AGENDA
FERNANDINA BEACH CITY COMMISSION
WORKSHOP
JULY 5, 2023
5:00 PM
CITY HALL COMMISSION CHAMBERS
204 ASH STREET
FERNANDINA BEACH, FL 32034

1 CALL TO ORDER

2 ROLL CALL

3 PLEDGE OF ALLEGIANCE

4 PRESENTATION

4.1 **Water and Wastewater Capacity Fees**

4.2 **Water and Wastewater Rate Study**

5 DISCUSSION

5.1 **MECHANICAL EQUIPMENT - SETBACK RESTRICTIONS -** *Discuss residential mechanical equipment setback restrictions. This item is placed on the agenda at the request of Commissioner Ayscue.*

5.2 **FISCAL YEAR 2023/2024 CAPITAL PROJECTS** - *This item is placed on the agenda at the request of Mayor Bean.*

6. ADJOURNMENT

ANY PERSON WISHING TO APPEAL ANY DECISION MADE BY THE COMMISSION WITH RESPECT TO ANY MATTER CONSIDERED AT SUCH MEETING OR HEARING WILL NEED A RECORD OF THE PROCEEDINGS, AND, FOR SUCH PURPOSES, MAY NEED TO ENSURE THAT A VERBATIM RECORD OF THE PROCEEDINGS IS MADE, WHICH RECORD INCLUDES THE TESTIMONY AND EVIDENCE UPON WHICH THE APPEAL IS MADE. AT THE DISCRETION OF THE MAYOR, A RECESS MAY BE SCHEDULED EVERY NINETY MINUTES.

Persons with disabilities requiring accommodations in order to participate should contact the City Clerk at (904) 310-3115 or TTY/TDD 711 (for the hearing or speech impaired).

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach

SUBJECT: Water and Wastewater Capacity Fees

ITEM TYPE: Presentation

REQUESTED ACTION:

SYNOPSIS: Florida Rural Water Association will present the results of the Capacity (Impact) Fee Study.

FISCAL IMPACT:

CITY ATTORNEY COMMENTS:

CITY MANAGER RECOMMENDATION(S):

Andre Desilet, Utilities Director	6/13/2023
Katie Newton, Legal Assistant	6/26/2023
Agnes White, Administrative Services Manager	6/26/2023
Pauline Testagrose, Comptroller	
Charles George, Interim City Manager	
Tammi E. Bach, City Attorney	

Katie A Newton

Submitted By: Katie Newton, Legal Assistant Date: June 13, 2023

COMMISSION ACTION:

FLORIDA RURAL WATER ASSOCIATION

2970 Wellington Circle • Tallahassee, FL 32309-7813
(850) 668-2746

EMAIL
frwa@frwa.net

WEBSITE
www.frwa.net

May 24, 2023

Andre Desilet
Utilities Director
City of Fernandina Beach
1180 S 5th Street
Fernandina Beach, FL 32034
Phone: (904) 277-7382
Email: adesilet@fbfl.org

RE: Water and Wastewater Capacity Fee Study
City of Fernandina Beach, Nassau Co., PWS: 2450364, Fac. No. FLA0027260

Dear Mr. Desilet:

Florida Rural Water Association is pleased to provide this Capacity Fee Study to the City of Fernandina Beach as a membership benefit. FRWA is dedicated to assisting water and wastewater systems provide Floridians with an ample affordable supply of high-quality water and wastewater disposal services, while protecting natural systems.

You should be congratulated on your water and wastewater system and operations staff. With unfunded mandates continuing to roll down from state and federal governments along with the aging of pipes, pumps, and plants, you have risen to the challenge and continue to provide quality services. To make a very difficult job more difficult, revenues have lagged behind expenses. Utility operators have done more with less each year, as measured in real dollars. They have shouldered the responsibility of running the system in a responsible manner and in compliance with state rules and regulations.

Capacity Fees. Capacity Fees (Connection Charges) are one-time charges assessed to the new commercial and residential connections to reimburse utility systems for infrastructure required to supply water and collect, treat, and dispose of wastewater from these new commercial and residential connections. Capacity Fees are proportional to the capacity set aside for the new customer. In some systems these charges are called Capacity Fees while others may be called Benefit Assessments, User Fees, Contributions In Aid of Construction (CIAC), Impact Fees or System Development Charges. [1]

The goals and objectives considered in the study include the following:

- ✓ Proposed Capacity Fees should be equitable among customer classes;
- ✓ Proposed Capacity Fees should minimize "shock" to customers if possible;

[1] AWWA, *Manual M1 - Principles of Water Rates, Fees and Charges*, 7th Edition, American Water Works Association, Denver CO., 2017, pp. 321-347

- ✓ Proposed Capacity Fees should reimburse the City for infrastructure required to supply water and collect treat, and disposal of wastewater from new commercial and residential connections; and
- ✓ Proposed Capacity Fees should provide for capital improvement needs and not operation and maintenance costs

Executive Summary.

Findings & Recommendations.

The City of Fernandina Beach has two options for setting Capacity Fees:

Option A – Use the **Remaining Useful Life Basis** to capture the existing cost of running the City of Fernandina Beach Water and Wastewater Utility.

Option B – Use the **Replacement Value Basis** to capture the true and sustainable cost of running the City of Fernandina Beach Water and Wastewater Utility.

Remaining Useful Life (RUL) is the length of time the utility infrastructure, piping, pumps, tanks, and equipment is likely to be functional before it requires replacement. A piece of equipment may last longer than its estimated useful life, but it will need more and more maintenance as it reaches that point. It may become obsolete or require major repairs. An especially old asset, while technically functional, may be more of a liability than a benefit if it requires frequent repair work.

The Remaining Useful Life basis for computing Capacity Fees provides a value to existing utility assets based on their depreciated condition, estimated based on the years it is expected to continue to function. This can also be called Replacement Cost New Less Depreciation. This basis does not provide for the cost of replacing the pipe or equipment when it reaches the end of its useful life, the cost that the utility will have to bear to serve the development being added to the utility.

As an example of the implication of Remaining Use Life Basis, most of Fernandina Beach's Master Wastewater Lift Stations were constructed in the 1970s, about 45 years ago. The industry standard for useful life for lift stations is 50 years. These lift stations have almost no value when computing Capacity Fees based on Remaining Useful Life Basis. For this portion of the Capacity Fee, the new user will have almost no Capacity Fee to pay. However, the true, sustainable value to the utility is the replacement cost for the lift stations, this is the cost the utility will have to bear to keep sewage transmission available for new users as they are added to the system.

Replacement Value is the original cost escalated to current-day dollars. That is, the cost to the utility to install new infrastructure to replace existing piping, pumps, tanks, and equipment in today's dollars. The Replacement Value recognizes the expense the utility must incur to purchase new piping and equipment as the existing piping and equipment have become unusable due to age and wear. This is the cost the existing users have been incurring for all the previous years in keeping sufficient and usable piping and equipment available for the users now coming onto the system.

Replacement Value reasonably reflects the cost of providing new expansion capacity to users as if the capacity was added at the time the new user connected to the water system. The utility is fairly compensated for the carrying costs of the excess capacity that needed to be built into the system in advance of the new users connecting to the system so it would be available at the time the connection was needed. With pipelines and treatment plants it is impossible to put in increments of capacity at exactly the time a new development needs to have it available. Capacity-related

infrastructure must be planned, designed, and constructed in large increments and the new users the capacity is intended to serve will typically connect to the system over many years. Utilities must make investments in capacity-related infrastructure that will provide service to new development well in advance of the time when the new development occurs. Meanwhile, the utility is incurring the cost of keeping the capacity-related infrastructure in proper working condition so it will be fully available when needed by the new development.

With Capacity Fees based on Replacement Value, the new users are paying for the true, sustainable value of the capacity that the utility has purchased and kept available for them until now to us. While Replacement Value capacity fees represent a higher cost per Equivalent Residential Connection (ERC) than Remaining Useful Life, FRWA recommends Replacement Value because it represents a more equitable compensation to the utility for the cost of constructing and keeping necessary, effective capacity available for new users when it is needed.

1. **Water Capacity Fee Finding.**

The current Water Impact Fee (Capacity Fee) for Fernandina Beach is $959 per Equivalent Residential Connection(ERC). For the Water Capacity Fee, the City has the option of using the evaluated Fee of **$520 per ERC** using the Remaining Useful Life Basis –or- **$2,760 per ERC** using the Replacement Value Basis to capture the true and sustainable cost of running its Water Utility. FRWA recommends using the Replacement Value.

2. **Wastewater Capacity Fee Findings.**

The current Wastewater Impact Fee (Capacity Fee) for Fernandina Beach is $2,321 per ERC. For the Wastewater Capacity Fee, the City has the option of using the evaluated Fee of **$2,480 per ERC** using the Remaining Useful Life Basis –or- **$7,280 per ERC** using the Replacement Value Basis to capture the true and sustainable cost of running its Wastewater Utility. FRWA recommends using the Replacement Value.

3. **Water & Wastewater Capacity Fee Findings.**

In combination both the Water and Wastewater Capacity Fees are:

Equivalent Residential Water & Wastewater Connection (ERC) Calculation Comparison

Category	Current Impact Fees	Option A Remaining Useful Life Value	Option B Replacement Value
Water	$959/ERC	$520/ERC	$2,760/ ERC
Wastewater	$2,321/ERC	$2,480/ ERC	$7,280/ ERC
Totals	**$3,280/ ERC**	**$3,000/ ERC**	**$10,040/ ERC**

4. **Water and Wastewater Capacity Fee Recommendations.**

FRWA recommends that the City use the evaluated fees to capture the true and sustainable cost of running its Water and Wastewater Utility and to maintain and protect the City's vital infrastructure. We recommend and can assist with continuing to establish a 5 and 10-year Capital Improvement Program to keep the City's utility financially sound.

5. **Other Utility Fee Recommendations**

- Fees for turn-ons, turn-offs, and late fees might need to be increased for inflation. Fees should be reviewed / updated at least annually by staff based on actual time and material costs for meters, fittings, boxes, equipment costs, fuel costs, and salaries.
- The Utility's policies on payments, late charge fees, illegal turn on penalty, or returned check penalty should also be reviewed / updated at least annually by staff.
- FRWA recommends implementing annual adjustments in accordance with the Florida Public Service Commission. The Florida Public Service Commission current Price Index is found at http://www.psc.state.fl.us/utilities/waterwastewater/, click on "Price Index and Pass Through Application for Water and Wastewater Utilities".

Year	Commission Approved Index	Year	Commission Approved Index
2011	1.18%	2017	1.51%
2012	2.41%	2018	1.76%
2013	1.63%	2019	2.36%
2014	1.41%	2020	1.79%
2015	1.57%	2021	1.17%
2016	1.29%	2022	4.53%

- It is recommended that you revisit this Capacity Fee study every 3 to 5 years or as needed. Indicators of need include changes to revenue or CIP expenses predictions, current financial position and other indicators that become evident during the annual budget approval process.

Capacity Fee Evaluation

Capacity Fee Calculations.

Capacity Fee Calculations are performed in accordance with the American Water Works Association *Manual M1 - Principles of Water Rates, Fees and Charges* guidelines for calculating and allocating Capacity Fees to new customers.[2] FRWA uses a rational and conservative approach when performing these evaluations. This approach is transparent, defendable, and complies with statute and case law. Since there is a rational nexus of allocating Capacity Fees to customer groups it also follows the intent of the Florida Statutes that set the basis for rates and Capacity Fees by counties and municipalities. Such fees shall be just and equitable. [3]

Capacity Fees are set using the following criteria:

- The water / wastewater system has the legal authority to charge Capacity Fees.
- Costs are allocated to specific customer classes based on use of the water / wastewater system infrastructure.
- New customers add incremental capital costs to the utility and the fees are set to recapture their impacts to the system.
- The evaluation of system data is sufficient to reasonably estimate the value of water / wastewater system infrastructure and support charges to new customers. The evaluation includes water / wastewater consumption, historical flow trends, growth, and inventories of water lines, wells, treatment, collection, manholes, lift stations, etc.
- Justification of capital costs are clearly provided in the calculation of fees.
- The costs of grant-funded and contributed assets are not included in the Capacity Fee calculations.
- Outstanding principal on debt that has been incurred for infrastructure is not included in asset value for Capacity Fee calculations.
- The capital costs / fee requirements for new customers are consistent, predictable, and uniform.
- Each customer class equitably pays its own way. No undue burden is placed on one class over another customer class.

Compliance with 163.31801 and the Dual Rational Nexus Test

For purposes of ensuring that proposed impact fees comply with the law, such impact fees must comply with section 163.31801, Florida Statutes. The City is responsible for compliance with this statute for all aspects of Capacity Fees – establishment, collection, and expenditures.

In 2019, through Senate Bill 144, the Florida Legislature incorporated into section 163.31801, Florida Statutes, the "dual rational nexus test." The dual rational nexus test determines the constitutionality of impact fees. The test has two prongs, each of which are a rational nexus that must be found:

> The local government must demonstrate a reasonable connection, or rational nexus, between the need for additional capital facilities and the growth in population generated by the subdivision. In addition, the government must show a reasonable connection, or rational nexus, between the expenditures of the funds collected and the benefits accruing to the subdivision.[4]

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[2] AWWA, *Manual M1 - Principles of Water Rates, Fees and Charges*, 7th Edition, American Water Works Association, Denver CO., 2017, pp. 321-347

[3] See Florida Statutes Chapter 153 for County Water & Sewer Systems and Chapter 180 - Municipal Public Works.

[4] *St. Johns County v. Northeast Florida Builders Ass'n, Inc.* 583 So.2d 635, 637 (Fla. 1991),; *Hollywood, Inc. v. Broward County,* 431 So.2d 606, 611-612 (Fla. 4th DCA 1983)

To understand the first prong of the dual rational nexus test, a rational nexus between the need for additional capital facilities and the growth in population generated by a new development, it is first important to understand what is considered rational. To be rational, the nexus must be substantial, demonstrably clear, and present. The Capacity Fee Study attempts to define (monetarily) the benefit new customers receive from hooking up to the utility in demonstrating the value of infrastructure capacity made available to the new customer. The Capacity Fee Study specifically focuses on the pro-rate share new customers should pay for the infrastructure required to meet the new demand. The goals of the Capacity Fee Study are rational and consistent with the first prong of the dual rational nexus test.

The second prong of the dual rational nexus test is that there must be a rational nexus between the expenditures of the funds collected and the benefits accruing to the payor of the impact fee. This can be satisfied by specifically earmarking the funds collected for use in acquiring capital facilities to benefit the new residents. How the City handles the fees collected is the responsibility of the City and is not addressed in this Capacity Fee Study.

Cost Savings and Benefits.

Capacity Fees provide a revenue source for replacement and upgrade of existing infrastructure as new customers are added to the system and the funds collected must benefit the new customers paying the fee. This revenue is intended to be used for funding major expansions as well as minimizing future debt or reducing the need for future debt. Capacity Fees also provide for the utility to maintain an appropriate level of retained earnings and cash reserves to meet capital improvement needs. Utilities that are committed to regular renewal and replacement of aging infrastructure regularly see cost savings in their O&M budget, avoid unnecessary costly emergency repairs and minimize community health and safety concerns due to critical water and wastewater equipment failures.

Accuracy of Revenue Predictions.

We have performed our analyses using the data and information obtained; we have relied upon such information to be accurate. Projected Capacity Fee revenue precision is limited by the accuracy of the financial information provided – good information "in" equals good information "out", and *vice versa*. Should our capacity fees not meet your expectations, we will work with you to carefully review and update financial records, revisit our calculations, valuation parameters, assumptions, etc. We are always happy to return, revisit your Capacity Fees, and adjust the analyses as necessary, consistent with Florida law.

Growth should pay for Growth.

Growth causes the need for expansion and should therefore pay its fair share for the costs incurred. These new connections use existing capacity or require expanded capacity in the form of plant expansions and water / sewer line extensions -- requiring significant capital expenditures. Existing ratepayers have supported and maintained the existing facilities, and new customers should support any new, additional, or expanded facilities plus pipelines that are required for the use of these new customers.

Some officials and new customers have argued incorrectly that the utility should allow new customers on the system without charge or at original plant costs (not adjusted for inflation). It's not fair to existing ratepayers and it is not a prudent utility practice. Nor would it be good business practice. Public officials may be tempted at times to trim budgets; lower utility rates below operational costs; and keep Capacity Fees below actual capital investment needs -- but this seriously reduces utilities' ability to perform its central mission, shortchanges ratepayers by delaying costs, sets up unrealistic expectations, and undermines the future vitality of the community.

Dealing with Growth & Infrastructure Decay.

Communities must maintain adequate levels of service for public facilities and anticipate and prepare for growth. Some older or aging infrastructure may need to be upgraded which requires adequate funding.

As new customers come online more and more of the treatment capacity is used up until the plant is at capacity and must be expanded. Further, the Florida Department of Environmental Protection requires that when a water plant reaches 75% of capacity that the supplier of water must submit source/treatment/storage capacity analysis reports by a professional engineer documenting projected flows. If the operating capacity of the water treatment plant or finished water storage is exceeded in less than 5 years, documentation of timely design, permitting, and construction must be submitted with the report (Rule 62-555.348 F.A.C.). Similarly, for wastewater treatment plants, FAC 62-600.405 requires timely planning, design, and construction of needed wastewater treatment facility expansion. This requirement includes a statement signed and sealed by a professional engineer that planning and preliminary design of the necessary expansion has been initiated if the Capacity Analysis Report documents that the permitted capacity of the facility will be exceeded within the next five years.

Existing Water System Demand.

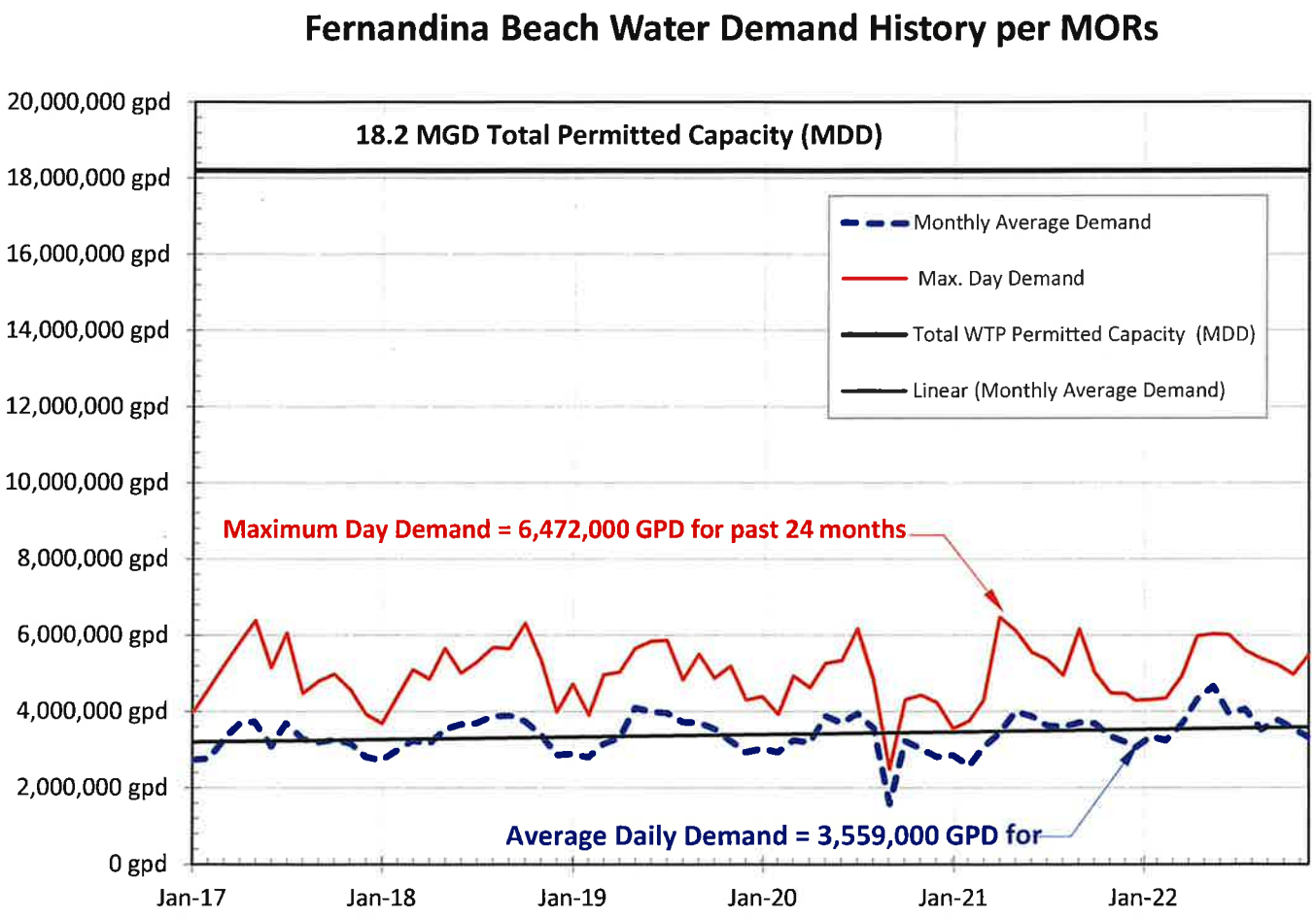

Figure 1 ~ Historic Water Demands

(GPD denotes Gallons per Day)

The amount of water used by the customers on the system is provided below, see Figure 1 for flow records:

City Population.....13,199
(based on Census.gov projections of latest US Census data, 2020 US Census recorded population at 12,978)

Equivalent Residential Connections (ERC).....11,162

Average Daily Demand (ADD) for past 24 months..... 3.559 MGD (2,470 gpm)

Maximum Daily Demand (MDD) for past 24 months ..... 6.472 MGD (4,490 gpm)

Total Permitted Plant Capacity (MDD)..... 18.2 MGD (12,640 gpm)

Percentage of total water treatment plant capacity used 36%

Water used per Equivalent Residential Connection (MDD / ERC)..... 580 gpd

The City has 3 water treatment plants with raw water provided from two groundwater wells at each plant, all 12-inch diameter outside casings. Treatment is provided by aeration and hypo-chlorination for disinfection. A minimum of 0.2 parts per million minimum chlorine residual is maintained throughout the distribution system to ensure water quality. The City has one elevated storage tank and 6 ground storage tanks to provide for storage and pressure. The maximum day water treatment demand has stayed well below the total capacity of 18.2 mgd for the past 24 months, utilizing only 36% of the total plant capacity.

Existing Wastewater System Demand.

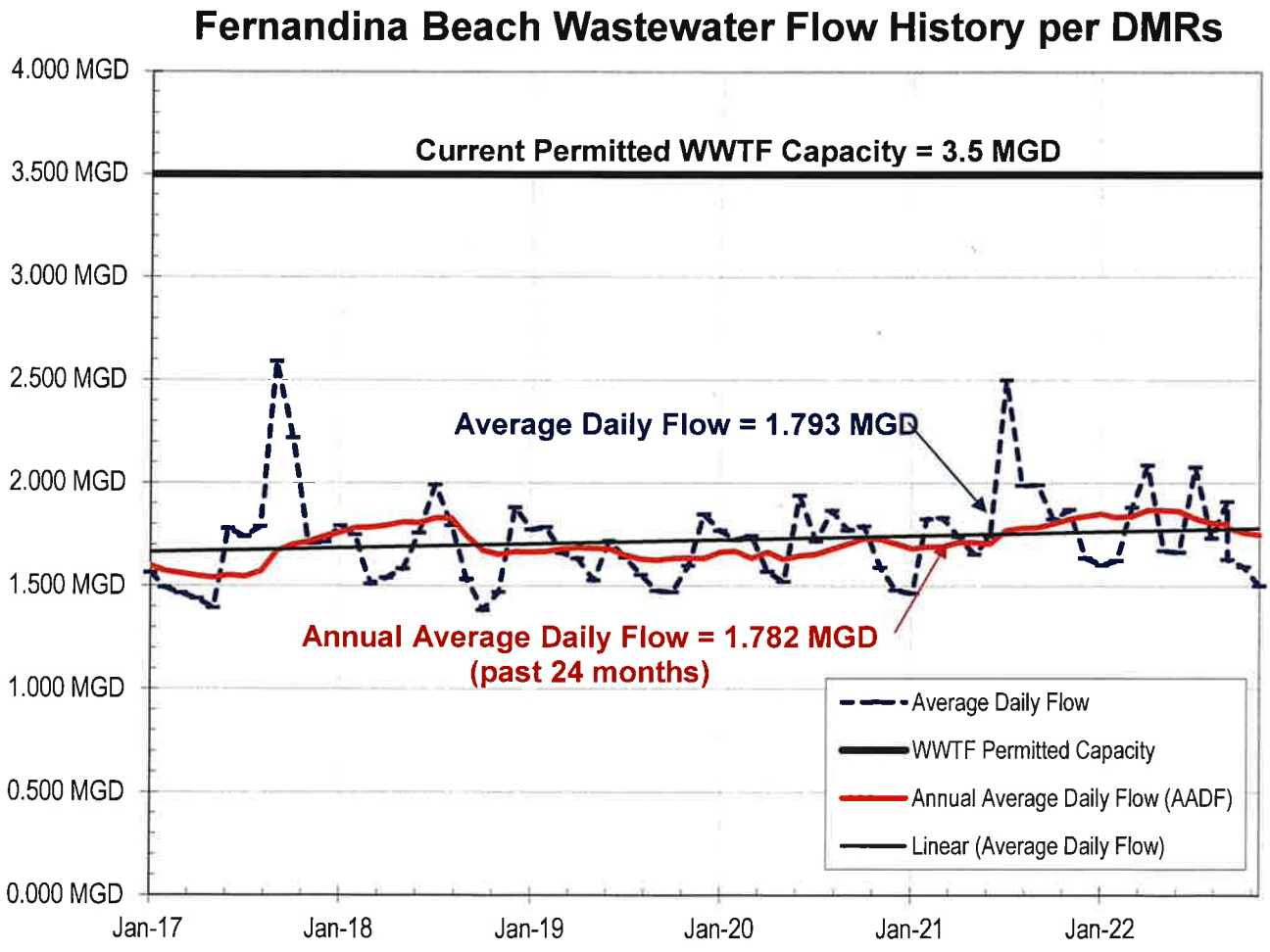

Figure 2 ~ Historic Wastewater Flows

(MGD denotes Million Gallons per Day)

The amount of wastewater used by the customers on the system is provided below, see Figure 2 for flow records:

City Population 13,199
(based on Census.gov projections of latest US Census data, 2020 US Census recorded population at 12,978)

Equivalent Residential Connections 9,021

Monthly Average Daily Flow per DMRs (for past 24 months) ..... 1.793 MGD (1,245 gpm)

Annual Average Daily Flow per DMRs (past 24 months) ..... 1.782 MGD (1,238 gpm)

Permitted Plant Capacity (AADF) ..... 3.5 MGD (2,430 gpm)

Percentage of wastewater treatment plant used ..... 51 %

The City has a biological nutrient removal treatment facility consisting of two parallel oxidation ditch trains. Preliminary treatment is accomplished with one mechanical screen, two backup manual screens and a grit chamber. Each oxidation ditch treatment train consists of an oxidation ditch with anoxic and aerobic zones, a secondary clarifier and a chlorine contact chamber. Chlorinated reclaimed water from the treatment trains is conveyed to a dichlorination chamber and then discharged to the Amelia River. Following aerobic digestion, the biosolids are dewatered on a rotary press and transported to a Class I Landfill for disposal. Annual average flows through the WWTP have remained well below the permitted capacity of 3.5 MGD.

Utilities are Capital Intensive.

The water supply and wastewater treatment industry are very capital intensive because almost every component of these systems requires fixed capital investments in long-term infrastructure. Water facilities include water supply, treatment, storage, distribution, and disposal of treatment residuals. Wastewater facilities include sewage collection, pumping (lift stations), transmission, treatment, disposal of treated effluent, and disposal of biosolids.

Funding Utilities.

Utilities typically operate for many years without fully recovering the initial construction costs. Loans and grants supported by rates are used to finance capital facilities. In addition to paying the debt obligation for existing facilities, rates support operation, maintenance, salaries, chemicals, power, vehicles, equipment, repair and replacement. Rates frequently cannot be structured to accommodate new or expanded facilities for new customers. Capacity Fees are used to assess new customers for capital construction costs and allow new customers to "buy-in" to the system. Capacity Fees bridge the funding gap needed to build the new facilities to provide service to new residents and businesses. Capacity Fees cannot be used for operation, maintenance, repair, replacement, or normal utility administrative costs. Capacity Fees should be held in a separate account from water/wastewater revenue and general funds. Finally, Capacity Fees must benefit the new users paying the Capacity Fees.

It is just too easy to neglect existing facilities and run them into the ground instead of being proactive in their repair and replacement. Problems with this approach are:

1. Cost for replacement is several times greater than for repair and maintenance;
2. Real cost of utility operation is hidden from the ratepayer and governing board;
3. Assets are not properly valued and preserved;
4. Improper stewardship of public assets;
5. Grants never cover all replacement costs; and
6. Diversion of public funds from more worthy uses.

FRWA Rough Order of Magnitude Capital Improvement Cost Projections.

Twenty years ago, conventional lime softening water treatment plants would cost about $4 to $6 per gallon to construct, today one would expect to spend approximately $6 to $15 per gallon to construct. Actual costs vary greatly by community, by region, and between design consultants. Plus, any estimate must include unique site-specific needs like new raw water wells, piping, land, instrumentation & controls, emergency power generation, or deep wells. The FRWA has developed cost estimating curves based on construction work in Florida for various types of water treatment techniques. These estimating curves have been used to prepare the rough order of magnitude costs for replacement shown herein.

Establishing the cost for new wastewater treatment capacity is equally difficult for wastewater treatment plants. Rough order of magnitude costs are included for wastewater plants, collection systems, lift stations, and force mains. Twenty years ago, an extended aeration secondary treatment plant would cost about $3 to $5 per gallon to construct, today you would expect to spend approximately $20 to $25 per gallon to construct. Actual costs vary greatly by regulated treatment requirements, by community, by region, and between design consultants. Recent final construction costs for advanced treatment wastewater plant and effluent reuse systems required by regulatory consent order for a Florida utility with much fewer wastewater connections than Fernandina Beach have been more than $28/gallon. All costs included are the Engineer's opinion of probable costs.

Scheduling Presentation of Capacity Fees Study Findings and Recommendations.

We are happy to come to your next City Commission meeting to explain our analysis and report. We anticipate that you will have questions to discuss and options to consider. The presentation is between 20 to 30-minutes in length, which would be followed by commission discussion. This activity typically takes about 60 to 90 minutes and can be held during a special workshop or a normal commission meeting. This is an informative meeting and decisions about Capacity Fees are usually taken at subsequent meetings. It is important that all commission members be in attendance since the adoption of Capacity Fees increases can produce public comment.

We have enjoyed serving you and wish your water and wastewater system the best. Please feel free to contact me if you have any further questions.

Sincerely,

Katherine Van Zant

Katherine Van Zant, P.E.
Saltus Engineering, Inc.

On behalf of
Florida Rural Water Association

This item has been digitally signed and sealed by Katherine Van Zant, PE. on 6 21 2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Katherine Van Zant Digitally signed by Katherine Van Zant
Date: 2023.06.21 15:23:41 -04'00'

Water & Wastewater Capacity Fee Report

FRWA Member: **Fernandina Beach**

Address: 1180 S. 5th Street
Fernandina Beach, FL 32034

Telephone: (904) 310-3431

Contact: Andre Desilet, Utilities Director

E-mail: adesilet@fbfl.org

County: **Nassau**

Population: 13,199

		Water:	Wastewater:
Connections:		9,310	7,783
PWS:	Facility ID:	**2450364**	FLA0027260
Capacity:	Capacity:	18.200 MGD	3.500 MGD
ADD:	AADF	3.559 MGD	1.782 MGD
MDD:	MADF	6.472 MGD	1.793 MGD

May 24, 2023

Version: **FINAL**

Prepared by: Katherine Van Zant, P.E. / Saltus Engineering, Inc.

This item has been digitally signed and sealed by Katherine Van Zant, PE, on 6/21 2023.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

KATHERINE L. VAN ZANT LICENSE No. 43964 STATE OF FLORIDA PROFESSIONAL ENGINEER

Florida Rural Water Association

2970 Wellington Circle
Tallahassee, Florida 32309-6885
Phone: 850-668-2746

Katherine Van Zant, P.E.
FL PE# 43964

Katherine Van Zant Digitally signed by Katherine Van Zant
Date: 2023.06.21 15:24:26 -04'00'

Florida Rural Water Association

2970 Wellington Circle, Tallahassee, Florida 32309

Member: **Fernandina Beach**
Contact: **Andre Desilet, Utilities Director**
Address: **Fernandina Beach, FL 32034**

Date: **24-May-23**
Version: **FINAL**
Conn: **9,310**
PWS: **2450364**

Water Capacity Fee Recommendations

Water Capacity Fee Calculation

	Wells	Water Treatment	Water Storage Tanks	Distribution System	Per Gallon
		Remaining Useful Life			
Cost per gal =	$2,198,000	$7,149,267	$4,920,000	$16,725,236	**$1.70 / gal**
		18,200,000 gpd			
		Replacement Value			
Cost per gal =	$4,020,000	$49,137,714	$18,980,000	$29,091,760	**$5.56 / gal**
		18,200,000 gpd			

Where:

Total Treatment Capacity =	18,200,000 gpd	
Max Day Demand from MORs =	6,472,000 gpd	based on average MDF/ADF past 24 months
Percentage of WTP used =	35.6%	
Average Daily Demand from MORs =	3,559,242 gpd	

Category	Remaining Useful Life		Replacement Value
Wells	**$2,198,000**	55%	$4,020,000
Water Treatment	**$7,149,267**	15%	$49,137,714
Water Storage Tanks	**$4,920,000**	26%	$18,980,000
Distribution System	**$16,725,236**	57%	$29,091,760
Less Water Utility Debt	**($14,562,116)**		($14,562,116)
Totals	**$16,430,387**	19%	**$86,667,358**
	$0.90 / gal		$4.76 / gal

Equivalent Residential Water Connection (ERC) Calculation

Where:

	Remaining Useful Life Basis	Replacement Value Basis	
System Value ($) =	$16,430,387	$86,667,358	
Max Daily Demand based on MORs past 24 months =	6,472,000 gpd	6,472,000 gpd	
ERCs =	11,162	11,162	see ERC calculation worksheet
Max Daily Demand / Connection =	**580 gpd/ERC**	**580 gpd/ERC**	
Avg Daily Demand / Connection =	**319 gpd/ERC**	**319 gpd/ERC**	

ERC Costs = System Value ($) x MDD / ERC ÷ Total Treatment Capacity gpd (Max Day)

ERC Costs = $16,430,387 ÷ 18,200,000 gpd × 580 gpd/ERC = **$523.45 / ERC** Remaining Useful Life Basis

Use **$520 / ERC**

ERC Costs = $86,667,358 ÷ 18,200,000 gpd × 580 gpd/ERC = **$2,761.09 / ERC** Replacement Value Basis

Use **$2,760 / ERC**

Remaining Equivalent Residential Water Connections Available

Where:

Max Daily Demand / ERC =	580 gpd/ERC	11,162 = ERCs
Total Treatment Capacity (Max Day) =	18,200,000 gpd	
Max Day Demand =	6,472,000 gpd	**11,728,000 gpd** = Capacity Remaining
Percentage of WTP used =	35.6%	64.4% = Capacity Remaining
		20,227 = ERCs Remaining

Note: 1. Approximate Useful Value based on industry standards, consistent with FRWA Deparatment of Environmental Protection Asset Management Plan

2. Utility debt for capital expenditures is taken out because repayment of debt will be paid by new users in rates

3. Infrastructure paid by developers and turned over the to City, based on information provided by City staff, is not included in Replacement Value or Remaining Useful Life costs

Florida Rural Water Association

2970 Wellington Circle, Tallahassee, Florida 32309

Member: **Fernandina Beach**
Contact: **Andre Desilet, Utilities Director**
Address: **Fernandina Beach, FL 32034**

Date: **24-May-23**
Version: **FINAL**
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GMS: **FLA0027260**

Wastewater Capacity Fee Recommendations

Wastewater Capacity Fee Calculation

	WWP	Lift Stations	Force Main	Gravity Sewers & Manholes	Per Gallon
		Remaining Useful Life			
Cost per gal =	$19,687,500	$865,000	$3,138,349	$27,650,000	**$14.67 / gal**
		3.500 MGD			
		Replacement Value			
Cost per gal =	$70,000,000	$13,450,000	$8,272,710	$45,426,000	**$39.19 / gal**
		3.500 MGD			

Where:

Total Treatment Capacity =	3.500 MGD	
AADF from DMRs =	1.782 MGD	*for past 24 months*
Percentage of WWTF used =	50.9%	

Category	Remaining Useful Life		Replacement Value	
WWTP	$19,687,500	28%	$70,000,000	$20.00 / gal
Lift Stations	$865,000	6%	$13,450,000	
Force Main	$3,138,349	38%	$8,272,710	
Gravity Sewers & Manholes	$27,650,000	61%	$45,426,000	
Less Wastewater Utility Debt	**($7,098,884)**		($7,098,884)	
Totals	**$44,241,965**	34%	**$130,049,826**	
	$12.64 / gal		$37.16 / gal	

Equivalent Residential Water Connection (ERC) Calculation

Where:

	Remaining Useful Life Basis	Replacement Value Basis	
System Value ($) =	$44,241,965	$130,049,826	
AADF from DMRs =	1.782 MGD	1.782 MGD	
ERCs =	9,101	9,101	*see ERC calculation worksh*
Average Daily Demand / Connection =	**196 gpd/ERC**	**196 gpd/ERC**	

ERC Costs = System Value ($) x ADD/ERC / Total Treatment Capacity gpd (AADF)

ERC Costs = $44,241,965 / 3,500,000 gpd × 196 gpd/ERC = **$2,477.55 / ERC** Remaining Useful Life Basis

Use $2,480 / ERC

ERC Costs = $130,049,826 / 3,500,000 gpd × 196 gpd/ERC = **$7,282.79 / ERC** Replacement Value Basis

Use $7,280 / ERC

Remaining Equivalent Residential Wastewater Connections Available

Where:

Monthly ADF / ERC =	196 gpd/ERC	9,101	= ERCs
Total Treatment Capacity =	3.500 MGD		
Monthly ADF from DMRs	1.782 MGD	1.718 MGD	= Capacity Remaining
Percentage of WWTF used =	50.9%	49.1%	
		8,765	= ERCs Remaining

Note: 1. Approximate Useful Value based on industry standards, consistent with FRWA Department of Environmental Protection Asset Management Plan.

2. Utility debt for capital expenditures is taken out because repayment of debt will be paid by new users in rates.

3. Infrastructure paid by developers and turned over the to City, based on information provided by City staff, is not included in Replacement Value or Remaining Useful Life costs

Florida Rural Water Association

2970 Wellington Circle, Tallahassee, Florida 32309

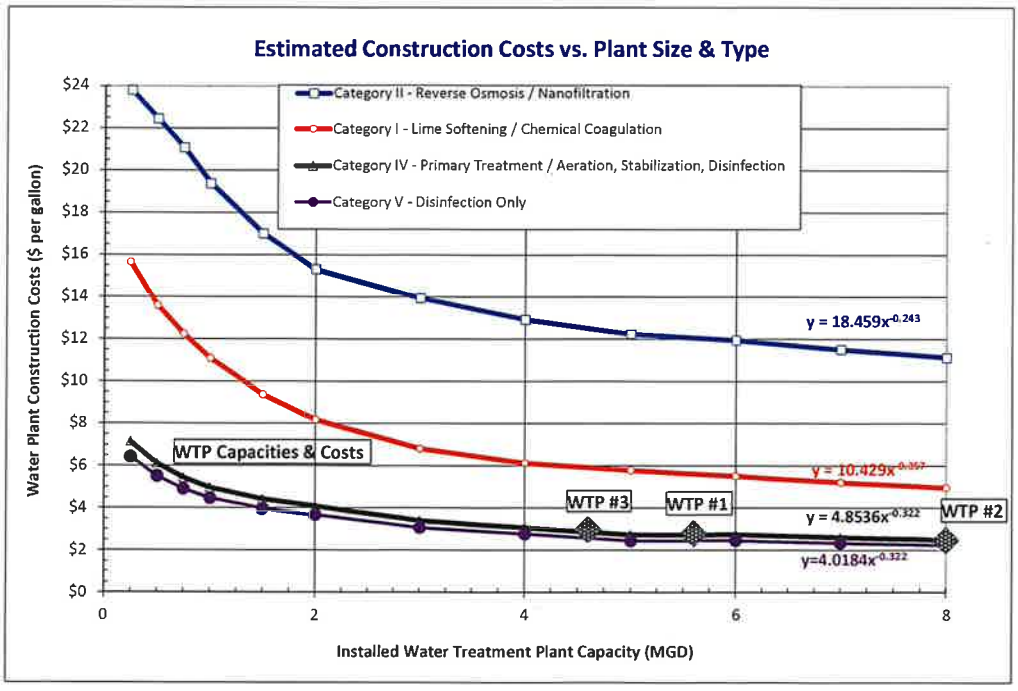
Member: **Fernandina Beach**
Contact: **Andre Desilet, Utilities Director**
Address: **Fernandina Beach, FL 32034**

Date: **24-May-23**
Version: **FINAL**
Conn: **9,310**
PWS: **2450364**

Estimated Construction Costs vs. Plant Size & Type

Water Treatment Plant Size (MGD)		**18.200 MGD**	from FDEP MOR reports and Permit 0080313.032-WC
FDEP Permitted Category per Rule 62-699.310(2)(e), F.A.C.			**II**
FDEP Permitted Staffing Classification per Rule 62-699.310(2)(e), F.A.C.			**B**
Construction Year	WTP #1 (5.6 MGD MDF Capacity)	1953	
	WTP #2 (8.0 MGD MDF Capacity)	1956	
	WTP #3 (4.6 MGD MDF Capacity)	2000	

Water Plant Category			
Category II - Reverse Osmosis / Nanofiltration	**No**	$0.00	
Deep Well Injection for Brine Disposal	**No**	$0.00	
Category I - Lime Softening / Chemical Caogulation	**No**	$0.00	
Category IV - Primary Treatment / Aeration, Stabilization, Disinfection **(WTP #1)**	**Yes**	$2.79	
Category IV - Primary Treatment / Aeration, Stabilization, Disinfection **(WTP #2)**	**Yes**	$2.48	
Category IV - Primary Treatment / Aeration, Stabilization, Disinfection **(WTP #3)**	**Yes**	$2.97	
Category V - Disinfection Only	**No**	$0.00	
Water Plant Construction Costs ($ per gallon)		$2.70	
Total Water Plant Construction Costs Estimate		**$49,137,714**	Replacement Cost
		$7,149,267	Useful Value



Note: *1. Approximate Useful Value based on industry standards, consistent with FRWA Deparatment of Environmental Protection Asset Management Plan and Florida Public Service Commission Average Service Life Guidelines, F.A.C. 25-30.140, Class B Utility: 32 years.*

2. WTP Capacities from Permit 0080313.032-WC

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Wellfield & Source Water

Replacement Value at today's cost: $ 670,000

Well	Well Name	Year Drilled	Casing Dia (inches)	Capacity (gpm)		Approx. Useful Value	Estimated ($)	
WTP 1 Well 1	Well 15	Refurbished 2022	12-in	950	a	100%	$ 670,000	$670,000
WTP 1 Well 2	Well 18	Refurbished 2023	12-in	1,500	a	100%	$ 670,000	$670,000
WTP 2 Well 1	Well 26	1956	12-in	1,500	a	10%	$ 67,000	$670,000
WTP 2 Well 2	Well 27	1965	12-in	1,500	a	10%	$ 67,000	$670,000
WTP 3 Well 1	Well 31	2000	12-in	1,500	b	54%	$ 362,000	$670,000
WTP 3 Well 2	Well 32	2000	12-in	1,500	b	54%	$ 362,000	$670,000
				8,450 gpm		27-yrs	**$ 2,198,000**	**$4,020,000**

12.168 MGD

Projected Replacement Value at today's cost: **$ 4,020,000**

Note: Approximate Useful Value based on industry standards, consistent with FRWA Deparatment of Environmental Protection Asset Management Plan: 50 years., operating wells assumed to have 10% capacity minimum.

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Distribution System Piping - Inventory, Condition & Current Value

Neglect lines less than 4-inches from value of water distribution system

Replacement Value at today's cost price per inch-diameter per foot: $8.50

Pipe Dia (inches)	Pipe Material	Length (feet)	Length (miles)	Approximate Average Age	Approx. Useful Value	Value ($ per ft)	Estimated ($)	
4-in	PVC, CI	17,693-ft	3.35 mi	50-yrs	50%	$34.00 /ft	$300,781	$601,562
6-in	PVC, AC, CI	149,829-ft	28.38 mi	47-yrs	53%	$51.00 /ft	$4,049,878	$7,641,279
8-in	PVC, AC, CI	132,889-ft	25.17 mi	44-yrs	56%	$68.00 /ft	$5,060,413	$9,036,452
10-in	PVC, AC, CI	67,603-ft	12.80 mi	43-yrs	57%	$85.00 /ft	$3,275,365	$5,746,255
12-in	PVC, AC, CI	57,322-ft	10.86 mi	34-yrs	66%	$102.00 /ft	$3,858,917	$5,846,844
16-in	PVC	1,613-ft	0.31 mi	18-yrs	82%	$136.00 /ft	$179,882	$219,368
		426,949-ft	80.86 mi			Weighted Average $68.14 /ft	**$16,725,236**	$29,091,760

Replacement Value at today's cost: **$29,091,760**

NOTES:

1. Lengths, material and age based on City GIS maps and interviews with Utilities staff.

2. Approximate Useful Value based on industry standards, consistent with FRWA Deparatment of Environmental Protection Asset Management Plan: 100 years.

3. Only piping purchased and installed by City utility is included. Areas provided by private developers based on interviews with City staff.

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Finished Water Storage Tanks

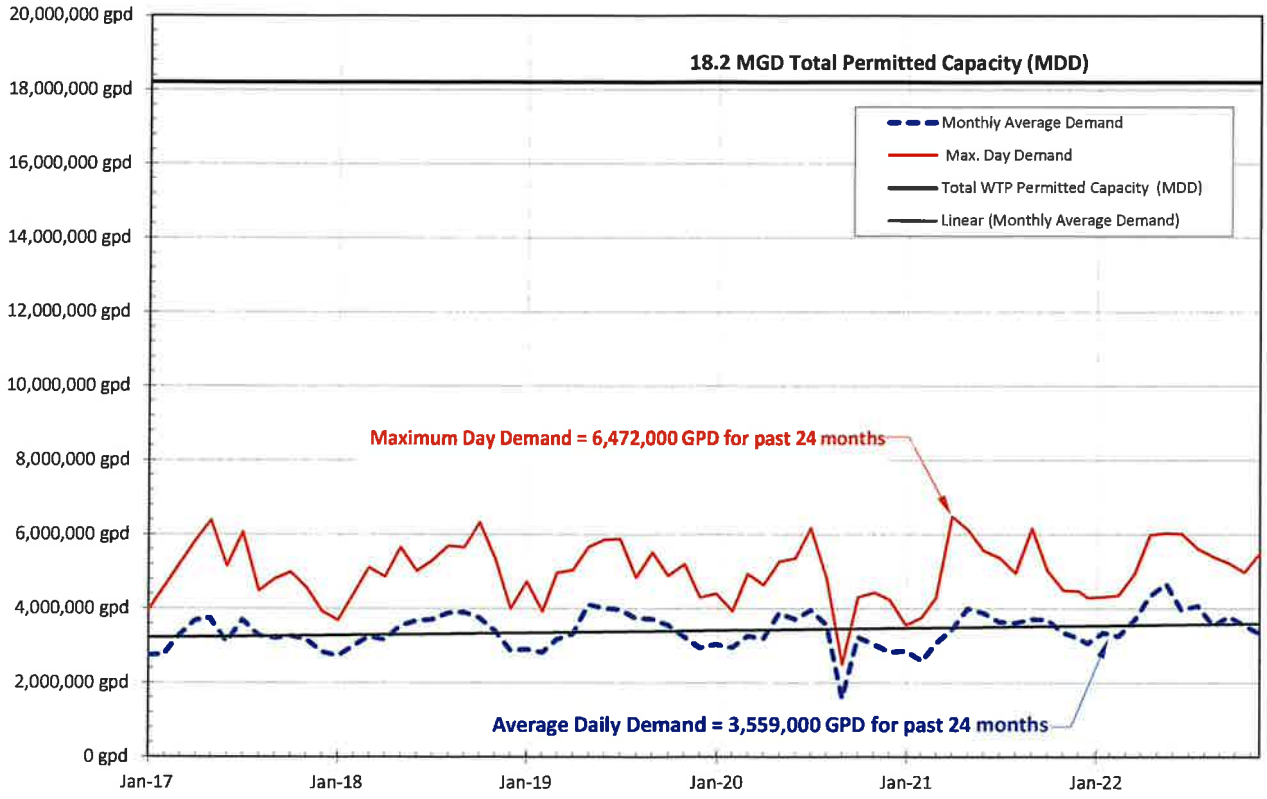
Steel Elevated Storage Tanks have an estimated 37-years useful life	$6.00/gal
Concrete Ground Storage Tanks have an estimated 40-years useful life	$7.00/gal
Steel Ground Storage Tanks have an estimated 37-years useful life	$6.00/gal
Hydropneumatic Tanks have an estimated 35-years useful life	$6.00/gal

Tank	Name / Location	Year Installed	Type & Material	Capacity (gal)	Approx. Useful Value	Estimated ($)	
WTP 1	G1: Ground Storage Tank w Aeration	before 1987	Concrete	500,000	10%	$300,000	$3,500,000
WTP 1	G2: Ground Storage Tank	before 1987	Concrete	180,000	10%	$108,000	$1,260,000
WTP 1	E: Elevated Storage Tank	before 1987	Steel	500,000	10%	$300,000	$3,000,000
WTP 2	G1: Ground Storage Tank w Aeration	1987	Concrete	500,000	30%	$900,000	$3,500,000
WTP 2	G2: Ground Storage Tank	before 1987	Concrete	120,000	10%	$72,000	$720,000
WTP 3	G1: Ground Storage Tank w Aeration	2000	Concrete	500,000	54%	$1,620,000	$3,500,000
WTP 3	G2: Ground Storage Tank w Aeration	2000	Concrete	500,000	54%	$1,620,000	$3,500,000
				2,800,000 gal		**$4,920,000**	$18,980,000

Replacement Value at today's cost: **$18,980,000**

Notes: Approximate Useful Value based on industry standards, consistent with FRWA Deparatment of Environmental Protection Asset Management Plan: 50 years. Minimum Useful Life = 10%.

Fernandina Beach Water Demand History per MORs



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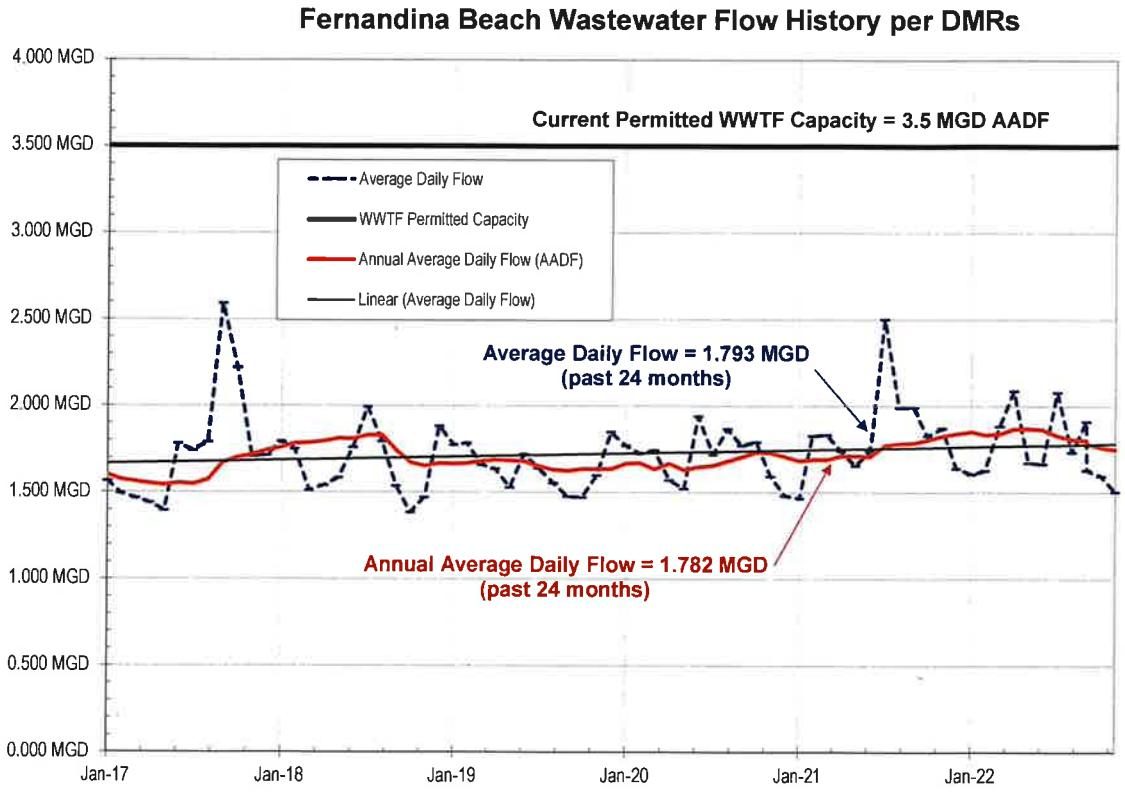
Historic Water Treatment Plant Flow Data from MORs

plant 1 from Monthly Operation Reports per 62-555.900(2), (3), (4) (6) or (5) (in MGDs)

Month	Monthly Average Demand	ADD (Annual)	Max. Day Demand	MDD (Annual)	Ratio MDD:ADD	Total WTP Permitted Capacity (MDD)	% Water Permit Capacity
Jan-17	2,738,256 gpd		3,978,000 gpd		1.45	18,200,000 gpd	22%
Feb-17	2,766,740 gpd		4,612,000 gpd		1.67	18,200,000 gpd	25%
Mar-17	3,274,611 gpd		5,203,000 gpd		1.59	18,200,000 gpd	29%
Apr-17	3,674,159 gpd		5,825,000 gpd		1.59	18,200,000 gpd	32%
May-17	3,735,902 gpd		6,382,000 gpd		1.71	18,200,000 gpd	35%
Jun-17	3,084,547 gpd		5,149,000 gpd		1.67	18,200,000 gpd	28%
Jul-17	3,690,062 gpd		6,056,000 gpd		1.64	18,200,000 gpd	33%
Aug-17	3,268,353 gpd		4,471,000 gpd		1.37	18,200,000 gpd	25%
Sep-17	3,203,192 gpd		4,797,000 gpd		1.50	18,200,000 gpd	26%
Oct-17	3,255,708 gpd		4,976,000 gpd		1.53	18,200,000 gpd	27%
Nov-17	3,162,385 gpd		4,564,000 gpd		1.44	18,200,000 gpd	25%
Dec-17	2,825,773 gpd	3,223,307 gpd	3,922,000 gpd	6,382,000 gpd	1.39	18,200,000 gpd	22%
Jan-18	2,719,998 gpd		3,685,000 gpd		1.35	18,200,000 gpd	20%
Feb-18						18,200,000 gpd	
Mar-18	3,243,773 gpd		5,097,000 gpd		1.57	18,200,000 gpd	28%
Apr-18	3,153,934 gpd		4,852,000 gpd		1.54	18,200,000 gpd	27%
May-18	3,531,127 gpd		5,649,000 gpd		1.60	18,200,000 gpd	31%
Jun-18	3,664,565 gpd		5,007,000 gpd		1.37	18,200,000 gpd	28%
Jul-18	3,697,160 gpd		5,296,000 gpd		1.43	18,200,000 gpd	29%
Aug-18	3,872,450 gpd		5,686,000 gpd		1.47	18,200,000 gpd	31%
Sep-18	3,898,232 gpd		5,650,000 gpd		1.45	18,200,000 gpd	31%
Oct-18	3,743,063 gpd		6,314,000 gpd		1.69	18,200,000 gpd	35%
Nov-18	3,391,332 gpd		5,327,000 gpd		1.57	18,200,000 gpd	29%
Dec-18	2,868,450 gpd	3,434,917 gpd	3,990,000 gpd	6,314,000 gpd	1.39	18,200,000 gpd	22%
Jan-19	2,894,966 gpd		4,719,000 gpd		1.63	18,200,000 gpd	26%
Feb-19	2,807,999 gpd		3,906,000 gpd		1.39	18,200,000 gpd	21%
Mar-19	3,156,869 gpd		4,961,000 gpd		1.57	18,200,000 gpd	27%
Apr-19	3,310,833 gpd		5,030,000 gpd		1.52	18,200,000 gpd	28%
May-19	4,097,741 gpd		5,654,000 gpd		1.38	18,200,000 gpd	31%
Jun-19	3,991,132 gpd		5,841,000 gpd		1.46	18,200,000 gpd	32%
Jul-19	3,961,192 gpd		5,867,000 gpd		1.48	18,200,000 gpd	32%
Aug-19	3,723,804 gpd		4,829,000 gpd		1.30	18,200,000 gpd	27%
Sep-19	3,707,599 gpd		5,502,000 gpd		1.48	18,200,000 gpd	30%
Oct-19	3,542,966 gpd		4,874,000 gpd		1.38	18,200,000 gpd	27%
Nov-19	3,230,133 gpd		5,191,000 gpd		1.61	18,200,000 gpd	29%
Dec-19	2,940,966 gpd	3,447,183 gpd	4,301,000 gpd	5,867,000 gpd	1.46	18,200,000 gpd	24%
Jan-20	3,028,870 gpd		4,393,000 gpd		1.45	18,200,000 gpd	24%
Feb-20	2,943,205 gpd		3,924,000 gpd		1.33	18,200,000 gpd	22%
Mar-20	3,251,385 gpd		4,929,000 gpd		1.52	18,200,000 gpd	27%
Apr-20	3,188,032 gpd		4,626,000 gpd		1.45	18,200,000 gpd	25%
May-20	3,872,578 gpd		5,260,000 gpd		1.36	18,200,000 gpd	29%
Jun-20	3,698,232 gpd		5,341,000 gpd		1.44	18,200,000 gpd	29%
Jul-20	3,950,933 gpd		6,160,000 gpd		1.56	18,200,000 gpd	34%
Aug-20	3,552,192 gpd		4,810,000 gpd		1.35	18,200,000 gpd	26%
Sep-20	1,575,666 gpd		2,490,000 gpd		1.58	18,200,000 gpd	14%
Oct-20	3,222,611 gpd		4,306,000 gpd		1.34	18,200,000 gpd	24%
Nov-20	3,020,732 gpd		4,430,000 gpd		1.47	18,200,000 gpd	24%
Dec-20	2,819,127 gpd	3,176,964 gpd	4,230,000 gpd	4,574,917 gpd	1.50	18,200,000 gpd	23%
Jan-21	2,856,708 gpd		3,545,000 gpd		1.24	18,200,000 gpd	19%
Feb-21	2,582,854 gpd		3,750,000 gpd		1.45	18,200,000 gpd	21%
Mar-21	3,065,870 gpd		4,286,000 gpd		1.40	18,200,000 gpd	24%
Apr-21	3,427,999 gpd		6,472,000 gpd		1.89	18,200,000 gpd	36%
May-21	3,993,063 gpd		6,126,000 gpd		1.53	18,200,000 gpd	34%
Jun-21	3,874,372 gpd		5,550,000 gpd		1.43	18,200,000 gpd	30%
Jul-21	3,627,353 gpd		5,361,000 gpd		1.48	18,200,000 gpd	29%
Aug-21	3,601,547 gpd		4,948,000 gpd		1.37	18,200,000 gpd	27%
Sep-21	3,708,799 gpd		6,153,000 gpd		1.66	18,200,000 gpd	34%
Oct-21	3,687,580 gpd		5,025,000 gpd		1.36	18,200,000 gpd	28%
Nov-21	3,349,733 gpd		4,484,000 gpd		1.34	18,200,000 gpd	25%
Dec-21	3,185,967 gpd	3,413,487 gpd	4,465,000 gpd	6,472,000 gpd	1.40	18,200,000 gpd	25%
Jan-22	3,054,612 gpd		4,292,000 gpd		1.41	18,200,000 gpd	24%
Feb-22	3,339,177 gpd		4,312,000 gpd		1.29	18,200,000 gpd	24%
Mar-22	3,240,869 gpd		4,346,000 gpd		1.34	18,200,000 gpd	24%
Apr-22	3,669,565 gpd		4,924,000 gpd		1.34	18,200,000 gpd	27%
May-22	4,325,612 gpd		5,978,000 gpd		1.38	18,200,000 gpd	33%
Jun-22	4,656,299 gpd		6,030,000 gpd		1.30	18,200,000 gpd	33%
Jul-22	3,952,934 gpd		6,014,000 gpd		1.52	18,200,000 gpd	33%
Aug-22	4,061,612 gpd		5,605,000 gpd		1.38	18,200,000 gpd	31%
Sep-22	3,522,133 gpd		5,387,000 gpd		1.53	18,200,000 gpd	30%
Oct-22	3,776,418 gpd		5,216,000 gpd		1.38	18,200,000 gpd	29%
Nov-22	3,544,466 gpd		4,970,000 gpd		1.40	18,200,000 gpd	27%
Dec-22	3,316,256 gpd	3,704,996 gpd	5,488,000 gpd	6,030,000 gpd	1.65	18,200,000 gpd	30%
	3,399,653 gpd	3,400,142 gpd	4,997,028 gpd		1.47		

Average Day Demand (GPD) from MORs	3,559,242 gpd	For past 24 months
MDF/ADF from MORs	1.82	For past 24 months
Max Daily Demand (GPD) from MORs	6,472,000 gpd	For past 24 months
Max Daily Demand (GPD) from MORs	5,236,777 gpd	For average MDF/ADF

	ADD	MDD	TPC
2017	3,223,307 gpd	6,382,000 gpd	18,200,000 gpd
2018	3,434,917 gpd	6,314,000 gpd	18,200,000 gpd
2019	3,447,183 gpd	5,867,000 gpd	18,200,000 gpd
2020	3,176,964 gpd	4,574,917 gpd	18,200,000 gpd
2021	3,413,487 gpd	6,472,000 gpd	18,200,000 gpd
2022	3,704,996 gpd	6,030,000 gpd	18,200,000 gpd


Fernandina Beach Wastewater Flow History per DMRs
4.000 MGD
3.500 MGD
3.000 MGD
2.500 MGD
2.000 MGD
1.500 MGD
1.000 MGD
0.500 MGD
0.000 MGD
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Current Permitted WWTF Capacity = 3.5 MGD AADF
Average Daily Flow
WWTF Permitted Capacity
Annual Average Daily Flow (AADF)
Linear (Average Daily Flow)
Average Daily Flow = 1.793 MGD
(past 24 months)
Annual Average Daily Flow = 1.782 MGD
(past 24 months)

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Address: Fernandina Beach, FL 32034

Date: 24-May-23

Version: FINAL

Conn: 7,783

GMS: **FL0027260**

Historic Wastewater Treatment Plant Flow Data from DMRs

from Discharge Monitoring Reports per 62-620.910(10) (in MGDs)

Month	Days/Month	Year	Monthly Average	3MMADD	Annual Average WWTP Permitted Capacity (FLW-04)	Annual Average	
Jan-17	31	2017	1.564 MGD	1.496 MGD	3.500 MGD	1.598 MGD	
Feb-17	28		1.493 MGD	1.490 MGD	3.500 MGD	1.572 MGD	
Mar-17	31		1.465 MGD	1.507 MGD	3.500 MGD	1.560 MGD	
Apr-17	30		1.439 MGD	1.466 MGD	3.500 MGD	1.549 MGD	
May-17	31		1.393 MGD	1.432 MGD	3.500 MGD	1.540 MGD	
Jun-17	30		1.780 MGD	1.537 MGD	3.500 MGD	1.551 MGD	
Jul-17	31		1.742 MGD	1.638 MGD	3.500 MGD	1.546 MGD	
Aug-17	31		1.790 MGD	1.770 MGD	3.500 MGD	1.572 MGD	
Sep-17	30		2.589 MGD	2.040 MGD	3.500 MGD	1.670 MGD	
Oct-17	31		2.219 MGD	2.199 MGD	3.500 MGD	1.700 MGD	
Nov-17	30		1.707 MGD	2.172 MGD	3.500 MGD	1.716 MGD	
Dec-17	31		1.713 MGD	1.880 MGD	3.500 MGD	1.741 MGD	
Jan-18	31	2018	1.792 MGD	1.737 MGD	3.500 MGD	1.760 MGD	
Feb-18	28		1.750 MGD	1.752 MGD	3.500 MGD	1.782 MGD	
Mar-18	31		1.510 MGD	1.684 MGD	3.500 MGD	1.785 MGD	
Apr-18	30		1.539 MGD	1.600 MGD	3.500 MGD	1.794 MGD	
May-18	31		1.583 MGD	1.544 MGD	3.500 MGD	1.810 MGD	
Jun-18	30		1.758 MGD	1.627 MGD	3.500 MGD	1.807 MGD	
Jul-18	31		1.992 MGD	1.778 MGD	3.500 MGD	1.829 MGD	
Aug-18	31		1.793 MGD	1.848 MGD	3.500 MGD	1.829 MGD	
Sep-18	30		1.535 MGD	1.773 MGD	3.500 MGD	1.741 MGD	
Oct-18	31		1.383 MGD	1.570 MGD	3.500 MGD	1.671 MGD	
Nov-18	30		1.471 MGD	1.463 MGD	3.500 MGD	1.652 MGD	
Dec-18	31		1.882 MGD	1.579 MGD	3.500 MGD	1.666 MGD	
Jan-19	31	2019	1.774 MGD	1.709 MGD	3.500 MGD	1.664 MGD	
Feb-19	28		1.784 MGD	1.813 MGD	3.500 MGD	1.667 MGD	
Mar-19	31		1.660 MGD	1.739 MGD	3.500 MGD	1.680 MGD	
Apr-19	30		1.634 MGD	1.693 MGD	3.500 MGD	1.687 MGD	
May-19	31		1.528 MGD	1.607 MGD	3.500 MGD	1.683 MGD	
Jun-19	30		1.719 MGD	1.627 MGD	3.500 MGD	1.680 MGD	
Jul-19	31		1.640 MGD	1.629 MGD	3.500 MGD	1.650 MGD	
Aug-19	31		1.554 MGD	1.638 MGD	3.500 MGD	1.630 MGD	
Sep-19	30		1.476 MGD	1.558 MGD	3.500 MGD	1.625 MGD	
Oct-19	31		1.470 MGD	1.501 MGD	3.500 MGD	1.633 MGD	
Nov-19	30		1.598 MGD	1.515 MGD	3.500 MGD	1.636 MGD	
Dec-19	31		1.848 MGD	1.639 MGD	3.500 MGD	1.634 MGD	
Jan-20	31	2020	1.769 MGD	1.738 MGD	3.500 MGD	1.665 MGD	
Feb-20	28		1.724 MGD	1.709 MGD	3.500 MGD	1.669 MGD	
Mar-20	31		1.742 MGD	1.745 MGD	3.500 MGD	1.635 MGD	
Apr-20	30		1.571 MGD	1.679 MGD	3.500 MGD	1.665 MGD	
May-20	31		1.520 MGD	1.611 MGD	3.500 MGD	1.629 MGD	
Jun-20	30		1.938 MGD	1.676 MGD	3.500 MGD	1.647 MGD	
Jul-20	31		1.718 MGD	1.725 MGD	3.500 MGD	1.654 MGD	
Aug-20	31		1.866 MGD	1.841 MGD	3.500 MGD	1.680 MGD	
Sep-20	30		1.771 MGD	1.785 MGD	3.500 MGD	1.704 MGD	
Oct-20	31		1.790 MGD	1.809 MGD	3.500 MGD	1.731 MGD	
Nov-20	30		1.593 MGD	1.718 MGD	3.500 MGD	1.727 MGD	
Dec-20	31		1.480 MGD	1.621 MGD	3.500 MGD	1.706 MGD	
Jan-21	31	2021	1.465 MGD	1.513 MGD	3.500 MGD	1.682 MGD	
Feb-21	28		1.826 MGD	1.590 MGD	3.500 MGD	1.690 MGD	
Mar-21	31		1.832 MGD	1.707 MGD	3.500 MGD	1.690 MGD	
Apr-21	30		1.739 MGD	1.799 MGD	3.500 MGD	1.712 MGD	
May-21	31		1.654 MGD	1.742 MGD	3.500 MGD	1.711 MGD	
Jun-21	30		1.740 MGD	1.711 MGD	3.500 MGD	1.706 MGD	
Jul-21	31		2.500 MGD	1.965 MGD	3.500 MGD	1.771 MGD	
Aug-21	31		1.989 MGD	2.076 MGD	3.500 MGD	1.781 MGD	
Sep-21	30		1.991 MGD	2.160 MGD	3.500 MGD	1.784 MGD	
Oct-21	31		1.824 MGD	1.935 MGD	3.500 MGD	1.803 MGD	
Nov-21	30		1.871 MGD	1.895 MGD	3.500 MGD	1.826 MGD	
Dec-21	31		1.640 MGD	1.778 MGD	3.500 MGD	1.839 MGD	
Jan-22	31	2022	1.606 MGD	1.706 MGD	3.500 MGD	1.851 MGD	
Feb-22	28		1.626 MGD	1.624 MGD	3.500 MGD	1.834 MGD	
Mar-22	31		1.883 MGD	1.705 MGD	3.500 MGD	1.839 MGD	
Apr-22	30		2.087 MGD	1.865 MGD	3.500 MGD	1.868 MGD	
May-22	31		1.672 MGD	1.881 MGD	3.500 MGD	1.869 MGD	
Jun-22	30		1.665 MGD	1.808 MGD	3.500 MGD	1.853 MGD	
Jul-22	31		2.078 MGD	1.805 MGD	3.500 MGD	1.828 MGD	
Aug-22	31		1.733 MGD	1.825 MGD	3.500 MGD	1.806 MGD	
Sep-22	30		1.910 MGD	1.907 MGD	3.500 MGD	1.800 MGD	
Oct-22	31		1.629 MGD	1.757 MGD	3.500 MGD	1.783 MGD	
Nov-22	30		1.594 MGD	1.711 MGD	3.500 MGD	1.760 MGD	
Dec-22	31		1.502 MGD	1.575 MGD	3.500 MGD	1.749 MGD	
Average			1.793 MGD	1.796 MGD		1.782 MGD	24 month period
Maximum			2.500 MGD				24 month period
Average			1.729 MGD	1.724 MGD		1.711 MGD	full period

Florida Rural Water Association

Date: **24-May-23**

Member: **Fernandina Beach**
Contact: **Andre Desilet, Utilities Director**
City: **Fernandina Beach, FL 32034**

Version: **FINAL**
Conn: **7,783**
GMS: **FLA0027260**

Wastewater Transmission System - Inventory, Condition & Current Value

Replacement Value at today's cost price per inch-diameter per foot: $8.50

Pipe Dia (inches)	Pipe Material	Length (feet)	Length (miles)	Approximate Average Age	Approx. Useful Value	Value ($ per ft)	Estimated ($)	
Wastewater Force Main								
4-in	PVC	33,952-ft	6.43 mi	36	40%	$34.00 /ft	$461,747	$1,154,368
6-in	PVC, CI	37,334-ft	7.07 mi	47	22%	$51.00 /ft	$412,541	$1,904,034
8-in	PVC, CI	31,471-ft	5.96 mi	44	27%	$68.00 /ft	$570,674	$2,140,028
10-in	CI	5,292-ft	1.00 mi	50	17%	$85.00 /ft	$74,970	$449,820
12-in	PVC, CI	25,730-ft	4.87 mi	23	62%	$102.00 /ft	$1,618,417	$2,624,460
		133,779-ft	25.34 mi			Useful Life Value:	**$3,138,349**	**$8,272,710**
						Replacement Value at today's cost:	**$8,272,710**	

NOTES:

1. Age, material, diameter and lengths of pipelines based on GIS data and interviews with operations staff.

2. Approximate Useful Value of existing force main based on industry standards, consistent with FRWA Deparatment of Environmental Protection Asset Management Plan: 60 years.

3. Cost based on similar construction in Florida and engineer estimate

4. Share of system cost is for force main 4-inches and larger for sewage transmission, collection system force mains required for connections (3-inches and smaller) are not included

5. Only piping purchased and installed by City utility are included. Areas provided by private developers based on interviews with City staff.

Florida Rural Water Association

2970 Wellington Circle, Tallahassee, Florida 32309

Member: **Fernandina Beach**

Contact: **Andre Desilet, Utilities Director**

City: **Fernandina Beach, FL 32034**

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Conn: **7,783**

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Wastewater Collection System - Inventory, Condition & Current Value

Replacement Value at today's cost price per inch-diameter per foot: $7.50

PVC	Pipe Material	Length (feet)	Length (miles)	Average Age (years) [1]	Approx. Useful Value [3]	Value ($ per ft)	Estimated ($)	
8-in	PVC, CI, ABS, VC, Orangeburg	539,635-ft	102.20 mi	28-yrs	71%	$60.00 /ft	$23,124,735	$32,378,100
10-in	PVC, CI, ABS, VC, DIP, PVC, RCP	24,239-ft	4.59 mi	32-yrs	64%	$75.00 /ft	$1,156,394	$1,817,925
12-in	PVC, VC, CI	5,285-ft	1.00 mi	16-yrs	69%	$90.00 /ft	$328,306	$475,650
15-in	PVC, ABS, VC	11,019-ft	2.09 mi	23-yrs	68%	$112.50 /ft	$837,982	$1,239,638
18-in	VC	2,771-ft	0.52 mi	18-yrs	64%	$135.00 /ft	$239,414	$374,085
24-in	VC	1,135-ft	0.21 mi	68-yrs	32%	$180.00 /ft	$65,376	$204,300
		563,874-ft	106.79 mi			Rounded	$24,281,000	$34,196,025
							$34,196,000	

Manholes

Category	Material	Quantity		Avg Est Age (years) [1]	Approx. Useful Value [3]	Value ($ per unit)	Estimated ($)	
Manholes	Concrete	1,123		35-yrs	30%	$10,000	$3,369,000	$11,230,000
							$3,369,000	$11,230,000
						Replacement Value at today's cost:	$11,230,000	

NOTES:

1. Age of pipelines are based on interviews with City staff and available GIS data.

2. Pipe Diameter based on available GIS data and interviews with City staff.

3. Approximate Useful Value of existing piping and manholes based on industry standards, consistent with FRWA Deparatment of Environmental Protection Asset Management Plan: 100 years gravity sewers, 50 years manholes and lined pipe. Age adjusted for lined pipes.

4. Cost based on similar construction in Florida and engineer estimate.

5. Share of system cost is for gravity sewers 8-inch and larger, collection system gravity sewers 6-inches and smaller required for connections are not included

6. Only piping and manholes purchased and installed by City utility are included. Areas provided by private developers based on interviews with City staff.

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Contact: **Andre Desilet, Utilities Director**
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Estimated WWTF Construction Costs

Year built: Treatment Train #1 began operation 1990, Treatment Train #2 began operation 2010

	Capacity	Construction Cost	$/gallon	Average Age (years)	Useful Life
Existing Biological Nutrient Removal Wastewater Treatment Plant: 2 parallel Oxidation Ditch treatment trains, each with a Secondary Clarifier and Chlorine Contact Chamber; Mechanical Screening Device; 2 backup Manual Bar Screens; Grit Removal Chamber; Dechlorination Chamber; 3 Aerobic Digesters; Rotary Press for Dewatering.	3.500 MGD	$70,000,000	$20.00 / gal	23	28%

Replacement Value at today's cost:	$70,000,000
Useful Life Value at today's cost:	**$19,687,500**

Notes: 1. WWTP cost based on similar construction in Florida and engineer estimate
2. Approximate Useful Value based on industry standards, consistent with FRWA Deparatment of Environmental Protection Asset Management Plan and Florida Public Service Commission Average Service Life Guidelines, F.A.C. 25-30.140 : 32 years.

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Wastewater Lift Stations

		Estimated Construction Cost	Average Age (years)	Useful Life Value	Unit Cost
Neighborhood Lift Stations	48	$9,600,000	38	$480,000	$200,000 / ea
Master Lift Stations	11	$3,850,000	45	$385,000	$350,000 / ea
			Useful Life Value:	$865,000	
			Replacement Value at today's cost:	**$13,450,000**	

1. Age based on City GIS data input.

2. Approximate Useful Value of existing lift stations based on industry standards, consistent with FRWA Deparatment of Environmental Protection Asset Management Plan: 40 years. Minimum useful life = 10%.

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Address: **Fernandina Beach, FL 32034**

Date: **24-May-23**
Version: **FINAL**
Conn: **9,310**
PWS **2450364**

Equivalent Residential Connection (ERC) Worksheet

WATER ERCS

Water Meter Breakdown by Size

Type	Quantity	Size	ERC Factor	Total ERCs
Residential	8296	3/4"	1	8296
Residential	42	1"	2	84
Residential	9	2"	8	72
Residential	8	3"	16	128
Residential	4	4"	25	100
Nonresidential	571	3/4"	1	571
Nonresidential	244	1"	2	488
Nonresidential	111	2"	8	888
Nonresidential	10	3"	16	160
Nonresidential	15	4"	25	375
Total	**9310**			**11162**

Ratio ERCs / Service Connection: 1.20

11162	Water ERCs

WASTEWATER ERCS

Type	Quantity	Size	ERC Factor	Total ERCs
Residential	7011	3/4"	1	7011
Residential	49	1"	2	98
Residential	4	2"	8	32
Residential	4	3"	16	64
Residential	3	4"	25	75
Nonresidential	480	3/4"	1	480
Nonresidential	125	1"	2	250
Nonresidential	90	2"	8	720
Nonresidential	6	3"	16	96
Nonresidential	11	4"	25	275
Total	**7783**			**9101**

Ratio ERCs / Service Connection: 1.17

9101	Wastewater ERCs

Source: Carrie Norfleet, Fernandina Beach Accountant

FERNANDINA BEACH CAPACITY FEES

SALTUS ENGINEERING, INC.

Katherine Van Zant, PE

Florida Rural Water Association

- Specialize water & wastewater rates and financing
- Serving over 1,400 cities, towns, special districts, and utilities throughout Florida
- Completed over 1,000 financing & rate studies.
- 30+ yrs advising Florida water & wastewater systems
  1. FRWA rate / fee studies have **never had legal challenge**
  2. Performed sound rational and methodical procedures
  3. Use tested utility industry standards – AWWA, GASB…
  4. Strong legal footing under Florida Statutes & case law

Water Revenues

Four Categories

1. **Rates**
   - Monthly charges for services used including fixed costs such as debt repayment
2. **Capacity Fees**
   - One time capacity buy-in
3. **Connection Charges**
   - Placement of new water meter or sewer stub-out
4. **Other Fees**
   - Late charges, turn offs / ons, etc.

What are Capacity Fees

- **One-time Charge Assessed**
  - new connections to reimburse utility systems for capital / fixed costs needed to provide capacity to be used
- **Fixed Costs for Water and Wastewater Service**
  - wells, treatment plants, storage tanks, pumps, pipes, etc.
- **Utility Capital Expenses, not Operations**

Growth Pays For Growth

Always-present questions:

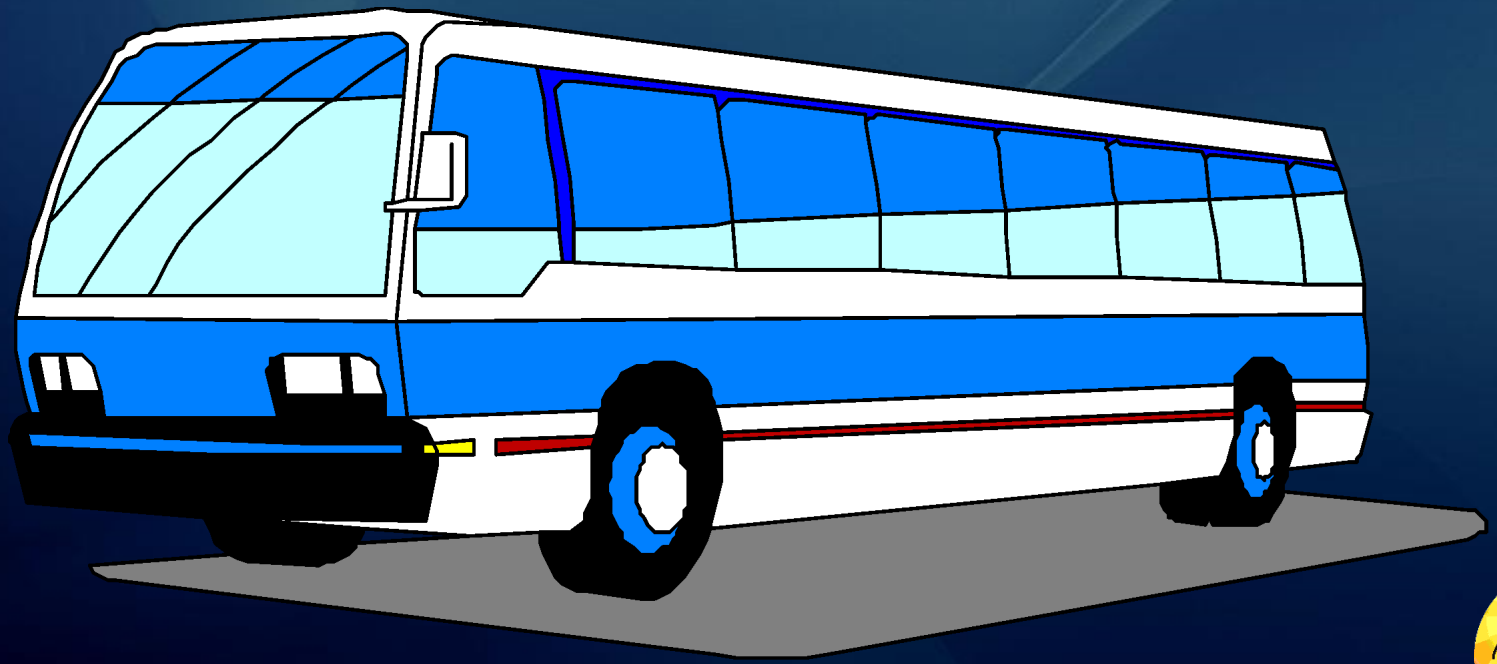
1. How shall we pay for growth?
2. Should existing utility rate payers support system expansion to accommodate growth?

- Capacity fees are designed to make it possible for new customers to pay for their proportion of the system and capacity they use up that has been provided in the system for them

Growth Pays For Growth

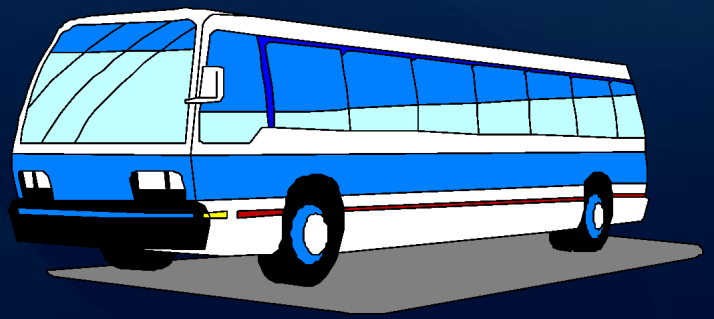
Example

Limited number of seats on the bus (capacity)



Growth Pays For Growth

- Rates pay for operation and debt
  - ✓ Gas, tires, driver, repairs, etc.
  - ✓ Existing rate payers are paying and have paid for their seat on the bus
- Capacity fees by new passengers pay for
  - ✓ Their own seat on the bus
  - ✓ Principles of equity & fairness
  - ✓ Cost is justifiable



Capacity Fee Objectives

- New development pay its own way
- Minimize debt or reduce need for future debt
- Maintain an appropriate level of retained earnings and cash reserves to meet capital needs

IS ONE MORE FEE REALLY NEEDED?

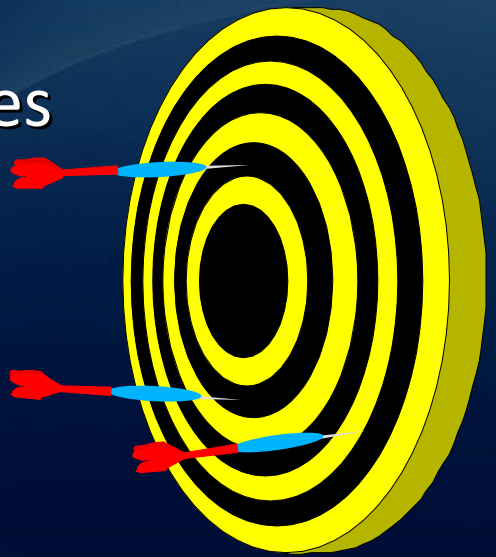
Dealing with Growth & Infrastructure Decay

- Florida statute requires communities to maintain adequate levels of service for public facilities and **to anticipate and prepare for growth**
- It takes **many years to build capacity** into a system, it's impossible to provide it at the same time the new growth happens
- In addition, water and wastewater utilities must maintain infrastructure in **good operating condition**
- Requires adequate funding and continual **repair and replacement** (R&R) just to keep up with normal usage and aging

HOW TO DETERMINE CAPACITY FEES

Pseudo-Rate / Fee Making Process

- Sampling of neighbors to confirm rates are *comparative only*
- Quick & Easy Method
  - Polling Surrounding Communities
  - Not Rational Basis
  - Not Defensible to Challenges
  - Don’t rely on comparisons



Capacity Fee Determination

$$\frac{\text{Capacity Cost (\$)}}{\text{ERC}} \times \text{No. of ERCs represented by new user}$$

Capacity Cost per ERC:

- **$/ERC** = $\frac{\text{Total Treatment Cost (\$)}}{\text{Total Treatment Capacity (gpd)}} \times \text{gpd/ERC}$

Capacity Fee Options

Option A

- The **Remaining Useful Life Basis** provides a value to existing assets based on current condition, based on years they are expected to continue to function.

Option B

- The **Replacement Value Basis** captures the true and sustainable costs or running (and replacing) Fernandina Beach's Water and Wastewater Utilities.

RECOMMENDED CAPACITY FEES

Recommended Water Capacity Fees

Current Capacity Fee – $959 / ERC

Option A – Remaining Useful Life Basis

- **$520** per Equal Residential Connection (ERC).

Option B – Replacement Value Basis

- **$2,760** per Equal Residential Connection (ERC).

⇨ **FRWA Recommends Option B to capture true & sustainable costs**

Water Capacity Fee Recommendations

- $5.56 per gallon water system capital cost
- 36% of water treatment plant is being used
- 20,227 more service connections at 100% capacity

Recommended Wastewater Capacity Fees

Current Capacity Fee - $2,321 / ERC

Option A – Remaining Useful Life Basis

- **$2,480** per Equal Residential Connection (ERC).

Option B – Replacement Value Basis

- **$7,280** per Equal Residential Connection (ERC).

⇨ **FRWA Recommends Option B to capture true & sustainable costs**

Wastewater Capacity Fee Recommendations

- $39.19 per gallon wastewater system capital cost
- 51% of wastewater treatment plant is being used
- 8,765 more service connections at 100% capacity

QUESTIONS ?

SALTUS
ENGINEERING, INC.

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach

SUBJECT: Water and Wastewater Rate Study.

ITEM TYPE: Presentation

REQUESTED ACTION:

SYNOPSIS: Florida Rural Water Association will present the results of the Water and Wastewater Rate Study.

FISCAL IMPACT:

CITY ATTORNEY COMMENTS:

CITY MANAGER RECOMMENDATION(S):

Andre Desilet, Utilities Director	6/13/2023
Katie Newton, Legal Assistant	6/26/2023
Agnes White, Administrative Services Manager	6/26/2023
Pauline Testagrose, Comptroller	
Charles George, Interim City Manager	
Tammi E. Bach, City Attorney	

Submitted By: Katie Newton, Legal Assistant Date: June 13, 2023

COMMISSION ACTION:

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach

SUBJECT: Discussion
Mechanical Equipment - Setback Restrictions

ITEM TYPE: Discussion

REQUESTED ACTION:

SYNOPSIS: This item is placed on the agenda at the request of Commissioner Ayscue who wishes to discuss residential mechanical equipment setback restrictions.

FISCAL IMPACT:

CITY ATTORNEY COMMENTS: N/A

CITY MANAGER RECOMMENDATION(S): N/A

Katie Newton, Legal Assistant	6/13/2023
Agnes White, Administrative Services Manager	6/13/2023
Charles George, Interim City Manager	6/13/2023

Submitted By: Katie Newton, Legal Assistant Date: June 13, 2023

COMMISSION ACTION:

MECHANICAL EQUIPMENT SETBACK REFERENCES IN LAND DEVELOPMENT CODE

4.02.03 Standards for Buildings and Building Placement

A. Encroachment

1. A yard created by the setbacks set forth in this section will not be considered a yard for any other building.
2. Every part of a required yard must be open and unobstructed from its lowest point to the sky, except as set forth in Section 4.02.03(A) (3), (4), (5) and (6) below.
3. Front entry steps may encroach into a minimum front yard up to forty-two (42) inches.
4. The following building features may project into a minimum yard up to twenty-four (24) inches: sills, belt courses, cornices, buttresses, ornamental features, chimneys, and eaves.
5. The following building features may project into a minimum rear yard up to forty-two (42) inches: open or enclosed fire escapes, outside stairwells, and balconies.
    a. Balconies must comply with the front and side yard setbacks.
6. Porches may encroach up to ten (10) feet into the rear yard setback.
    a. Porches must comply with the front and side yard setbacks.
7. Decks with a finished floor of 12" or less from grade are permissible encroachments into the side and rear yards up to five (5) feet from the property line. For installation of a deck on varying topography, the floor level may be allowed to reach a maximum of 36" from grade.
    a. Decks must comply with the front yard setbacks.
8. Mechanical equipment may be located within the side or rear yard setback, but not closer than five (5) feet to side or rear yard lot lines and screened by landscaping or opaque fencing.
9. Specific requirements for fences and signs are outlined in Sections 5.01and 5.03.

4.03.03 8th Street Small Area Design Standards

General Principles. The 8th Street standards are intended to encourage flexibility and variety in development through creative site and building design. All development shall contribute to making 8th Street a distinct and memorable part of the city, unique in spaces, buildings, and street character. Development shall be oriented and designed to contribute to the street environment and shall place priority on pedestrian comfort, convenience, safety, and access. Pedestrian scale elements refer to buildings and spaces whose dimensions, properties, and components correspond to human occupation and use. Access to all development shall be sited and designed to have a positive visual impact on the street with primary pedestrian access from 8th Street. Driveways and parking shall not take priority over pedestrian areas. Variety in design elements, transparency, color, texture, signs, and materials creates a visually interesting environment and contributes to the establishment of an architectural character for the corridor. Architectural compatibility is not limited to any particular style. The design standards for the 8th Street Small Area are as follows:

1. On the portion of the property fronting 8th Street, there is a required six (6) foot pedestrian/landscaping access area to provide a continuous, unobstructed clear walkway. This is to be measured from the property line going back six (6) feet. Buildings or building components may encroach into this space starting at the second story, with necessary structural components on the first story as long as the 6 foot pedestrian access area is unobstructed, provided an open pedestrian/landscape space is maintained. Required bicycle parking is not permissible within this area.
2. The setbacks for the remaining sides of the property are zero (0) feet.

3. Building Orientation.
    a. Primary entrances shall face 8th Street. At least one public entrance of each principal structure shall be oriented toward the front lot line or side lot line. Developments are encouraged to provide as many pedestrian connections to the street as feasible.
    b. Commercial and Mixed Use structures that extend across the full block width from S. 8th Street to S. 9th Street and S. 7th Street shall contain a secondary façade which is designed with an architectural style, detail, trim features, and roof treatments as consistent with that of the primary façade.
    c. On corner lots, new buildings shall be oriented toward the streets and shall consider and complement the patter of existing adjoining development, with the primary façade(s) of the principal building facing the 8th Street facing lot line. Corner locations shall be considered opportunities for distinctive architecture.
    d. Accessory structures, if any, shall be located at the rear of the principal buildings. All detached garages or carports shall be set back from the front façade of the principal building by at least 10 feet, openings shall not face 8th Street. Where feasible, detached garage and carport access shall be from the side streets.
    e. All outdoor mechanical equipment shall be located at the rear of the principal buildings and screened. Screening may be structural or vegetative. They shall not be visible from any street. Mechanical equipment placed on the roof shall be screened from abutting streets with parapets or other types of visual screening.
    f. Solid waste, recycling, and yard trash containers; grease containers, and loading docks shall be screened and located in parking areas or other locations remote from the sidewalk.