ROCHESTER
PUBLIC WORKS
ENVIRONMENTAL SERVICES

FINAL REPORT

Wastewater Rates and Fees Study

Prepared for
City of Rochester, Minnesota
November 1, 2021

MUNICIPAL FINANCIAL SERVICES
2960 Valley Basin Avenue, Henderson, Nevada 89052-3814

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List of Abbreviations

BOD	Biochemical Oxygen Demand
CAFR	Comprehensive Annual Financial Report
Ccf	Hundred Cubic Feet (equal to ~ 748.1 gallons)
CCI	Construction Cost Index
CIP	Capital Improvement Program
City	City of Rochester
COW	Committee of the Whole
DSC	debt service coverage
FY	Fiscal year (July 1 to June 30)
ENR	Engineering News Record
ERU	Equivalent Residential Unit
gpd	gallons per day
I/I	Inflow/Infiltration
mgd	million gallons per day
MHI	Mean Household Income
NH3-N	Ammonia Nitrogen
O&M	Operation and maintenance
PIF	Plant Investment Fee
RCA	Request for Council Action
RCO	Rochester Code of Ordinances
RPU	Rochester Public Utilities
TP	Total Phosphorous
TSS	Total Suspended Solids
UA	Unaccounted
UPC	Uniform Plumbing Code
WRP	Water Reclamation Plant

Executive Summary

The City of Rochester, in conjunction with Municipal Financial Services, has analyzed the adequacy of revenues from rates to meet projected expenditures of the wastewater enterprise fund to determine whether revenues will be adequate to cover operating and maintenance costs as well as needed capital costs while meeting target reserve levels. Wastewater charges and Plant Investment Fees were developed for the six-year period 2022 through 2027.

Recommended Fixed Charges, Quantity Charges and High Strength Surcharges

Fixed charges and quantity charges are summarized in Table ES-1. High strength surcharges are summarized in Table ES-2. The charges shown in these tables are those to be adopted by resolution for implementation. Fixed charges and quantity charges apply to residential and the main commercial customer class.

Table ES-1. Recommended Fixed and Quantity Charges, 2022 - 2027

		Current	Recommended					
Charge		2021	2022	2023	2024	2025	2026	2027
Fixed Charges	$/month	$19.00	$19.00	$19.10	$19.20	$19.30	$19.40	$19.50
Quantity Charges	$/Ccf	$4.160	$4.19	$4.22	$4.26	$4.29	$4.32	$4.35

High strength surcharges are unit costs for flow, BOD, TSS, TP and NH3-N that are applied to customers whose wastewater discharge cannot be characterized as residential or grouped with the main commercial customer class. These surcharges are applied to 16 accounts. Some customers have multiple accounts.

Table ES-2. Recommended High Strength Surcharges, 2022 - 2027

		Current	Recommended					
Charge		2021	2022	2023	2024	2025	2026	2027
High Strength Surcharges								
Flow	$/Ccf	$1.99	$1.91	$1.93	$1.94	$1.96	$1.97	$1.98
BOD	$/pound	$0.47	$0.54	$0.55	$0.55	$0.56	$0.56	$0.57
TSS	$/pound	$0.44	$0.43	$0.44	$0.44	$0.44	$0.45	$0.45
TP	$/pound	$6.00	$5.98	$6.03	$6.09	$6.14	$6.19	$6.24
NH3-N	$/pound	$2.21	$2.23	$2.25	$2.27	$2.28	$2.30	$2.31

Recommended Plant Investment Fees

The City established Plant Investment Fees (PIF) upon those developments and redevelopments that create the need for or increase the demands on the Water Reclamation Plant. The PIFs shown in these tables are those to be adopted by resolution for implementation.

Residential Units. The PIF is established as an Equivalent Residential Unit (ERU). Recommended PIFs for Residential and ERUs for 2022 – 2027 are summarized in Table ES-3.

		Current	Recommended					
Customer Class	Unit of Service	2021	2022	2023	2024	2025	2026	2027
Residential	Per connection	$3,600	$3,750	$3,900	$4,050	$4,200	$4,350	$4,500

Multiple Dwelling Units. Buildings containing more than three dwelling units will be charged 70% (down from the current 80%) of the cost of one Equivalent Residential Unit PIF for each unit. Recommended PIFs for Multiple Dwelling Units for 2022 – 2027 are summarized in Table ES-4.

Table ES-4. Recommended Residential Plant Investment Fees, 2022- 2027

		Current	Recommended					
Customer Class	Unit of Service	2021	2022	2023	2024	2025	2026	2027
Multiple Dwelling Unit	Per connection	$2,880	$2,650	$2,750	$2,850	$2,950	$3,050	$3,150

Non-residential Developments. New and redeveloped non-residential developments that do not have a discharge permit from the Water Reclamation Plant will have a Plant Investment Fee based on the size of each installed water meter, excluding those designated by Rochester Public Utilities as being installed as irrigation meters. The minimum meter size is 5/8" x 3/4" and the current (2021) PIF for that meter size is based on 25 fixture units as defined by the Uniform Plumbing Code, State of Minnesota, Chapter 4715.2300, subpart 3, using the drainage fixture unit values shown. Based on changes to the Uniform Plumbing Code (UPC) the recommended number of fixture units is increased to 32. The PIF for the 5/8" x 3/4" meter will be prorated based on the per fixture unit fee shown and the number of installed fixture units. PIFs based on meter size for 2022 – 2027 are summarized in Table ES-5.

Table ES-5. Recommended Non-residential Plant Investment Fees, 2022 - 2027

		Current	Recommended					
Customer Class	Unit of Service	2021	2022	2023	2024	2025	2026	2027
Non-Residential Developments								
Fixture Units per Connection		25	32	32	32	32	32	32
⅝ x ¾ per Fixture Unit	Per fixture unit	*$216*	*$177*	*$184*	*$192*	*$198*	*$206*	*$213*
Water Meter Size								
⅝ x ¾	Per connection	$5,400	$5,650	$5,900	$6,150	$6,350	$6,600	$6,800
¾	Per connection	$15,100	$7,400	$7,650	$7,950	$8,250	$8,550	$8,850
1	Per connection	$21,200	$13,000	$13,600	$14,100	$14,600	$15,100	$15,700
1½	Per connection	$48,200	$22,700	$23,600	$24,500	$25,400	$26,300	$27,200
2	Per connection	$105,800	$36,900	$38,300	$39,800	$41,300	$42,800	$44,200
3+	Per connection	$105,800	$128,800	$133,900	$139,100	$144,200	$149,400	$154,500

Permitted Non-residential Developments. Permitted Non-residential developments are commercial and industrial developments that have industrial discharge permits with the Water Reclamation Plant that specify the allowable flows and loads that may be discharged. The commercial or industrial developments that have industrial discharge permits with the Water Reclamation Plant that do not specify allowable flows and loads that may be discharged are subject to the PIF based on water meter size as described for Non-residential developments. When there is a requirement that the discharge limits be increased, a Plant Investment Fee will be determined based on the Equivalent Residential Unit fee. These developments pay a high strength waste surcharge on their monthly bill based on their usage; therefore the PIF calculated as a percent of the rates determined for an ERU. The percent of ERU for calculation of Recommended PIFs is increased to 60% from the current (2021) 5%.

The unit rates that will be used for determining the PIF for Permitted Non-residential developments for 2022 – 2027 are summarized in Table ES-6.

Table ES-6. Recommended Permitted Non-residential Plant Investment Fees, 2022 - 2027

Customer Class		Unit of Service	Current 2021	Recommended 2022	2023	2024	2025	2026	2027
Permitted Non-Residential Developments									
Flow	$/Ccf/day	Per Permit	$499	$6,240	$6,480	$6,730	$6,980	$7,230	$7,480
BOD	$/lb/day	Per Permit	$161	$2,010	$2,090	$2,170	$2,250	$2,330	$2,410
TSS	$/lb/day	Per Permit	$76	$950	$980	$1,020	$1,060	$1,100	$1,140
TP	$/lb/day	Per Permit	$1,816	$26,480	$27,540	$28,600	$29,660	$30,710	$31,770
NH3-N	$/lb/day	Per Permit	$929	$10,490	$10,910	$11,330	$11,750	$12,170	$12,590

Recommended Trucked Liquid Waste Charges

Charges for trucked liquid waste – Septage, Portable Toilet and FOG (Fats, Oils and Grease) wastes – are shown in Table ES-7.

Table ES-7. Recommended Trucked Liquid Waste Charges, 2022 - 2027

Hauled Waste Charges		Current 2021	Recommended 2022	2023	2024	2025	2026	2027
Portable Toilet Waste	$/1000 gallons	$153.00	$123.00	$124.00	$125.00	$126.00	$127.00	$128.00
Fats, Oils and Greases	$/1000 gallons	$35.00	$36.00	$37.00	$38.00	$39.00	$40.00	$41.00
Septage	$/1000 gallons	$120.00	$123.00	$124.00	$125.00	$126.00	$127.00	$128.00

Recommended Monitoring and Sampling Charges

Monitoring, sampling and analysis charges are shown in Table ES-8. Charges are based on direct lab fees, personnel hours and equipment costs for gathering samples, and shipping fees.

Table ES-8. Monitoring, Sampling and Analysis Charges, 2022 - 2027

Monitoring and Sampling Charges	Current 2021	Recommended 2022	2023	2024	2025	2026	2027
Monthly Monitoring Charge	$1,850	$980	$1,010	$1,040	$1,070	$1,100	$1,130
Sampling Charge	na	$170	$180	$180	$190	$200	$200
Metals Analysis Charge	$380	$280	$290	$300	$300	$310	$320
Conventional Pollutants Analysis Charge	$380	$140	$150	$150	$150	$160	$160

Section 1
Introduction

This report documents the development of wastewater rates (monthly charges and quantity charges) and plant investment (connection) fees to recover annual costs for the capital improvement program (CIP) and the operation and maintenance (O&M) of the City of Rochester (City) wastewater utility. Rates and fees are developed on a sound enterprise basis while maintaining a prudent fund balance and debt service coverage ratios.

1.1 Project Authorization and Objectives

During April 2021, Municipal Financial Services entered into an agreement with the City to prepare a study that documents the development of a financing plan and wastewater rate analysis. The project objectives were to develop projected rates and fees using development processes established in previous studies. The rate development process in this study and in the previous studies were all in accordance with standard industry practices.

1.2 Organization of the Report

The report is organized into seven chapters and multiple appendices. Following the introduction in Section 1, Section 2 describes the customer characteristics (number, type and level of use) of wastewater system users. Section 3 describes the projected operating and capital improvement program expenditures and allocation of costs. Section 4 describes the development of unit costs and charges. Section 5 summarizes monthly bills and revenues for each customer class. The development of plant investment fees is described in Section 6. The rate adoption process and a description of documents related to the process are provided in Section 7.

1.3 Rate-Making Objectives

There are numerous rate-making objectives that must be considered when developing rates and rate structures.

Revenue sufficiency. Generate sufficient revenue to fund operating costs, capital costs and bonded debt, and maintain adequate reserves.

Revenue stability. Recover revenue from fixed and quantity charges that will cover all costs.

Conservation signal. Reward customer for efficient indoor water use and discourage its waste.

Administrative efficiency. Enable efficient implementation and ongoing administration, including monitoring and updating.

Affordability. Be as affordable as possible while maintaining the utility's sound financial position and credit rating.

Customer acceptance. Be as simple as possible to facilitate customer understanding and acceptance.

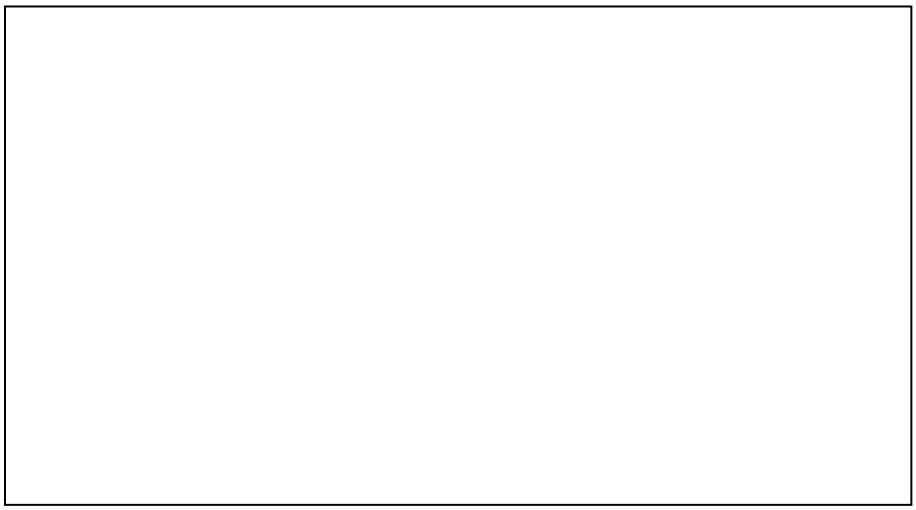
Fairness. Provide for each customer class to pay its proportionate share of the required revenue in compliance with legal rate-making requirements.

Economic development. Operation of the enterprise must be competitive with local jurisdictions to retain and attract economic development.

1.4 Overview of Utility Rate Setting Process

Rate studies classically have three categories of technical analysis – the development of revenue required from rates, the allocation of costs among functional cost categories (cost-of-service analysis) and the design of a rate structure. An overview of the rate-setting analytical steps is shown in Figure 1-1.

The revenue required from rates is net of non-rate revenues (for example interest earned on fund balances, loan disbursements and revenue from new connections to the system) and other revenues not required from rates (such as revenue from service turn on/off).



The allocation of costs are structured so that the revenue required from charges is distributed proportionally for every level of service in a manner that allows the development of unit costs. The rate structure uses the unit costs as a basis for aggregating costs into rates that are applicable to the various customer classes.

Figure 1-1. Overview of Rate Setting Analytical Steps

Information and data for the development of water rates and preparation of this report comes from a number of documents provided by the City. The list of documents, and the key information and data from each used in this study, are summarized below.

City of Rochester Calendar Year 2021 Expenditure Adopted Budget. The City provided its adopted budgets for two Business Units in the Sewer Utility Enterprise Fund –Water Reclamation Plant (Account 49631) and Sewer Collections (Account 49611). Starting in 2022, both budgets are combined into a single operating budget for management efficiency, however, total operating budget projects remain the same for this analysis.

Capital Expenditures Plan, Current Debt and New Debt Obligations. The City provided annual projections of capital expenditures for the time period 2022 - 2045. The City provided annual projections of debt service for current debt and projected interest rates and debt duration for new debt service.

Rochester Code of Ordinances. Section 12-6-2 of the Rochester Code of Ordinances authorizes the Common Council to establish by resolution a fixed and quantity charge, a high strength surcharge, a capital equalization charge, a residential charge, a monitoring charge, hauled liquid waste charges and a plant investment fee for connection to and use of the City of Rochester wastewater facility.

Rochester Public Utilities Billing System data. The City provided sewer flow data for each customer class and permitted customers for 2019, 2020 and 2021. Sewer flow was based on water use data provided by Rochester Public Utilities (RPU).[1]

Water Reclamation Plant data. The City provided sewer pollutant load data for each customer class, permitted customers, and hauled waste for 2019, 2020 and 2021.

[1] Rochester Public Utilities owns and operates power generating, distribution, and water distribution facilities to serve the city of Rochester, MN. More than 50,000 electric customers and more than 40,000 water accounts are currently served by RPU.

1.5 Rochester Wastewater Utility

The City provides wastewater collection and treatment services to about 40,200 connections located both inside and outside the city limits.[2] The majority of these customers, approximately 37,100 (92 percent), are residential.

1.6 Projected Revenue from 2021 Charges for Services

Projected revenue from 2021 charges for services of approximately $28,960,000 is shown in Table 1-1. The amount of revenue from charges for services shown in the 2015 Rate Study for 2021 was $33,810,000.

Table 1-1. Projected Revenue from 2021 Charges for Services

		Fixed Charge		Quantity	Quantity Charge		Total	
Customer Classification	Accounts	$/month/Acct	Revenue	Ccf	$/Ccf	Revenue	Revenue	
Residential Users	36,845	$19.00	$8,400,660	2,139,379	$4.1600	$8,899,817	$17,300,477	*60%*
Commercial Users								
User 1	1	$19.00	$228	17,566		$138,412	$138,640	
User 2	1	$19.00	$228	31,228		$140,809	$141,037	
User 3	1	$19.00	$228	152,236		$640,831	$641,059	
User 4	1	$19.00	$228	29,764		$228,756	$228,984	
User 5	1	$19.00	$228	51,233		$359,705	$359,933	
User 6	1	$19.00	$228	15,126		$63,672	$63,900	
User 7	1	$19.00	$228	19,029		$80,104	$80,332	
User 8	1	$19.00	$228	68,311		$287,552	$287,780	
User 9	1	$19.00	$228	20,005		$99,334	$99,562	
User 10	1	$19.00	$228	2,440		$10,270	$10,498	
Other Commercial	3,143	$19.00	$716,604	1,720,460	$4.1600	$7,157,113	$7,873,717	
Subtotal, Commercial	3,153		$718,884	2,127,398		$9,206,557	$9,925,441	*34%*
Industrial/Trucked Waste								
User 1	1	$19.00	$228	44,922		$782,184	$782,412	
User 2	1	$19.00	$228	129,043		$701,552	$701,780	
User 3	1	$19.00	$228	21,092		$108,145	$108,373	
User 4	1	$19.00	$228	4,879		$20,270	$20,498	
User 5	1	$19.00	$228	2,928		$12,162	$12,390	
User 6	1	$19.00	$228	6,343		$26,351	$26,579	
Leachate			$0	7,434		$25,123	$25,123	
Portable Toilets			$0	537		$35,382	$35,382	
FOG			$0	324		$8,491	$8,491	
Septage			$0	357		$31,938	$31,938	
Subtotal, Ind/Trucked	6		$1,368	217,859		$1,751,597	$1,752,965	*6%*
Totals	40,004		$9,120,912	4,484,636		$19,857,972	$28,978,884	*100%*
Total (rounded to $10,000)							$28,980,000	

[2] The City provides service to 103 accounts in the Chester Heights Sanitary Sewer District.

1.7 Wastewater System Replacement Value

Annual costs for the City's CIP exceed O&M expenditures and reflect the need for continued investments for maintenance, repair and replacements in wastewater system facilities. As shown in Table 1-2, the City's acquisition (accounting book) value of its wastewater system is approximately $529,000,000 and its current replacement value is approximately $1,104,000,000.

Table 1-2. Wastewater System Replacement Value

Wastewater System Component	Accounting Book Value [1, 2]	Replacement : Accounting Value [3]	Estimated Replacement Value
Water Reclamation Plant	$333,000,000	1.9	$632,700,000
Collection System	$196,200,000	2.4	$470,900,000
Total Wastewater System	**$529,200,000**		**$1,103,600,000**

Notes:

1 The book value is based on the acquisition cost plus accumulated depreciation as shown in the Comprehensive Annual Financial Report for the Year Ending December 31, 2020, page 29.

2 The split between Water Reclamation Plant and Collection System is based on findings from the 2009 Study.

3 The ratio of replacement value to acquisition value is based on findings from studies of these values performed by the consultant for other municipalities.

Figure 1-2 shows the approximate current replacement value for each component of the system and the percentage contribution of each component to the total system value.

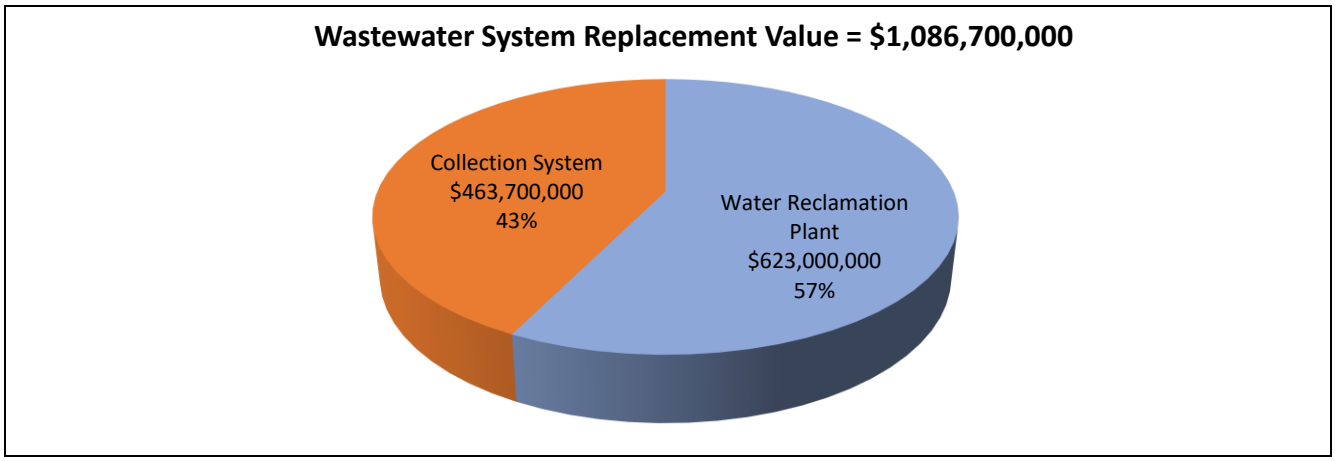


Figure 1-2. Wastewater System Replacement Value

1.8 Affordability Evaluation

Affordability was evaluated based on principles found in the U.S. Environmental Protection Agency's (EPA's) *Affordability Assessment Tool for Federal Water Mandates* (Affordability Manual).[3] This document describes the EPA's current policies for analyzing the affordability of water, wastewater, and storm water mandates on American communities. Residential monthly wastewater bills based on 2021 wastewater charges were evaluated using methods described in the EPA's Affordability Manual. The evaluation is summarized in the table below and in the following list of findings.

Table 1-3. Current (2021) Residential Monthly Wastewater Bill Affordability Evaluation

	Household income in the past 12 months (Inflation-Adjusted Dollars) [1]							
	Minnesota				City of Rochester			
	2019		2018		2019		2018	
Total Households	2,222,568		2,194,452		50,479		49,361	
Less than $10,000	4.1%	4%	4.4%	4%	2.7%	3%	4.7%	5%
$10,000 to $14,999	3.4%	8%	3.8%	8%	2.8%	6%	4.6%	9%
$15,000 to $24,999	6.5%	14%	7.3%	16%	5.8%	11%	8.0%	17%
$25,000 to $34,999	7.2%	21%	7.9%	23%	8.3%	20%	6.8%	24%
$35,000 to $49,999	11.3%	33%	12.1%	36%	12.3%	32%	12.9%	37%
$50,000 to $74,999	17.6%	50%	17.4%	53%	18.5%	50%	16.0%	53%
$75,000 to $99,999	14.5%	65%	13.8%	67%	12.9%	63%	14.6%	68%
$100,000 to $149,999	18.5%	83%	17.8%	85%	18.2%	82%	15.9%	84%
$150,000 to $199,999	8.3%	91%	7.7%	92%	8.7%	90%	8.1%	92%
$200,000 or more	8.5%	100%	7.6%	100%	9.8%	100%	8.5%	100%
Median income (dollars)	74,593		70,315		74,527		70,094	
Mean income (dollars)	96,995		93,047		96,813		96,055	

1. American Community Survey, Datasets ACSST1Y2019 and ACSST1Y2018, ACS 1-Year Estimates Subject Tables

Affordability Assessment			
Median Household Income (MHI) *less than 80% is disadvantaged*	2019	2018	2017
Statewide Minnesota Median Household Income	$74,593	$70,315	$68,388
Rochester Median Household Income	$74,527	$70,094	$75,464
Rochester MHI as a percentage of the State MHI	**99.9%**	**99.7%**	**110.3%**
2021 Single Family Annual Average Wastewater Bill based on $39.13/mo. Bill	$469.56	$469.56	$469.56
Annual Average Wastewater Bill as a % of Rochester MHI	**0.63%**	**0.67%**	**0.62%**

Finding 1 – Mean Household Income. Mean household income (MHI) for the State of Minnesota and for the City of Rochester were obtained from the United States Census Bureau American Community Survey (ACS) 1-Year Estimates Subject Tables found on the United States Census Bureau website. MHI for the City of Rochester in 2019 and 2018 was nearly identical to that for the State of Minnesota (in 2017 it was about 10 percent greater than that for the State). Communities with MHI less than 80% of the State MHI may be considered disadvantaged. The City of Rochester is not considered disadvantaged based on Affordability Manual guidance.

Finding 2 – Average Monthly Wastewater Bill as Percentage of MHI. Monthly wastewater bills less than or equal to 2% of MHI are considered affordable for a community. The average monthly wastewater bill for the City of Rochester – approximately $39 – as percentage of 2019 MHI is 0.65% of MHI. The City of Rochester wastewater bills are considered affordable based on this analysis.

Finding 3 – Average Monthly Wastewater Bill at 2% of MHI. Monthly wastewater bills at 2% of 2019 MHI would be equal approximately $124 per month ($74,527 x 2 percent ⁄ 12).

[3] Copyright 2013, U.S. Conference of Mayors, American Water Works Association, and Water Environment Federation.

Section 2
Customer Wastewater Discharge Characteristics

In order to recover the costs of providing wastewater collection, treatment and disposal services from these customers according to their demands on the system, these customers must be identified and the characteristics of their wastewater specified.

Annual discharges of volume, biochemical oxygen demand (BOD), total suspended solids (TSS), total phosphorus (TP) and ammonia nitrogen (NH3-N) must be documented for the residential and commercial customer classes and individual large commercial and industrial customers in order to develop an equitable rate structure in which user charges are based on both the quantity and strength of wastewater discharged. The purpose of this chapter is to identify and document current customer wastewater characteristics and to project customer wastewater characteristics for the defined six-year rate development study period, calendar years 2022 - 2027.

2.1 Residential Accounts and Wastewater Discharge Characteristics

Residential wastewater discharge volume was evaluated in detail. Wastewater discharge volume for residential accounts is estimated by using metered water use during winter months. The direct measurement of wastewater volume for individual residential accounts is not technically feasible or administratively economical. Winter months used for this estimate are January, February and March. The City adopted the use of winter water use as a basis for calculating the volume component of the residential sewer charge in the 1980s. The method of using winter water use as a basis for calculating the volume component of the residential sewer charge is standard industry practice.

The quantity of wastewater volume billed for residential customers is either the winter average or the actual usage, whichever is less. When actual metered water use is less than the winter average use for an individual account, the actual metered use for that period becomes the wastewater flow billed. In this manner, the annual wastewater volume billed will be less than the annualized winter average use. For the entire residential customer class, the wastewater volume billed will always be slightly less than average winter water use.

Evaluation began with a review of residential wastewater volume for the 23-year period 1998 - 2020. The review focused on projected residential wastewater volume data from the past four rate studies (the 1998 Study, the 2004 Study, the 2009 Study and the 2015 Study) and actual wastewater volume data from the City's billing department (RPU data) for the time periods 2001 – 2003, 2006 – 2014, and 2016 – 2020.

The RPU data indicates a significant decline in average wastewater volume between 1998 and 2020. The level of average winter water use (the proxy for wastewater volume) declined from 193 gallons per day (gpd) in 1998 to 161 gpd in 2003 – a decline of approximately 17 percent. Average winter water use continued to decline from 161 gpd in 2003 to 137 gpd in 2008 – a decline of approximately 15 percent. Over the following twelve years, average winter water use declined further from 137 gpd in 2008 to 117 gpd in 2020 – a decline of approximately 15 percent.

Based on review of residential average wastewater volume for the 23-year period 1998 - 2020, it is projected that average wastewater volume will be 119 gpd in 2021 and remain at that level for the next six years. Data from the 1998 Study, the 2004 Study, the 2009 Study, the 2015 Study, RPU data, and projections used in this study are shown in Figure 2-1.

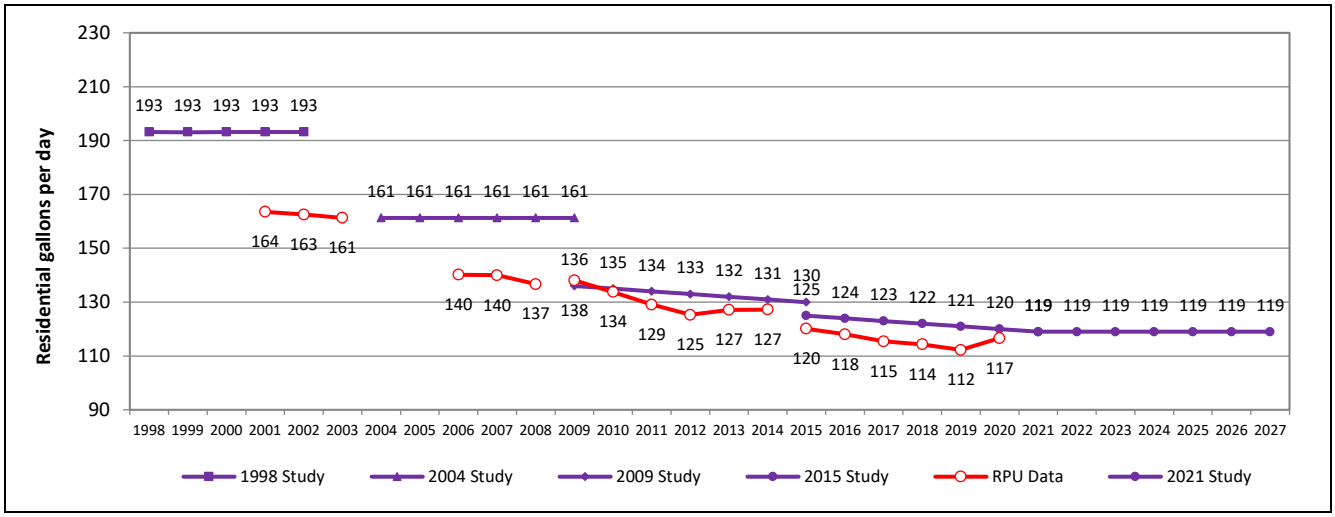


Figure 2-1. Residential Average Wastewater Discharge Volume (gpd), 1998 - 2027

The number of residential accounts was evaluated in a manner similar to that used for residential average wastewater discharge volumes for the 23-year period 1998 - 2020. The average annual increase in residential accounts during the eight-year period 2008 – 2014 was approximately 325 per year. The average annual increase in residential accounts during 2016 - 2020 was 265 per year. The average annual increase in accounts projected for 2021 – 2027 is projected to be 360. Data from the 1998 Study, the 2004 Study, the 2009 Study, the 2015 Study, RPU data, and projections used in this study are shown in Figure 2-2.

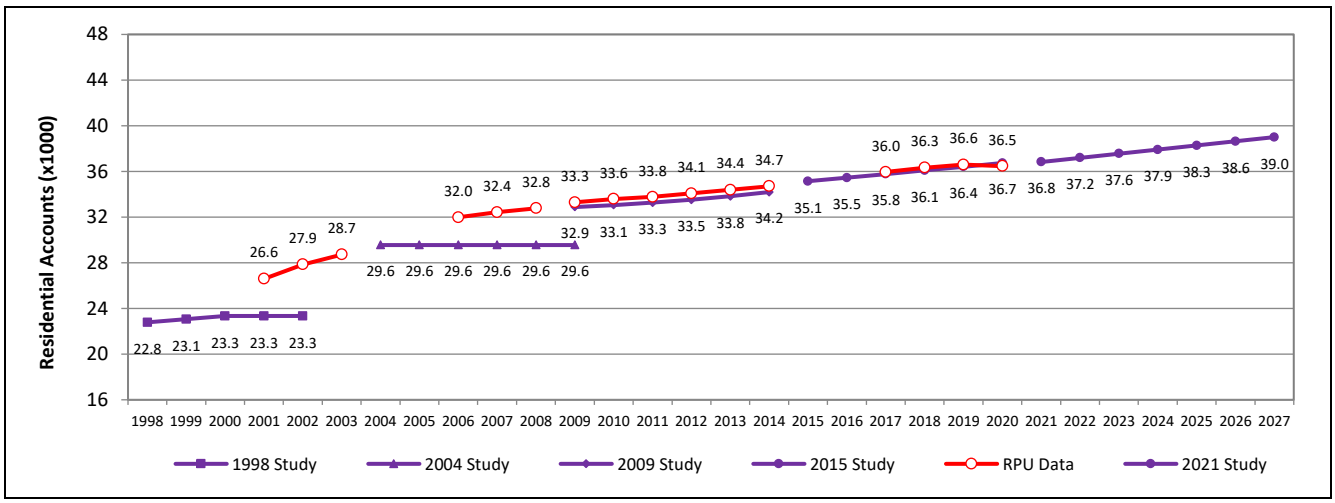


Figure 2-2. Residential Accounts, 1998 - 2027

Annual discharge (in pounds) of biochemical oxygen demand (BOD), total suspended solids (TSS), total phosphorus (TP) and ammonia nitrogen (NH3-N) for residential customers were developed based on residential wastewater discharge volume, the number of accounts and the estimated average concentrations of pollutants based on sewer system sampled data (in milligrams per liter, mg/l). Residential wastewater discharge characteristics for 2006 – 2027 are summarized in Table 2-1. Detailed data for 2019 – 2027 are included in Tables A-1 through A-10 in Appendix A.

Table 2-1. Residential Wastewater Discharge Characteristics

				Pollutant Concentrations					Pollutant Loads				BOD/TSS Loads
	No. of	Flow		BOD	TSS	TP	NH3-N	Flow	BOD	TSS	TP	NH3-N	per Connection
Year	Conn.	gpd	mgd	mg/l	mg/l	mg/l	mg/l	mg/yr	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
2006	31,992	140	4.484	200	200	7	20	1,637	7,479	7,479	262	748	0.234
2007	32,432	140	4.540	200	200	7	20	1,657	7,572	7,572	265	757	0.233
2008	32,793	137	4.482	200	200	7	20	1,640	7,476	7,476	262	748	0.228
2009	33,309	138	4.599	240	240	7	20	1,679	8,957	8,957	269	767	0.269
2010	33,597	134	4.495	240	240	7	20	1,641	8,934	8,934	262	750	0.266
2011	33,776	129	4.360	240	240	7	20	1,591	8,924	8,924	255	727	0.264
2012	34,089	125	4.271	240	240	7	20	1,559	8,927	8,927	249	712	0.262
2013	34,401	127	4.373	240	240	7	20	1,596	8,942	8,942	255	729	0.260
2014	34,722	127	4.418	240	240	7	20	1,613	8,968	8,968	258	737	0.258
2015	35,162	120	4.223	240	240	7	20	1,542	9,004	9,004	247	704	0.256
2016	35,550	118	4.197	250	250	7	28	1,532	8,750	8,750	245	980	0.246
2017	35,959	115	4.150	253	253	7	28	1,515	8,757	8,757	242	969	0.244
2018	36,347	114	4.155	256	256	7	28	1,517	8,871	8,871	243	970	0.244
2019	36,606	112	4.108	259	259	7	28	1,500	8,874	8,874	240	959	0.242
2020	36,485	117	4.254	262	262	7	28	1,553	9,296	9,296	248	993	0.255
2021	36,845	119	4.385	265	265	7	28	1,600	9,690	9,690	256	1,024	0.263
2022	37,205	119	4.427	265	265	7	28	1,616	9,785	9,785	258	1,034	0.263
2023	37,565	119	4.470	265	265	7	28	1,632	9,880	9,880	261	1,044	0.263
2024	37,925	119	4.513	265	265	7	28	1,647	9,974	9,974	263	1,054	0.263
2025	38,285	119	4.556	265	265	7	28	1,663	10,069	10,069	266	1,064	0.263
2026	38,645	119	4.599	265	265	7	28	1,679	10,164	10,164	268	1,074	0.263
2027	39,005	119	4.642	265	265	7	28	1,694	10,258	10,258	271	1,084	0.263

2.2 Commercial Accounts and Wastewater Discharge Characteristics

The number of commercial accounts was evaluated in a manner similar to that used for residential accounts for the 23-year period 1998 - 2020. The average annual increase in commercial accounts during the eight-year period 2008 – 2014 was approximately 14 per year. The average annual increase in commercial accounts during the eight-year period 2016 – 2020 was approximately 25 per year. The average annual increase in accounts projected for 2021 - 2027 is 25 per year. Data from the 1998 Study, the 2004 Study, the 2009 Study, the 2015 Study, RPU data, and projections used in this study are shown in Figure 2-3.

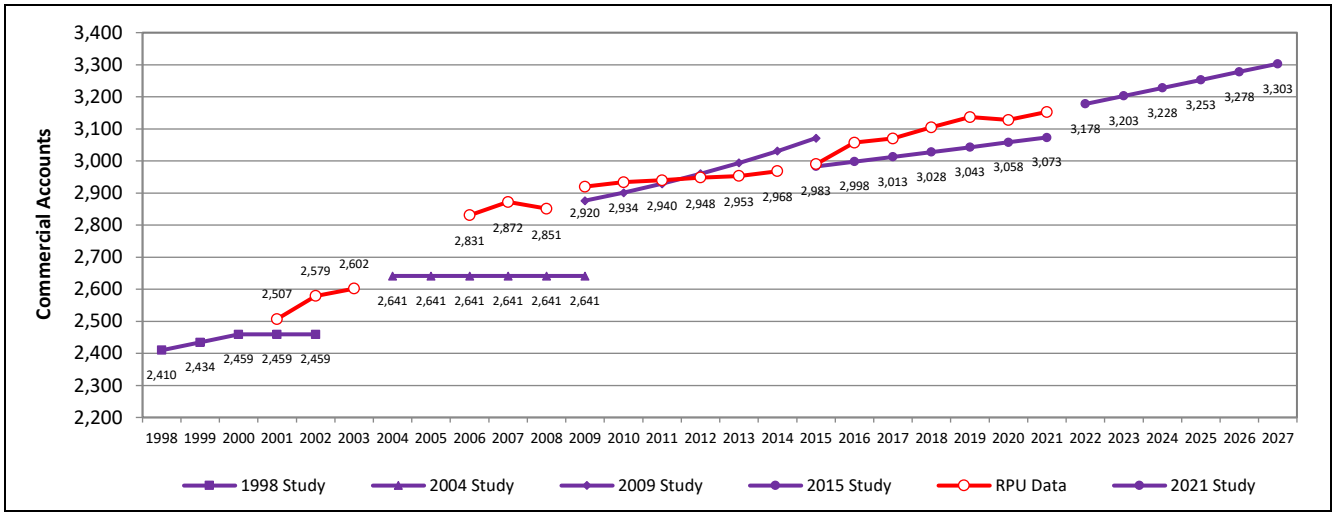


Figure 2-3. Commercial Accounts, 1998 - 2027

The number of commercial accounts and average discharge per account were used to calculate wastewater discharge for the time period 1998 – 2027. Projections of wastewater discharge volume from the 1998 Study, the 2004 Study, the 2009 Study, the 2015 Study, RPU data, and projections used in this study are shown in Figure 2-4.

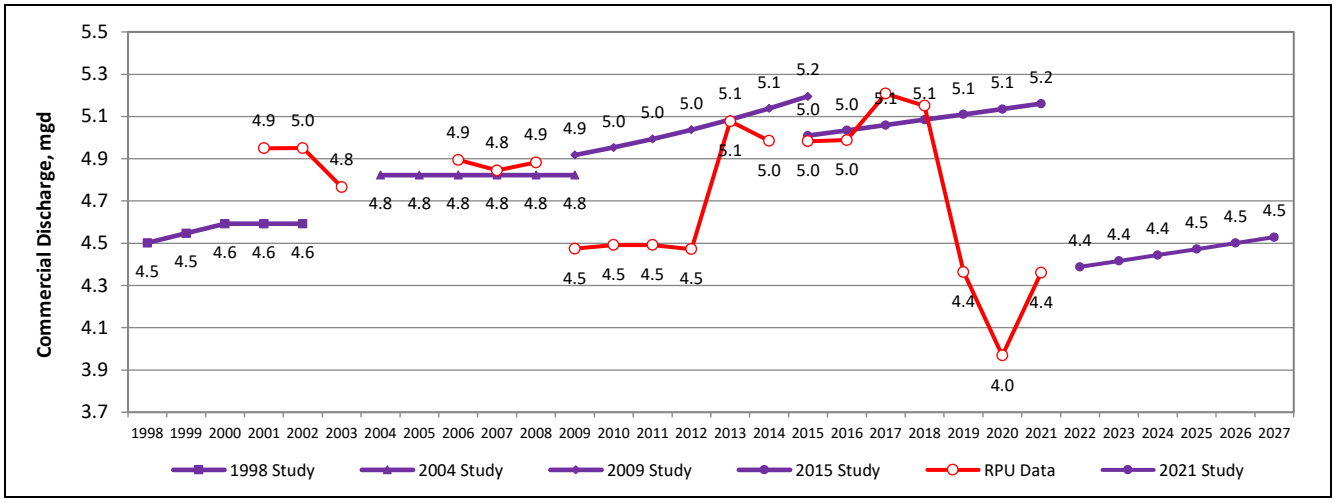


Figure 2-4. Commercial Wastewater Discharge, 1998 - 2027

Historical flow data used in previous rate studies was found to double count flow from large commercial customers who are also wastewater permitted users. This error in data had artificially inflated flow from the commercial customers until 2019 when the correction was made. The loss of large industrial and commercial users combined with COVID and the error in prior data is the reason for the significant drop in recent commercial flow and future projected wastewater flow to be lower.

Annual discharge (in pounds) of biochemical oxygen demand (BOD), total suspended solids (TSS), total phosphorus (TP) and ammonia nitrogen (NH3-N) for commercial customers were developed based on commercial wastewater discharge volume, the number of accounts and the estimated concentrations of pollutants (in milligrams per liter, mg/l). Commercial user wastewater discharge characteristics for 2022 and onward, are summarized in Table 2-2. Detailed data for 2019 – 2027 are included in Tables A-1 through A-10 in Appendix A.

Table 2-2. Commercial Wastewater Discharge Characteristics

User	Flow (mgd)	BOD (mg/L)	TSS (mg/L)	TP (mg/L)	NH3-N (mg/L)
Commercial Users					
User 1	0.036	263	267	104	35
User 2	0.064	263	267	14	35
User 3	0.312	263	267	6	35
User 4	0.061	490	1,000	27	35
User 5	0.105	500	680	32	35
User 6	0.031	263	267	6	35
User 7	0.039	263	267	6	35
User 8	0.140	263	267	6	35
User 9	0.041	393	402	6	35
User 10	0.005	263	267	6	35
All Others	3.554	265	265	6	31
Total Commercial	4.388				

2.3 Industrial and Trucked Waste Accounts and Wastewater Discharge

Annual discharge (in pounds) of biochemical oxygen demand (BOD), total suspended solids (TSS), total phosphorus (TP) and ammonia nitrogen (NH3-N) for industrial and trucked waste customers were developed based on industrial and trucked waste wastewater discharge volume, the number of accounts and the estimated concentrations of pollutants (in milligrams per liter, mg/l).[4] Industrial and trucked waste wastewater discharge characteristics for 2022 and onward, are summarized in Table 2-3. Detailed data for 2019 – 2027 are included in Tables A-1 through A-10 in Appendix A.

Table 2-3. Industrial and Trucked Waste Wastewater Discharge Characteristics

User	Flow (mgd)	BOD (mg/L)	TSS (mg/L)	TP (mg/L)	NH3-N (mg/L)
Industrial/Trucked					
User 1	0.092	3,812	1,179	13	31
User 2	0.264	666	246	10	31
User 3	0.043	485	355	8	31
User 4	0.010	263	267	6	31
User 5	0.006	263	267	6	31
User 6	0.013	263	267	6	31
Leachate	0.015	25	41	0	86
Portable Toilets	0.001	7,180	9,940	440	1,600
FOG	0.001	8,000	10,000	100	50
Septage	0.001	8,000	22,000	50	100
Total All	0.446				

2.4 Infiltration/Inflow and Unaccounted Flow and Loadings

Besides wastewater flow and loadings from residential, commercial and industrial accounts, other wastewater flow and loadings are the result of Infiltration/Inflow (I/I) and unaccounted for discharges (UA). I/I and UA cannot be directly measured.[5] I/I and UA flow and loadings are estimated as the difference between known flow and loadings from customers and flow and loadings measured at the headworks of the wastewater treatment.

[4] Hauled waste is received from contracted haulers that supply a service for the local and surrounding businesses and communities. Concentrations of hauled waste characteristics vary greatly from domestic wastewater.

[5] Infiltration is water entering a sewer system, including building drains and sewers, from the ground, through such means as, but not limited to, defective pipes, pipe joints, connections, or manhole walls. Inflow is water discharge into a sewer system from such sources as, but not limited to, roof leaders, cellar, yard and area drains, foundation drains, unpolluted cooling water discharges, drains from springs and swampy areas, manhole covers, cross connections from storm sewers and combined sewers, catch basins, storm waters, surface runoff, street wash waters or drainage.

2.5 Accounts and Wastewater Discharge Summary

Annual wastewater discharge from residential, commercial, industrial and trucked waste accounts, excluding unaccounted discharge (UA) and inflow/infiltration (I/I), for the time period 1998 – 2027 are shown in Figure 2-5.

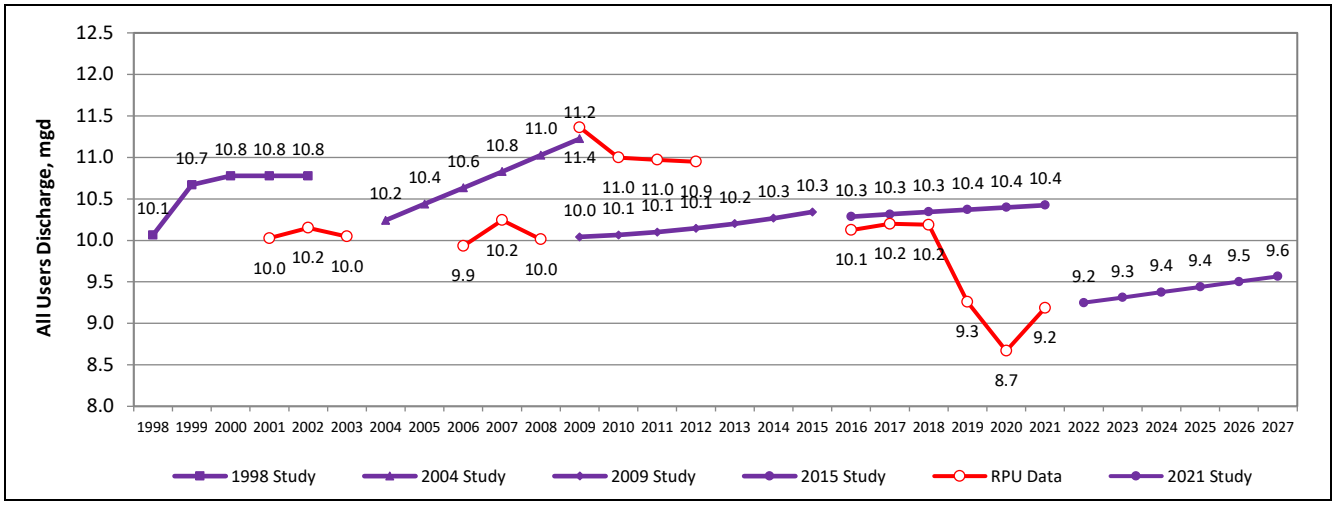


Figure 2-5. All Accounts Wastewater Discharge, 1998 - 2027

A summary of the number of accounts and wastewater discharge characteristics discussed in the preceding paragraphs for residential, commercial and industrial/septage are shown in Figure 2-6 for 2022 (the first year for which new rates are recommended).

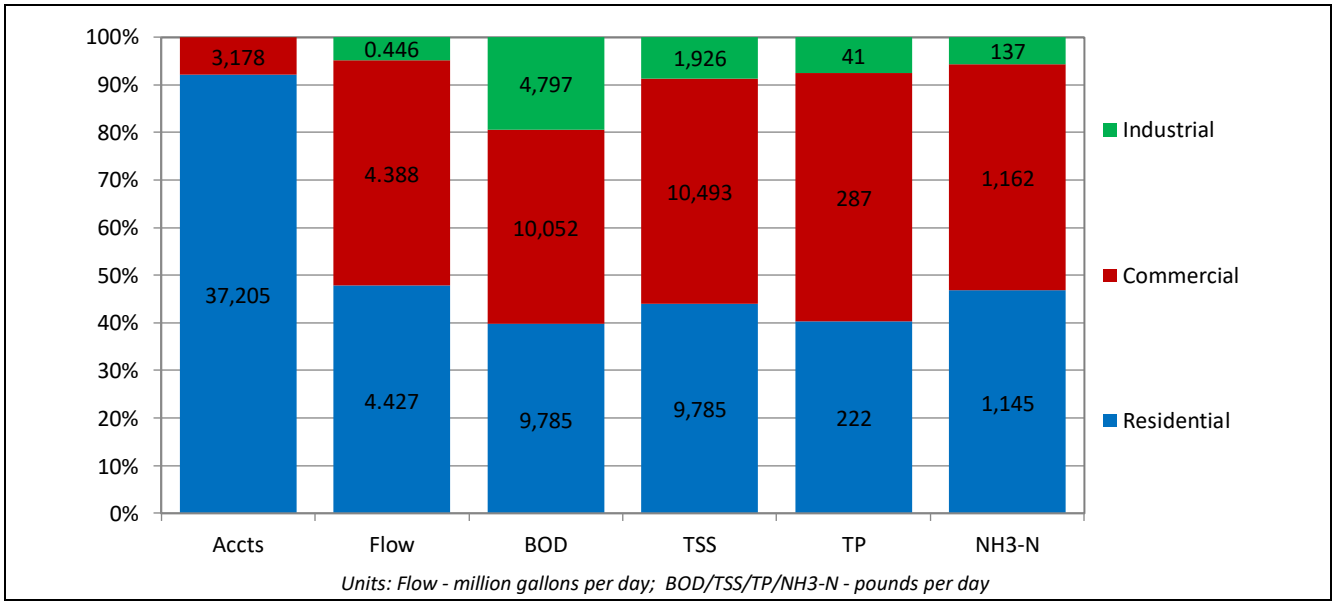


Figure 2-6. Projected Customer Wastewater Discharge, 2022

Section 3
Expenditures and Revenues

The amount of revenue required from wastewater rates is developed in this chapter for each year in the study period. Revenue requirements include pay-as-you-go capital costs, existing and new debt service, accrual to reserves, and expenses for operations and maintenance. The amount of revenue required is net of interest and use of reserves.

3.1 Operations and Maintenance Expenses

Operations and maintenance (O&M) items include expenses in the following categories for both the Water Reclamation Plant and Sewer Collection:

- Employee services
- Contractual services (including utilities)
- Materials and supplies
- Other charges (taxes, licenses, billing and collection)
- Capital outlay (furniture, equipment)

Actual (2020), estimated (2021) and projected (2022 – 2027) O&M expenses for each item are shown in detail in Table B-1 of Appendix B and are summarized in Table 3-1. Projections were based on escalation of the previous years' expenditures. Annual escalation percentages were 2 percent except for Taxes and Licenses (1 percent) and Employee Services (3.5 percent).

Table 3-1. Operations and Maintenance Expenses

	Actual	Estimated	Projected						2022-2027
Expenditure Category	2020	2021	2022	2023	2024	2025	2026	2027	Total
Water Reclamation Plant and Sewer Collection									
Employee Services	4,863,000	5,077,000	5,255,000	5,439,000	5,629,000	5,826,000	6,030,000	6,241,000	34,420,000
Contractual Services	2,799,000	3,289,000	3,336,000	3,403,000	3,471,000	3,540,000	3,611,000	3,683,000	21,044,000
Materials and Supplies	1,190,000	1,311,000	1,336,000	1,363,000	1,391,000	1,418,000	1,447,000	1,475,000	8,430,000
Other Charges	3,090,000	3,425,000	3,473,000	3,521,000	3,572,000	3,622,000	3,673,000	3,726,000	21,587,000
Capital Outlay	9,000	40,000	41,000	42,000	42,000	43,000	44,000	45,000	257,000
Alloc to Other Activities *	(264,389)	(205,000)	(209,000)	(213,000)	(217,000)	(221,000)	(226,000)	(230,000)	(1,316,000)
Total	11,686,611	12,937,000	13,232,000	13,555,000	13,888,000	14,228,000	14,579,000	14,940,000	84,422,000

** "Alloc to Other Activities" are reimbursement to the Wastewater fund for activities performed by Wastewater staff for other funds.*

3.2 Capital Expenditures and Debt Obligations

Capital expenditures over the next 23 years are projected to total approximately $467 million. The wastewater system has three existing debt obligations. One new debt obligation is projected to supplement expenditures for capital improvements in 2024.

3.2.1 Existing Debt Obligations

The wastewater system has three existing debt obligations listed below with debt service remaining for 2022 onward.

- Taxable GO Waste Water Revenue Refunding Bonds, Series 2012A Crossover Refunding 2004A Bonds; final payment of approximately $6,953,000 in 2022
- General Obligation Waste Water Revenue Refunding Bonds, Series 2015B Crossover Refunding 2007A; remaining payments of approximately $12,756,500 in 2022 - 2027
- Taxable GO Waste Water Revenue Refunding Bonds, Series 2020B Crossover Refunding 2012A Bonds; remaining payments of approximately $25,669,800 in 2022 - 2027

Annual principal and interest payments for each series and the amounts of those payments paid by rate payers (as opposed to paid by revenues from developer fees or other sources) are shown in Table B-2 in Appendix B.

3.2.2 Capital Expenditures and Financial Plan

New loans and additional debt service will be required to fund a portion of expenditures for capital projects. Projects costs, the amount funded by new loans and funded by rates and fees, and the total amount of new debt service payments are summarized in Table 3-2 by project category. Detailed capital expenditures for each category of projects and the proposed funding mechanism for each project are shown in Table B-3 in Appendix B.

Table 3-2. Financial Plan for Capital Project Expenditures

Project Category	Project Costs	Funded by Rates and Fees	Percent by New Debt	Debt Service Principal	Debt Service Interest	Total Debt Payments
Water Reclamation Plant Projects	$196,500,000	$149,500,000	24%	$47,000,000	$16,182,765	$63,182,765
Collection System	$270,839,000	$270,839,000	0%	$0	$0	$0
Total	$467,339,000	$420,339,000	10%	$47,000,000	$16,182,765	$63,182,765

Annual expenditures for capital projects are shown in Table B-3. Annual and cumulative annual capital project expenditures for 2022 – 2045 are summarized in Figure 3-1.

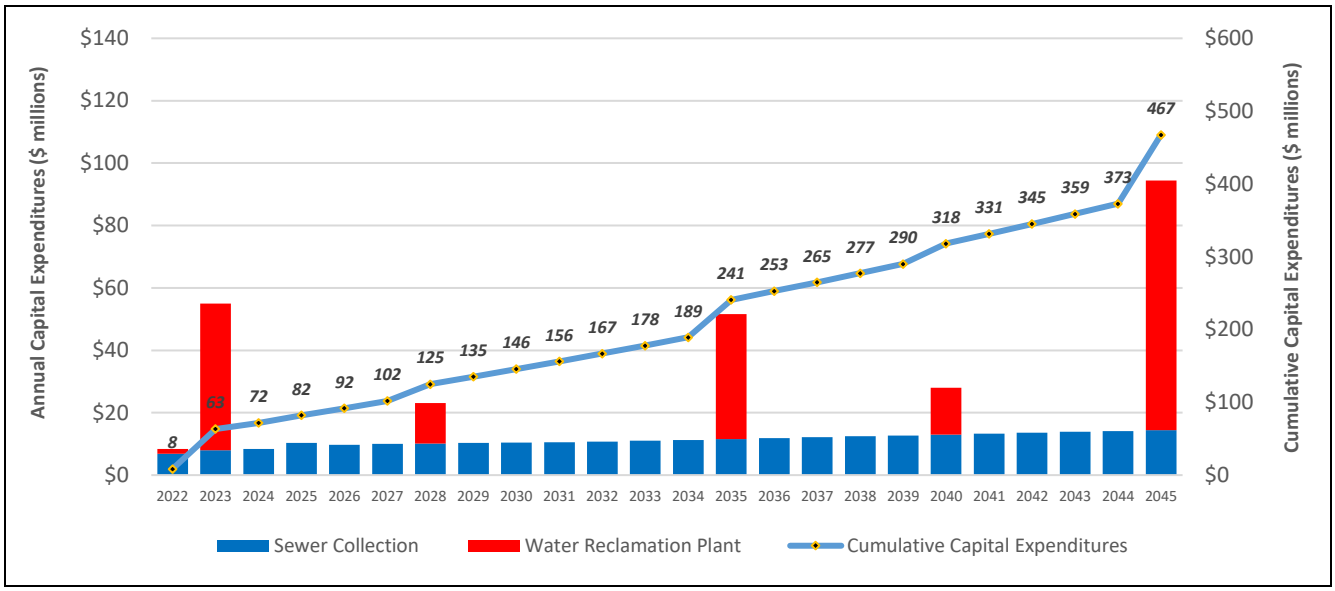


Figure 3-1. Projected Annual and Cumulative Capital Expenditures, 2022 - 2045

3.2.3 New Debt Obligations

New loans and additional debt service will be required to fund expenditures for some capital projects. Annual capital expenditures for each category of projects to be funded by cash are shown in Table B-4 in Appendix B. Capital expenditures for Collection R&R are completely funded by cash not debt.

Annual and cumulative annual debt obligations for 2022 – 2045 are summarized in Figure 3-2. The debt obligation amounts include both existing debt obligations and new debt obligations.

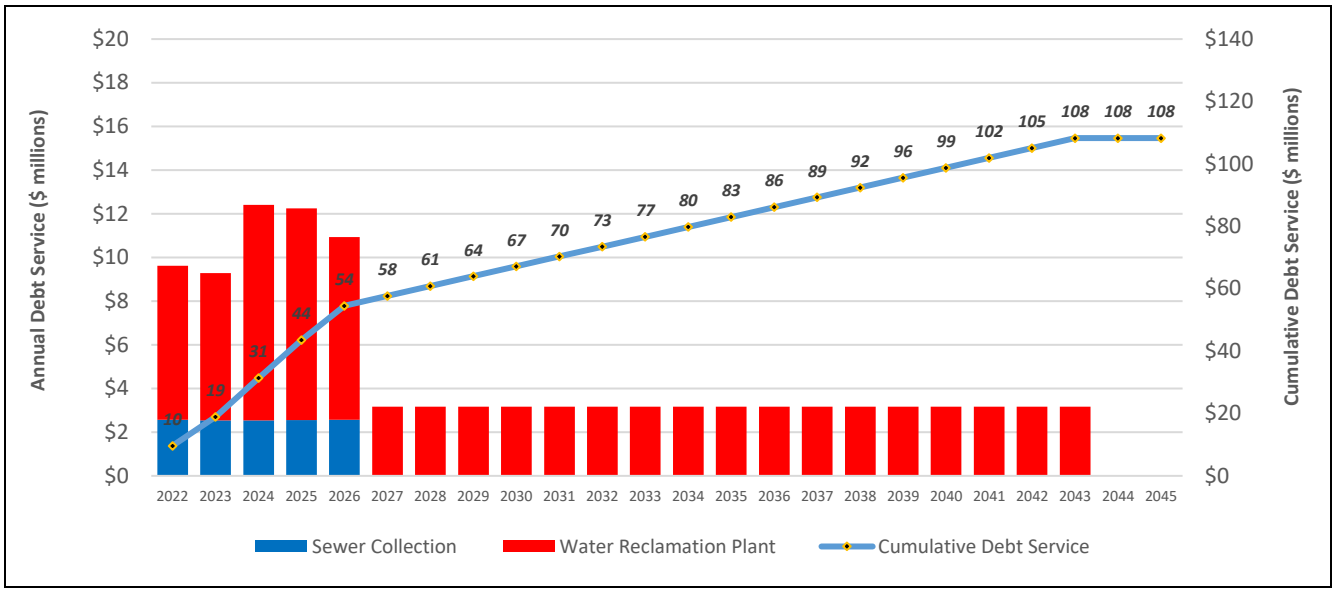


Figure 3-2. Projected Annual and Cumulative Debt Obligations, 2022 - 2045

3.2.4 Debt Service Coverage

The issuance of bonds and the assumption of debt service impose two significant requirements upon the City – 1) the payment of the annual debt; and 2) the maintenance of net revenues sufficient to meet coverage of the debt service.

Bonds issued by municipalities are typically secured by a lien upon and from, the revenues of the municipalities' enterprise for which the bonds are issued. Commonly, an operating history of the enterprise or feasibility study is used to determine that such revenues are sufficient to pay projected operation and maintenance expenses of the enterprise, debt service associated with the bonds and an additional amount known as coverage. Issuers of public municipal bonds generally covenant in the bond resolution or indenture to establish rates and charges for the products or services provided by the enterprise in a manner sufficient to provide revenues to pay such amounts and to provide coverage.

A coverage ratio of net revenues equal to 1.10 times debt service was used for the evaluation. The projected coverage ratio requirement and calculated coverage for 2022 – 2045 are shown in Table B-5 of Appendix B.

3.3 Trunk Sewer Rate Revenue

Trunk Sewer Rates were developed in the City of Rochester's sanitary sewer Master Plan and are intended recover costs for upsizing and extending the trunk sewer system within each sewer super district. The Trunk Sewer Rate costs are adjusted annually based on the Engineering News Record (ENR) index which has historically averaged three percent increases. This rate study assumes a three percent annual increase for revenue projections from Trunk Sewer Rates. Because the sewer super districts each have a defined cost per developable acre and it is uncertain which super district will see growth, an average has been assumed for this rate study at $13,535 per developable acre. This assumes an average minus South Zumbro super sewer district because of the high cost and other infrastructure limitations in this area. Based on concepts outlined in the sewer Master Plan, developable acreage is approximately 48% of annual total acreage growth. City historical average growth over the last 16 years has been 227 total acres/year. Therefore, in this rate study, 110 acres/year average developable acreage growth is assumed.

3.4 Target Fund Balance

Another objective in the development of rates and fees was to produce sufficient revenue to maintain a prudent fund balance. A target fund balance was developed based on three components – working capital, rate stabilization and debt service reserves. The assumptions for each component for 2022 – 2045 are shown in Table B-6 of Appendix B.

3.5 Revenue Required from Wastewater Rates

The amount of revenue required from wastewater rates was developed based on projected annual expenditures, projected annual revenue from sources other than rates (for example, SAC principal repayments and Plant Investment Fees), projected fund balances, projected coverage ratios and the goal of maintaining gradual increases in the rates. Development of the amount of revenue required from wastewater rates is shown in Table 3-3 for 2021 – 2027.

Table 3-3. Revenue Required from Wastewater Rates

Expenditure/	Estimated	Projected						2022 - 2027
Revenue Category	2021	2022	2023	2024	2025	2026	2027	Total
Reclamation Plant		9,625,000	9,851,560	10,085,671	10,030,325	10,268,511	10,511,221	60,372,288
Billing and Collection		1,122,000	1,144,440	1,167,329	1,190,675	1,214,489	1,238,779	7,077,712
Collection/Conveyance		2,485,000	2,559,000	2,635,000	3,007,000	3,096,000	3,190,000	16,972,000
Capital		8,368,000	55,000,000	8,435,000	10,370,000	9,700,000	10,000,000	101,873,000
Current Debt Service		9,623,000	9,283,000	9,253,000	9,091,000	7,769,000	0	45,019,000
New Debt Service				3,159,000	3,159,000	3,159,000	3,159,000	12,636,000
New Debt Disbursements			(47,000,000)					(47,000,000)
Add/(Use) Fund Balance		(1,720,000)	(900,000)	(4,300,000)	(6,000,000)	(3,900,000)	3,650,000	(13,170,000)
Non-rate Revenue		(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	(600,000)
Totals	28,980,000	29,403,000	29,838,000	30,335,000	30,748,000	31,207,000	31,649,000	183,180,000
Annual Change								
Dollars		423,000	435,000	497,000	413,000	459,000	442,000	
Percent		1.5%	1.5%	1.7%	1.4%	1.5%	1.4%	

3.6 Cash Flow

The cash flow resulting from the projections of expenditures and revenues is summarized in Table 3-4 for 2022 – 2027. Detailed expenditures and revenues for 2022 – 2045 are shown in Table B-7 of Appendix B.

Table 3-4. Cash Flow, 2022 - 2027

	6 Years FY22 - FY27	
Balance* January 1, 2022	**$33,550,000**	
Expenditures		
Operations & Maintenance	$84,420,000	*35%*
Debt Service	$57,660,000	*24%*
Capital - Cash	$54,870,000	*22%*
Capital - Financed	$47,000,000	*19%*
Total Expenditures	**$243,950,000**	*100%*
Revenues		
Charges for Service	$183,400,000	*72%*
Plant Investment Fees	$10,240,000	*4%*
Trunk Sewer Rates	$9,920,000	*4%*
Miscellaneous	$2,750,000	*1%*
Loan Disbursements	$47,000,000	*19%*
Total Revenues	**$253,310,000**	*100%*
Net Revenues	$9,360,000	
Balance* December 31, 2027	**$42,910,000**	
Target Balance December 31, 2027	**$12,120,000**	

** Cash and cash equivalent investments.*

Section 4
Unit Costs, Charges and High Strength Surcharges

The projected customer characteristics developed in Chapter 2 and the projected revenue requirements and cost allocations developed in Chapter 3 are used to develop unit costs for the billable parameters (number of connections, flow, BOD, TSS, TP, NH3-N and UA – I/I). The unit costs are then used to develop revenue requirements and charges for each customer class. High strength surcharges are used to develop charges for individual customers.

4.1 Rate Development Methodology

Rates were developed using the processes established in previous studies. The rate development process in this study and in the previous studies were all in accordance with standard industry practices. The rate development process used in this study is shown schematically in Figure 4-1.

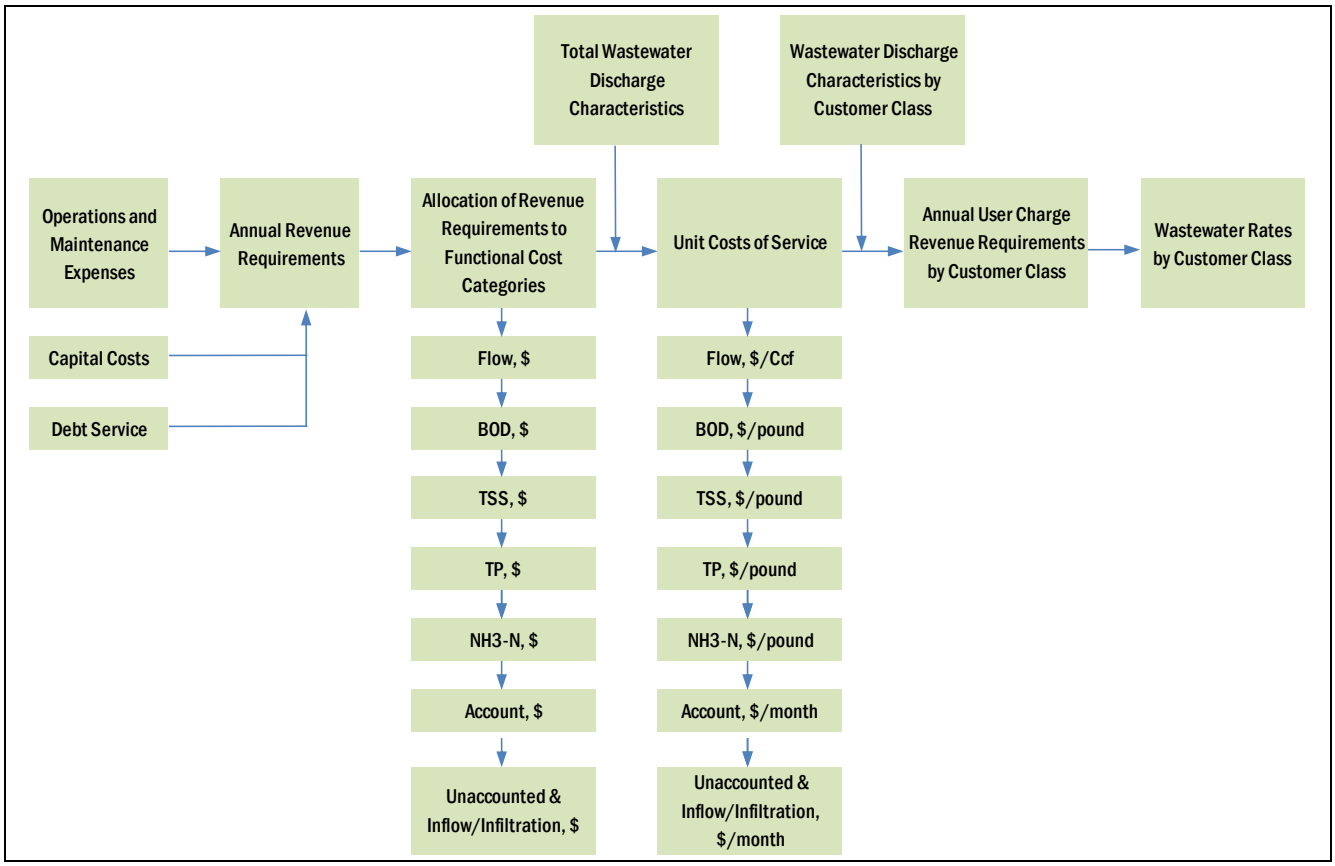


Figure 4-1. Wastewater Rate Development Methodology

4.2 Allocation of Revenue Required from Rates

The first step in the development of rates is the equitable allocation of revenue requirements among the functional cost categories used to develop unit costs that are applicable to all customers. The allocation of revenue requirements, using the same expenditure and revenue categories as shown in Table 3-4, are shown in Table 4-1.

Table 4-1. Allocation of Revenue Requirements to Functional Cost Categories

	Quantity Charge Components					Fixed Charge Components		
	Flow	BOD	TSS	TP	NH3-N	Connections	UA-I/I	Total
Expenditure Category								
Reclamation Plant	14%	26%	20%	10%	7%	19%	5%	100%
Billing/Accounting	0%	0%	0%	0%	0%	100%	0%	100%
Collection/Conveyance	100%	0%	0%	0%	0%	0%	0%	100%
Capital	30%	15%	10%	2%	8%	20%	15%	100%
Debt Service	30%	15%	10%	2%	8%	20%	15%	100%
Add/(Use) Fund Balance	*dollar-weighted composite of other categories*							
Non-rate Revenue	*dollar-weighted composite of other categories*							
Annual Dollar-weighted Composite								
2022 Dollar-weighted Composite	29%	17%	12%	4%	7%	21%	10%	100%

4.3 Unit Costs

Unit costs for each functional cost category were developed by dividing the annual revenue requirements for each functional cost category by the number of units for each category. The development of unit costs for each functional cost category for 2022 through 2027 are shown in Tables C-1a through C-1f in Appendix C and summarized in Table 4-2.

Table 4-2. Unit Costs of Service, 2022 - 2027

Category	Unit of Measure	2022	2023	2024	2025	2026	2027
Unit Costs							
Flow, mgd	$/mg per day	$933,549	$940,165	$948,620	$954,341	$961,394	$967,824
BOD, lb/day	$/pound per day	$199	$201	$203	$204	$206	$207
TSS, lb/day	$/pound per day	$158	$159	$161	$162	$163	$164
TP, lb/day	$/pound per day	$2,183	$2,201	$2,224	$2,240	$2,259	$2,277
NH3-N, lb/day	$/pound per day	$814	$820	$827	$833	$839	$845
Connections	$/connection	$153	$153	$155	$155	$156	$157
UA-I/I (connections)	$/connection	$74	$75	$75	$75	$76	$76

4.4 Revenue Required from Customer Classes

The revenue required from each customer class was developed using unit costs for each functional cost category and the number of units of use for each functional category. For example, the calculation of revenue required from residential users for 2022 using the unit costs shown in the previous table and units of use (wastewater discharge characteristics) projected for that year are shown in Table 4-3. The development of revenue required from each customer class for 2022 through 2027 are shown in Tables C-2a through C-2f in Appendix C.

Table 4-3. Revenue Required from Residential Customers, 2022

	Wastewater Discharge Characteristics [1,2,3]						Flow	BOD	TSS	TP	NH3-N	No. of	UA - I/I	
ıstomer	No. of	Flow	BOD	TSS	TP	NH3-N	$933,549	$198.84	$157.94	$2,183	$814.08	$152.70	$74.14	Total
assification	Conn.	mgd	lbs/day	lbs/day	lbs/day	lbs/day	mgd	lbs/day	lbs/day	lbs/day	lbs/day	Conn.	Conn.	Revenue
Residential Users	37,205	4.427	9,785	9,785	222	1,145	4,133,191	1,945,612	1,545,485	483,701	931,841	5,681,028	2,758,473	17,479,331

4.5 Fixed Charges and Quantity Charges

The development of fixed monthly charges and quantity charges for 2022 through 2027 are shown in Tables C-3a through C-3f in Appendix C and summarized in Table 4-4. The charges shown in this table are those adopted by resolution for implementation and apply to residential and the main commercial customer class.

Residential quantity charges are established as follows: For the months of January, February and March of a year, the residential charge will be based on actual water usage. For the balance of the calendar year, the residential charge will be based on the average monthly water usage for the period of January through March or on the actual usage, whichever is less. In the case of a dwelling that is not connected to the sanitary sewer system in the period of January through March of a calendar year, the monthly charge will be based upon a minimum of five billing units (Ccf).

Table 4-4. Recommended Fixed and Quantity Charges, 2022 - 2027

		Current	Recommended					
Charge		2021	2022	2023	2024	2025	2026	2027
Fixed Charges	$/month	$19.00	$19.00	$19.10	$19.20	$19.30	$19.40	$19.50
Quantity Charges	$/Ccf	$4.160	$4.19	$4.22	$4.26	$4.29	$4.32	$4.35

4.6 High Strength Surcharges

High strength surcharges are unit costs for flow, BOD, TSS, TP and NH3-N that are applied to customers whose wastewater discharge cannot be characterized as residential or grouped with the main commercial customer class. These surcharges, shown in the table below, are applied to approximately 15 customers and used as a basis for calculation of hauled wastes.

Table 4-5. Recommended High Strength Surcharges, 2022 - 2027

Charge		Current 2021	Recommended 2022	2023	2024	2025	2026	2027
High Strength Surcharges								
Flow	$/Ccf	$1.99	$1.91	$1.93	$1.94	$1.96	$1.97	$1.98
BOD	$/pound	$0.47	$0.54	$0.55	$0.55	$0.56	$0.56	$0.57
TSS	$/pound	$0.44	$0.43	$0.44	$0.44	$0.44	$0.45	$0.45
TP	$/pound	$6.00	$5.98	$6.03	$6.09	$6.14	$6.19	$6.24
NH3-N	$/pound	$2.21	$2.23	$2.25	$2.27	$2.28	$2.30	$2.31

4.7 Trucked Liquid Waste Charges

Charges for trucked liquid waste – Portable Toilet and FOG (Fats, Oils and Grease) and Septage wastes – are shown in Table 4-6.

Table 4-6. Recommended Septage, Portable Toilet Waste and FOG Charges, 2022 - 2027

Hauled Waste Charges		Current 2021	Recommended 2022	2023	2024	2025	2026	2027
Portable Toilet Waste	$/1000 gallons	$153.00	$123.00	$124.00	$125.00	$126.00	$127.00	$128.00
Fats, Oils and Greases	$/1000 gallons	$35.00	$36.00	$37.00	$38.00	$39.00	$40.00	$41.00
Septage	$/1000 gallons	$120.00	$123.00	$124.00	$125.00	$126.00	$127.00	$128.00

Section 5
Revenue from Charges and Customer Bills

The recommended charges presented in the previous chapter are evaluated in terms of changes since the previous study. The impact of the recommended charges on residential and commercial customers is evaluated in detail.

5.1 Revenue from Rates

The fixed charges and quantity charges, when multiplied by projected units of use for each charge (number of connections and flow), yield the projected amount of revenue for each customer class. The projected amount of revenue from each customer class is summarized in Table 5-1. Revenues shown in this table are slightly different (about 0.12 percent higher on average) than revenue requirements shown in Table 4-2 due to rounding of fixed charges and quantity charges.

Table 5-1. Revenue from Charges Summary, 2022 - 2027

	Estimated	Projected						2022 - 2027	
Customer Category	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**Total**	**%**
Residential Users									
Fixed Charge, $/mo	$19.00	$19.00	$19.10	$19.20	$19.30	$19.40	$19.50		
Quantity Charge, $/Ccf	$4.16	$4.19	$4.22	$4.26	$4.29	$4.32	$4.35		
Avg SFR Discharge/mo	4.84	4.84	4.84	4.84	4.84	4.84	4.84		
Quantity Charge, $/mo	$20.13	$20.27	$20.42	$20.61	$20.76	$20.90	$21.05		
Average Monthly Bill	**$39.13**	**$39.27**	**$39.52**	**$39.81**	**$40.06**	**$40.30**	**$40.55**		
Accounts	36,845	37,205	37,565	37,925	38,285	38,645	39,005		
Total Residential	$17,300,477	$17,534,323	$17,814,501	$18,118,817	$18,403,441	$18,690,182	$18,979,041	$109,540,305	60%
Commercial Users									
User 1	$138,640	$138,925	$140,020	$141,389	$142,351	$143,512	$144,580		
User 2	$141,037	$141,919	$142,996	$144,353	$145,293	$146,437	$147,486		
User 3	$641,059	$645,527	$650,395	$656,537	$660,787	$665,960	$670,701		
User 4	$228,984	$231,578	$233,369	$235,617	$237,186	$239,087	$240,832		
User 5	$359,933	$365,494	$368,330	$371,887	$374,373	$377,382	$380,146		
User 6	$63,900	$64,343	$64,828	$65,440	$65,863	$66,378	$66,850		
User 7	$80,332	$80,889	$81,499	$82,268	$82,800	$83,448	$84,042		
User 8	$287,780	$289,785	$291,970	$294,727	$296,634	$298,956	$301,084		
User 9	$99,562	$101,156	$101,927	$102,897	$103,571	$104,390	$105,141		
User 10	$10,498	$10,568	$10,647	$10,747	$10,816	$10,901	$10,978		
Other Commercial	$7,873,717	$7,975,254	$8,097,169	$8,235,984	$8,352,065	$8,480,706	$8,604,795		
Subtotal, Commercial	$9,925,441	$10,045,438	$10,183,149	$10,341,846	$10,471,741	$10,617,156	$10,756,634	$62,415,963	34%
Industrial/Trucked Waste									
User 1	$782,412	$852,317	$859,224	$867,815	$873,908	$881,221	$887,963		
User 2	$701,780	$728,722	$734,381	$741,479	$746,441	$752,445	$757,962		
User 3	$108,373	$110,957	$111,809	$112,879	$113,625	$114,530	$115,360		
User 4	$20,498	$20,638	$20,793	$20,989	$21,125	$21,289	$21,441		
User 5	$12,390	$12,474	$12,567	$12,685	$12,767	$12,866	$12,958		
User 6	$26,579	$26,761	$26,963	$27,217	$27,393	$27,607	$27,803		
Leachate	$25,123	$24,691	$24,869	$25,095	$25,249	$25,439	$25,612		
Portable Toilets	$35,382	$49,295	$49,682	$50,167	$50,507	$50,918	$51,295		
FOG	$8,491	$8,733	$8,976	$9,218	$9,461	$9,703	$9,946		
Septage	$31,938	$32,750	$33,008	$33,331	$33,558	$33,832	$34,083		
Subtotal, Ind/Trucked	$1,752,965	$1,867,337	$1,882,272	$1,900,877	$1,914,033	$1,929,850	$1,944,422	$11,438,790	6%
Totals	$28,978,884	$29,447,097	$29,879,922	$30,361,540	$30,789,215	$31,237,187	$31,680,097	$183,395,058	100%

5.2 Historical and Projected Charges

Between 1998 and 2027 (29 years), allocation of costs to fixed charges (customer and UA-I/I) has increased relative to allocation of costs to quantity charges (flow, BOD, TSS, TP and NH3-N). As a result, on a percentage basis, fixed charges have increased more than quantity charges.

During the same time period, the average monthly wastewater discharge from residential customers has decreased from approximately 6.6 Ccf to 4.8 Ccf – a decrease of 26 percent.

Fixed charges, quantity charges, average residential monthly wastewater discharge and average residential monthly bills in 1998, 2015, 2021 and projected for 2027 are summarized in Table 5-2.

Table 5-2. Fixed Charges, Quantity Charges and Single Family Bills, 1998 - 2027

Item	1998	*% of Bill*	2015	*% of Bill*	2021	*% of Bill*	2027	*% of Bill*
Fixed Charge, $/month	$4.41	*33%*	$13.37	*46%*	$19.00	*49%*	$19.50	*48%*
Quantity Charge, $/Ccf	$1.13		$3.10		$4.16		$4.35	
SFR Discharge, Ccf/month	*7.86*		*5.08*		*4.84*		*4.84*	
Quantity Charges, $/month	$8.84	*67%*	$15.77	*54%*	$20.13	*51%*	$21.05	*52%*
Monthly Bill	$13.25	*100%*	$29.14	*100%*	$39.13	*100%*	$40.55	*100%*

5.3 Residential Monthly Bills

Historic, recommended and projected residential monthly bills based on average residential monthly wastewater discharge are shown in Figure 5-1. The average yearly increase in monthly bills from 1998 to 2045 is approximately one percent.

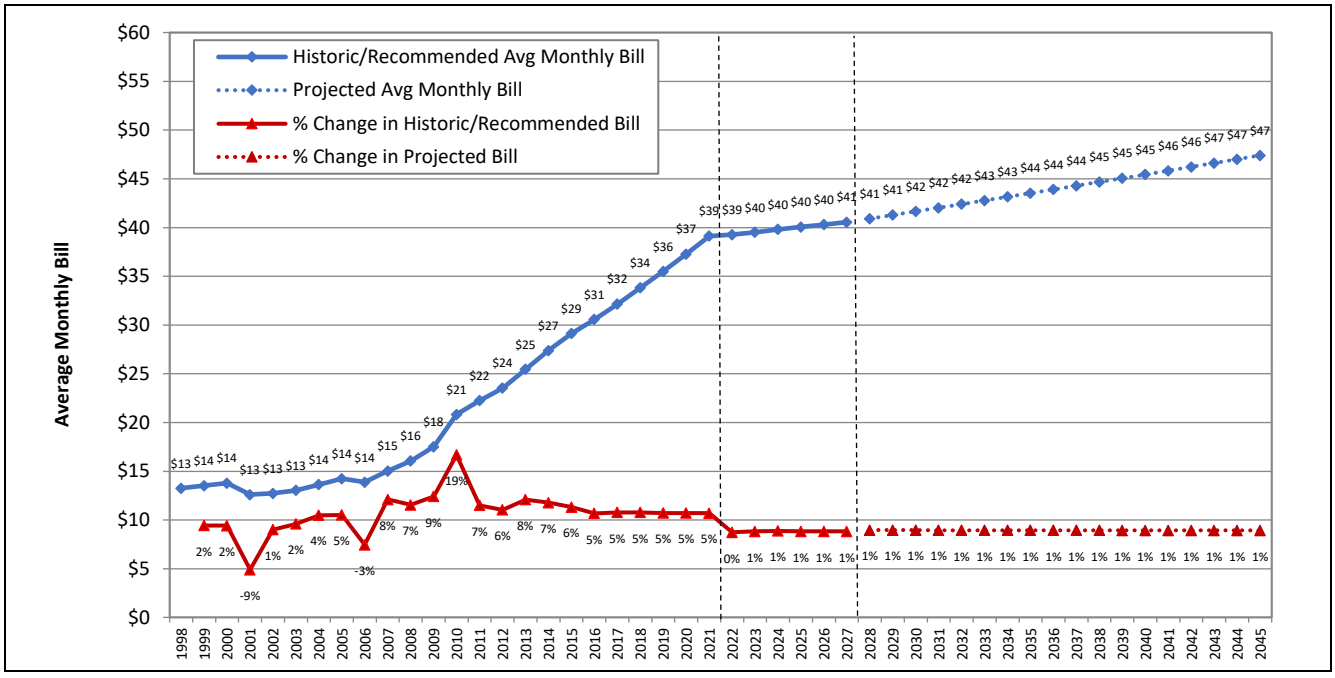


Figure 5-1. Average Residential Monthly Bills and Percent Increases, 1998 - 2045

5.4 Projected Cash Flow and Residential Monthly Bills, 2021 -2045

Cash flow and residential monthly bills based on average residential monthly wastewater discharge and historic and recommended charges are shown in Figure 5-2 for 2021 – 2045.

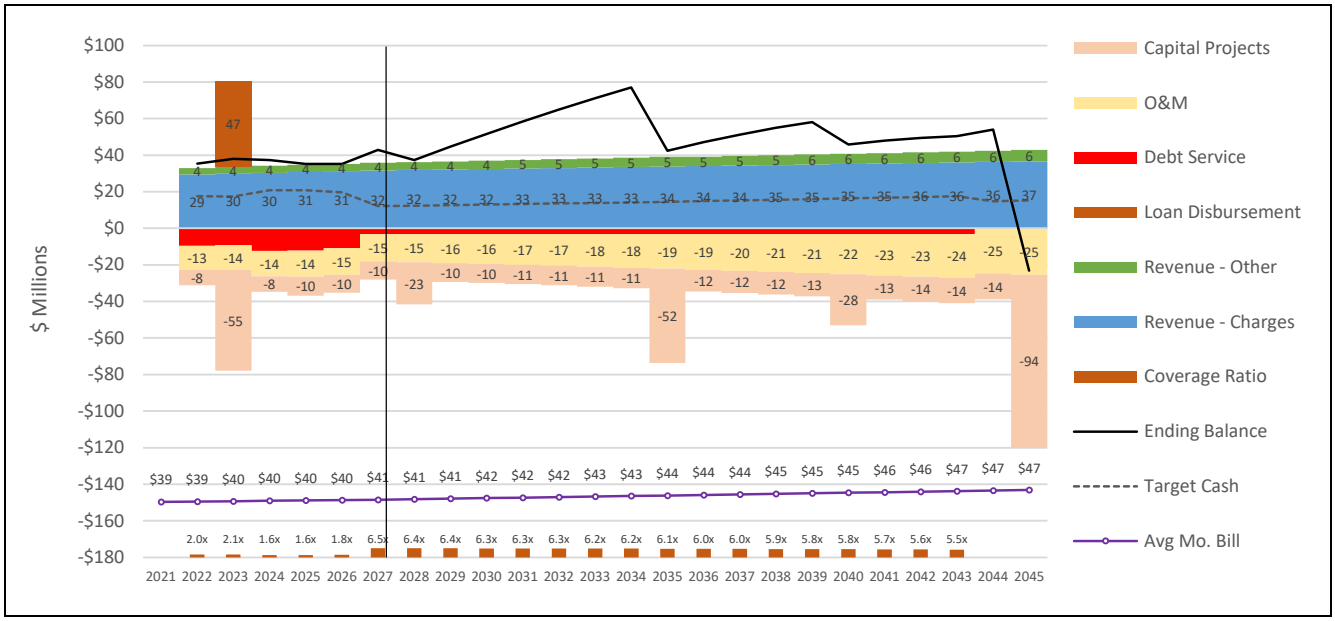


Figure 5-2. Projected Cash Flow and Residential Monthly Bills, 2021 - 2045

5.5 Total Revenues, 2022 -2045

Annual projected revenue from Charges for Services, PIFs, Trunk Sewer Fees and Interest/Other, and cumulative revenue, are shown in the figure below.

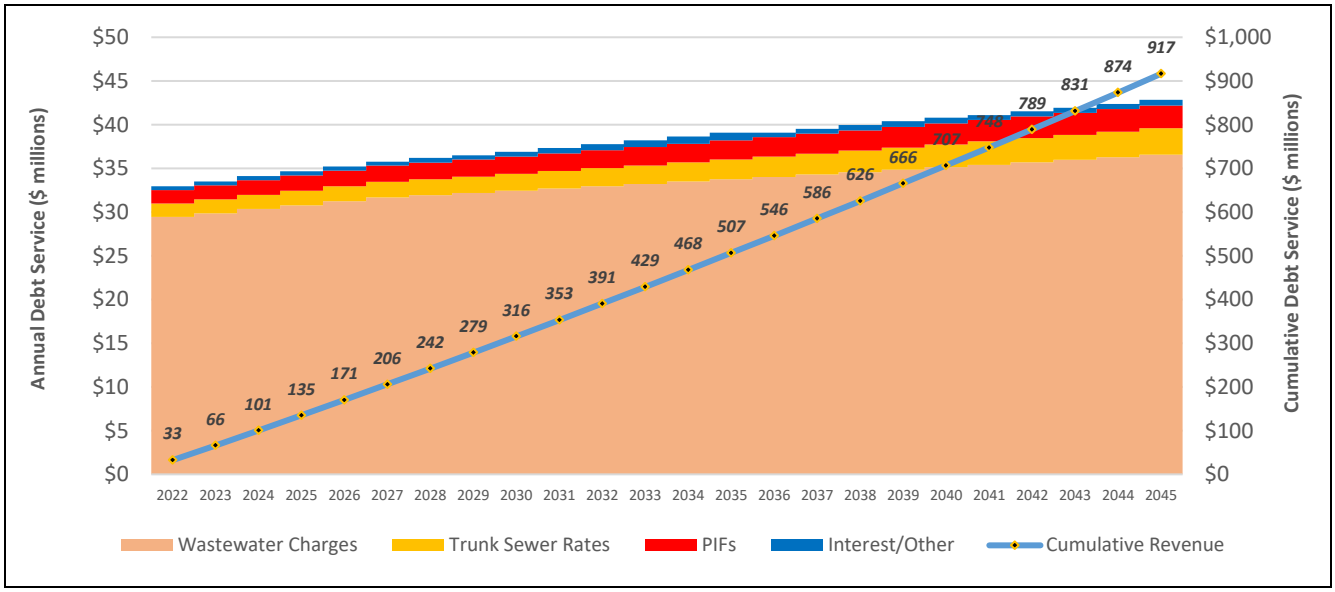


Figure 5-3. Total Revenues, 2022 - 2045

Section 6
Plant Investment Fees

Plant Investment Fees (PIFs) are fees charged for connection to the wastewater system. The fees are for wastewater system facilities in existence at the time the fees are imposed, or for new wastewater system facilities to be acquired or constructed in the future, that are of proportional benefit to the person or property being charged.

Plant Investment Fees were instituted by in 2005. The initial fee level for residential connections was set at $500 and raised annually to its current (2021) level of $3,600. PIFs for commercial connections were based on the ratio of average water use for a given water meter size connection (which is representative of wastewater discharge) to the average wastewater discharge for residential customers times the residential PIF. PIFs for industrial connections were based on residential PIF components for flow, BOD, TSS, TP and NH3-N times the industrial connection's wastewater discharge levels for each of those components times a multiplier.

6.1 Plant Valuation and Equivalent Residential Units

PIFs are developed based on the value of Water Treatment Plant assets and the capacity available in those assets. Development of the Water Treatment Plant Valuation and the amount of Equivalent Residential Unit Capacity are summarized in the table below.

Table 6-1. Water Treatment Plant Valuation and Equivalent Residential Unit Capacity

Item (all values $millions except ERUs)			2020	2021	2022	2023	2024	2025	2026	2027
WATER TREATMENT PLANT VALUATION										
Water Treatment Plant										
Adjusted Book Value			$633							
Escalated Book Value	*Escalation Rate >*	*2.0%*		$645	$658	$672	$685	$699	$713	$727
Capital projects										
Annual				$13	$2	$47	$0	$0	$0	$0
Seven-year Average				$9	$9	$9	$9	$9	$9	$9
Total Valuation				$667	$669	$727	$694	$707	$721	$736
VALUATION ADJUSTMENTS										
Developer contributions (PIF)										
Prior		$89								
Annual			$3	$3	$3	$3	$3	$3	$3	$3
Cumulative		$89	$92	$95	$98	$101	$104	$107	$110	$113
Principal portion remaining exist debt										
Series 2012A Crossover Refunding 2004A Bonds			$17	$12	$6	$0	$0	$0	$0	$0
Series 2020B Crossover Refunding 2012A Bonds			$23	$23	$23	$23	$17	$11	$5	$0
Total Principal Portion Remaining, Existing Debt			$40	$35	$29	$23	$17	$11	$5	$0
Principal portion remaining new debt							$45	$43	$42	$40
Total Valuation Adjustments			$176	$168	$160	$151	$142	$133	$123	$116
NET VALUATION, $millions				$499	$509	$576	$552	$575	$598	$620
Equivalent Runoff Units (ERUs)				137,903	137,903	137,903	137,903	137,903	137,903	137,903

6.2 Residential and Multiple Dwelling Unit PIFs

PIFs for residential connections are calculated by dividing the Water Treatment Plant Net Valuation by the number of Equivalent Residential Units. The calculation is shown in the table below. PIFs for residential connections are recommended to increase by $100 - $150 per year from the current $3,600 fee. PIFs for Multiple Dwelling Unit connections are calculated as 70% of the PIF/ERU (down from the current 80% of the PIF/ERU). PIFs for Multiple Dwelling Unit connections are recommended to decrease by $230 from the current $2,880 fee and then increase by $100 per year for the next five years.

Table 6-2. Residential and Multiple Dwelling Unit PIFs

	Current	Recommended					
Item	2021	2022	2023	2024	2025	2026	2027
NET VALUATION, $millions	$499	$509	$576	$552	$575	$598	$620
Equivalent Runoff Units (ERUs)	137,903	137,903	137,903	137,903	137,903	137,903	137,903
Residential PIF							
NET VALUATION $/ERU	$3,617	$3,691	$4,180	$4,001	$4,167	$4,337	$4,493
NET VALUATION $/ERU, smoothed 2021 - 2027	$3,617	*$3,763*	*$3,909*	*$4,055*	*$4,201*	*$4,347*	$4,493
NET VALUATION $/ERU, smoothed/rounded 2021 - 2027	**$3,600**	**$3,750**	**$3,900**	**$4,050**	**$4,200**	**$4,350**	**$4,500**
Multiple Dwelling Unit PIF							
Percent of Residential PIF per ERU	80%	70%	70%	70%	70%	70%	70%
Multiple Dwelling Unit PIF $/Unit	**$2,880**	**$2,650**	**$2,750**	**$2,850**	**$2,950**	**$3,050**	**$3,150**

6.3 Non-residential Development PIFs

PIFs for non-residential developments were based on the ratio of average winter water use for the ⅝ x ¾ and ⅝ x ½ water meter size non-residential connections (which is representative of wastewater discharge) to the average wastewater discharge for residential customers and the maximum flow rate for water meters, times the residential PIF. The ratios used are called the "equivalency factors." The calculation of the three sets of equivalency factors is summarized in the table below.

Table 6-3. Non-residential Equivalency Factors

Non-residential Meter Size	Estimated Wastewater Discharge Winter Water Use, gpd			Wastewater Equivalency Factor		
	2013	2014	Assigned			
		Residential gpd >	119		*Line 1*	
⅝ x ½	180	197	180		*Line 2*	
⅝ x ¾	166	178			*Line 3*	
				1.5	*Line 4*	*Line 3/4 gpd / Line 1 gpd*

Non-residential Meter Size	Meter Max. Flow, gpm	Water Meter Equivalency Factor	Non-residential Meter Equivalency Factor Calculations	
⅝ x ½	21	1.0	*Line 5*	
⅝ x ¾	21	1.0	*Line 6*	
¾	27	1.3	*Line 7*	*Line 7 gpm / Line 5 gpm*
1	48	2.3	*Line 8*	*Line 8 gpm / Line 5 gpm*
1½	85	4.0	*Line 9*	*Line 9 gpm / Line 5 gpm*
2	136	6.5	*Line 10*	*Line 10 gpm / Line 5 gpm*
3+	476	22.7	*Line 11*	*Line 11 gpm / Line 5 gpm*

Non-residential Meter Size	Equivalency Factors Wastewater	Water Meter	PIF	Non-residential Equivalency Factor Calculations	
⅝ x ¾	1.5	1.0	1.5	*Line 12*	*Line 4 equivalency factor*
¾	1.5	1.3	2.0	*Line 13*	*Line 12 x Line 7 equivalency factor*
1	1.5	2.3	3.5	*Line 14*	*Line 12 x Line 8 equivalency factor*
1½	1.5	4.0	6.1	*Line 15*	*Line 12 x Line 9 equivalency factor*
2	1.5	6.5	9.8	*Line 16*	*Line 12 x Line 10 equivalency factor*
3+	1.5	22.7	34.3	*Line 17*	*Line 12 x Line 11 equivalency factor*

Calculation of PIFs for non-residential developments is shown in the table below. The number of Fixture Units per Connection for ⅝ x ¾ Nonresidential meters is increased from 25 to 32. The per fixture unit charge is calculated by dividing the Residential PIF by the number of Fixture Units per Connection. For example, the value for 2022, is calculated to be $177 which is $3,750 divided by 32 (rounded to the nearest $1). Non-residential development PIFs for all meter connection sizes for 2022 - 2027 are shown in Table 6-4.

Table 6-4. Non-Residential Development PIFs

Customer Class	*PIF Equivalency Factor*	Current 2021	Recommended 2022	2023	2024	2025	2026	2027
Residential PIF	1.0	$3,600	$3,750	$3,900	$4,050	$4,200	$4,350	$4,500
Non-Residential (meter size)								
Fixture Units per Connection		25	32	32	32	32	32	32
⅝ x ¾ per Fixture Unit	1.5	*$216*	*$177*	*$184*	*$192*	*$198*	*$206*	*$213*
Water Meter Size								
⅝ x ¾	1.5	$5,400	$5,650	$5,900	$6,150	$6,350	$6,600	$6,800
¾	2.0	$15,100	$7,400	$7,650	$7,950	$8,250	$8,550	$8,850
1	3.5	$21,200	$13,000	$13,600	$14,100	$14,600	$15,100	$15,700
1½	6.1	$48,200	$22,700	$23,600	$24,500	$25,400	$26,300	$27,200
2	9.8	$105,800	$36,900	$38,300	$39,800	$41,300	$42,800	$44,200
3+	34.3	$105,800	$128,800	$133,900	$139,100	$144,200	$149,400	$154,500

Residential and Non-residential Development PIFs for 2005 - 2027 are shown in Figure 6-1.

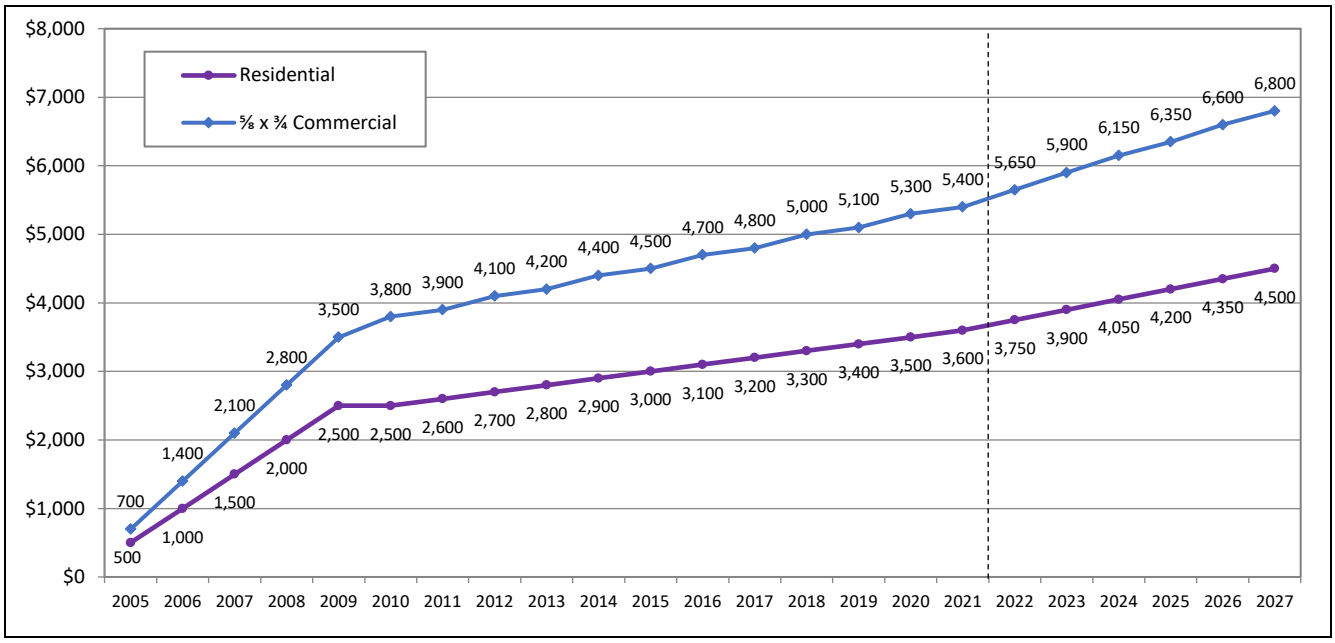


Figure 6-1. Residential and ⅝ x ¾-inch meter Commercial PIFS, 2005 - 2027

6.4 Permitted Non-residential Development PIFs

The PIFs developed in this section apply only to the commercial and industrial developments that have industrial discharge permits with the Water Reclamation Plant that specify the allowable flows and loads that may be discharged. The commercial or industrial developments that have industrial discharge permits with the Water Reclamation Plant that do not specify allowable flows and loads that may be discharged are subject to the PIF based on water meter size as shown in the rates resolution.

When there is a requirement that the discharge limits be increased, a Plant Investment Fee will be determined based on the Equivalent Residential Unit fee. These developments pay a high strength waste surcharge on their monthly bill based on their usage and is typically 60% of their permitted discharge peak allowable limits, Therefore, the PIF will be based on 60% of the rates determined for an ERU.

Industrial discharge permit PIF is established for specific wastewater characteristics listed in the rates resolution and values include the 40% deduction.

PIFs for Permitted Non-residential Developments are based on adjusted residential PIF components for flow, BOD, TSS, TP and NH3-N times the industrial connection's wastewater discharge levels for each of those components.

The calculation of PIFs for Permitted Non-residential Developments for 2022 – 2027 was changed in the following ways:

- Average residential wastewater discharge flow is lowered from 130 gpd to 119 gpd
- Average residential wastewater discharge TP is decreased from 7 mg/l to 6 mg/l
- Average residential wastewater discharge NH3-N is increased from 28 mg/l to 31 mg/l
- Fee components as a percent of the Residential PIFs was changed from 5 percent to 60 percent

Residential and Permitted Non-residential Developments PIF components are calculated as shown in Table 6-5.

Table 6-5. Permitted Non-residential Plant Investment Fee Development

% Allocation of PIF to Parameters [1]						
Treatment Process	CIP Cost	Flow	BOD	TSS	TP	NH3-N
Headworks	$22,086,597	$22,086,597	$0	$0	$0	$0
Primary Clarifier	$6,582,421	$3,291,210	$1,316,484	$1,316,484	$658,242	$0
Aeration	$19,687,563	$0	$7,875,025	$1,968,756	$1,968,756	$7,875,025
Final Clarifier	$5,804,116	$1,741,235	$2,321,647	$580,412	$580,412	$580,412
Sludge Handling	$7,356,303	$0	$2,942,521	$2,942,521	$1,103,445	$367,815
Total	$61,517,000	$27,119,043	$14,455,677	$6,808,173	$4,310,855	$8,823,252
	Percent of Total >	44%	23%	11%	7%	14%
$ Allocation of PIF to Parameters						
Year	Residential	Flow	BOD	TSS	TP	NH3-N
	allocation from above >	*44%*	*23%*	*11%*	*7%*	*14%*
2022	$3,750	$1,653	$881	$415	$263	$538
2023	$3,900	$1,719	$916	$432	$273	$559
2024	$4,050	$1,785	$952	$448	$284	$581
2025	$4,200	$1,852	$987	$465	$294	$602
2026	$4,350	$1,918	$1,022	$481	$305	$624
2027	$4,500	$1,984	$1,057	$498	$315	$645
Residential Discharge Characteristics [2]		Flow	BOD	TSS	TP	NH3-N
mgd or mg/l	*amount >*	0.000119	265	265	6	31
	unit of measure >	*mgd*	*mg/l*	*mg/l*	*mg/l*	*mg/l*
Ccf or pounds (per day)	*amount >*	0.159	0.263	0.263	0.006	0.031
	unit of measure >	*Ccf/day*	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*
Ccf or pounds (per month)	*amount >*	4.84	8.00	8.00	0.18	0.94
	unit of measure >	*Ccf/month*	*lbs/month*	*lbs/month*	*lbs/month*	*lbs/month*
Plant Investment Fee Componenet Unit Costs		Flow	BOD	TSS	TP	NH3-N
Per 1 Ccf/day or 1 lb/day		1 Ccf/day	1 lb/day	1 lb/day	1 lb/day	1 lb/day
2022		$10,393	$3,351	$1,578	$44,130	$17,482
2023		$10,808	$3,485	$1,641	$45,895	$18,181
2024		$11,224	$3,619	$1,704	$47,661	$18,881
2025		$11,640	$3,753	$1,767	$49,426	$19,580
2026		$12,055	$3,887	$1,830	$51,191	$20,279
2027		$12,471	$4,021	$1,894	$52,956	$20,978
Non-Residential Development With Discharge Permit PIFs		$/1 Ccf/day	$/1 lb/day	$/1 lb/day	$/1 lb/day	$/1 lb/day
Fee components are based on a percent of the fees determined for Residential connections		*60%*	*60%*	*60%*	*60%*	*60%*
Current (2021), 5% of Residential		$499	$161	$76	$1,816	$929
2022		$6,240	$2,010	$950	$26,480	$10,490
2023		$6,480	$2,090	$980	$27,540	$10,910
2024		$6,730	$2,170	$1,020	$28,600	$11,330
2025		$6,980	$2,250	$1,060	$29,660	$11,750
2026		$7,230	$2,330	$1,100	$30,710	$12,170
2027		$7,480	$2,410	$1,140	$31,770	$12,590

Notes:

1 The percent allocation of PIFs to parameters is based on percentages developed in the 2004 Rate Study and the 2006 Update, Table 5.1, WRP Project Upgrade and Capacity Expansion Expenditures Allocated to Pollutants.

2 Residential discharge characteristics are from Table A-9, Wastewater Discharge Characteristics - 2021.

6.5 Recommended Plant Investment Fees

Recommended PIFs for 2022 – 2027 are summarized in Table 6-6.

Table 6-6. Recommended Plant Investment Fees

Customer Class	Unit of Service	Current 2021	Recommended 2022	2023	2024	2025	2026	2027
Residential	Per connection	$3,600	$3,750	$3,900	$4,050	$4,200	$4,350	$4,500
Multiple Dwelling Unit	Per connection	$2,880	$2,650	$2,750	$2,850	$2,950	$3,050	$3,150
Non-Residential Developments								
Fixture Units per Connection		25	32	32	32	32	32	32
⅝ x ¾ per Fixture Unit	Per fixture unit	*$216*	*$177*	*$184*	*$192*	*$198*	*$206*	*$213*
Water Meter Size								
⅝ x ¾	Per connection	$5,400	$5,650	$5,900	$6,150	$6,350	$6,600	$6,800
¾	Per connection	$15,100	$7,400	$7,650	$7,950	$8,250	$8,550	$8,850
1	Per connection	$21,200	$13,000	$13,600	$14,100	$14,600	$15,100	$15,700
1½	Per connection	$48,200	$22,700	$23,600	$24,500	$25,400	$26,300	$27,200
2	Per connection	$105,800	$36,900	$38,300	$39,800	$41,300	$42,800	$44,200
3+	Per connection	$105,800	$128,800	$133,900	$139,100	$144,200	$149,400	$154,500
Permitted Non-Residential Developments								
Flow $/Ccf/day	Per Permit	$499	$6,240	$6,480	$6,730	$6,980	$7,230	$7,480
BOD $/lb/day	Per Permit	$161	$2,010	$2,090	$2,170	$2,250	$2,330	$2,410
TSS $/lb/day	Per Permit	$76	$950	$980	$1,020	$1,060	$1,100	$1,140
TP $/lb/day	Per Permit	$1,816	$26,480	$27,540	$28,600	$29,660	$30,710	$31,770
NH3-N $/lb/day	Per Permit	$929	$10,490	$10,910	$11,330	$11,750	$12,170	$12,590

6.6 Plant Investment Fees Revenue

PIFs and revenues from fees are shown in Table D-1 of Appendix D. Revenues from the fees over the time period 2022 – 2045 are estimated to be $50.8 million. Revenues from the fees are based on projections of new connections described in Chapter 2.

The projected numbers of new connections per year are listed below along with calculation of the number of ERUs for each customer class during the estimated time period of implementation of fees.

Residential: 360 connections/year x 24 years x 1 ERU/connection = 8,640 ERUs

Non-Residential: 25 connections/year x 24 years x ERU/connection (varies by meter size) = 1,285 ERUs

Total: 9,925 ERUs

PIF revenues from industrial connections are not included because revenues from industrial connections can vary greatly and historical information has no reliable trending information.

Section 7
Adoption of Charges and Fees

The process of adopting wastewater charges and fees included a meeting with the City Council and hearings with the City Council. Key events in the adoption process of wastewater charges and fees are described in this chapter.

7.1 City Council Study Session

The Executive Summary from the September 2021 *Wastewater Rates and Fees Study* (Draft Report) was provided to the City Council at a City Council Study Session meeting on September 20, 2021. Slides used in the presentation of findings and recommendations from the Draft Report to the City Council are included in Appendix E.

During the City Council meeting, Council requested more information pertaining to the evaluation of affordability. City staff prepared an information sheet regarding that item for the Council. The information sheet is included in Appendix F.

7.2 City Council Hearings

At its November 1, 2021 Council meeting, City staff presented to Council Agenda Item F16, a "Request for Council Action" (RCA) that recommended adopting a Resolution approving the 2022 - 2027 Wastewater Rates and Fees Schedule. The RCA and Resolution No. 231-21 are included in Appendix G.

City staff also presented to Council Agenda Item F15, another RCA that recommended updating the sanitary sewer related ordinances at the same time as when the wastewater rates and fees are set for the six year cycle. Sanitary Sewer Ordinances: Chapter 12-2. Sanitary Sewage Disposal, Chapter 12-3. Pretreatment of Sewage Discharges, Chapter 12-5. Discharges of Fats, Oil and Grease, and Chapter 12-6. Sewer Charges were recommended to be updated to incorporate minor grammar changes to ensure consistency, reflect the changes in rates and fees from the recent sewer rate study and rates for council approval, and incorporate more language that has historically only been listed in resolutions or the rate study and not in the Ordinances.

Section 8

Limitations

This document was prepared solely for the City of Rochester in accordance with professional standards at the time the services were performed and in accordance with the Professional Services Agreement between the City of Rochester and Municipal Financial Services. This document is governed by the specific scope of work in the Agreement passed and adopted by the Common Council of the City of Rochester on April 12, 2021; it is not intended to be relied upon by any other party. We have relied on information or instructions provided by the City of Rochester and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Appendix A: Customer Wastewater Discharge Characteristics

Appendix B: Cash Flow, Reserves and Debt Coverage

Appendix C: Unit Costs, Charges and High Strength Surcharges

Appendix D: Plant Investment Fees

Appendix E: Presentation for City Council Study Session

Appendix F: Information Sheet for City Council Study Session

Appendix G: Request for Council Action (RCA) and Resolution 231-21 Approving the Wastewater Rates and Fees 2022-2027