



Orange Water and Sewer Authority

# Water and Sewer System Development Fee Study

March 6, 2018





March 6, 2018

Mr. Stephen Winters  
Director of Finance and  
Customer Service  
400 Jones Ferry Road  
Carrboro, NC 27510

Re: Water and Sewer System  
Development Fee Study

Dear Mr. Winters,

Stantec is pleased to present this Final Report on the Water and Sewer System Development Fee Study that we performed for the Orange Water and Sewer Authority. We appreciate the professional assistance provided by you and all of the members of OWASA staff who participated in the Study.

If you have any questions, please do not hesitate to call us at (202) 585-6391. We appreciate the opportunity to be of service to OWASA, and look forward to the possibility of doing so again in the near future.

Sincerely,

A handwritten signature in black ink, appearing to read "David Hyder".

David A. Hyder  
Principal

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Enclosure

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# 1. INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has conducted a Water and Sewer System Development Fee Study (Study) for Orange Water and Sewer Authority's water and sewer systems (hereafter referred to as "OWASA" or "Utility"). This report presents the results of the comprehensive Study, including background information, legal requirements, an explanation of the calculation methodology employed, and the results of the analysis.

## 1.1 BACKGROUND

A system development fee is a one-time charge paid by a new customer to recover a portion or all of the cost of constructing water and sewer system capacity for that customer. The fees are also assessed to existing customers requiring increased system capacity. In general, system development fees are based upon the costs of major backbone utility infrastructure including water supply facilities, treatment facilities, effluent disposal facilities, and transmission mains. System development fees serve as the mechanism by which growth can "pay its own way," and minimize the extent to which existing customers must bear the cost of facilities that will be used to serve new customers.

OWASA currently assesses water and sewer system development fees that are designed to recover the cost of water and sewer capacity from new connectors to each respective system. In an effort to comply with North Carolina's new Public Water and Sewer System Development Fee Act, Session Law (S.L.) 2017-138, OWASA has retained the services of Stantec to calculate updated system development fees for each system.

## 1.2 LEGAL REQUIREMENTS

The new Public Water and Sewer System Development Fee Act, S.L. 2017-138, also known as House Bill 436 ("HB 436") was approved on July 20, 2017 and grants local government entities that own or operate municipal water and wastewater systems, the authority to assess system development fees for the provision of utility service to new development.

HB 436 defines new development as 1) subdivision of land, 2) construction or change to existing structure that increases service needs or 3) any use of land which increased service needs within 1 year (no longer than 12 months) of a development fee being adopted.

According to HB 436 the following procedural requirements must to be followed in order to adopt a system development fee:

- **Requirement 1:** The fee should be calculated in a written analysis ("SDF Analysis") prepared by a financial professional or licensed professional engineer (qualified by experience and training or education) who employs generally accepted accounting, engineering, and planning methodologies to calculate system development fees for water and sewer systems, including

the buy-in, incremental cost or marginal cost, and combined costs methods for each service; and that (1) documents the facts and data used in the analysis and their sufficiency and reliability; (2) provides analysis regarding the selection of the appropriate method of analysis; (3) documents and demonstrates reliable application of the methodology to the facts and data, including all reasoning, analysis, and interim calculations underlying each identifiable component of the system development fee; (4) identifies all assumptions and limiting conditions affecting the analysis and demonstrates that they do not materially undermine the reliability of the conclusions reached; (5) calculates a system development fee per service unit of new development and includes an equivalency or conversion table to use in determining the fees applicable for various categories of demand; and (6) covers a planning horizon of between 10 and 20 years.

- **Requirement 2:** The system development fee analysis must be posted on OWASA's website, and OWASA must solicit comments and provide a means by which people can submit their comments, for a period of at least 45 days.
- **Requirement 3:** Comments received from the public must be considered by preparer of the system development fee analysis for possible adjustments to the analysis.
- **Requirement 4:** OWASA must hold a public hearing prior to considering adoption of the system development fees including any adjustments made as part of the comments received by the OWASA.
- **Requirement 5:** OWASA must publish the system development fee schedule as part of its annual budget or fee ordinance.
- **Requirement 6:** OWASA cannot adopt a fee that is higher than the fee calculated by the professional analysis.
- **Requirement 7:** OWASA must update the system development fee analysis at least every five years.

In addition to the procedural requirements listed above, HB 436 provides specific requirements pertaining to the calculation of the system development fees. These requirements are highlighted within the body of this report in concert with the calculation of the system development fees for OWASA.

### 1.3 OBJECTIVES

The objective of this Study is to:

1. Determine the full cost recovery system development fees for water and sewer service based upon requirements created by the new Public Water and Sewer System Development Fee Act, S.L. 2017-138.
2. Provide a comparison of the system development fees calculated during the study with OWASA's current system development fees.

## 1.4 GENERAL METHODOLOGY

There are three primary approaches to the calculation of system development fees, all of which are outlined within the new Public Water and Sewer System Development Fee Act, S.L. 2017-138. Each of the approaches are discussed below.

### *Buy-In Method*

This approach determines the system development fees solely on the existing utility system assets. Specifically, the replacement cost of each system's major functional components serve as the cost basis for the system development fee calculation. This approach is most appropriate for a system with considerable excess capacity, such that most new connections to the system will be served by that existing excess capacity and the customers are effectively "buying-in" to the existing system.

### *Incremental/Marginal Cost Method*

The second approach is to use the portion of each system's multi-year capital improvement program (CIP) associated with the provision of additional system capacity by functional system component as the cost basis for the development fee calculation. This approach is most appropriate where 1) the existing system has limited or no excess capacity to accommodate growth, and 2) the CIP contains a significant number of projects that provide additional system capacity for each functional system component representative of the cost of capacity for the entire system.

### *Combined Cost Method*

The third approach is a combination of the two approaches described above. This approach is most appropriate when 1) there is excess capacity in the current system that will accommodate some growth, but additional capacity is needed in the short-term as reflected in each system's CIP, and 2) the CIP includes a significant amount of projects that will provide additional system capacity, but does not necessarily have a sufficient number of projects in each functional area to be reflective of a total system.

## **Methodologies & Restriction of Proceeds**

While HB 436 allows for the use of any one of the three methodologies discussed above, it specifies restrictions on how the revenues generated by the fees calculated using each methodology may be utilized. Table 1-1 summarizes each of the three methodologies, their typical application, and restriction of how the revenues can be utilized for each.

**Table 1-1 Description of Methodologies & Restriction to Proceeds**

<b>Methodology / Approach:</b>	<b>Description:</b>	<b>Often Used by Systems with:</b>	<b>Fee Proceeds Allowed for:</b>
<b>Buy-In Method</b>	New development shares in <u>capital costs previously incurred</u> which provided capacity for demand created by the needs of development.	Excess capacity.	Expansion and/or rehabilitation projects. Since the buy-in method reimburses the system for certain past investments, proceeds can be treated as unrestricted.
<b>Incremental / Marginal Cost</b>	New development share in <u>capital costs to be incurred in the future</u> which will provide capacity for demand created by the needs of new development.	Limited or no excess capacity and a CIP which will provide significant additional capacity.	Professional services costs in development of new fees and expansion costs (construction costs, debt service, capital, land purchase, other costs etc.) <u>related to new development only</u> .
<b>Combined Cost</b>	Combination of Buy-In and Incremental / Marginal Cost methods	Some excess capacity but short-term additional capacity is needed and identified in the CIP.	Restricted in the same manner as the Incremental / Marginal Cost Methodology.

Given that OWASA has excess capacity in its current water and sewer systems, the methodology chosen for the calculation of the system development fee for each system in this Study is the Buy-In Method. This approach calculates system development fees that reflect the most current estimates of current capacity as provided by OWASA to accommodate new connections to the water and sewer systems. This approach will reimburse OWASA for the cost of its existing capacity that will be used to serve future growth. To comply with the new legislation, OWASA will revisit the methodology at least every five years to determine if the "buy-in" method is still the most appropriate methodology to use.

## 2. BASIS OF ANALYSIS

The first step in calculating water and sewer development fees is to determine the cost basis or value for each major system (Water and Sewer). The net system value for use in the determination of system development fees is calculated using the following approach.

- 1) The existing system assets are analyzed to determine the replacement cost new less depreciation (RCNLD) of OWASA's existing major water and sewer system components.
- 2) Any donated assets and/or assets not funded by OWASA (Grants, Developers, etc.) are removed from the system assets.
- 3) The assets are further reduced by the outstanding principal on debt for each system.
- 4) The resulting net system value is used in the determination of the fee.

The following section outlines the details of the analysis completed during the Study to calculate the water and sewer system development fees.

### 2.1 TOTAL SYSTEM VALUE

OWASA provided a detailed asset inventory which included an asset identification number, a description of the asset, cost center, asset type, year placed in service, original cost, net book value and useful life for each water and sewer system asset as of June 30, 2017. These assets were classified by each major system function, and a RCNLD was calculated for each asset record using the data provided by OWASA and the Engineering News Record Construction Cost Index. Schedule 4 in the Appendix shows a summary of the RCNLD for OWASA's existing water and sewer systems, categorized into functions, as well as administration and general assets based upon asset records provided by OWASA staff.

### 2.2 CREDITS

HB 436 requires that the system development fee calculations include provisions for credits against the value of the system to account for assets that were not funded by OWASA and for assets that were financed by OWASA with remaining outstanding debt liabilities. The credits included in this Study are discussed below.

#### *Principal on Outstanding Debt*

Once the net system values were identified for each functional component, an adjustment was then made in the form of a credit for the principal of all outstanding debt that will be recovered in user fees after new customers connect to the water and/or sewer systems. Upon connection to either system, new customers will pay monthly user rates associated with the use of utility service. In addition to systems operating costs, the user rates recover the principal and interest payments associated with the debt



incurred to fund the capital costs of each water and sewer system. This avoids a double recovery of those capital costs from the system development fees and user rates.

#### *Contributed and Grant Funded Assets*

Water and sewer system assets that were donated to OWASA or were funded with grants must be excluded from the system development fee calculation. As OWASA did not incur the cost of purchasing and/or constructing the asset, OWASA cannot include the costs in the system value used to determine the system development fee.

Table 2-1 presents the determination of the net system value given the credit for debt service and donated assets.

**Table 2-1 Net System Values and Credits by System**

<b>System</b>	<b>Total System Value</b>	<b>Principal Outstanding</b>	<b>Donated Assets</b>	<b>Net System Value</b>	<b>Credits as % of Total System Value</b>
Water	\$188,831,903	(\$28,807,200)	(\$53,799,309)	\$106,225,394	44%
Sewer	\$236,114,437	(\$32,834,800)	(\$62,450,931)	\$140,828,706	39%

## 2.3 CAPACITIES

Once the system costs were determined and allocated to each system and its components, the next step was to determine the water and sewer system's capacities by functional component as stated in terms of units of capacity. Expressing the system capacities in terms of units of capacity allows for developing of the unit price of capacity, which is essential for determining system development fees.

OWASA's water and sewer systems consist of numerous functional components such as water treatment, source of supply, transmission and storage for water, and sewer treatment, collection and disposal for sewer. Each of the functional components have a capacity. While treatment, supply, and disposal capacities are generally accepted to be either the physical or regulatory permitted capacity of such facilities and are readily available, transmission system capacities are more difficult to quantify.

As such, it is common to define the capacity for all functional components (including the transmission facilities) based on the system's total treatment capacity. This approach was utilized for the determination of the system capacities for OWASA's systems. The rationale behind this decision is the only capacity the system can offer to its connections is its total treatment capacity, even if the transmission and pumping portion of either system is larger than that system's treatment capacity. Table 2-2 summarizes the capacity by function used in the fee calculation for OWASA.

**Table 2-2 System Capacity by Function**

	Water Capacity (MGD)		Sewer Capacity (MGD)	
	Source of Supply/ Treatment	Transmission/ Pumping	Treatment/ Disposal	Transmission/ Pumping
<b>Current Capacity</b>	<b>20.00<sup>1</sup></b>	<b>20.00</b>	<b>14.50<sup>2</sup></b>	<b>14.50</b>

<sup>1</sup> Represents water treatment plant maximum day capacity

<sup>2</sup> Represents sewer treatment plant maximum month capacity

## 2.4 UNIT COST OF CAPACITY

To calculate the unit cost of capacity, the net system value for the water and sewer systems is divided by the capacity of each respective system. The detailed calculations for the unit cost of capacity for each system are presented in Schedules 1 and 2, in the Appendix. Table 2-3 provides a schedule of the existing and calculated unit costs of capacity based upon the net system value and capacity information discussed herein.

**Table 2-3 Unit Cost of Capacity per Gallon per Day**

System	Existing	Calculated	Difference
Water	\$6.07	\$5.47	(\$0.60)
Sewer	\$11.55	\$10.00	(\$1.55)

## 2.5 UNITS OF SERVICE

Once the unit cost of capacity is determined the system development fees can be calculated by applying the unit cost to the estimated units of service required by new customers joining the water and/or sewer system. OWASA currently charges system development fees based on average use by household size for residential customers, and based on meter size for non-residential customers. Therefore the units of service currently used by OWASA relate to demands associated with single family household size and demands by meter size.

To evaluate units of service, we performed a detailed analysis of the existing demands placed on OWASA's system on a per account basis. Specifically, we utilized GIS and billing data to examine the usage profiles for existing single family detached homes served by OWASA and calculated the average use at 100 square foot increments of home size. This analysis was used to update the average daily demands for the existing household sizes used to assess system development fees. In addition to updating the average use per household size used in calculating the fees, as a result of the Study, a new class is recommended for houses less than 800 square feet. Our analysis revealed that households of 800 square feet or smaller use significantly less water than those over 800 square feet. The multi-family class fee is calculated based on average use of the single-family detached 800 - 1,300 square feet house.

The units of service for non-residential customers is based on demand by meter size. Specifically, the non-residential average use for a 5/8" meter was calculated based on an average of usage per account for all non-residential for the 2012 through 2016 period. This base demand is then scaled up for each meter size based on the American Water Works Association (AWWA) meter equivalency factors. The average use level of service identified as part of this process is shown in Table 2-4 below:

**Table 2-4 Unit of Service by Customer Class**

<b>Customer Class</b>	<b>Calculated Units of Service (gallons per day)</b>
Single Family Detached < 800 sq. ft.	79
Single Family Detached < / = 800 -1,300 sq. ft.	98
Single Family Detached 1,301-1,700 sq. ft.	111
Single Family Detached 1,701-2,400 sq. ft.	127
Single Family Detached 2,401-3,100 sq. ft.	147
Single Family Detached 3,101-3,800 sq. ft.	169
Single Family Detached > 3,800 sq. ft.	223
Multi-family Individually Metered	98
Non-residential 5/8" Meter	325

The units of service shown in Table 2-4 were used to calculate the system development fees for each category of new connection as outlined in the next section.

### 3. SYSTEM DEVELOPMENT FEES AND COMPARISONS

This section summarizes the results of the Study, a comparison of the existing and calculated system development fees by customer class and conclusions and recommendations.

#### 3.1 SYSTEM DEVELOPMENT FEES BY CUSTOMER CLASS

OWASA calculates system development fees for each customer class (residential, multi-family, and non-residential) based on the units of service presented in the prior section. The water fee is calculated based on a loss factor of 10%, a peak factor by customer class based on demonstrated peaking, and the average use level of service for each customer class, and within each class, for each block of household sizes. The sewer fee is similarly calculated based on a sewer factor by customer class, an inflow and infiltration factor by customer class, and the same average usage per household based on actual metered water use. Schedules 3 and 4 of the Appendix present the specific factors by customer class used to calculate the water and sewer system development fees.

The detailed system development fees by customer class as calculated during this Study are shown in Tables 3-1 and 3-2 for water and sewer, respectively.

**Table 3-1 Water System Development Fee Schedule**

System	Existing	Calculated	Difference
Single Family Detached < 800 sq ft	\$1,033	\$620	(\$413)
Single Family Detached < / = 800-1,300 sq ft	\$1,033	\$770	(\$263)
Single Family Detached 1,301-1,700 sq ft	\$1,207	\$864	(\$343)
Single Family Detached 1,701-2,400 sq ft	\$1,552	\$1,142	(\$410)
Single Family Detached 2,401-3,100 sq ft	\$2,470	\$1,767	(\$703)
Single Family Detached 3,101-3,800 sq ft	\$3,429	\$2,442	(\$987)
Single Family Detached >3,801 sq ft	\$5,406	\$4,295	(\$1,111)
Single Family Detached 1" Meter	\$8,143	\$7,338	(\$805)
Multi-family Individually Metered	\$1,112	\$830	(\$282)
Multi-family 1" Meter	\$8,143	\$7,338	(\$805)
Non-residential 5/8" Meter	\$3,255	\$2,933	(\$322)
Non-residential 1" Meter	\$8,143	\$7,338	(\$805)
Non-residential 1.5" Meter	\$16,275	\$14,666	(\$1,609)
Non-residential 2" Meter	\$26,040	\$23,466	(\$2,574)
Non-residential 3" Meter	\$52,081	\$46,933	(\$5,148)
Non-residential 4" Meter	\$81,376	\$73,332	(\$8,044)
Non-residential 6" Meter	\$162,752	\$146,664	(\$16,088)
Non-residential 8" Meter	\$260,403	\$234,663	(\$25,740)

**Table 3-2 Sewer System Development Fee Schedule**

System	Existing	Calculated	Difference
Single Family Detached < 800 sq ft	\$2,829	\$1,632	(\$1,197)
Single Family Detached < / = 800-1,300 sq ft	\$2,829	\$2,207	(\$802)
Single Family Detached 1,301-1,700 sq ft	\$3,270	\$2,251	(\$1,019)
Single Family Detached 1,701-2,400 sq ft	\$3,384	\$2,391	(\$993)
Single Family Detached 2,401-3,100 sq ft	\$3,859	\$2,652	(\$1,207)
Single Family Detached 3,101-3,800 sq ft	\$4,256	\$2,912	(\$1,344)
Single Family Detached >3,801 sq ft	\$4,541	\$3,466	(\$1,075)
Single Family Detached 1" Meter	\$13,088	\$11,329	(\$1,759)
Multi-family Individually Metered	\$3,064	\$2,196	(\$868)
Multi-family 1" Meter	\$13,088	\$11,329	(\$1,759)
Non-residential 5/8" Meter	\$6,553	\$5,673	(\$880)
Non-residential 1" Meter	\$16,392	\$14,192	(\$2,200)
Non-residential 1.5" Meter	\$32,763	\$28,366	(\$4,397)
Non-residential 2" Meter	\$52,421	\$45,386	(\$7,035)
Non-residential 3" Meter	\$104,842	\$90,773	(\$14,069)
Non-residential 4" Meter	\$163,816	\$141,832	(\$21,984)
Non-residential 6" Meter	\$327,632	\$283,664	(\$43,968)
Non-residential 8" Meter	\$524,211	\$453,863	(\$70,348)

## 3.2 CONCLUSIONS AND RECOMMENDATIONS

Based upon the analysis presented herein, we have developed the following conclusions and recommendations:

- We recommend that OWASA adopt water and sewer system development fees as demonstrated in Tables 3-1 and 3-2.
- We recommend that OWASA review its development fees at least every 5 years to ensure that it follows requirements established by the Public Water and Sewer System Development Fee Act, S.L. 2017-138 and to ensure that the fees remain fair and equitable and continue to reflect the systems' current cost of capacity. As OWASA continues to expand its facilities, future changes in technology, demands, development patterns, or other factors may necessitate additional adjustments to its development fees.
- We recommend that as part of any system development fee update, OWASA also evaluate the most appropriate accepted methodology for calculating its system unit cost of capacity as system capacity may change over time.

**Disclaimer**

*This document was produced by Stantec Consulting Services, Inc. (“Stantec”) for the Orange Water and Sewer Authority and is based on a specific scope agreed upon by both parties. Stantec’s scope of work and services do not include serving as a “municipal advisor” for purposes of the registration requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) or the municipal advisor registration rules issued by the Securities and Exchange Commission. Stantec is not advising the Orange Water and Sewer Authority, or any municipal entity or other person or entity, regarding municipal financial products or the issuance of municipal securities, including advice with respect to the structure, terms, or other similar matters concerning such products or issuances.*

*In preparing this report, Stantec utilized information and data obtained from the Orange Water and Sewer Authority or public and/or industry sources. Stantec has relied on the information and data without independent verification, except only to the extent such verification is expressly described in this document. Any projections of future conditions presented in the document are not intended as predictions, as there may be differences between forecasted and actual results, and those differences may be material.*

*Additionally, the purpose of this document is to summarize Stantec’s analysis and findings related to this project, and it is not intended to address all aspects that may surround the subject area. Therefore, this document may have limitations, assumptions, or reliance on data that are not readily apparent on the face of it. Moreover, the reader should understand that Stantec was called on to provide judgments on a variety of critical factors which are incapable of precise measurement. As such, the use of this document and its findings by the Orange Water and Sewer Authority should only occur after consultation with Stantec, and any use of this document and findings by any other person is done so entirely at their own risk.*

## APPENDIX: SUPPORTING SCHEDULES

- Schedule 1 Water System Development Fee Calculation
- Schedule 2 Sewer System Development Fee Calculation
- Schedule 3 Calculated Residential & Non-Residential Fees
- Schedule 4 Asset RCNLD and Functional Allocations
- Schedule 5 Outstanding Debt Service by System

Schedule 1: Water System Development Fee Calculation

## Water System Development Fees FY19 - Buy-In Method

Functional Component	Total
Total System Value	\$188,831,903
<i>Credits:</i>	
Outstanding Principal	(\$28,807,200)
Donated Assets	(\$53,799,309)
Net System Value	\$106,225,394
Total Credits	(\$82,606,509)
Credit as % of Total System Value	44%
<i>Capacity:</i>	
Million Gallons Per Day (MGD)	20.00
<i>Fee Calculation:</i>	
Calculated Cost per Unit of Capacity	\$9.44
Credit for Debt Service and Donated Assets	(\$4.13)
Calculated Fee per Unit of Capacity After Debt Service Credit	\$5.31
Reduction for Contingency	0.0%
Percentage of Full Cost Recovery	100.0%
Escalation Factor to Effective Year	3.0%
<b>Calculated Fee per Unit of Capacity</b>	<b>\$5.47</b>
Current Fee per Unit of Capacity	\$6.07
\$ Change	-\$0.60
Percent Change	-10%



Schedule 2: Sewer System Development Fee Calculation

## Sewer System Development Fees FY19 - Buy-In Method

Functional Component	Total
Total System Value	\$236,114,437
<i>Credits:</i>	
Outstanding Principal	(\$32,834,800)
Donated Assets	(\$62,450,931)
Net System Value	\$140,828,706
Total Credits	(\$95,285,731)
Credit as % of Total System Value	39%
<i>Capacity:</i>	
Million Gallons Per Day (MGD)	14.50
<i>Fee Calculation:</i>	
Calculated Cost per Unit of Capacity	\$16.28
Credit for Debt Service and Donated Assets	(\$6.57)
Calculated Fee per Unit of Capacity After Debt Service Credit	\$9.71
Reduction for Contingency	0.0% \$0
Percentage of Full Cost Recovery	100.0% \$9.71
Escalation Factor to Effective Year	3.0%
<b>Calculated Fee per Unit of Capacity</b>	<b>\$10.00</b>
Current Fee per Unit of Capacity	\$11.55
\$ Change	-\$1.55
Percent Change	-13%

Schedule 3: Calculated Residential & Non-Residential Fees

**Calculated Water System Development Fees**

Customer Class	Loss Factor	Peak Factor	Meter Equivalent	Average Use (gpd)	Unit Charge (\$/gpd)	Calculated System Development Fee	Current System Development Fee	Difference
Single Family Detached < 800 sq ft	1.1	1.3	n/a	79	\$ 5.47	\$ 620	\$ 1,033	\$ (413)
Single Family Detached 800-1300 sq ft	1.1	1.3	n/a	98	\$ 5.47	\$ 770	\$ 1,033	\$ (263)
Single Family Detached 1301-1700 sq ft	1.1	1.3	n/a	111	\$ 5.47	\$ 864	\$ 1,207	\$ (343)
Single Family Detached 1701-2400 sq ft	1.1	1.5	n/a	127	\$ 5.47	\$ 1,142	\$ 1,552	\$ (410)
Single Family Detached 2401-3100 sq ft	1.1	2.0	n/a	147	\$ 5.47	\$ 1,767	\$ 2,470	\$ (703)
Single Family Detached 3101-3800 sq ft	1.1	2.4	n/a	169	\$ 5.47	\$ 2,442	\$ 3,429	\$ (987)
Single Family Detached >3800 sq ft	1.1	3.2	n/a	223	\$ 5.47	\$ 4,295	\$ 5,406	\$ (1,111)
Single Family Detached 1" Meter	1.1	1.5	n/a	813	\$ 5.47	\$ 7,338	\$ 8,143	\$ (805)
Multi-family Individually Metered	1.1	1.4	n/a	98	\$ 5.47	\$ 830	\$ 1,112	\$ (282)
Multi-family 1" Meter	1.1	1.5	n/a	813	\$ 5.47	\$ 7,338	\$ 8,143	\$ (805)
Non-residential 5/8" Meter	1.1	1.5	1.0	325	\$ 5.47	\$ 2,933	\$ 3,255	\$ (322)
Non-residential 1" Meter	1.1	1.5	2.5	813	\$ 5.47	\$ 7,338	\$ 8,143	\$ (805)
Non-residential 1.5" Meter	1.1	1.5	5.0	1,625	\$ 5.47	\$ 14,666	\$ 16,275	\$ (1,609)
Non-residential 2" Meter	1.1	1.5	8.0	2,600	\$ 5.47	\$ 23,466	\$ 26,040	\$ (2,574)
Non-residential 3" Meter	1.1	1.5	16.0	5,200	\$ 5.47	\$ 46,933	\$ 52,081	\$ (5,148)
Non-residential 4" Meter	1.1	1.5	25.0	8,125	\$ 5.47	\$ 73,332	\$ 81,376	\$ (8,044)
Non-residential 6" Meter	1.1	1.5	50.0	16,250	\$ 5.47	\$ 146,664	\$ 162,752	\$ (16,088)
Non-residential 8" Meter	1.1	1.5	80.0	26,000	\$ 5.47	\$ 234,663	\$ 260,403	\$ (25,740)

Note: Calculated Water SDF = Loss Factor \* Peak Factor \* Average Use \* Unit Value

Schedule 3: Calculated Residential & Non-Residential Fees

**Calculated Sewer System Development Fees**

Customer Class	Sewer Factor	I/I Factor	Combined Use and I/I Factor	Meter Equivalent	Average Use (gpd)	Unit Charge (\$/gpd)	Calculated System Development Fee	Current System Development Fee	Difference
Single Family Detached < 800 sq ft	1.0	1.2	1.8	n/a	79	\$ 10.00	\$ 1,632	\$ 2,829	\$ (1,197)
Single Family Detached 800-1300 sq ft	1.0	1.2	1.8	n/a	98	\$ 10.00	\$ 2,027	\$ 2,829	\$ (802)
Single Family Detached 1301-1700 sq ft	1.0	1.2	1.8	n/a	111	\$ 10.00	\$ 2,251	\$ 3,270	\$ (1,019)
Single Family Detached 1701-2400 sq ft	0.9	1.2	1.8	n/a	127	\$ 10.00	\$ 2,391	\$ 3,384	\$ (993)
Single Family Detached 2401-3100 sq ft	0.9	1.2	1.8	n/a	147	\$ 10.00	\$ 2,652	\$ 3,859	\$ (1,207)
Single Family Detached 3101-3800 sq ft	0.8	1.2	1.8	n/a	169	\$ 10.00	\$ 2,912	\$ 4,256	\$ (1,344)
Single Family Detached >3800 sq ft	0.7	1.2	1.8	n/a	223	\$ 10.00	\$ 3,466	\$ 4,541	\$ (1,075)
Single Family Detached 1" Meter	1.0	1.1	1.8	n/a	649	\$ 10.00	\$ 11,329	\$ 13,088	\$ (1,759)
Multi-family Individually Metered	1.0	1.3	1.8	n/a	98	\$ 10.00	\$ 2,196	\$ 3,064	\$ (868)
Multi-family 1" Meter	1.0	1.1	1.8	n/a	649	\$ 10.00	\$ 11,329	\$ 13,088	\$ (1,759)
Non-residential 5/8" Meter	1.0	1.1	1.8	1.0	325	\$ 10.00	\$ 5,673	\$ 6,553	\$ (880)
Non-residential 1" Meter	1.0	1.1	1.8	2.5	813	\$ 10.00	\$ 14,192	\$ 16,392	\$ (2,200)
Non-residential 1.5" Meter	1.0	1.1	1.8	5.0	1,625	\$ 10.00	\$ 28,366	\$ 32,763	\$ (4,397)
Non-residential 2" Meter	1.0	1.1	1.8	8.0	2,600	\$ 10.00	\$ 45,386	\$ 52,421	\$ (7,035)
Non-residential 3" Meter	1.0	1.1	1.8	16.0	5,200	\$ 10.00	\$ 90,773	\$ 104,842	\$ (14,069)
Non-residential 4" Meter	1.0	1.1	1.8	25.0	8,125	\$ 10.00	\$ 141,832	\$ 163,816	\$ (21,984)
Non-residential 6" Meter	1.0	1.1	1.8	50.0	16,250	\$ 10.00	\$ 283,664	\$ 327,632	\$ (43,968)
Non-residential 8" Meter	1.0	1.1	1.8	80.0	26,000	\$ 10.00	\$ 453,863	\$ 524,211	\$ (70,348)

Note: Calculated Sewer SDF fee = Sewer Factor \* I/I Factor \* Combined Use and I/I Factor \* Average Usage

Schedule 4: Asset Listing RCNLD System and Functional Allocations

## Summary of System Fixed Assets & Administration Cost Allocation

System	Function	RCNLD	% of Total	Total
Water	Treatment	\$ 82,124,987	43%	\$ 82,124,987
	Transmission	\$ 8,768,687	5%	\$ 8,768,687
	Distribution	\$ 40,862,136	22%	\$ 40,862,136
	General & Admin	\$ 3,276,785	2%	\$ 3,276,785
	Donated Assets - Water	\$ 53,799,309	28%	\$ 53,799,309
<b>Total Water System</b>		<b>\$ 188,831,903</b>	<b>100%</b>	<b>\$ 188,831,903</b>
Sewer	Treatment	\$ 118,251,854	50%	\$ 118,251,854
	Transmission	\$ 6,367,662	3%	\$ 6,367,662
	Collection	\$ 43,502,257	18%	\$ 43,502,257
	Reclaimed Water	\$ -	0%	\$ -
	General & Admin	\$ 5,541,733	2%	\$ 5,541,733
Donated Assets - Sewer	\$ 62,450,931	26%	\$ 62,450,931	
<b>Total Sewer System</b>		<b>\$ 236,114,437</b>	<b>100%</b>	<b>\$ 236,114,437</b>
<b>Total System</b>		<b>\$ 424,946,340</b>		<b>\$ 424,946,340</b>

Schedule 5: Outstanding Debt Service by System

**Outstanding Principal By System**

	<b>Water</b>	<b>Sewer</b>
<b>FY 2018</b>	\$2,829,950	\$2,438,050
<b>FY 2019</b>	\$2,957,950	\$2,500,050
<b>FY 2020</b>	\$2,698,300	\$1,734,700
<b>FY 2021</b>	\$2,455,800	\$2,122,200
<b>FY 2022</b>	\$2,205,600	\$2,617,400
<b>FY 2023</b>	\$2,311,350	\$2,706,650
<b>FY 2024</b>	\$2,430,050	\$2,802,950
<b>FY 2025</b>	\$2,549,100	\$2,903,900
<b>FY 2026</b>	\$2,680,750	\$3,007,250
<b>FY 2027</b>	\$1,126,800	\$2,836,200
<b>FY 2028</b>	\$1,173,450	\$2,934,550
<b>FY 2029</b>	\$1,212,100	\$3,030,900
<b>FY 2030</b>	\$1,068,000	\$595,000
<b>FY 2031</b>	\$1,108,000	\$605,000
<b>Totals</b>	<b>\$28,807,200</b>	<b>\$32,834,800</b>