ISLE OF PALMS WATER & SEWER COMMISSION

FINAL WATER AND SEWER IMPACT FEE REPORT

January 18, 2023

CONFLUENCE
Consulting, LLC

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January 18, 2023

Mr. Chris Jordan
General Manager
Isle of Palms Water & Sewer Commission
1300 Palms Boulevard,
Isle of Palms, SC 29451

Subject: Final Water and Sewer Impact Fee Report

Dear Chris:

Attached is the Final Water and Sewer Impact Fee Report (Final Report). The fee calculations presented in the Final Report have increased in comparison to the current impact fees adopted in 2018. The water impact fee increased by 11% from $3,082 per ERU to $3,414 per equivalent residential unit (ERU); while the sewer impact fee increased more significantly by 36% from $3,432 per ERU to $4,654 per ERU. These capital cost increases reflect a significant escalation in construction costs related to inflation, supply chain limitations, and rising labor costs; as well as the evolving needs for planned repairs and improvements to the Commission's sewer system since 2018.

The proposed impact fees determined in this Impact Fee Update reflect the maximum, full cost fees the Commission should consider adopting. However, because the full cost sewer impact fee represents a significant increase, the Final Report provides an alternative to phase-in the full cost sewer impact fees over a two-year period. The Commission has decided to adopt the $4,654 full cost sewer impact fee per ERU over a two-year period through two similar 16% increases at the beginning of the next two fiscal years. The phase-in includes adopting a sewer impact fee of **3,995** per ERU on July 1, 2023; followed by adopting the full cost fee of **$4,654** per ERU on July 1, 2024.

I have enjoyed working with the Commission in determining these updated water and sewer impact fees and would like to thank you, Helena Stickles, and Bill Jenkins for your collective assistance in providing the necessary guidance and the financial and capital information to conduct the analysis.

Sincerely yours,
CONFLUENCE CONSULTING, LLC.

Frank Davis
President

EXECUTIVE SUMMARY

The Isle of Palms of Palms Water and Sewer Commission (Commission) engaged Confluence Consulting, Inc. (Confluence) to conduct an Impact Fee Update (Impact Fee Update) to update its water and sewer impact fees in accordance with South Carolina's 1999 Development Impact Fee Act. As part of the Study, Commission management developed a six-year water and sewer capital improvements plan (CIP) that includes a variety of capital projects required to provide capacity to meet increased demands for water and sewer services associated with anticipated customer growth. The Commission has adopted the six-year CIP that serves as the basis for the updated impact fees as part of this Impact Fee Update.

In general, impact fees are defined as one-time capital recovery charges assessed against new development as a way to recover a proportional share of the cost of capital facilities constructed to provide service capacity for new customers. Numerous approaches to determining impact fees have been adopted by water and sewer utilities across the country. The major goal in selecting an impact fee methodology is to select an approach which provides equity to existing and future customers and is legally defensible.

1. Capital Improvement Plans

Although not expressly subject to the State's impact fee legislation, the Commission has determined to have a CIP in place before imposition of the impact fees. The CIP is a multi-year schedule that lays out a series of water and sewer capital projects and costs over a six-year capital planning period (FY 2022 through FY 2027). The CIP provides a specific plan for how the Commission expects to expand or construct its facilities and services to meet the demands of existing and new customers.

A. Water Capital Improvements

The Commission currently owns and operates a 1.2 million gallon per day (MGD) Reverse Osmosis Water Treatment Plant (WTP) and water distribution system for retail customers located on the Isle of Palms. This distribution system conveys treated water either produced at the Reverse Osmosis WTP or purchased from the City of Charleston Commission of Public Works (CPW). Based on a 1995 Wholesale Water Supply, Treatment, and Transmission Contract with CPW, the Commission purchased "Contract Capacity" of up to 3.0 MGD of capacity in the CPW water system. The water distribution system has approximately 275,000 linear feet of water line ranging in diameter from 2 inches to 16 inches, two pumping stations, and a total storage capacity of 2.4 million gallons.

The Commission does not have any planned expansions to its Reverse Osmosis WTP or Contract Capacity with CPW. However, the Commission is required to make annual capital payments totalling nearly $250,00 during the planning period for its portion of the annual improvements to the CPW water system. The water CIP also includes several improvements to the Commission's distribution system including hydrants,

water line improvements for looping and increased capacity, and replacing smaller diameter lines with larger lines. Because these improvements benefit both existing and new customers, they are included in the impact fee calculation and allocated to all customers based on a cost per gpd. The total costs of the six-year water CIP are approximately $9.1 million.

Appendix B: Schedule 1 provides more detail on the expansion-related projects in the water CIP.

B. Sewer Capital Improvements

The Commission currently owns and operates the 1.07 MGD Wild Dunes Wastewater Treatment Plant (WWTP), the 0.30 MGD Forest Trails WWTP, and a sewer collection system to serve retail sewer customers located in portions of the City of Isle of Palms. The collection system consists of 129,624 linear feet of gravity sewer lines ranging from 6 inches to 10 inches in diameter and 44,000 feet of force mains ranging from 2 inches to 12 inches in diameter. The collection system conveys sewer discharges to the two wastewater treatment plants.

To increase treatment efficiencies and consolidate all its treatment services at the newer Forest Trails WWTP, the Commission is in the process of expanding the capacity of the Forest Trails WWTP to 1.4 MGD and will construct a new pumping station at the Wild Dunes WWTP to divert existing flows to the expanded Forest Trails WWTP. After receiving construction bids, the expansion to the Forest Trails WWTP to provide 1.4 MGD will cost an estimated $18.6 million, and the new Wild Dunes pumping station will cost an estimated $2.8 million during the planning period.[1] These projects will allow for the decommission of the old Wild Dunes WWTP and consolidate all treatment operations at the Forest Trails WWTP.

The sewer CIP also includes several minor improvements to the Commission's collection system and upgrading electrical systems. These improvements benefit both existing and new customers and are included in the impact fee calculation and allocated to all customers based on a cost per gpd. The total costs of the six-year sewer CIP are $23.0 million.

Appendix B: Schedule 2 provides more detail on the expansion related projects in the sewer CIP.

2. Calculation of Impact Fees

The most common and accepted methodologies for calculating water and sewer impact fees are: 1) the system buy-in approach focusing on the cost of buying into the net equity of the existing system, and 2) the marginal incremental cost methodology focusing on the cost of adding additional facilities to serve new customers. The system buy-in approach is appropriate for utility systems with existing capacity

[1] The total estimated costs for to upgrade the Forest Trail WWTP is $26.7 million, however, a portion of the project costs relate additional building space and equipment to accommodate future expansions. To ensure the sewer impact fee recovers only those costs of capacity benefitting the new customers paying the fees, the cost of the Forest Trails WWTP included in the six-year CIP adopted as the basis for this Update reflects the $18.6 million associated with the 1.4 MGD expansion.

already in place to serve new customers, while the marginal incremental cost methodology is appropriate for utilities that must provide additional capacity to serve new customers. However, many utilities often determine impact fees based on a hybrid approach that recognizes the average cost of the net equity of the existing system and cost of adding additional facilities to serve new customers.

A. Water Impact Fees

Since the existing water system has available capacity to serve new customers, and the Commission has planned capital projects that will benefit new customers and expand service capacity, the water impact fee is calculated based on a hybrid of the system buy-in approach and the marginal incremental-cost approach.

System Buy-In Value

The Buy-In value of the existing water facilities represents the replacement cost new less depreciation (RCNLD) of the assets of the water system, which is determined by escalating depreciated water facility asset values based on the Engineering News Record (ENR) 20-City Cost Index. The value of any assets that were contributed by developers, funded through grants, contributed by other parties, or have contractual restrictions are excluded from the buy-in value of facilities available to serve new equivalent residential units (ERUs). After the assets are allocated to the water and sewer systems and deductions are made to exclude assets contributed by developers or funded through Federal Emergency Management Agency (FEMA) grants, the buy-in value of the water system is approximately **$22.8 million**. This represents the value of existing assets that is available to serve both existing and future customers of the water system.

Marginal Incremental Cost Value

The Marginal Incremental cost value of the water system represents the water capital improvements included in the Commission's six-year CIP. The Commission plans to perform $9.1 million in water capital improvements. Since these capital improvements will benefit both existing and new customers through replacements and oversizing of water lines, it is appropriate to include all the water capital improvements in the marginal incremental cost value, since the impact fees are determined based on the total value of the 4.2 MGD of water system capacity.

Based on the hybrid approach, the proposed water impact fee per ERU is **$3,414**, which represents a 11% increase when compared to the current impact fee**.** The 11% increase equates to an average increase of 2.6% if the Commission had increased the water impact fees annually since the current fees were adopted in 2018. This fee per ERU is based on daily the water demand of the typical single-family residence and represents the 300 gpd average daily water demand identified in DHEC standards for determining sewer system capacity escalated by a 1.50x peaking factor. This peaking factor is applied, since water systems are sized to meet peak demand, and is based on the average daily water use by residential customers during the peak water use month (August) in calendar year 2021, divided by the annual daily average water use by residential customers during 2021.

The Commission will continue to assess single-family homes based on the square footage of the home, recognizing that larger homes have a much higher daily demand than smaller homes. For other non-residential establishments, the Commission should continue to charge the water impact fee based on the DHEC standards unit contributory loadings for various establishments. However, Confluence recommends applying the 1.50x peaking factor to these standards to reflect peak day water demands.

Executive Summary Table 1 presents the proposed residential single-family water impact fees in comparison with the existing impact fees that have been in place since 2018.

ES Table 1: Proposed Residential Water Impact Fees per Square Footage

Single-Family Residential (Square Feet Area)	Demand (gpd) (1)	Impact Fees		Change	
		Current	Proposed	Increase	Percent
2,000 and Less Than (1 ERU)	450	$ 3,082	$ 3,414	$ 332	11%
2,001 to 3,500	675	$ 4,623	$ 5,121	$ 498	11%
Greater than 3,500	1,020	$ 6,986	$ 7,738	$ 752	11%

(1) The differentials applied to the demand factors for the 2,001 to 3,500 square feet and greater than 3,500 square feet categories are based on the historical consumption and square footage analysis performed by TMG.

B. Sewer Impact Fees

Since the existing sewer system also has available capacity to serve new customers, and the Commission has planned capital projects that will benefit new customers and expand service capacity, the sewer impact fee is also calculated based on a hybrid of the system buy-in approach and the marginal incremental cost approach.

System Buy-In Value

The buy-in value of the existing sewer facilities represents the RCNLD of the assets of the sewer system, which is determined by escalating depreciated wastewater facility asset values based on the ENR 20-City Cost Index. Again, the value of any assets contributed by developers, funded through grants, contributed by other parties, or have contractual restrictions are excluded from the buy-in value of facilities available to serve new ERUs. Additionally, since the Commission plans to decommission the Wild Dunes WWTP and consolidate treatment operations at the Forest Trails WWTP, the RCNLD of the Wild Dunes WWTP is also excluded from the sewer buy-in value. After the assets are allocated to the water and sewer systems and deductions are made to exclude assets contributed by developers, funded through FEMA grants, and the value of the soon to be decommissioned Wild Dunes WWTP, the system buy-in value of the sewer system is approximately **$14.3 million**. This represents the value of existing assets that are available to serve both existing and future customers of the sewer system.

Marginal Incremental Cost Value

The marginal incremental cost value of the sewer system represents the capital improvements included in the Commissions five-year CIP. The Commission plans to perform $23.0 million in sewer capital improvements. The major projects relate to expanding the Forest Trails WWTP and diverting the wastewater flows from the Wild Dunes WWTP to Forest Trails WWTP. Since these capital improvements will benefit both existing and new customers through replacements and oversizing of sewer lines, it is appropriate to include all the sewer capital improvements in the marginal incremental cost value since the impact fees are determined based on the total value of the 1.4 MGD of sewer system capacity. Since the Commission issued $16.1 million in capital costs through the Series 2020 revenue bond issue and will receive $4.4 million in FEMA grant funds, a debt principal credit and FEMA grant deduction is applied to the marginal incremental cost value for water.

Based on the hybrid approach, the proposed sewer impact fee per ERU is **$4,654**, which represents a 36% increase when compared to the current impact fee. The 36% increase equates to an average increase of 7.9% if the Commission had increased the sewer impact fees annually since the current fees were adopted in 2018. This fee per ERU is based on daily sewer demand characteristics of the typical single-family residence and represents the 300 gpd average daily water demand identified in DHEC standards for determining sewer system capacity. The 300 gpd daily demand per ERU is not adjusted, since wastewater treatment and collection systems are sized to meet average day sewer flows.

As with water, the Commission will continue to assess single-family homes based on the square footage of the home, recognizing that larger homes have a much higher daily demand than smaller homes. For other non-residential establishments, the Commission should continue to charge the water impact fee based on the DHEC standards unit contributory loadings for various establishments.

Executive Summary Table 2 presents the proposed residential single-family sewer impact fees in comparison with the existing impact fees that have been in place since 2018.

ES Table 2: Proposed Residential Sewer Impact Fees per Square Footage

Single-Family Residential (Square Feet Area)	Demand (gpd) (1)	Impact Fees		Change	
		Current	Proposed	Increase	Percent
2,000 and Less Than (1 ERU)	300	$ 3,432	$ 4,654	$ 1,222	36%
2,001 to 3,500	450	$ 5,148	$ 6,981	$ 1,833	36%
Greater than 3,500	680	$ 7,779	$ 10,549	$ 2,770	36%

(1) The differentials applied to the demand factors for the 2,001 to 3,500 square feet and greater than 3,500 square feet categories are based on the historical consumption and square footage analysis performed by TMG.

For more information on the contributory loading factors to be used by multi-family and non-residential establishments, see Appendix A.

3. Sewer Impact Fee Phase-In Alternatives

Because the updated sewer impact fee calculation represents a significant increase from the current sewer impact fee adopted in 2018, Commission management asked Confluence to provide an alternative to phase-in the updated sewer impact fees over the next two years. The alternative would implement the $4,654 full cost sewer impact fee over a two-year period through two similar 16% increases at the beginning of the next two fiscal years. This would include adopting a sewer impact fee of **$3,995** per ERU in FY 2024 prior to adopting the full cost fee per ERU in FY 2025. Executive Summary Table 3 summarizes the phase-in of the full cost sewer impact fee under similar 16% increases over the next two years.

ES Table 3: Single-Family Residential Sewer Impact Fees by Square Footage (Phase-In Alternative)

Per ERU (2,000 sq/ft or less)	Current	FY 2023	FY 2024
Sewer Impact Fee	$ 3,432	$ 3,995	$ 4,654
Percent Change	N/A	16%	16%
Dollar Change	N/A	$ 563	$ 659

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I. INTRODUCTION

Confluence Consulting, LLC (Confluence) is pleased to submit this Final Impact Fee Report (Report) to update the Isle of Palms Water & Sewer Commission (Commission) water and sewer impact fees (Impact Fee Update). Impact fees, also referred to as capacity fees, are one-time charges assessed against new water and sewer customers or developers to recover a proportional share of the capital costs incurred by the utility to provide service capacity to new utility customers. In October 2020, the City of Isle of Palms (City) issued $16.1 million in Series 2020 Water and Sewer Revenue Bonds (Series 2020 Bonds) for the Commission to expand its Forest Trails Wastewater Treatment Plant (WWTP) and decommission its Wild Dunes WWTP to consolidate its treatment capacity and serve all existing and future customer demands at the Forest Trails WWTP. The preliminary engineering estimate for the cost of the Forest Trails WWTP expansion project ($16.0 million), and the cost of the new pump station at Wild Dunes ($1.3 million) that will divert wastewater flows to the expanded Forest Trails WWTP, totalled $17.3 million. However, when the Commission received bids for constructing the WWTP expansion project in October 2021, building materials and other construction related costs increases led to a significantly higher anticipated combined costs of $29.9 million for the WWTP expansion project and the new pump station project.[2]

The current impact fees were adopted in 2018 and no longer reflect the current cost of providing water and sewer capacity to new customers. To ensure these new customers pay their proportionate share of the capital investments necessary to provide both water and sewer system capacity, the Commission is interested in having Confluence calculate updated cost-justified and legally defensible impact fees.

The Commission provides water and sewer service to the Isle of Palms, a 6-mile barrier island located in Charleston County. The Commission is governed by a board of elected officials and provides service in areas that cannot be provided for by any other agency. The Commission was created in 1992 through an ordinance enacted by the City of Isle of Palms and Section 5-31-250, et. seq., of the Code of Laws of South Carolina 1976 to own, operate, and manage the water and sewer systems of the Isle of Palms. The Commission is governed by five Commissioners elected by the residents of the City of Isle of Palms and currently provides water to approximately 4,676 water accounts and wastewater treatment to 2,714 sewer accounts.

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[2] While the total bid costs to upgrade the Forest Trail WWTP is $26.7 million, a portion of the project costs relate to additional building space and equipment to accommodate future expansions. The Commission's engineering consultant determined that the portion of the project costs that relate to expanding Forest Trails WWTP to 1.4 MGD is $18.6 million. To ensure the sewer impact fee recovers only those costs of capacity benefitting the new customers paying the fees, the cost of the Forest Trails WWTP included in the six-year CIP adopted as the basis for this Impact Fee Update reflects the $18.6 million associated with the 1.4 MGD expansion.

1. State Legislative Requirements

In 1999 South Carolina enacted into law its Development Impact Fee Act ("Act"), which allows counties and/or municipalities to assess impact fees to recover the cost of new public facilities required to serve growth and new development. Specifically, these new public facilities include fire, police, emergency, parks and recreation, storm water, roads and streets, libraries, solid waste, and others. The purpose of this Act was to develop a set of consistent guidelines and procedures for each of the State's 269 municipalities and other jurisdictions in developing and calculating impact fees. However, the Act also creates certain challenges for the State's municipalities related to developing and administering the fees. For example, the Act requires that a county or municipality adopt an impact fee ordinance that:

- Defines the procedures and policies governing the administration of collecting and appropriating the impact fees;
- Establishes the fee;
- Includes the amount of the fee; and
- Provides an explanation regarding the calculation of the fee.

The Act also requires that the governing body adopt a capital improvements plan (CIP) that identifies the facilities eligible for impact fee funding and estimates the capital costs associated with those facilities. In addition, the Act requires the impact fee revenues be appropriated to fund those capital projects included in the CIP. Finally, a report must be prepared that estimates the effects of recovering expansion-related capital costs through impact fees on the availability of affordable housing within the municipality.

The Act by its terms does not expressly apply to the Commission for at least two reasons. First, the Act imposes requirements only on a "governmental entity", which is defined in § 6-1-920(11) as "county", as provided in Chapter 9, Title 4, and a municipality, as defined in § 5-1-20." Those definitions refer to the 46 counties of the State of South Carolina and to incorporated municipalities and do not include commissions of public works or special purpose districts. Second, the Act defines "development impact fee" in § 6-1-920(8) to mean "a payment of money imposed as a condition of development approval." Insofar as the Commission has no development approval and proposes to charge its impact fee at the time of connection rather than upon development approval, the proposed water and sewer impact fees are not development impact fees.

In any event, since utility impact fees are more common and have been used more extensively over the years both nationally and throughout the State, the Act does provide certain exemptions related to implementing water and sewer impact fees. Specifically, water and sewer utility impact fees are exempt from most of the provisions of the Act except the following, as stated in the legislation:

1. The governing body or utility have a CIP before imposition of development impact fees;

2. The governing body prepare a report to be made public before imposition of the impact fees that includes, but not be limited to, an explanation of the basis, use, calculation, and method of collection of the impact fees; and
3. The impact fees be enacted in accordance with the local planning process or the provisions of Article 3 (relating to the authority of local governments to assess taxes and fees).

Recognizing the anticipated future growth occurring within Commission's service area and its planned capital improvements to meet that demand, the Commission engaged Confluence to calculate updated water and sewer impact fees.

2. Purpose of Report

The purpose of this Report is to provide an explanation of the methodology used to calculate the impact fees, identify the system improvements to be recovered through the impact fees, define the service units of capacity, and otherwise address the requirements of the Act related to calculating water and sewer impact fees.

II. CAPITAL IMPROVEMENTS PLAN

The Commission has determined to have a CIP in place before imposition of the impact fees and adopted its fiscal year (FY) 2023 CIP on May 18, 2022. The CIP aims to recognize and resolve deficiencies in existing facilities and to anticipate and meet future demand for capital facilities. The CIP provides a specific plan for how the Commission expects to expand or construct its facilities and services to meet the demands of existing and/or new population and businesses. The Commission has designed a CIP to coordinate the financing and timing of capital improvements in a way that maximizes the benefits to the Commission and its water and sewer customers.

The CIP for the purposes of determining the updated impact fees presented in this report has updated project costs estimates and provides a multi-year schedule that lays out a series of water and sewer capital projects and costs over a six-year capital planning period (FY 2022 through FY 2027). Although the CIP adopted in May incorporated a five-year forecast planning period, the Impact Fee Update includes the planned capital improvements for FY 2022 since the Forest Trails WWTP expansion and other projects are multi-year projects that are either on-going or not yet capitalized, and thus, not currently included in the Commission's deprecation schedule. These on-going projects are crucial to providing system capacity for new customers and should be reflected in the updated impact fee calculations.

For example, the total estimated cost of the upgrade to Forest Trails WWTP is $26,178,000. However, initial engineering and construction began in FY 2022, and as of July 1, 2022, the Commission has already expended approximately $5.8 million on the WWTP upgrade. For this reason, and because a portion of the WWTP upgrade costs will accommodate anticipated future expansions, the costs for the Forest Trail WWTP included in this impact fee update differ from the costs included in the Commission's approved five-year CIP. Additionally, in October the Commission received construction bids for three capital projects scheduled to begin during in the current fiscal year (FY 2023). Because the bids for two of the three projects are substantially higher than engineering estimates included in the adopted CIP for those projects, the Commission revised the CIP in October as part of this Impact Fee Update to reflect both the on-going projects initiated in FY 2022 and the updated construction costs and timing for several projects. As part of its approval of the updated water and sewer impact fees, the Commission is also approving the CIP documented in this Report to support the determination of the updated full cost impact fees.

Since the Act requires the Commission have a CIP before imposing the updated water and sewer impact fees, this section of the report summarizes the Commission's CIP. Specifically, this section and the Schedules in Appendix B include the following:

- A general description of existing facilities and existing levels of service;
- An analysis of total and average day capacity and the level of current usage;

- A table establishing the service unit for an equivalent residential unit (ERU) for both water and sewer and a conversion table for other non-residential customer types (land uses);
- A description of system improvements; and
- An identification of the funding sources for the system improvements included in the CIP.

This section describes the Commission's water and sewer CIP and contains analyses of the total and average day capacity, the level of current usage, and commitments for usage of capacity for existing public facilities. These analyses were prepared by Confluence in consultation with management personnel of the Commission, using generally accepted principles and professional standards. The usage and capacity were based on actual water production and purchases and sewer flow data provided by the Commission and other information provided through local and state governmental agencies. More information on all the capital projects included in the Commission's CIP, detailed schedules setting forth the estimated dates for commencing and completing all the water and sewer capital projects, as well as the planned financing methods for these projects are included in the materials attached as Appendix B.

1. Water Capital Improvements Plan

The water CIP is a multi-year capital plan and includes capital projects to improve and expand water treatment and distribution facilities. The Commission operates the water system as a single integrated system.

A. Description of Water System and Existing Levels of Service

The Commission currently owns and operates a 1.2 million gallon per day (MGD) Reverse Osmosis Water Treatment Plant (WTP) and a water distribution system for retail customers located on the Isle of Palms. This distribution system serves approximately 4,676 retail customers by distributing treated water either produced at the Reverse Osmosis WTP or purchased from the City of Charleston Commission of Public Works (CPW).[3] Based on a 1995 Wholesale Water Supply, Treatment, and Transmission Contract with CPW (Water Contract), the Commission purchased "Contract Capacity" of up to 3.0 MGD in the CPW water system. The water distribution system has approximately 275,000 linear feet of water line ranging in diameter from 2 inches to 16 inches, four pumping stations, and a total storage capacity of 2.4 million gallons.

Based on production and purchased water data from July 2021 to June 2022, the average day demand is 1.28 MGD, and the peak day demand is 2.35 MGD, which represent the existing level of service for the Commission's water system. The peak day demand that can be served by the current water production and distribution facilities and the planned water distribution projects included in the CIP is 4.2 MGD. This

[3] Although currently referred to as Charleston Water System, the 1995 Water Contract refers to the City of Charleston Commission of Public Works as CPW. This report will use the term CPW as defined in the 1995 Water Contract.

includes the 1.2 MGD of peak day demand that can be served by the existing Reverse Osmosis WTP and the 3.0 MGD of Contract Capacity in the CPW water system. This peak day water production capacity of 4.2 MGD is supported by the existing and planned water distribution projects.

B. Water Units of Service

Peak water system capacity is available to serve both existing and new customers. To determine how this peak capacity is distributed equitably among all customers, a service unit is determined to create a nexus between available water capacity and equivalent demands for water services. An appropriate service unit basis for water impact fees is the typical peak daily water use by the typical residential single-family unit, or an equivalent residential unit (ERU).

According to the 2015 South Carolina Department of Health and Environmental Control (DHEC) Standards for Wastewater Facility Construction R.61-67 (DHEC standards) in determining sewer system capacity available to serve new customers, the typical average daily water demand for a residential home is 300 gpd. This 300 gpd represents the average use per ERU. However, since water systems are sized to meet peak demands, a 1.50x peaking factor is applied to the 300 gpd average day factor to determine a 450 gpd water service unit per ERU.[4] This service unit applies to the typical single-family home that is 2,000 square feet or less in size.

The Commission will continue to assess single-family homes based on the square footage of the home, recognizing that larger homes have a much higher daily demand than smaller homes. This is particularly the case in Isle of Palms, which is a beach community that has seen the development of very large high-density rental beach houses with multiple bedrooms. To ensure these larger homes are assessed impact fees that reflect their higher demands, the Commission currently uses three square footage categories to assess its water and sewer development fees. These square footage categories include:

1. 2,000 or less;
2. 2,001 to 3,500; or
3. Greater than 3,500.

For other non-residential establishments, the Commission should continue to charge the water impact fee based on the DHEC standards unit contributory loadings for various establishments. However, for water impact fees, Confluence recommends applying the 1.50x peaking factor to these standards to reflect peak day demands.

[4] Based on FY 2021 customer billing data, the average monthly water usage per single-family residential customers during the peak usage month (August) divided by the annual average day water use per single-family residential customers is 1.5 times.

Table 1 below presents the water demand factors per single-family residential homes for homes within the square footage categories. The DHEC standards and contributing loading factors are included in Appendix A.

Table 1: Residential Water Demand Factors Based on Square Footage

Single-Family Residential (Square Feet Area)	Demand (gpd) (1)
2,000 and Less Than (1 ERU)	450
2,001 to 3,500	675
Greater than 3,500	1,020

(1) The differentials applied to the demand factors for the 2,001 to 3,500 square feet and greater than 3,500 square feet categories are based on the historical consumption and square footage analysis performed by TMG.

C. Water System Improvements to Serve Growth

The Commission does not have any planned expansions to its Reverse Osmosis WTP or Contract Capacity with CPW. However, the Commission is required to make annual capital payments totaling over $250,000 during the planning period for its portion of the annual improvements to the CPW water system. The water CIP also includes several improvements to the Commission's distribution system, including hydrants, water line improvements for looping and increased capacity, extension of the R.O. concentration discharge line, and replacing smaller diameter lines with larger lines. Because these improvements benefit both existing and new customers, they are included in the impact fee calculation and allocated to all customers based on a cost per gpd. The total costs of the six-year water CIP are approximately $9.1 million.

Table 2 provides more detail on the capital improvement projects in the water CIP.

Table 2: Six-Year Total for Water Capital Improvements Plan (FY 2022 through FY 2027)

Water Capital Improvements	Total
CCPW Capital Improvement Program	$ 1,544,710
Pelican Bay-Replace existing 4" w/l with 8" and hydrants	676,000
Pelican Bay-Engineering	56,322
Deep Well #2 RTU	32,500
Fairway Dunes/Duneridge-replace existing w/8" (phase 1)	1,438,365
Fairway Dunes/Duneridge-10"- loop across golf course (Phase 2)	2,032,149
Beachwood East/Dunecrest Lane w/l replacement	920,000
Beachwood East/Dunecrest Project-Engineering	85,617
Shady, Oakview, and Timber Lane w/l replacement	399,925
Racquet Club Villas-Replace existing w/8" WL	418,000
Racquet Club Villas-Engineering	39,123
RO Concentrate Discharge Line Extension	645,000
Twin Oaks - Replace existing 2" w/l with 1400	783,294
TOTAL WATER CAPITAL PROJECTS	**$ 9,071,005**

Funding Sources	
Annual Rate/Cash Funded	$ 8,621,005
Impact Fees	450,000
TOTAL FUNDING SOURCES	**$ 9,071,005**

Appendix B: Schedule 1 provides more detail on the annual expenditures of capital improvement projects in the water CIP.

2. Sewer Capital Improvements Plan

The sewer CIP is a multi-year capital plan and includes capital projects to improve and expand sewer treatment and collection facilities. The Commission operates the sewer system as a single integrated system.

A. Description of Sewer System and Existing Level of Service

The Commission currently owns and operates the 1.10 MGD Wild Dunes WWTP, the 0.30 MGD Forest Trails WWTP, and a sewer collection system that serves retail sewer customers located in portions of the City of Isle of Palms. The collection system consists of 129,624 linear feet of gravity sewer lines ranging from 4 inches to 10 inches in diameter and 44,000 feet of force mains ranging from 4 inches to 8 inches in diameter. The collection system serves approximately 2,714 retail customers through conveyance of sewer discharges to the two wastewater treatment plants.

Based on wastewater flow data from July 2021 to June 2022, current average day demand for the Wild Dunes WWTP was 0.29 MGD, and the current average day demand for the Forest Trails WWTP was 0.21 MGD. Based on this, the combined system average day demand is 0.50 MGD, which represents the existing level of service for the Commission's sewer system. The daily demand that can be served by the current wastewater treatment and collection facilities and the planned sewer collection projects included in the CIP is 1.40 MGD. This represents the current capacity and the total 1.40 MGD of capacity that will be available at the Forest Trails WWTP following the current expansion to that facility and the decommissioning of the Wild Dunes WWTP. This average day wastewater treatment capacity of 1.40 MGD is supported by the existing and planned sewer collection projects.

B. Sewer Units of Service

Sewer system capacity is available to serve both existing and new customers. Similar to water, to determine how this capacity is distributed equitably among all customers, a service unit is determined to create a nexus between available sewer capacity and equivalent demands for sewer services. An appropriate service unit basis for sewer impact fees is the typical average day water use for a typical residential single-family unit, or an ERU.

According to the 2015 DHEC standards in determining wastewater system capacity available to serve new customers, the typical average daily demand for a residential home is 300 gpd. This 300 gpd represents the average water use per ERU that is returned to the sewer system. This 300 gpd service unit applies to a 2,000 or less square foot home.

As with water, the Commission will continue to assess single-family homes based on the square footage of the home, recognizing that larger homes have a much higher daily demand than smaller homes. This is particularly the case in Isle of Palms, which is a beach community that has seen the recent development of very large high-density rental beach houses with multiple bedrooms. To ensure these larger homes are assessed impact fees that reflect their higher demands, the Commission currently uses three square footage categories to assess its water and sewer development fees. These square footage categories include:

1. 2,000 or less;
2. 2,001 to 3,500; or
3. Greater than 3,500.

For other non-residential establishments, the Commission should continue to charge the sewer impact fee based on the DHEC standards unit contributory loadings for various establishments.

Table 3 below presents the demand factors per single-family residential homes for homes within the square footage categories. The DHEC standards and contributing loading factors are included in Appendix A.

Table 3: Residential Sewer Demand Factors Based on Square Footage

Single-Family Residential (Square Feet Area)	Demand (gpd) (1)
2,000 and Less Than (1 ERU)	300
2,001 to 3,500	450
Greater than 3,500	680

(1) The differentials applied to the demand factors for 2,001 to 3,500 square feet and greater than 3,500 square feet categories are based on the historical consumption and square footage analysis performed by TMG.

C. Sewer System Improvements to Serve Growth

To increase treatment efficiencies and consolidate all its treatment services at the newer Forest Trails WWTP, the Commission is currently expanding the capacity of the Forest Trails WWTP to 1.4 MGD and constructing a new pumping station at the Wild Dunes WWTP to divert existing flows to the expanded Forest Trails WWTP. The expansion to the Forest Trails WWTP to provide 1.4 MGD will cost an estimated $18.6 million and the new Wild Dunes pumping station will cost an estimated $2.8 million during the planning period.[5] These projects will allow for the decommission of the old Wild Dunes WWTP and a consolidation of treatment operations at the Forest Trails WWTP.

The sewer CIP also includes several minor improvements to the Commission's collection system and upgrading electrical systems. These improvements benefit both existing and new customers and are included in the impact fee calculation and allocated to all customers based on a cost per gpd. The total costs of the six-year sewer CIP are $26.9 million.

Table 4 provides more detail on the capital improvement projects in the sewer CIP.

[5] While the total bid costs to upgrade the Forest Trail WWTP is $26.7 million, a portion of the project costs relate to additional building space and equipment to accommodate future expansions. The Commission's engineering consultant determined that the portion of the project costs that relate to expanding Forest Trails WWTP to 1.4 MGD is $18.6 million. To ensure the sewer impact fee recovers only those costs of capacity benefitting the new customers paying the fees, the cost of the Forest Trails WWTP included in the six-year CIP adopted as the basis for this Impact Fee Update reflects the $18.6 million associated with the 1.4 MGD expansion.

Table 4: Six-Year Sewer Capital Improvements Benefiting New Customers (FY 2022 through FY 2027)

Sewer Capital Improvements Plan	Total
Upgrade Existing Electrical Systems & Equip.	$ 53,179
Upgrade Forest Trails WWTP to 1.4 MGD (1)	18,600,000
Upgrade Forest Trails WWTP to 1.4 MGD	820,943
New Pump Station-Wild Dunes	2,757,600
Spare Submersible Pumps LS 10,19, and 22	32,000
Gravity Sewer Cleaning/Inspection	220,000
Deep Sewer point repair	120,000
Raven Coat manholes	30,000
New Sewer Flusher	93,000
SCADA Computer FTWWTP	26,400
Spare Grinder Pumps	110,000
Stairs and Deck Replacement LS 26	7,000
Odor Control LS 18	80,000
TOTAL SEWER CAPITAL PROJECTS	**$ 22,950,122**

Funding Sources	
Annual Rate/Cash Funded	7,112,514
Impact Fees	550,000
Grant Funding	4,357,500
Debt Funding (1)	16,118,939
TOTAL FUNDING SOURCES	**$ 28,138,939**

(1) The bond proceeds presented in Table 4 include the additional unexpended bond funding for the Forest Trails WWTP upgrade project. Again, the Forest Hills WWTP upgrade includes incremental project costs above the $18.6 million included in this six-year CIP to accommodate future expansions above the 1.4 MGD benefitting the new customers paying the sewer impact fees determined in this Impact Fee Update. For this reason, the total funding sources are greater than the project costs including in the six-year sewer CIP.

Appendix B: Schedule 2 provides more detail on the capital improvement projects in the sewer CIP.

3. Financing Methods

In the project summaries in Appendix B, Schedule 1 and Schedule 2, there are four different financing methods used. These methods include cash from rates, impact fee funds, debt, and grant funded capital. Cash from rates includes the general operating reserves generated by monthly rates and charges. These funds are available after all annual operating and maintenance expenses have been funded. Impact fee funds represent annual and accumulated balances of impact fee collections.

In anticipation of the Forest Trails WWTP expansion and the annual debt service associated with the Series 2020 Bonds, the Commission implemented wastewater rate increases in each of the past three fiscal years (FY 2020, FY 2021, and FY 2022). These rate increases were designed to ensure revenue self-sufficiency for the wastewater system and to provide adequate debt service coverage for the Series 2020 Bonds. These wastewater rate increases helped the Commission generated strong current cash levels that can be used to fund the approximately $7.1 million of capital project costs that will not be funded through the currently remaining ($10.0 million) in bond proceeds and the remaining $4.4 million in Federal Emergency Management Agency (FEMA) grant funding.

The remaining sewer capital improvements will be funded through a combination of cash from rates ($7.1 million) and impact fee funds ($550,000). All $9.1 million in water capital improvements will be funded through a combination of cash from rates ($8.6 million) and impact fee funds ($450,000).

Schedule 1 and Schedule 2 in Appendix B provide more detail on the financing plans for the planned projects in the water and sewer CIP.

A credit is provided in the calculation of the impact fees for the net present value (NPV) of the principal portion of debt service on the revenue bonds outstanding and to be issued by the Commission to fund the capital costs recovered through the impact fees[6]. This credit is provided to ensure that new customers are not charged twice for these costs through both the impact fees and their future utility rates and charges. Since bonds were issued in 2020 to pay the costs of providing additional wastewater treatment capacity to new customers connecting to the Commission's sewer system over the next 10 to 20 years, the sewer impact fees collected from these new customers over that period may also be used to pay down the debt principal or make annual debt service payments on the debt used to fund the sewer capital improvement costs. Any capital costs and related capacity for projects to be fully funded through contributions and/or grants are excluded from the capacity fee calculations.

[6] The NPV of the remaining principal payments is determined based on a discount rate of 3.0%, which proxies the Commission's current cost of debt.

III. IMPACT FEE METHODOLOGY

Impact fees, or capacity fees, are defined as "one-time capital recovery charges assessed against new development as a way to recover a proportional share of the cost of capital facilities constructed to provide service capacity for new customers." [7] These types of fees are typically used in areas experiencing high growth where recovering expansion-related costs through rates would place an inequitable burden on existing customers.

Since project initiation, Confluence has worked closely with Commission staff in developing an understanding of the Commission's water and sewer service areas and the pricing objectives for impact fees. Based on this understanding, Confluence has calculated the impact fees based on the following recommendations:

- Calculate the impact fees in a manner consistent with the requirements of the Rational Nexus test and industry guidelines.
- Calculate the water and sewer impact fees based on a hybrid or combination of the industry accepted system buy-in approach, which estimates the cost of providing a unit of system capacity based upon the net equity investment in existing capacity, and the marginal incremental cost approach, which focuses on the cost of adding additional facilities to serve new customers included in the CIP.
- Determine the Replacement Cost New Less Depreciation (RCNLD) for the existing water and sewer assets recovered through the fees.
- Provide credits for the NPV of remaining principal payments on outstanding debt and future principal payments on proposed debt issues required to fund future additions of utility assets in the Commission's CIP.
- Include the estimated capital costs budgeted in the Commission's CIPs for relevant water and sewer projects proposed to expand or replace existing capacity available that will serve and benefit new customers locating within the Commission's service area.

These recommendations are developed and discussed in more detail in the following sections and exhibits of this section.

1. Impact Fee Approaches

Numerous approaches to determining impact fees have been adopted by water and sewer utilities across the country. The major goal in selecting an impact fee methodology is to select an approach which provides equity to existing and future customers and is legally defensible. To meet this goal, care must be taken to develop impact fees that reflect the current cost of providing capacity to meet each customer's

[7] Source: Comprehensive Guide to Water and Wastewater Finance and Pricing - Fourth Edition, George A. Raftelis.

needs or level of usage. The more prevalent and accepted methodologies for calculating impact fees are discussed below, followed by a brief discussion of the "Rational Nexus" test.

A. System Buy-In Approach

Under this approach, impact fees are based upon the "buy-in" concept that existing users, through service charges, tax contributions, and other up-front charges, have developed a valuable public capital facility. This method is appropriate for utility systems such as the Commission with additional capacity already in place and provides an estimate of the cost of providing a unit of capacity based upon the net equity of the existing assets. This method calculates a fee based upon the proportional cost of each user's (both existing and future) share of the existing system capacity. The costs of the facilities are based on a review of fixed asset records and include escalation of the depreciated value of those assets to current dollars. Any outstanding principal on funds borrowed to construct the core assets is deducted, based on the assumption that this cost will be recovered from all present and future customers through the retail utility rates.

B. Marginal Incremental Cost Methodology

The marginal incremental cost methodology specifically focuses on the cost of adding additional facilities to serve new customers. It is most appropriate in a situation where existing facilities do not have available capacity to serve new customers, and the cost for new capacity can be tied to an approved CIP or master plan. This method includes the calculation of an adjustment or credit for relevant principal payments related to the new assets that will be recovered through future utility rates. This credit is designed to address the issue of double payment by new customers for the same unit of capacity through the capacity fee and through user rates and charges.

C. Hybrid Approach

Another approach that has become increasingly more common for determining water and sewer utility impact fees is a hybrid approach that combines the system buy-in approach and the marginal incremental cost methodology. This hybrid approach recognizes that new customers of water and sewer systems benefit from both facilities already in place and future improvements to those facilities, including planned extensions and expansions. Under the hybrid approach, an average value of existing and planned facilities is determined to reflect the investment of all existing and future customers of the system.

D. Rational Nexus

In general, properly developed impact fees must comply with the "Rational Nexus" test established in court cases. The "Rational Nexus" test requires that: 1) the need for impact fees is a result of new growth; 2) the amount of the fee does not exceed the reasonable cost to provide capacity to accommodate growth; and 3) the funds collected must be adequately earmarked for the sufficient benefit of new customers required to pay the fee. The development of appropriate impact fees is an important

component in the overall strategy for pricing utility services and represents a major challenge for public utilities.

2. Water Impact Fee Calculation Methodology

Since the existing water system has available capacity to serve new customers, and the Commission has planned capital projects to expand service capacity, the water capacity fee is calculated based on a hybrid of the system buy-in approach and the marginal incremental cost approach.

A. Buy-In to Existing Water Facilities

The buy-in value of the existing water facilities represents the RCNLD of the assets of the water system. This RCNLD is determined by escalating depreciated water facility asset values based on the Engineering News Record (ENR) 20-City Cost Index. The value of any assets that were contributed by developers, funded through grants, contributed by other parties, or have contractual restrictions are excluded from the buy-in value of facilities available to serve new ERUs. By including the RCNLD of the water facilities available to serve new ERUs, the Commission can use water impact fee revenues to make annual payments on or retire debt issued to fund the existing water facilities.

Table 5 summarizes the determination of the buy-in value of the facilities included in the water impact fee.

Table 5: Buy-In to Existing Water Facilities

Water System Asset Category	Adjusted Original Cost	Accumulated Depreciation	Depreciated Value	RCNLD (1)
Land (2)	$ 283,743	$ -	$ 283,743	$ 283,743
Buildings (2)	406,562	273,507	133,055	233,896
Water System	24,458,821	10,543,757	13,915,064	22,362,589
Reverse Osmosis System	2,489,196	1,622,260	866,935	1,777,734
Office Equipment (3)	33,598	13,197	20,401	22,691
Communications Equipment (2)	28,743	15,018	13,725	0
Vehicle And Equipment (2)	482,644	335,488	147,156	176,082
Computer System (2)	313,828	179,422	134,406	176,307
Subtotal Water System Assets	**$ 28,497,135**	**$ 12,982,649**	**$ 15,514,486**	**$ 25,033,041**
Less: Contributed Capital	(1,397,606)	(686,602)	(711,003)	(1,101,100)
Less: FEMA	(2,107,479)	(1,599,302)	(508,177)	(1,140,247)
Less: Debt Principal Credit (3)				
Water System Buy-In Value	$ 24,992,050	$ 10,696,744	$ 14,295,306	**$ 22,791,694**

(1) RCNLD is determined by escalating the depreciated value of asset line items by the annual inflationary cost factors from the ENR 20-City Cost Index.

(2) Because land, building, and other facilities and equipment benefit both water and sewer customers, the shared utility assets are allocated between water and sewer based on relevant factors such as personnel time logs for work performed between water and sewer functions.

(3) The Commission has no outstanding debt issues related to funding the water system assets.

After the assets are allocated to the water and sewer systems and deductions are made to exclude assets contributed by or funded through FEMA grants, the Buy-In value of the water system is approximately $22.8 million. This represents the value of existing assets that is available to serve both existing and future customers of the water system.

B. Marginal Incremental Cost Value of Water System

The marginal incremental cost value of the water system represents the water capital improvements included in the Commissions six-year CIP. As detailed in Table 2, the Commission plans to perform $9.1 million in water capital improvements. Although these capital improvements will benefit both existing and new customers through replacements and oversizing of water lines, it is appropriate to include all the water capital improvements in the marginal incremental cost value, since the impact fees are determined based on the total value of the 4.2 MGD of water system capacity.

Since the Commission plans to fund the six-year water CIP through cash from rates and available impact fee funds, no debt principal credit is applied to the marginal incremental cost value for water impact fees.

Table 6 summarizes the calculation of the water impact fee based on the hybrid System Buy-In and Marginal Incremental Cost approach.

Table 6: Calculation of Water Impact Fee per ERU

Water Impact Fee Calculation	**Fiscal Year Ending June 30, 2021**
System Buy-In Component	
Replacement Costs of Existing Facilities	**$ 25,033,041**
Less:	
Contributed Capital	$ (1,101,100)
FEMA Grant Funded	$ (1,140,247)
Debt Principal Credit	$ -
Total Replacement Costs	**$ 22,791,694**
Marginal Costs Component	
Planned CIP Improvements	$ 9,071,005
Less:	
Debt Principal Credit	$ -
Total Marginal Costs	**$ 9,071,005**
Total Value Benefiting Existing & New ERU	**$ 31,862,699**
Current Capacity (MGD)	4.20
Cost per Gallon Per Day	$ 7.59
Peak Daily Demand Per ERU (300 gpd x 1.5x)	450
Impact Fee Per ERU	**$ 3,414**

Again, the full cost water impact fee per ERU of **$3,414** is based on daily the water demand of the typical three-bedroom single-family residence. This demand is based on the 300 gpd average daily water demand identified in DHEC standards for determining sewer system capacity escalated by a 1.50x peaking factor, since water systems are sized to meet peak demands. The 1.50x peaking factor is based on the average daily water use by residential customers during the peak water use month (August) in calendar year 2021, divided by the annual daily average water use by residential customers during FY 2021.

The Commission will continue to assess single-family homes based on the square footage of the home, recognizing that larger homes have a much higher daily demand than smaller homes. As a beach community, Isle of Palms has seen the development of very large rental beach houses with multiple bedrooms and very high water use during the summer rental season. To ensure these larger homes are assessed impact fees that reflect their higher demands, the Commission currently uses three square footage categories to assess its water and sewer impact fees.

Table 7 presents the current and proposed water impact fees per residential single-family home for homes within the square footage categories.

Table 7: Single-Family Residential Water Impact Fees by Square Footage

Single-Family Residential (Square Feet Area)	Demand (gpd) (1)	Impact Fees		Change	
		Current	Proposed	Increase	Percent (2)
2,000 and Less Than (1 ERU)	450	$ 3,082	$ 3,414	$ 332	11%
2,001 to 3,500	675	$ 4,623	$ 5,121	$ 498	11%
Greater than 3,500	1,020	$ 6,986	$ 7,738	$ 752	11%

(1) The differentials applied to the demand factors for the 2,001 to 3,500 square feet and greater than 3,500 square feet categories are based on the historical consumption and square footage analysis performed by TMG.

(2) Represents an average annual increase of 2.6% since 2018 impact fee study.

As Table 7 demonstrates, the updated calculation results in proposed water impact fees that are 11% greater than the fees adopted in 2018. The 11% increase to the water impact fees results from four years of capital investments in the existing water system capacity that have increased the system buy-in component by approximately $2.5 million since the 2018 Impact Fee Study. Similarly, the planned capital projects included in the current CIP reflect an approximately $600,000 increase in the marginal costs component in comparison to planned projects included in the 2018 CIP. These capital cost increases reflect a significant escalation in construction costs related to inflation, supply chain limitations, and rising labor costs; as well as the evolving needs for planned repairs and improvements to the Commission's water system since 2018. The proposed water impact fees presented in Table 7 reflect the maximum, full cost fees the Commission should consider adopting, however the Commission may choose to adopt new water impact fees below those presented in Table 7.

For other non-residential establishments, the Commission should continue to charge the water impact fee based on the DHEC standards unit contributory loadings for various establishments. However, Confluence recommends applying the 1.50x peaking factor to these standards to reflect peak day demands.

For more information on the contributory loading factors to be used by multi-family and non-residential establishments, see Appendix A.

3. Sewer Impact Fee Calculation Methodology

Since the existing sewer system also has available capacity to serve new customers, and the Commission has planned capital projects to expand service capacity, the sewer impact fee is also calculated based on a hybrid of the system buy-in approach and the marginal incremental cost approach.

A. Buy-In to Existing Sewer Facilities

The buy-in value of the existing sewer facilities represents the RCNLD of the assets of the sewer system. This RCNLD is determined by escalating depreciated wastewater facility asset values based on the ENR 20-City Cost Index. Again, the value of any assets that were contributed by developers, funded through grants, contributed by other parties, or have contractual restrictions are excluded from the buy-in value of facilities available to serve new ERUs. Additionally, since the Commission will decommission the Wild Dunes WWTP and consolidate treatment operations at the Forest Trails WWTP, the RCNLD of the Wild Dunes WWTP is also excluded from the sewer buy-in value. By including the RCNLD of the eligible sewer facilities available to serve new ERUs, the Commission can use sewer impact fee revenues to make annual payments on or retire debt issued to fund the existing sewer facilities.

Table 8 summarizes the determination of the buy-in value of the facilities included in the sewer impact fee.

Table 8: Buy-In to Existing Sewer Facilities

Sewer System Asset Category	Adjusted Original Cost	Accumulated Depreciation	Depreciated Value	RCNLD (1)
Land (2)	$ 319,965	$ -	$ 319,965	$ 319,965
Buildings (2)	458,463	308,422	150,041	263,755
Sewer System	21,186,208	11,203,521	9,982,688	14,519,899
Office Equipment (2)	31,014	12,182	18,832	20,945
Communications Equipment (2)	26,532	13,863	12,669	-
Vehicle And Equipment (2)	510,489	354,843	155,646	186,240
Computer System (2)	289,687	165,620	124,067	162,745
Subtotal Sewer System Assets	**$22,822,360**	**$12,058,451**	**$10,763,908**	**$15,473,550**
Less: Contributed Capital	(837,243)	(411,313)	(425,930)	(659,619)
Less: FEMA	(2,933)	(2,226)	(707)	(1,587)
Less: Wild Dunes WWTP	(2,233,351)	(1,945,360)	($287,990)	(535,461)
Less: Debt Principal Credit (3)				$ -
Water System Buy-In Value	$19,748,834	$9,699,553	$10,049,281	**$14,276,882**

(1) RCNLD is determined by escalating depreciated value of assets by the annual inflationary cost factors from the ENR 20-City Cost Index.

(2) Because land, building, and other facilities and equipment benefit both water and sewer customers, the shared utility assets are allocated between water and sewer based on relevant factors such as personnel time logs for work performed between water and sewer functions.

(3) The Commission has not no outstanding debt issues related to funding the sewer system assets.

After the assets are allocated to the water and sewer systems and deductions are made to exclude assets contributed by or funded through FEMA grants, and the value of the soon to be decommissioned Wild Dunes WWTP, the system buy-in value of the sewer system is approximately $14.3 million. This represents the value of existing assets that is available to serve both existing and future customers of the sewer system.

B. Marginal Incremental Cost Value of Sewer System

The marginal incremental cost value of the sewer system represents the capital improvements included in the Commissions six-year CIP. As detailed in Table 4, the Commission plans to perform $23.0 million in sewer capital improvements. The major projects relate to expanding the Forest Trails WWTP and diverting the wastewater flows from the Wild Dunes WWTP to Forest Trails WWTP. Although these capital improvements will benefit both existing and new customers through replacements and oversizing of sewer lines, it is appropriate to include all the sewer capital improvements in the marginal incremental cost value, since the impact fees are determined based on the total value of the 1.4 MGD of sewer system capacity.

Since the Commission issued the $16.1 million Series 2020 Bonds and will receive $4.4 million in FEMA grant funds, a debt principal credit and FEMA grant deduction is applied to the marginal incremental cost value for sewer.[8]

Table 9 summarizes the calculation of the sewer impact fee based on the hybrid System Buy-In and Marginal Incremental Cost approach.

Table 9: Calculation of Sewer Impact Fee per ERU

Sewer Impact Fee Calculation	**Fiscal Year Ending June 30, 2021**
System Buy-In Component	
Replacement Costs of Existing Facilities	**$ 15,473,550**
Less:	
Contributed Capital	$ (659,619)
FEMA Grant Funded	$ (1,587)
Wild Dunes WWTP	$ (535,461)
Debt Principal Credit	$ -
Total Replacement Costs	**$ 14,276,882**
Marginal Costs Component	
Planned CIP Improvements	$ 22,950,122
Less:	
FEMA Grant	$ (4,357,500)
Debt Principal Credit	$ (11,151,525)
Total Marginal Costs	**$ 7,441,097**
Total Value Benefiting Existing & New ERU	**$ 21,717,980**
Current & Planned Capacity (MGD)	1.40
Cost per Gallon Per Day	$ 15.51
Daily Demand Per ERU (DHEC)	300
Impact Fee Per ERU	**$ 4,654**

Again, the full cost sewer impact fee per ERU of **4,654** is based on daily sewer demand characteristics of the typical three-bedroom, single-family residence. This demand is based on the 300 gpd average daily water demand identified in DHEC standards for determining sewer system capacity. The 300 gpd daily demand per ERU is not adjusted, since wastewater treatment and collection systems are sized to meet average day sewer flows.

[8] On January 3, 2023, the Commission received official approval from the State of South Carolina of its request to increase the FEMA grant funds from $2,224,649 to $4,357,500 which will be used to Upgrade the Forest Hill WWTP.

As with water, the Commission will continue to assess single-family homes based on the square footage of the home, recognizing that larger homes have a much higher daily demand than smaller homes. As a beach community, Isle of Palms has seen the development of very large rental beach houses with multiple bedrooms and very high water use during the summer rental season. To ensure these larger homes are assessed impact fees that reflect their higher demands, the Commission currently uses three square footage categories to assess its water and sewer impact fees.

Table 10 presents the current and proposed sewer impact fees per residential single-family home for homes within the square footage categories.

Table 10: Single-Family Residential Sewer Impact Fees by Square Footage

Single-Family Residential (Square Feet Area)	Demand (gpd) (1)	Impact Fees		Change	
		Current	Proposed	Increase	Percent (2)
2,000 and Less Than (1 ERU)	300	$ 3,432	$ 4,654	$ 1,222	36%
2,001 to 3,500	450	$ 5,148	$ 6,981	$ 1,833	36%
Greater than 3,500	680	$ 7,779	$ 10,549	$ 2,770	36%

(1) The differentials applied to the demand factors for 2,001 to 3,500 square feet and greater than 3,500 square feet categories are based on the historical consumption and square footage analysis performed by TMG.

(2) Represents an average annual increase of 7.9% since the 2018 Impact Fee Study.

As Table 10 demonstrates, the updated calculation results in proposed sewer impact fees that are 36% greater than the fees adopted in 2018. The 36% increase equates to an average increase of 7.9% if the Commission had increased the sewer impact fees annually since the current fees were adopted in 2018. The significant increase to the sewer impact fees results from four years of capital investments in the existing sewer system capacity that have increased the system buy-in component by approximately $4.5 million since the 2018 Impact Fee Study. Similarly, the planned capital projects included in the current CIP reflect an approximately $1.2 million increase in the marginal costs component in comparison to planned projects included in the 2018 CIP.[9] These capital cost increases reflect a significant escalation in construction costs related to inflation, supply chain limitations, and rising labor costs; as well as the evolving needs for planned repairs and improvements to the Commission's sewer system since 2018.

[9] Both the current CIP and 2018 CIP include the Forest Trails WWTP upgrade to 1.4 MGD. However, the bid costs and amount of bond funding have increased significantly in the current sewer impact fee calculation in comparison to the assumptions included in the 2018 calculation. While the increased bond funding results in a higher debt principal credit that mitigates the increased construction bid costs of the WWTP upgrade, the net result was an $1.2 million increase in the marginal cost component for the updated calculation of the sewer impact fee.

For other non-residential establishments, the Commission should continue to charge the sewer impact fee based on the DHEC standards unit contributory loadings for various establishments.

For more information on the contributory loading factors to be used by multi-family and non-residential establishments, see Appendix A.

The proposed sewer impact fees presented in Table 10 reflect the maximum, full cost fees the Commission should consider adopting, however the Commission may choose to adopt new sewer impact fees below those presented in Table 10, or phase-in the adoption of the maximum fees over a two-year period. Because the full cost sewer impact fees determined in this Impact Fee Update reflect a significant increase, the following section presents an alternative to phase-in the full cost sewer impact fees over the next two years.

While encouraging growth and development is always an objective, another major objective of impact fees is to ensure (to the extent possible) that growth pays for itself. Public sentiment in rapidly growing jurisdictions has shifted from funding all infrastructure needs through increases to monthly user charges to other innovated ways of financing, such as impact fees, which provide an additional capital financing alternative to debt and user rates. Should the Commission decide to delay or adopt a sewer impact fee below the full cost fee determined in this Impact Fee Update, existing customers would have to subsidize the short fall in impact fee revenues through their user rates and charges. As such, the collection of full cost impact fee revenues would further reduce the need for (or magnitude of) future debt issues and/or user rate increases.

IV. SEWER IMPACT FEE PHASE-IN ALTERNATIVE

Because the updated sewer impact fee calculation represents a significant increase from the current sewer impact fee adopted in 2018, Commission management asked Confluence to provide an alternative to phase-in the updated sewer impact fees over the next two years. The alternative would phase-in the 36% increase through two similar increases on July 1, 2023; and July 1, 2024. The Commission would implement the $4,654 full cost sewer impact fee over a two-year period through two similar 16% increases at the beginning of the next two calendar years.[10] This would include adopting a sewer impact fee of **3,995** per ERU in FY 2024 prior to adopting the full cost fee per ERU in FY 2025.

Table 11 summarizes the phase-in of the full cost sewer impact fee under similar 16% increases over the next two years.

Table 11: Single-Family Residential Sewer Impact Fees by Square Footage (Phase-In Alternative)

Per ERU (2,000 sq/ft or less)	Current	FY 2023	FY 2024
Sewer Impact Fee	$ 3,432	$ 3,995	$ 4,654
Percent Change	N/A	16%	16%
Dollar Change	N/A	$ 563	$ 659

Table 12 presents the sewer impact fees per residential single-family home for homes within the square footage categories that would be adopted in FY 2024 under Alternative 1. The fees within each category would have the same 16% increase.

Table 12: Single-Family Residential Sewer Impact Fees by Square Footage (Phase-In Alternative)

Single-Family Residential (Square Feet Area)	Demand (gpd) (1)	Impact Fees		Change	
		Current	Proposed	Increase	Percent
2,000 and Less Than (1 ERU)	300	$ 3,432	$ 3,995	$ 563	16%
2,001 to 3,500	450	$ 5,148	$ 5,993	$ 845	16%
Greater than 3,500	680	$ 7,779	$ 9,055	$ 1,276	16%

(1) The differentials applied to the demand factors for 2,001 to 3,500 square feet and greater than 3,500 square feet categories are based on the historical consumption and square footage analysis performed by TMG.

[10] Alternatively, the Commission could choose to implement the full-cost sewer impact fee at the beginning of FY 2025, on July 1, 2024.

V. COMPARISON WITH LOCAL COMMUNITIES

One of the Commission's objectives is to implement impact fees that do not burden economic development. Therefore, a comparison of the Commission's current and recommended full cost water and sewer impact fees to similar impact fees assessed to new customers in local communities provides a benchmark when considering the economic impact of the impact fees.

Table 13 provides a comparison between the Commission and eight other communities in South Carolina of the applicable water and sewer impact fees for a typical residential customer, or a single-family residential home representing a single ERU. These communities were chosen because of the population, geographic, and demographic characteristics they share with the Commission.

Table 13: Comparison of Water and Sewer Impact Fees with Local Communities

	Utility Capacity Fees (1)		
Utility/Community	**Water**	**Wastewater**	**Total**
Mount Pleasant Waterworks	$ 3,110	$ 5,550	$ 8,660
IOPWSC (Proposed)	**3,414**	**4,654**	**8,068**
Charleston Water System (CPW) (2)	3,715	4,280	7,995
IOPWSC (Current)	**3,082**	**3,432**	**6,514**
Beaufort-Jasper County	1,924	4,395	6,319
Dorchester County	2,200	3,500	5,700
Average (Excluding IOPWSC)	2,145	3,299	5,445
Hilton Head Island PSD	2,400	3,040	5,440
Berkeley County	2,200	2,850	5,050
Myrtle Beach	1,785	1,655	3,440
Broad Creek PSD	975	2,425	3,400
Summerville Public Works	1,000	2,000	3,000

(1) Based on impact fees assessed per ERU or per typical single-family residential home.
(2) Effective July 1, 2023.

While Table 15 presents a comparison with other communities assuming the Commission adopts the full cost $4,654 sewer impact fee per ERU in FY 2024, the Commission may prefer to mitigate the initial impact on new customers by adopting the phase-in alternative presented in the previous section.

Table 14 presents a comparison with other communities assuming the Commission decides to adopt the two-year phase-in sewer impact fee of $3,995 per ERU in FY 2024.

Table 14: Comparison of Water and Sewer Impact Fees with Local Communities (Alternative 1)

	Utility Capacity Fees (1)		
Utility/Community	**Water**	**Wastewater**	**Total**
Mount Pleasant Waterworks	$ 3,110	$ 5,550	$ 8,660
Charleston Water System (CPW) (2)	3,715	4,280	7,995
IOPWSC (Proposed)	**3,414**	**3,995**	**7,409**
IOPWSC (Current)	**3,082**	**3,432**	**6,514**
Beaufort-Jasper	1,924	4,395	6,319
Dorchester County	2,200	3,500	5,700
Hilton Head Island PSD	2,400	3,040	5,440
Average (Excluding IOPWSC)	2,145	3,299	5,445
Berkeley County	2,200	2,850	5,050
Myrtle Beach	1,785	1,655	3,440
Broad Creek PSD	975	2,425	3,400
Summerville Public Works	1,000	2,000	3,000

(1) Based on impact fees assessed per ERU or per typical single-family residential home.

(2) Effective July 1, 2023.

APPENDIX A

1. Per Person 2. Per Person, with Showers	4 8
EE. Rest Homes: 1. Per Bed 2. Per Bed, with Laundry	 75 113
FF. Restaurants: 1. Fast Food Type, Not Twenty Four (24) Hours (Per Seat) 2. Twenty Four (24) Hour Restaurant (Per Seat) 3. Drive-In (Per Car Service Space) 4. Vending Machine, Walk-up Deli or Food Preparation (Per Person)	 30 53 30 30
GG. Schools, Day Care: 1. Per Person 2. Per Person, with Cafeteria 3. Per Person, with Cafeteria, Gym and Showers	 8 11 15
HH. Service Stations: 1. Per Employee 2. Per Car Served 3. Car Wash (Per Car Washed)	 8 8 56
II. Shopping Centers, Large Department Stores, Malls: (Per Person, No Restaurant)	19
JJ. Stadiums, Coliseums: (Per Seat, No Restaurant)	4
KK. Swimming Pools: (Per Person, with Sewer Facilities and Showers)	8
LL. Theaters: Indoor (Per Seat), Drive In (Per Stall)	4

N. Dentist Office:	
1. Per Employee	11
2. Per Chair	6
3. Per Suction Unit; Standard Unit	278
4. Per Suction Unit; Recycling Unit	71
5. Per Suction Unit; Air Generated Unit	0
O. Factories, Industries:	
1. Per Employee	19
2. Per Employee, with Showers	26
3. Per Employee, with Kitchen	30
4. Per Employee, with Showers and Kitchen	34
P. Fairgrounds: (Average Attendance, Per Person)	4
Q. Grocery Stores: (Per Person, No Restaurant or Food Preparation)	19
R. Hospitals:	
1. Per Resident Staff	75
2. Per Bed	150
S. Hotels: (Per Bedroom, No Restaurant)	75
T. Institutions: (Per Resident)	75
U. Laundries: (Self Service, Per Machine)	300
V. Marinas: (Per Slip)	23
W. Mobile Homes: (Per Unit)	225
X. Motels: (Per Unit, No Restaurant)	75
Y. Nursing Homes:	
1. Per Bed	75
2. Per Bed, with Laundry	113
Z. Offices, Small Stores, Business, Administration Buildings: (Per Person, No Restaurant)	19
AA. Picnic Parks: (Average Attendance, Per Person)	8
BB. Prison/Jail:	
1. Per Employee	11
2. Per Inmate	94
CC. Residences: (Per House, Unit)	300
DD. Rest Areas, Welcome Centers:	

61-67, Appendix A. Unit Contributory Loadings to All Domestic Wastewater Treatment Facilities

Unit Contributory Loadings to All Domestic Wastewater Treatment Facilities	
Type of Establishment	**Hydraulic Loading (GPD)**
A. Airport:	
1. Per Employee	8
2. Per Passenger	4
B. Apartments, Condominiums, Patio Homes:	
1. Three (3) Bedrooms (Per Unit)	300
2. Two (2) Bedrooms (Per Unit)	225
3. One (1) Bedroom (Per Unit)	150
C. Assembly Halls: (Per Seat)	4
D. Barber Shop:	
1. Per Employee	8
2. Per Chair	75
E. Bars, Taverns:	
1. Per Employee	8
2. Per Seat, Excluding Restaurant	30
F. Beauty Shop:	
1. Per Employee	8
2. Per Chair	94
G. Boarding House, Dormitory: (Per Resident)	38
H. Bowling Alley:	
1. Per Employee	8
2. Per Lane, No Restaurant, Bar or Lounge	94
I. Camps:	
1. Resort, Luxury (Per Person)	75
2. Summer (Per Person)	38
3. Day, with Central Bathhouse (Per Person)	26
4. Travel Trailer (Per Site)	131
J. Car Wash: (Per Car Washed)	56
K. Churches: (Per Seat)	2
L. Clinics, Doctor's Office:	
1. Per Employee	11
2. Per Patient	4
M. Country Club, Fitness Center, Spa: (Per Member)	38

APPENDIX B

Schedule 1
Isle of Palms Water & Sewer Commission
Water and Sewer Financial Planning & Rate Model
Water Capital Improvements Plan (CIP)

			Fiscal Year Ending, June 31					FY 2023 - 2027
Water Capital Improvements		2022	2023	2024	2025	2026	2027	**Total**
W1	CCPW Capital Improvement Program	$ 91,947	$ 91,947	$ 340,054	$ 340,054	$ 340,354	$ 340,354	$ 1,544,710
W2	Pelican Bay-Replace existing 4" w/l with 8" and hydrants				676,000			676,000
ENG	Pelican Bay-Engineering			56,322				56,322
W3	Deep Well #2 RTU		32,500					32,500
W5a	Fairway Dunes/Duneridge-replace existing w/8" (phase 1)					1,438,365		1,438,365
W5b	Fairway Dunes/Duneridge-10"- loop across golf course (Phase 2)						2,032,149	2,032,149
W7	Beachwood East/Dunecrest Lane w/l replacement					920,000		920,000
ENG	Beachwood East/Dunecrest Project-Engineering				85,617			85,617
W11	Shady, Oakview, and Timber Lane w/l replacement		399,925					399,925
W12	Racquet Club Villas-Replace existing w/8" WL			418,000				418,000
ENG	Racquet Club Villas-Engineering		39,123					39,123
W13	RO Concentrate Discharge Line Extension		645,000					645,000
W36	Twin Oaks - Replace existing 2" w/l with 1400						783,294	783,294
Total Water Capital Projects		**$ 91,947**	**$ 1,208,495**	**$ 814,376**	**$ 1,101,671**	**$ 2,698,719**	**$ 3,155,797**	**$ 9,071,005**
Water Capital Funding Sources								
Annual Rate Funded		$ 16,947	$ 1,133,495	$ 739,376	$ 1,026,671	$ 2,623,719	$ 3,080,797	$ 8,621,005
Impact Fees		75,000	75,000	75,000	75,000	75,000	75,000	450,000
Grant Funding								-
Debt Funding								-
Total Funding Sources		$ 91,947	$ 1,208,495	$ 814,376	$ 1,101,671	$ 2,698,719	$ 3,155,797	$ 9,071,005

Schedule 2
Isle of Palms Water & Sewer Commission
Water and Sewer Financial Planning & Rate Model
Sewer Capital Improvements Plan (CIP)

			Fiscal Year Ending, June 31					FY 2023 - 2027
		2022	2023	2024	2025	2026	2027	Total
Sewer Capital Improvements								
S1	Upgrade Existing Electrical Systems & Equip.	$ 13,097	$ 13,097	$ 13,359	$ 13,626			$ 53,179
S2	Upgrade Forest Trails WWTP to 1.4 MGD	1,860,000	9,300,000	4,650,000	2,790,000	-		18,600,000
ENG	Upgrade Forest Trails WWTP to 1.4 MGD	820,943						820,943
S3	New Pump Station-Wild Dunes		2,757,600					2,757,600
S5	Spare Submersible Pumps LS 10,19, and 22		32,000					32,000
S6	Gravity Sewer Cleaning/Inspection	56,000	64,000	64,000	36,000			220,000
S7	Deep Sewer point repair		120,000					120,000
S8	Raven Coat manholes		30,000					30,000
S9	New Sewer Flusher		93,000					93,000
S10	SCADA Computer FTWWTP	26,400						26,400
S11	Spare Grinder Pumps	55,000	55,000					110,000
S12	Stairs and Deck Replacement LS 26	7,000						7,000
S13	Odor Control LS 18	80,000						80,000
Total Sewer Capital Projects		**$ 2,918,440**	**$ 12,464,697**	**$ 4,727,359**	**$ 2,839,626**	**$ -**	**$ -**	**$ 22,950,122**
Sewer Capital Funding Sources								
Annual Rate Funded		-	4,372,888	-	2,739,626	-	-	7,112,514
Impact Fees		50,000	100,000	100,000	100,000	100,000	100,000	550,000
Grant Funding		1,089,375	3,268,125	-	-	-	-	4,357,500
Debt Funding		5,564,996	4,723,684	5,830,259	-	-	-	16,118,939
Total Funding Sources		$ 6,704,371	$ 12,464,697	$ 5,930,259	$ 2,839,626	$ 100,000	$ 100,000	$ 28,138,953