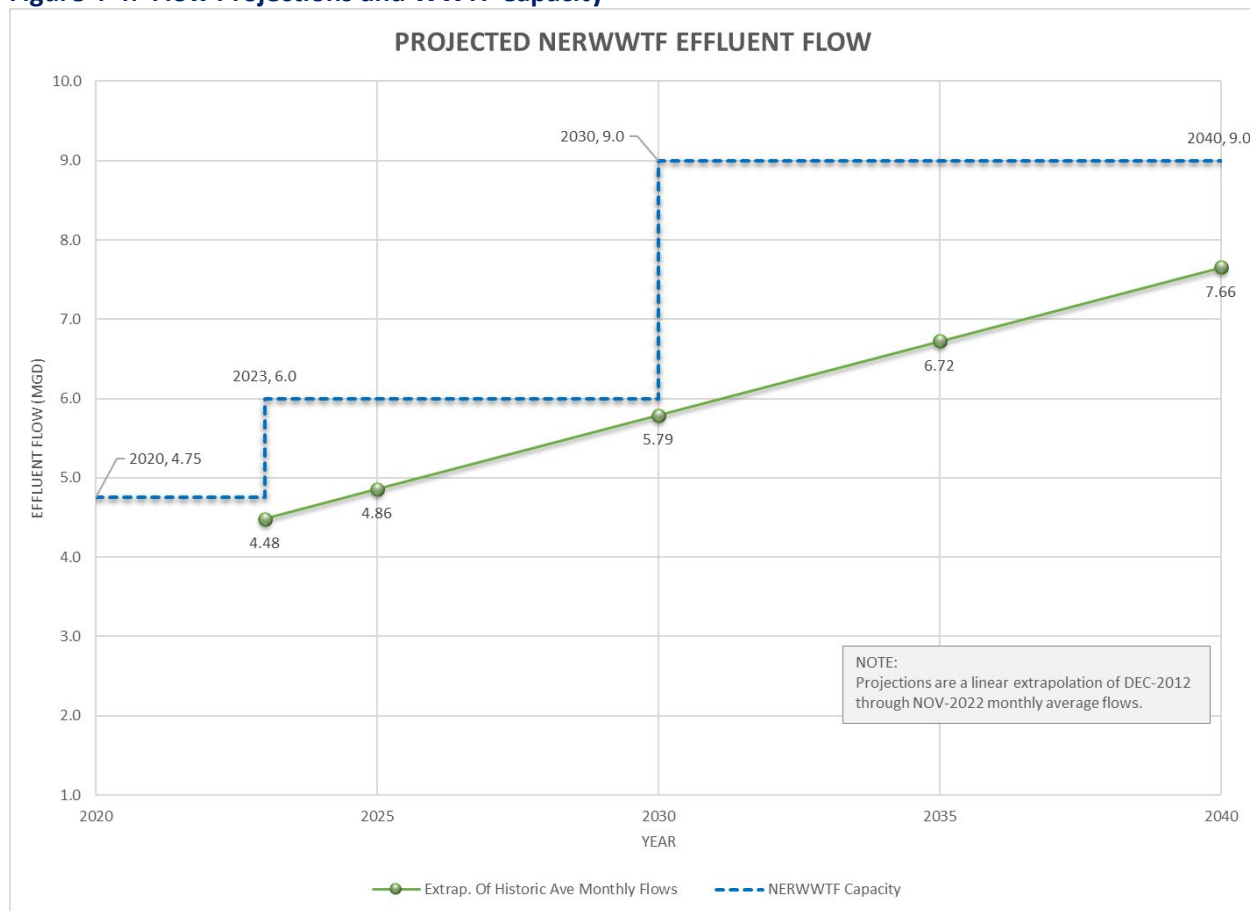
In the January 18, 2024 permit revision, the permitted capacity increased from 4.75 MGD AADF to the design treatment capacity of 6.0 MGD AADF.

The wastewater flow projections for the NERWWTF were established with predicted flows for the NERUSA. These projected flows were compared between three sources including the PCU NERUSA 2015 Master Plan, regional projections from the 2020 Central Florida Water Initiative (CFWI) Regional Water Supply Plan, and the NERUSA portion of the PCU Capacity Summary Report. To refine the projections for wastewater treatment demands, the evaluation included reviews of the 2023 Capacity Analysis Report, historical flows, and future development commitments. The projections represent flows based on historical data and committed capacity. Since this projection is reflective of the capacity pledged for the area based on development commitments, it represents the best available localized projections. These flow projections are presented in **Figure 4-3**. Additionally, **Figure 4-4** illustrates the WWTF capacity compared to projected flow.

Figure 4-3: Flow Projections



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Figure 4-4: Flow Projections and WWTF Capacity

4.1.4 A list and ranking of facility construction, expansion, or upgrades necessary to meet applicable nutrient water quality requirements, and the estimated costs of these facility improvements

In 2023, as flow to the plant was approaching 4.75 MGD, PCU modified the permit to include the full plant design capacity of 6.0 MGD. In addition, PCU currently plans to expand the plant capacity to 9.0 MGD using a phased approach. Procurement of services for the preliminary design of this project is in progress. The estimated costs for the facility improvements, from the conceptual design report to construction cost (excluding contingencies), is \$147M.

4.1.5 A projected timeline of the dates by which the construction of any facility improvements, including new/extended sewer lines, will begin and be completed and the date by which operations of the improved facility will begin

Pre-application meetings were held with FDEP in November 2023 to discuss the next steps for the planned upgrades. As per the draft schedule presented to FDEP, the County anticipates the first phase, which will allow for up to 7.0 MGD, to be online in 2026. The remaining phases, up to 9.0 MGD, will come online in 2028.

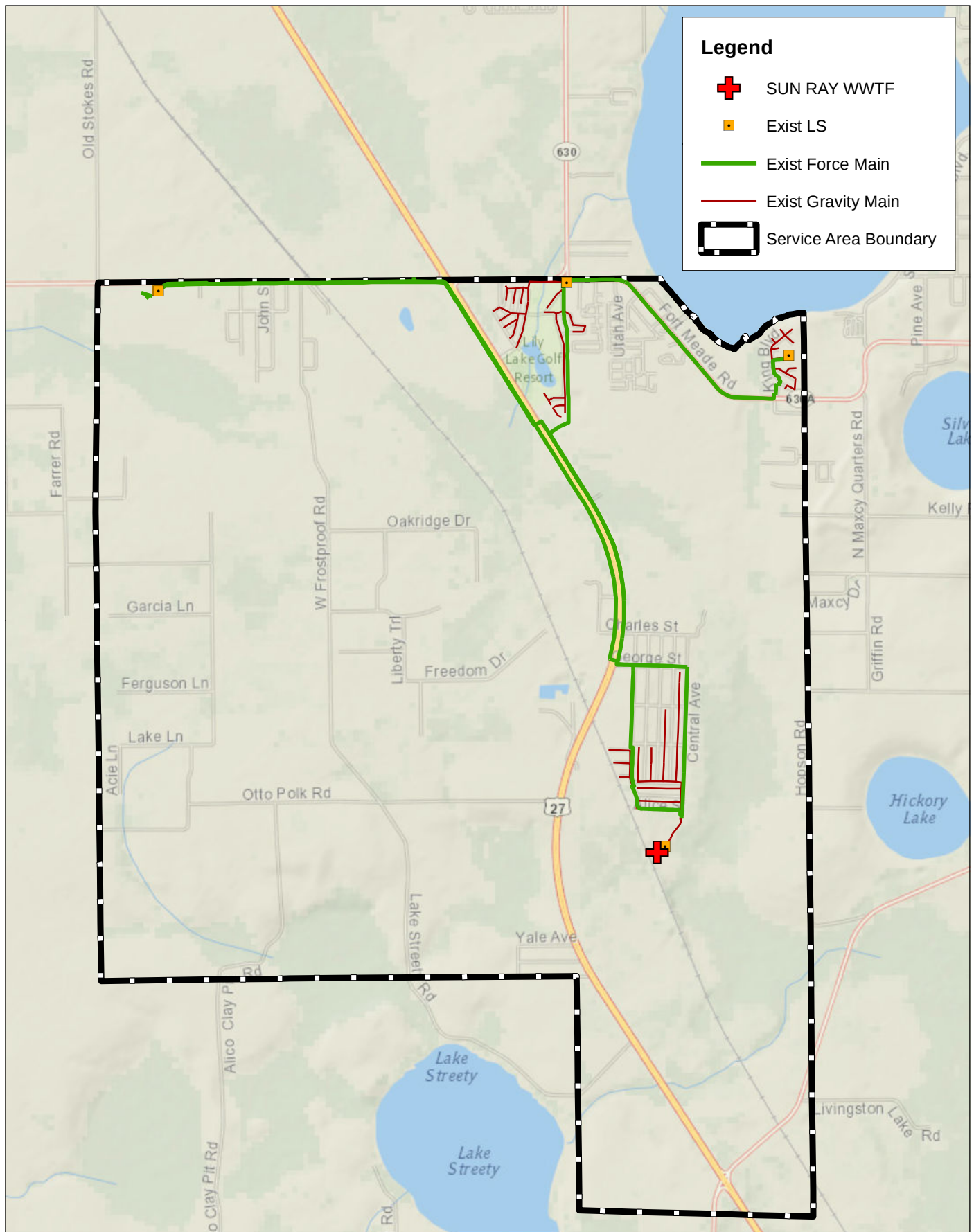
5. SERUSA Description

The portion of the SERUSA served by the County encompasses approximately 14.5-square miles in southeast Polk County. Within the SERUSA, PCU owns and operates 5 lift stations, 5.6 miles of wastewater gravity sewers, 11.4 miles of wastewater force mains, and operates the Sun Ray WWTF. The Crooked Lake Park WWTF, by receivership, is technically not located within a Polk County service area, but is in proximity to the SERUSA.

5.1 Sun Ray WWTF (SRWWTF), Final Order Required Information

The SRWWTF utility service area covers approximately 10 square miles, and in 2023 served 569 total connections. It provides treatment of domestic wastewater generated by the South County Jail. It is located within the SERUSA of Polk County, Florida at 915 Central Avenue, Frostproof, FL 33843. **Figure 5-1** provides the SRWWTF location, lift stations, force mains, and the service area boundary.

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5.1.1 Permitted Capacity

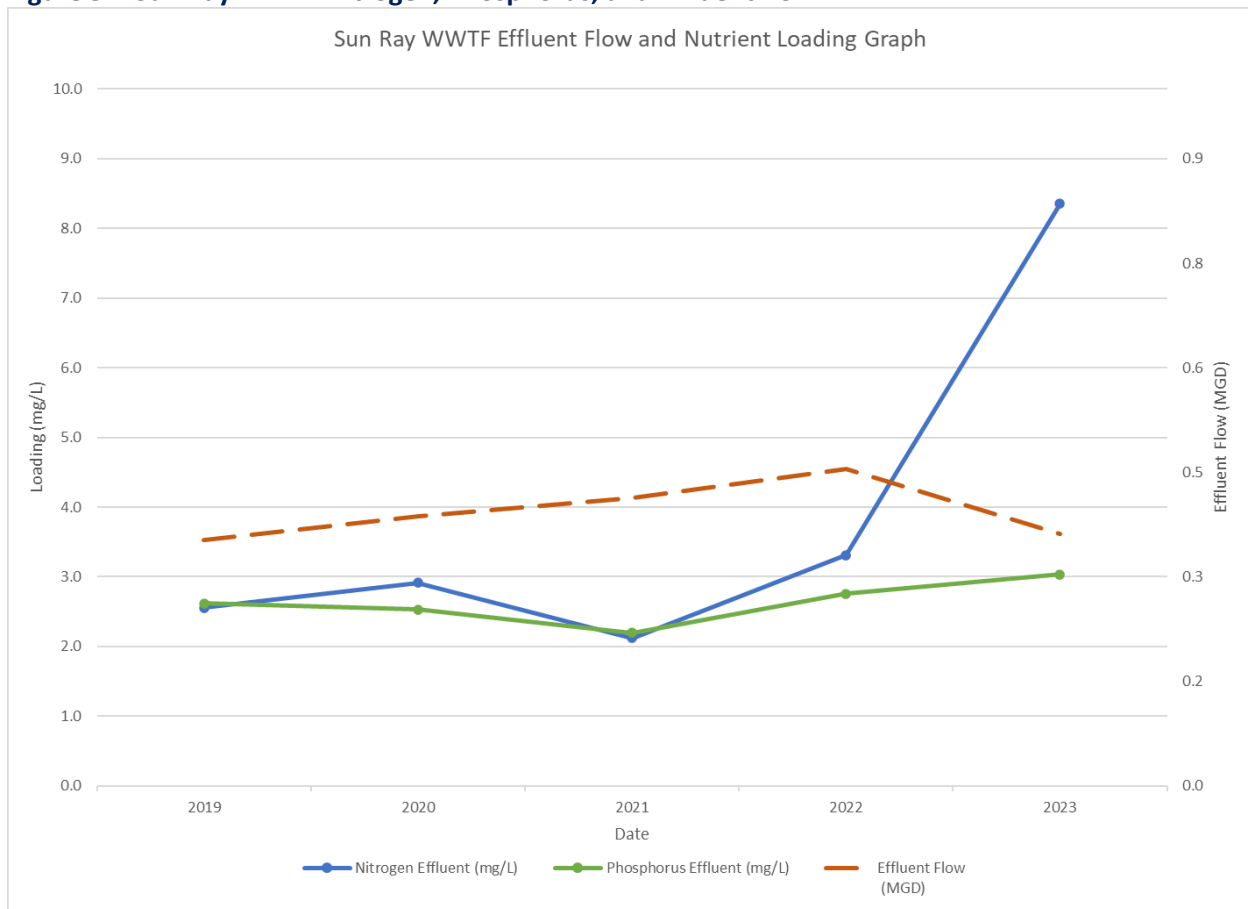
The SRWWTF has a permitted capacity of 1.0 MGD, based on a twelve-month average daily flow (12MADF). FDEP Permit number FLA012949 was issued on July 21, 2019 and expires on July 20, 2024. It has one permitted reuse land application discharge system (R-001) including the following sites:

- On-site: 0.098 MGD AADF two-cell Rapid Infiltration Basic (RIB)
- Hopson Road site: 0.350 MGD AADF two-cell RIB
- Prine Site: 0.650 MGD AADF three-cell RIB

5.1.2 The facility's permitted TN and TP effluent limits

The current permit includes limits of 'report only' for TN and TP. The annual TN and TP loads (showing both flow and concentrations) discharged from the facility over the past five years are shown in **Figure 5-2**.

Figure 5-2 Sun Ray WWTF Nitrogen, Phosphorus, and Effluent flow

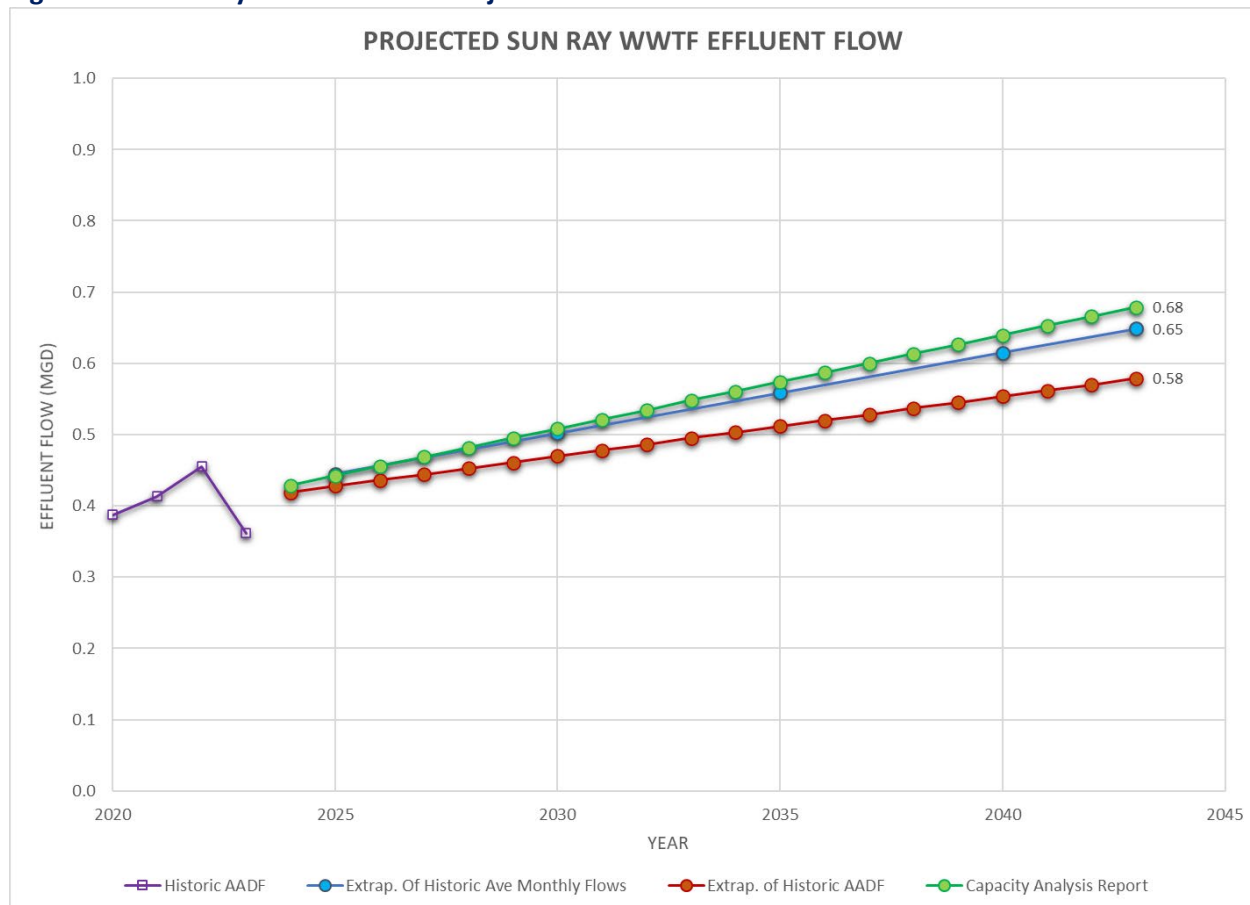


5.1.3 Capacity analysis considering future growth over the next 20 years

PCU maintains a database of all proposed developments submitted to the County for review and approval for construction. The County utilizes this data to prepare projection reports such as the Water and Wastewater Capacity Summary Report (CSR), SERUSA Master Plan, and 2025 Central Florida Water Initiative projections that determine the number of lots that are in construction, and those that are approved but have not begun construction. The projections for the next 10-years include an average growth rate of approximately 4.3% for flows from the South County Jail and 0.35% growth rate for the residential connections.

According to the effluent flow projections provided in the December 2023 Capacity Analysis Report, 50% of the permitted capacity may be exceeded by 2030; however, 75% of the capacity will not be exceeded within the 10-year planning period (2033). See **Figure 5-3** for 20-year growth projections in the Sun Ray WWTF Service Area.

Figure 5-3: Sun Ray WWTF Effluent Projections



5.1.4 A list and ranking of facility construction, expansion, or upgrades necessary to meet applicable nutrient water quality requirements, and the estimated costs of these facility improvements

In accordance with F.A.C. 62-600.405, as the permitted capacity will not be exceeded within the next 5-years, planning for expansion of improvement are not recommended at this time.

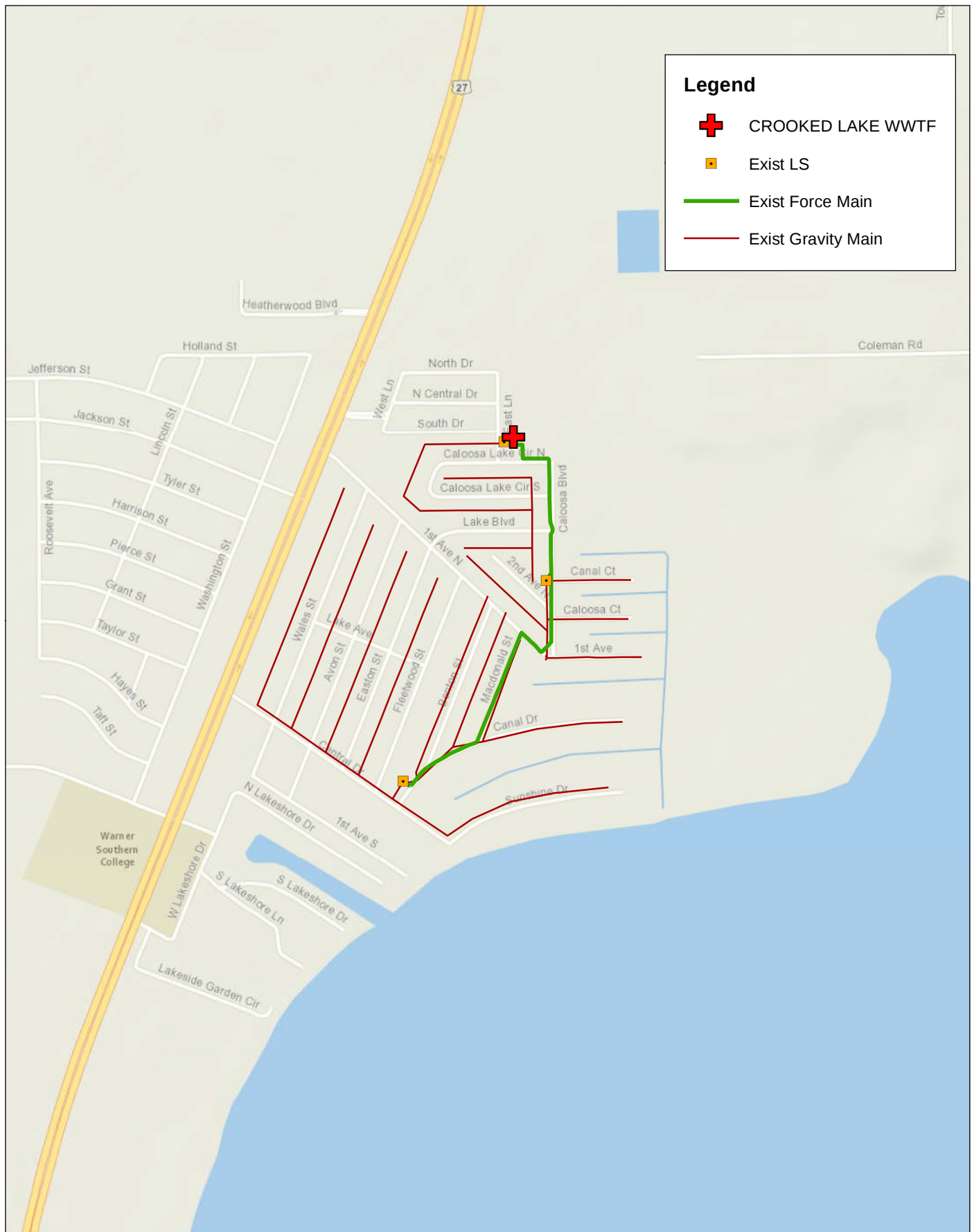
5.1.5 A projected timeline of the dates by which the construction of any facility improvements, including new/extended sewer lines, will begin and be completed and the date by which operations of the improved facility will begin

As described above, no improvements are recommended at this time.

5.2 Crooked Lake Park Sewerage Company, Final Order Required Information

Permit number FLA013038 was issued on November 30, 2023 and expires on November 29, 2028. The permit was accompanied by an Administrative Order, AO-068SWD23. The Circuit/County Court of the Tenth Judicial Circuit in Polk County appointed the Polk County Utilities as the receiver for the Crooked Lake Park Sewerage wastewater treatment facility on March 25, 2021. Prior to County receivership, the facility lacked proper maintenance and was unable to comply with Department rules, regulations, and permit requirements. Due to the conditions of the facility, the final plan is to decommission and abandon the existing WWTF, and all the wastewater generated will be conveyed to the City of Lake Wales WWTF. **Figure 5-4** shows the WWTF location, lift stations, force mains, and the service area boundary.

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5.2.1 Permitted Capacity

The Crooked Lake Park Sewerage Company has a permitted capacity of 0.060 MGD. As authorized by permit, during high storm events, when the Crooked Lake plant is unable to effectively treat its received wastewater, this wastewater is hauled to the SRWWTF and pumped into the headworks where it is treated and released as SRWWTF effluent to the three RIB sites available. This method of disposal is meant to be a temporary solution during high rain events, with plans under design for the Crooked lake WWTF to be decommissioned and the existing flows transferred to the City of Lake Wales WWTF for treatment.

5.2.2 The facility's permitted TN and TP effluent limits

The current permit includes interim limits of 'report only' for TN and TP as annual averages. These limits were added to the permit to allow the facility time to collect data, analyze, and provide a plan of action to meet the final TN and TP limit required for the Final Lake Okeechobee Basin Management Action Plan (BMAP) which became effective January 2020. After the interim period, reclaimed water shall be limited in accordance with the following table.

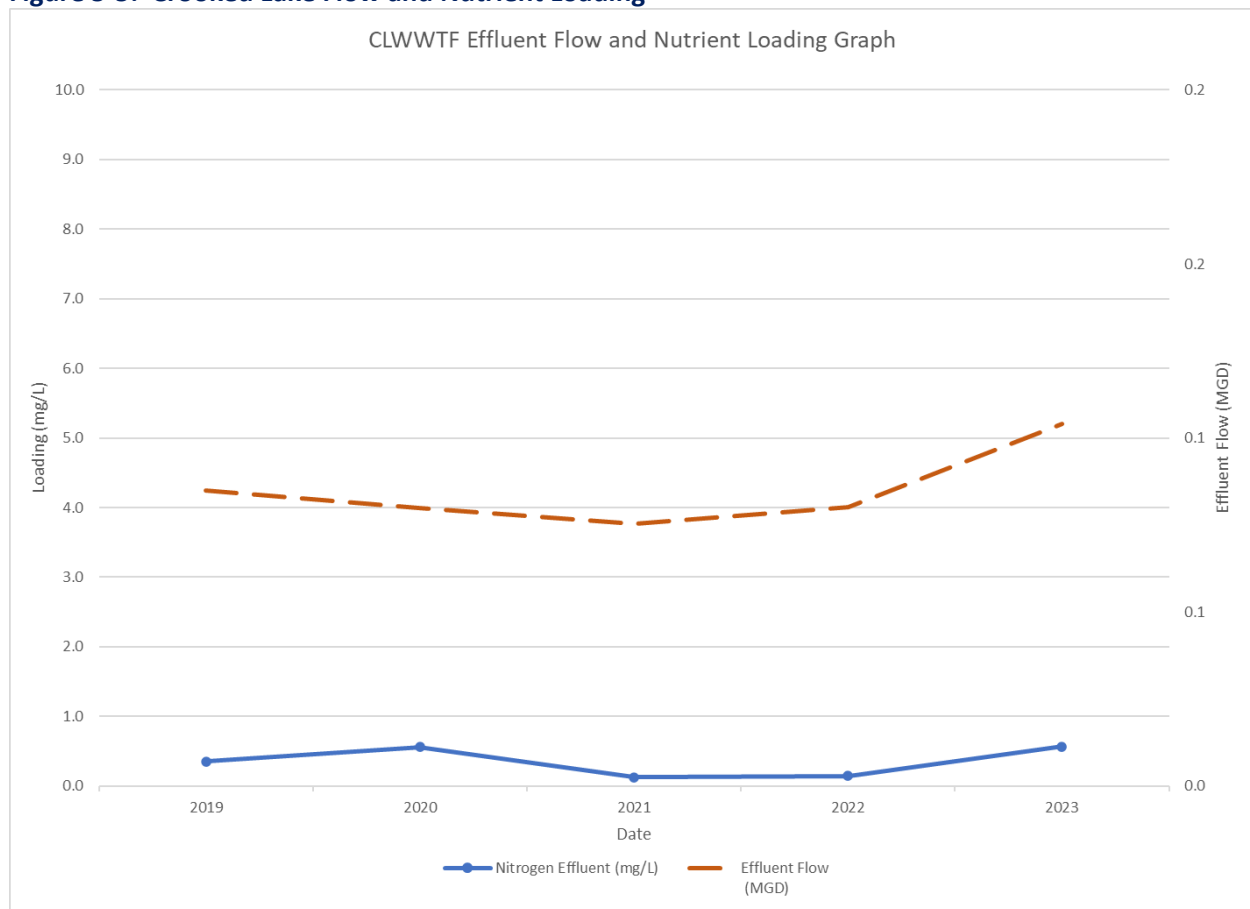
Table 5-1: TN and TP limits

Parameters after Interim period ends	Limit	Statistical Basis	Frequency
Total Nitrogen	10.0 mg/L	Annual Average	Monthly
Total Phosphorus	6.0 mg/L	Annual Average	Monthly

5.2.3 The annual TN and TP loads (showing both flow and concentrations) discharged from the facility over the past five years, estimated if necessary

Permits prior to the November 30, 2023 renewal did not require TP sampling and reporting. As a result, **Figure 5-5** only includes the past 5-year TN and flow data.

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Figure 5-5: Crooked Lake Flow and Nutrient Loading

5.2.4 Capacity analysis considering future growth over the next 20 years

A 20-year capacity analysis has not been included in this report due to the planned decommissioning of the facility to be completed by July 2026.

5.2.5 A list and ranking of facility construction, expansion, or upgrades necessary to meet applicable nutrient water quality requirements, and the estimated costs of these facility improvements

FDEP included the following findings of fact with the issuance of the current permit:

- Due to the lack of maintenance prior to County receivership, the treatment facility will not be capable of meeting permit limitations during the period for which the operation permit is requested without significant repair/upgrades.
- The 3-month ADF exceeds 50% of the permitted capacity on an average daily flow (ADF) basis, Chapter 62-600.405 FAC stipulates that it may be necessary to prepare a Capacity Analysis Report (CAR) for submission. However, the significant fluctuations in flows were identified by the Permittee as possibly being caused by stormwater inflow and groundwater infiltration (I&I) to the facility in the collection system. In addition, some of the portions of the existing collection system likely date back to the late 1950s when the area was initially platted, some of the manhole drop connections are missing, and structural issues were noted such as cracked pipes, broken pipes and deteriorated manholes.
- During Hurricane Ian on September 2022, the berm separating the two RIBs was manually breached to equalize the water level and prevent the RIB system from discharging into Crooked Lake. This modification prevents the function of alternating loading and resting periods.

- The RIB system is pumped out for emergencies only as necessary and transported to the SRWWTF (FLA012949) RIB system to maintain capacity and freeboard.
- The final plan will be the decommissioning and abandonment of the existing WWTF, and all the wastewater generated will be conveyed to the City of Lake Wales WWTF.

Cost estimates for the project:

- I&I Reduction (i.e. gravity system lining and repairs), \$4.5M
- Lift Stations Improvements and Force Main (for tying into Lake Wales system), \$4.5M
- Connection Fees to reserve capacity with Lake Wales, \$1M

5.2.6 A projected timeline of the dates by which the construction of any facility improvements, including new/extended sewer lines, will begin and be completed and the date by which operations of the improved facility will begin

The action plan/timeline for facility improvements and abandonment were contained within in the administrative order issued with the permit on November 30, 2023 and an excerpt from the AO is included here for ease of reference.

Action Plan	Due Date
a. The land application of the reclaimed water shall be in compliance with all limits specified in the permit except land application description and loading and resting period.	First day of the second month following permit issuance
b. Submit a report every six-months, via email to the Southwest District office at SWD_DW@floridaDEP.gov , outlining progress toward compliance with Administrative Order AO-068SWD23.	Every six months following permit issuance
c. Complete collection system upgrades noted to reduce inflow and infiltration in the submitted OMPR.	6/30/2024
d. Design and construction of the force main to redirect influent flow to City of Lake Wales WWTF.	7/01/2025
e. Submit abandonment plan to the Department.	At least six months prior to abandonment of the plant
f. Decommission and abandonment of the plant	7/02/2026
g. Comply with the final limit for TN and TP or obtain Department approved regulatory relief.	7/02/2026; If Action Plan item f. is not completed
h. Meet the facility classification and operator staffing requirements in accordance to Rule 62-699.310(2)1., F.A.C. as a Category I, Type III, Class C facility.	7/02/2026; If Action Plan item f. is not completed

6. Funding

This report has been prepared to comply with the requirements of the Department's June 12, 2023 final order. As illustrated previously in this report, funding is a key factor in the County's ability to bring forth WWTF projects designed to comply with new State requirements. It is critical that any new requirements and/or restrictions in the BMAP areas located within Polk County also include State and/or Federal Funding assistance.

****End of Report****