

How to Commit a Rate Study

(And Get Away With It)



What is a Rate Study

A Rate Study is a loose term used to describe a number of tasks

Typical Tasks.

- Revenue Sufficiency
- Cost of Service Analysis
- Design of Monthly User Rates
- Design of Impact (Connection Fees)
- Miscellaneous Fees Analyses
- Wholesale Rate Design
- Capital Finance Plan



Issues Facing Utilities

There is a multitude of issues that may lead you to consider completing a rate study, including:

- Inflation
- Changes in Operating and Maintenance Expenses
- Capital Improvements Plan and Projects
- Growth / New Development
- Rate Structure
- Regulatory Requirements

Do I Need A Rate Study

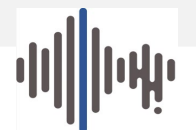
Identify If You Need to Prepare for a Rate Study or Revenue Sufficiency Analysis





Financial Metrics

Identify areas of focus for your utility



Financial Metrics

Metrics can identify your areas of focus & how you compare to similar utilities.



Identify the financial metrics that are important to your utility.

- FitchRatings, Inc. publishes national medians for the Water and Sewer Industry
- Medians are summarized by geographic area, size, and rating category (AAA, AA, A)
- Medians can provide a clear comparison to your peers
- Calculating metrics annually and historically can give you a better feel for the financial position of your utility and its outlook.



Key Metric – All-In Debt Service Coverage

Indicates the financial margin to meet current debt service with current revenues available for debt service.

Information Needed

- Information can be found on Annual Comprehensive Financial Report (ACFR) (Audit)
- Current year's revenues available for debt service divided by the current year's total debt service
 - Revenues available = Total operating revenues less operating expenses (excludes depreciation)
 - Operating Revenues – Found on Statement of Revenues, Expenses, and Change in Net Position
 - Operating Expenses – Found on Statement of Revenues, Expenses, and Change in Net Position
 - Total debt service = total senior and subordinate debt due in the current fiscal year
 - Annual Debt Service – Found on Statement of Cash Flows or Notes to Financial Statements (Long-term Debt or Liability)
 - Note – This metric could be different than the Rate Covenant requirement in your Bond Resolution



Key Metric – All-In Debt Service Coverage

Data

STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET P For the Years Ended June 30, 2021 and 2020

	<u>2021</u>
Operating revenues:	
Water sales	\$ 20,869,733
Sewer fees	6,159,731
Water and sewer tap fees	2,118,807
Reimbursements	2,625,588
Other services	<u>1,523,963</u>
Total operating revenues	<u>33,297,822</u>
Operating expenses:	
Cost of sales	5,107,723
Personnel services and employee benefits	6,788,609
Depreciation and amortization	5,605,232
Other services and charges	<u>4,609,165</u>
Total operating expenses	<u>22,110,729</u>
Operating income	<u>11,187,093</u>

STATEMENTS OF CASH FLOWS For the Years Ended June 30, 2021 and 2020

	<u>2021</u>
Cash flows from operating activities:	
Receipts from customers	\$ 34,380,376
Payments to vendors	(12,327,484)
Payments to employees	<u>(4,644,650)</u>
Net cash provided by operating activities	<u>17,408,242</u>
Cash flows from noncapital financing activities:	
Contributions - DRIP program	<u>66,195</u>
Cash flows from capital and related financing activities:	
Repayment of bonds payable	(2,970,000)
Interest paid	(2,950,404)
Acquisition of capital assets	(4,558,124)
Acquisition of intangible assets	(76,941)
Proceeds from sales of capital assets	125,319
Proceeds from issuance of note payable	<u>-</u>
Net cash used in capital and related financing activities	<u>(10,430,150)</u>



Key Metric – All-In Debt Service Coverage

Calculation

All-In Debt Service Coverage

Water Sales	\$	20,869,733
Sewer Fees	\$	6,159,731
Water and Sewer Tap Fees	\$	2,118,807
Reimbursements	\$	2,625,588
Other Services	\$	1,523,963
	\$	33,297,822
Operating Expenses	\$	22,110,729
Less: Depreciation	\$	(5,605,232)
Operating Expenses	\$	16,505,497
Net Revenues	\$	16,792,325
Annual Debt Service	\$	5,920,404
All-In Debt Service Coverage		283.63%

Take Note

- Fitch Median = 270% (all credits) (190% A credits)
- Financial Statements may include debt service coverage calculation prepared in accordance with Bond Resolution.
- Indicates Operating Margin Available to Hedge Against Risk



Key Metric – Total Outstanding Debt to Net Plant Assets

Indicates the Existing Debt Leverage Relative to System Equity (How much of your House is Mortgaged)

Information Needed

- Information can be found on Annual Comprehensive Financial Report (ACFR) (Audit)
- Total amount of utility long-term debt divided by the net asset value of the plant
 - Total Outstanding Debt – Found on the Statement of Net Position (Assets & Liabilities)
 - Current Liabilities section shows the Bonds and Notes Payable due in the next 12 months
 - Noncurrent Liabilities section shows the Bonds and Notes Payable (due in more than 12 months)
 - Net Plant Assets – Found on the Statement of Net Position (Assets & Liabilities)
 - Noncurrent Assets section shows non-depreciable and depreciable capital assets
 - Does not include cash, receivables, inventories, or prepaid expenses



Key Metric – Total Outstanding Debt to Net Plant Assets

Data

STATEMENTS OF NET POSITION June 30, 2021 and June 30, 2020

	<u>2021</u>
Assets	
Current assets:	
Cash and cash equivalents	\$ 33,546,641
Receivables:	
Customer accounts, net	1,609,829
Other receivables	491,428
Inventories	489,175
Prepaid expenses	224,459
Restricted Assets:	
Cash and Cash Equivalents	183,405
Total current assets	<u>36,544,937</u>
Noncurrent assets:	
Capital assets:	
Nondepreciable	8,135,842
Depreciable, net	136,609,554
Liabilities	
Current liabilities:	
Accounts payable	1,372,987
Accrued liabilities	1,089,051
Accrued interest payable	237,354
Bonds payable - current portion, net of unamortized amounts	3,404,477
Compensated absences due within one year	168,097
Total current liabilities	<u>6,271,966</u>
Noncurrent liabilities:	
Deposits payable	1,451,636
Bonds payable - noncurrent portion, net of unamortized amounts	73,994,923
Note Payable	5,072,506
Compensated absences due in more than one year	82,794
Total noncurrent liabilities	<u>80,601,859</u>
Total liabilities	<u>86,873,825</u>



Key Metric – Total Outstanding Debt to Net Plant Assets

Calculation

Total Outstanding Debt to Net Plant Assets

Capital Assets

Nondepreciable \$ 8,135,842

Depreciable, Net \$136,609,554

Net Plant Assets \$144,745,396

Debt Outstanding

Bonds Payable - Current Portion \$ 3,404,477

Bonds Payable - Non-Current Portion \$ 73,994,923

Note Payable \$ 5,072,506

Total Outstanding Debt \$ 82,471,906

Total Outstanding Debt to Net Plant Assets 57%

Take Note

- Fitch Median = 41% (all credits) (71% A credits)
- Indicates How Much Leveraging Capacity You Have For the Future
- Consider Adding Construction-Work-In-Process if large or debt-funded projects are underway
- This Example Utility is leveraged greater than the median and may need to increase “Pay-Go” funding in the future



Key Metric – Operating Margin

Indicates the financial margin to pay operating expenses and capital re-investment

Information Needed

- Information can be found on Annual Comprehensive Financial Report (ACFR) (Audit)
- Operating revenues minus operating expenses (excluding depreciation), divided by operating revenues
 - Operating Revenues – Found on Statement of Revenues, Expenses, and Change in Net Position
 - Operating Expenses – Found on Statement of Revenues, Expenses, and Change in Net Position
 - Excludes Depreciation



Key Metric – Operating Margin

Data

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Key Metric – Operating Margin

Calculation

Operating Margin

Gross Revenues	\$ 33,297,822
Less: Operating Expenses	<u>\$ (16,505,497)</u>
Net Revenues	\$ 16,792,325

Operating Margin **50.43%**

Take Note

- Fitch Median = 44% (all credits) (43% A credits)
- Indicates margin available to fund operating expenses and cash available to fund capital reinvestment
- Capital reinvestment margin can be achieved through Pay-Go funding or debt funding
- This Example Utility has a strong margin, but we know that a large portion of net revenues is used to pay debt service.



Key Metric – Free Cash as Percent of Depreciation

Indicates the annual financial capacity to maintain facilities at the current level of service from existing cash flows

Information Needed

- Information can be found on Annual Comprehensive Financial Report (ACFR) (Audit)
- Current surplus revenues after the payment of operating expenses, debt service, and transfers out divided by the current year's depreciation
 - Surplus (Operating) Revenues – Found on Statement of Revenues, Expenses, and Change in Net Position
 - Operating Expenses – Found on Statement of Revenues, Expenses, and Change in Net Position
 - Excludes Depreciation
 - Transfers Out – Found on Statement of Revenues, Expenses, and Change in Net Position
 - Debt service = total senior and subordinate debt due in the current fiscal year
 - Annual Debt Service – Found on Statement of Cash Flows or Notes to Financial Statements (Long-term Debt or Liability)



Key Metric – Free Cash as Percent of Depreciation

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Net cash used in capital and related financing activities	<u>(10,430,150)</u>



Key Metric – Free Cash as Percent of Depreciation

Calculation

Free Cash as Percent of Depreciation

Gross Revenues	\$ 33,297,822
Less: Operating Expenses	\$ (16,505,497)
Less: Debt Service	<u>\$ (5,920,404)</u>
Free Cash	\$ 10,871,921
Depreciation	\$ 5,605,232

Free Cash as Percent of Depreciation **193.96%**

Take Note

- Fitch Median = 135% (all credits) (127% A credits)
- Indicates margin of current re-investment into the system
- Depreciation should be considered the minimum reinvestment level since depreciation is based on historical cost and not current replacement value
- This Example Utility has a strong margin, but we know that the replacement of existing assets will be significantly higher.



Key Metric – Days of Cash on Hand

Indicates the financial flexibility to pay for near-term obligations

Information Needed

- Information can be found on Annual Comprehensive Financial Report (ACFR) (Audit)
- Current unrestricted cash and investments plus any restricted cash and investments (if available for general system purposes), divided by operating expenditures minus depreciation, divided by 365
 - Unrestricted Cash and Investments and Restricted Cash – Found on Statement of Net Position
 - Operating Expenses – Found on Statement of Revenues, Expenses, and Change in Net Position
 - Excludes Depreciation



Key Metric – Days of Cash on Hand

Data

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Operating income	<u>11,187,093</u>

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Cash and cash equivalents	\$ 33,546,641
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Other receivables	491,428
Inventories	489,175
Prepaid expenses	224,459
Restricted Assets:	
Cash and Cash Equivalents	<u>183,405</u>
Total current assets	<u>36,544,937</u>
Noncurrent assets:	
Capital assets:	
Nondepreciable	8,135,842
Depreciable, net	136,609,554



Key Metric – Days of Cash on Hand

Calculation

Days of Cash on Hand

Unrestricted Cash and Cash Equivalent: \$ 33,546,641

Operating Expenses (Less Deprecation) \$ 16,505,497

Days Per Year 365

1 Day of Operating Expense \$ 45,221

Days of Cash on Hand

742

Take Note

- Fitch Median = 545 (all credits) (315% A credits)
- Indicates hedge against risk and ability to pay for near term obligations
- This Example Utility has strong reserves, but we do not know what the long-term capital needs are.
- Consider bifurcating reserves into separate “buckets” for operations and capital re-investment



Financial Metrics

Conclusions

- Identify the financial metrics that are important to your utility.
- Consider how your metrics compare to similar utilities. Fitch publishes medians for geographic area, size, and rating category (AAA, AA, A)
- Calculating metrics annually can give you an understanding of your financial position and the direction of your utility





Revenue Sufficiency

Developing a Financial Forecast and Plan



What is Revenue Sufficiency

Revenue Sufficiency Refers to the Ability of Revenues to Meet Your Financial Goals

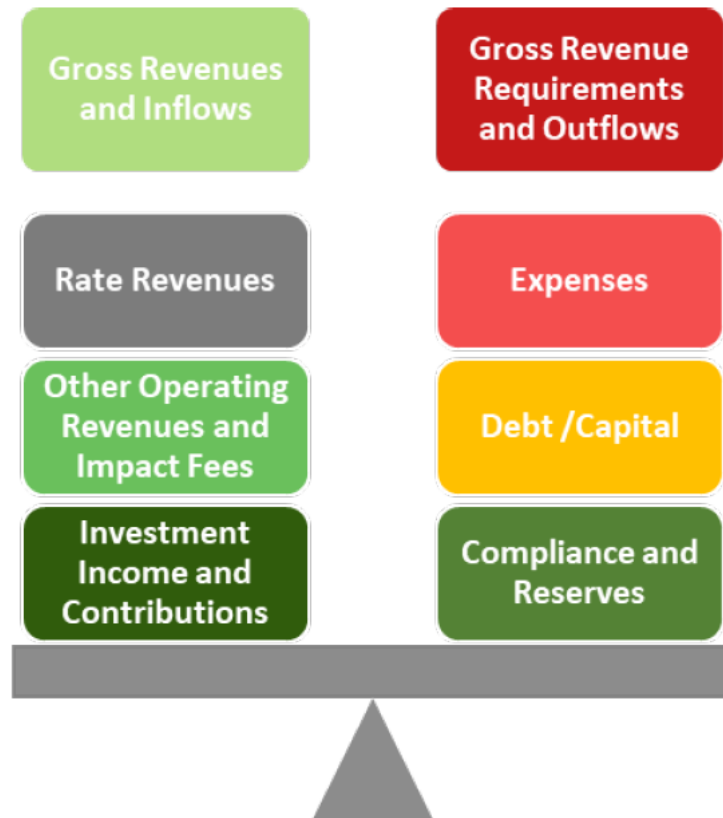
Required Tasks

- Projection of Revenues
- Projection of Operating Expenses
- Identification of Existing and Proposed Debt Service Requirements
- Development of “Pay-Go” Capital Funding Deposits
- Development of Capital Funding Plan
- Projection of Fund (Cash) Balances



Revenue Sufficiency Basics

Developing a financial plan that meets the utilities goals and objectives



- + Cost of Operation and Maintenance
- + Capital Expenditures and Debt Service
- + Fund Transfers Out/Covenant Compliance
- Other Revenue and Income
- Fund Transfers-In and Contributions
- = Net Revenue Requirements (Funded from Rates)

Goal – To Identify all revenues (inflows) that the utility can use to meet its identified requirements (outflows) to provide high-quality service.



Revenue Projections

Developing a projection of rate and other revenues

Rate Revenues

- Rate Revenues include all revenues that rate adjustments could or would be applied.
 - Monthly Base Charges for Utility Services
 - Volumetric Charges (Metered Consumption)
 - Possible Miscellaneous Fees
 - Have Adjustments been applied historically
 - Has the Utility's cost increased

Other Revenues

- Other Revenues Include all revenues that rate adjustments would not be applied.
 - Interest Income
 - Sale of Scrap
 - Impact Fees
 - Contractual Rates
 - Wholesale Rates
 - Possible Miscellaneous Fees
 - Have Adjustments not been applied historically

Goal – Identify the amount of revenues that can be adjusted with a rate increase and which revenue source can not.

Example – Interest Income cannot increase because we implemented a rate adjustment



Revenue Projections

Example

			Recognized
Revenue Line Items	Budget	Adjustments	Rate Revenues
Water Sales	\$ 20,869,733	\$ -	\$ 20,869,733
Sewer Fees	\$ 6,159,731	\$ -	\$ 6,159,731
Water and Sewer Tap Fees	\$ 2,118,807	\$ (2,118,807)	\$ -
Other Services	\$ 1,523,963	\$ (1,523,963)	\$ -
	\$ 30,672,234	\$ (3,642,770)	\$ 27,029,464

The Example Utility will not apply rate adjustments to Water and Sewer Tap Fees or Other Services. These Revenues have been excluded from the calculation of rate revenues



Revenue Projections

Example (Cont'd.) – Adding Revenue For New Growth

Estimate Revenue From New Developments Based on New Homes or Equivalent Residential Connections (ERCs)

Water Bill	
Base Charge	\$ 10.00
Volumetric Charge (5,000 Gallons)	\$ 12.50
Wastewater Bill	
Base Charge	\$ 12.00
Volumetric Charge (5,000 Gallons)	\$ 20.00
Total Monthly Bill	\$ 54.50
Annual Bill	\$ 654.00

Next Add Additional Revenues from Growth to our existing revenue forecast.

	B	C	D	E	F	G
25		2023	2024	2025	2026	2027
26	Existing Rate Revenues	\$ 27,029,464	\$ 27,192,964	\$ 27,323,764	\$ 27,421,864	=F32
27						
28	New Customers/ERCs	250	200	150	100	100
29	Average Revenue Per New Customer	\$ 654.00	\$ 654.00	\$ 654.00	\$ 654.00	\$ 654.00
30	New Customer Additional Revenues	\$ 163,500	\$ 130,800	\$ 98,100	\$ 65,400	=G28*G29
31						
32	Estimated Rate Revenues	\$ 27,192,964	\$ 27,323,764	\$ 27,421,864	\$ 27,487,264	=G26+G30



Operating and Maintenance Expense Projections

Developing a projection of operating and maintenance expenses

- Operating Expenses can be identified using the Utility's budget for the current or upcoming fiscal year.
- Comparing the budget to the most recently completed ACFR (ACFR) can assist help you gauge the reasonableness of the budget
- Items that should not be included in the projection of operating expenses
 - Depreciation Expense
 - Debt Service Payments
 - Transfers to Renewal and Replacement Fund
 - Transfers to General Fund
 - Capital Improvement Projects (that would be depreciated)
- Note - If your utility has Bonds outstanding – Consider reading the Rate Covenant and Flow of Funds requirements in the Official Statement or Bond Resolution for a definition of Operating and Maintenance Expenses



Operating and Maintenance Expense Projections

Example

	B	C	D	E	F	G	H	I	J
		Budget/Actual	Adjustment	2023	Inflation Factor	2024	2025	2026	2027
34									
35	Operating Expenses								
36	Cost of Sales (Goods Sold)	\$ 5,107,723	\$ -	\$ 5,107,723	3.5%	\$ 5,286,493	\$ 5,471,521	\$ 5,663,024	=I36*(1+\$F36)
37	Personnel Services & Benefits	\$ 6,788,609	\$ -	\$ 6,788,609	10.0%	\$ 7,467,470	\$ 8,214,217	\$ 9,035,639	\$ 9,939,202
38	Depreciation and Amortization	\$ 5,605,232	\$ (5,605,232)	\$ -	0.0%	\$ -	\$ -	\$ -	\$ -
39	Other Services and Charges	\$ 4,609,165	\$ -	\$ 4,609,165	4.5%	\$ 4,816,577	\$ 5,033,323	\$ 5,259,823	\$ 5,496,515
40	Total Operating Expenses	\$ 22,110,729	\$ (5,605,232)	\$ 16,505,497	\$ 0	\$ 17,570,541	\$ 18,719,061	\$ 19,958,485	\$ 21,296,947

Steps Required to Complete Operating and Maintenance Expense Projections

1. Identify Starting Point – Either Current Budget or Most Recently Completed Actual Operating Results (Audit)
2. Adjustments – Remove Non-Cash Expenses (Depreciation) or Add Additional Requirements (New Personnel)
3. Identify Inflationary Assumptions – Labor is typically largest cost and Cost of Living Adjustments May Be Known. Consider Current Change in the Consumer Price Index (Available on Bureau of Labor Statistics Website)
4. Project Operating Costs for Future Years – Multiply Prior Year's Estimated Expense by 1 + Inflationary Factor



Debt Service Payment Projections

Developing a projection of the existing debt service payments

- Debt service payments for existing debt can be identified using the Utility's amortization schedules.
 - These can be requested from the finance department, if not readily available.
 - The City's ACFR or Audit may have the schedules available on an annual basis in the Notes Section.

NOTES TO FINANCIAL STATEMENTS

June 30, 2021 and June 30, 2020

NOTE 5 – LONG-TERM DEBT

Revenue bond debt service requirements to maturity are as follows:

<u>Year Ending June 30,</u>	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2022	\$ 3,090,000	\$ 2,808,224	\$ 5,898,224
2023	3,075,000	2,680,459	5,755,459
2024	3,205,000	2,549,409	5,754,409
2025	3,345,000	2,411,516	5,756,516
2026	3,490,000	2,265,969	5,755,969
2027-2031	19,215,000	9,343,239	28,558,239
2032-2036	22,965,000	5,442,928	28,407,928
2037-2040	15,130,000	1,461,650	16,591,650
Total	<u>\$ 73,515,000</u>	<u>\$ 28,963,394</u>	<u>\$ 102,478,394</u>



Debt Service Payment Projections (Cont'd.)

Developing a projection of the existing debt service payments

- Proposed / additional debt service schedules may need to be estimated
 - Florida State Revolving Loan Fund – Provides low-cost financing for utility capital improvement projects.
 - Amortization Schedules are not available until project completion
 - May Require Estimate For Forecasting Purposes
 - Assumptions Required – Term, Interest Rate, Issuance Costs, Capitalized Interest, Capital Cost, Project Completion Date
- Example Calculation of Estimated Debt Service Payment (Microsoft Excel)

	B	C	D
43	SRF - Clean Water Loan		
44	Project Cost - Ryan's Forcemain	\$ 10,000,000	
45	Loan Admin. Fee (2.0% of Project Cost)	\$ 200,000	=C44*0.02
46	Total Loan Amount	\$ 10,200,000	=C44+C45
47	Term (Years)	20	
48	Interest Rate	2.00%	
49	Estimated SRF Loan Annual Payment	\$623,799	=PMT(C48,C47,-C46)



Debt Service Payment Projections (Cont'd.)

Example

- Projections Based on Available Information.
- Amounts shown are presented on Cash Basis
- Consider an Accrual Basis if payments are not level or if required by Bond Resolution (Rate covenant). This would allow for payments to be recovered in the 12 months prior to becoming due.
 - Example – Money Must be Saved Prior to Making Payment.

	B	C	D	E	F	G
51		2023	2024	2025	2026	2027
52	Projected Debt Service Payments					
53	Existing Debt Service (From ACFR)	\$ 5,755,459	\$ 5,754,409	\$ 5,756,516	\$ 5,755,969	\$ 5,711,648
54	Proposed SRF Loan (Estimated)	\$ -	\$ 623,799	\$ 623,799	\$ 623,799	\$ 623,799
55	Total Projected Debt Service Payments	\$ 5,755,459	\$ 6,378,208	\$ 6,380,315	\$ 6,379,768	\$ 6,335,446



Capital Funding and Other Transfers Projections (Cont'd.)

Developing a projection for capital funds and other transfers

- Renewal and Replacement (R&R) Fund Transfers
 - Most Utilities have a dedicated capital funding account or fund. These funds or accounts can have many names.
 - Purpose – is to provide a dedicated mechanism for the funding of capital improvements and re-investment
 - Consider Requirements of R&R Fund
 - Bond Resolution – Flow of Funds Provisions may include a minimum amount that may be required to be transferred annually
 - Typically linked to a percent of total operating revenues. Example 10% of the prior year's rate or operating revenues
 - Transfer should be levelized (stable) for the forecast period for rate-setting purposes
 - This will be different from capital spending which generally varies from year to year
- Other Transfers
 - General Fund Transfers – Payment-In-Leu-of-Tax (PILOT or Franchise Fee Payments), Indirect Cost Allocations
 - Transfers to Reserves – Build up of working capital to meet management goals and objectives



Capital Funding and Other Transfers Projections

Developing a projection for capital funds and other transfers

- Things to consider when developing your estimated transfer
 - Calculate Minimum Transfer Requirements (e.g., 10% of Rate Revenues)
 - Compare it to Annual Depreciation Expense (represents the minimum level of funding to maintain Utility Net Position)
 - Compare it to recent historical capital spending. Are you depositing more than you spend
 - Compare it to the average annual spending of Capital Improvement Plan

R&R Fund Deposit Considerations

Depreciation (FY-2021)	\$	5,605,232
10% of Operating Revenues	\$	3,067,223
Historical Spending (CWIP)	\$	6,125,080
CIP Annual Average (Less Debt Funding)	\$	9,537,025
Average of All Considerations	\$	6,083,640
Recognized R&R Fund Deposit	\$	9,500,000



Developing Revenue Requirements and Surplus/(Deficiency)

Combining all the pieces of your financial forecast to identify revenue sufficiency

- Gross Revenue Requirements = sum of operating and maintenance expense, existing and proposed debt service, renewal and replacement fund deposits, and other requirements
- Less: Other Revenues (Revenues that cannot be adjusted)
- Net Revenue Requirements = The Amount we want to fund from rates

	2023	2024	2025	2026	2027
Gross Revenue Requirements					
Operating and Maintenance Expenses	\$ 16,505,497	\$ 17,570,541	\$ 18,719,061	\$ 19,958,485	\$ 21,296,947
Existing Debt Service	\$ 5,755,459	\$ 5,754,409	\$ 5,756,516	\$ 5,755,969	\$ 5,711,648
Proposed Debt Service	\$ -	\$ 623,799	\$ 623,799	\$ 623,799	\$ 623,799
R&R Fund Deposits	\$ 9,500,000	\$ 9,500,000	\$ 9,500,000	\$ 9,500,000	\$ 9,500,000
Other Requirements	\$ -	\$ -	\$ -	\$ -	\$ -
Total Gross Revenue Requirements	\$ 31,760,956	\$ 33,448,748	\$ 34,599,375	\$ 35,838,253	\$ 37,132,393
Less: Other Revenues	\$ (3,642,770)	\$ (3,642,770)	\$ (3,642,770)	\$ (3,642,770)	\$ (3,642,770)
Net Revenue Requirements	\$ 28,118,186	\$ 29,805,978	\$ 30,956,605	\$ 32,195,483	\$ 33,489,623
Projected Rate Revenues (Under Existing Rates)	\$ 27,192,964	\$ 27,323,764	\$ 27,421,864	\$ 27,487,264	\$ 27,552,664
Existing Surplus/(Deficiency) - Amount	\$ (925,222)	\$ (2,482,214)	\$ (3,534,741)	\$ (4,708,219)	\$ (5,936,959)
Existing Surplus/(Deficiency) - Percent	(3.40%)	(9.08%)	(12.89%)	(17.13%)	(21.55%)



Developing Rate Adjustments

Use your financial forecast to develop a rate adjustment plan

	B	C	D	E	F	G	H	
85		2023	2024	2025	2026	2027		
86								
87	Net Revenue Requirements	\$ 28,118,186	\$ 29,805,978	\$ 30,956,605	\$ 32,195,483	\$ 33,489,623		
88								
89	Rate Revenues - Under Existing Rates	\$ 27,192,964	\$ 27,323,764	\$ 27,421,864	\$ 27,487,264	\$ 27,552,664		
90	Cumulative Prior Year's Rate Adjustments	N/A	4.00%	8.16%	12.49%	16.99%	= (1+F88)*(1+F92)-1	
91	Revenues From Prior Year Adjustments	N/A	\$ 1,092,951	\$ 2,237,624	\$ 3,432,170	\$ 4,680,056	=G87*G88	
92	Proposed Rate Revenues	\$ 27,192,964	\$ 28,416,715	\$ 29,659,488	\$ 30,919,434	\$ 32,232,720	=G89+G87	
93								
94	Proposed Rate Adjustment	4.00%	4.00%	4.00%	4.00%	4.00%		
95	Revenues From Current Year Adjustment	\$ 1,087,719	\$ 1,136,669	\$ 1,186,380	\$ 1,236,777	\$ 1,289,309	=G92*G90	
96	Projected Rate Revenues (Under Existing Rates)	\$ 28,280,683	\$ 29,553,383	\$ 30,845,868	\$ 32,156,211	\$ 33,522,029	=G90+G93	
97								
98	Projected Surplus/(Deficiency) - Amount	\$ 162,497	\$ (252,595)	\$ (110,738)	\$ (39,272)	\$ 32,405	=G94-G85	
99	Projected Surplus/(Deficiency) - Percent	0.57%	(0.85%)	(0.36%)	(0.12%)	0.10%		

- Surplus/(Deficiency) represents a “deposit to” / “use of” reserves (cash)
- Confirm that your calculation of rate revenues recognizes rate adjustments assumed in prior years
- Goal is to develop a rate plan that is predictable, stable, and has justification
- Update it annually or as conditions change





Rate Design

Designing Monthly Base and Volumetric Rates



Why Change Rates

Changing Rate Structure to Meet Your Objectives

Considerations

- How Will Your Customers Be Impacted
- Fixed vs. Variable Revenue Recovery (Stability)
- Defensibility (Can We Defend Our Charges)
- Conservation Incentives
- Cost of Service Provided
- Affordability

CURRENT USAGE	100 CU FEET	GALLONS	GALLONS/DAY	DAYS OF SERVICE
PREVIOUS YEAR USAGE	26	19,451	303.92	6
	18	13,466	210.40	

PAYMENTS RECEIVED AS OF 07/24/07 ARE REFLECTED ON THIS WATER STATEMENT.
PAYMENTS RECEIVED AFTER 07/24/07 WILL BE REFLECTED ON YOUR NEXT WATER STATEMENT.



Understanding Your Existing Rates

Before changing your rate structure, it is important to understand your existing rates

- Consider How your rates affect revenue stability and your customers

Customer Class	Water Service	Wastewater Service
Base Charges		
Customers Served by 3/4-Inch to 2-Inch Meters	\$12.07	\$4.73
Customers Served by Meters Greater than 2-Inch	16.12	4.73
Consumption Charges (per 1,000 Gallons of Metered Water)		
Minimum - 0 – 1,000 Gallons	\$5.91	\$10.18
1,001 Gallons and Up	5.91	10.18

- The example utility collects 90% of its rate revenues from Consumption Charges (Industry Average = 70%)

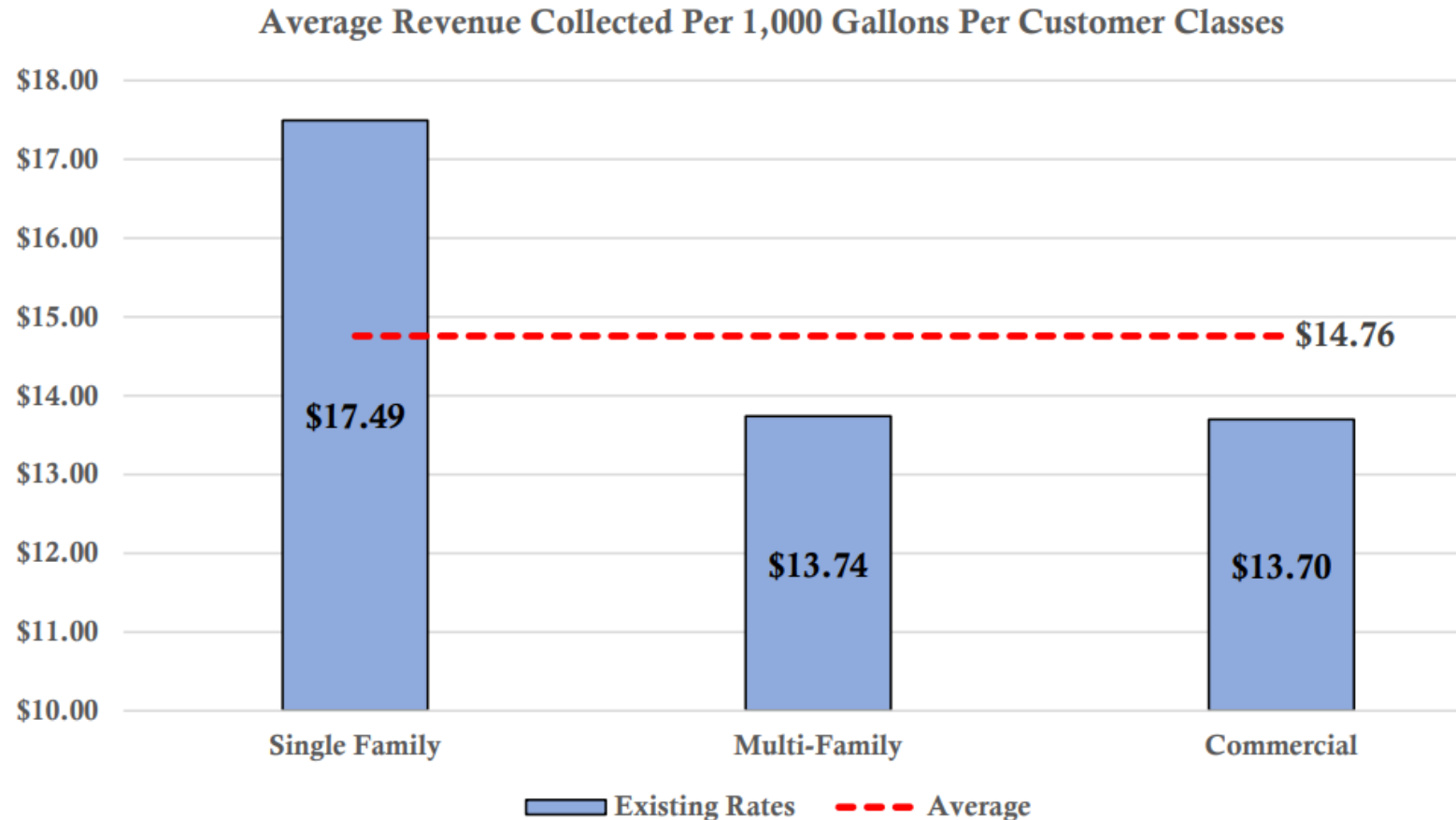
Rate Type	Existing Rates
Amount of Revenues	
Base Fees	\$4,666,501
Volumetric Fees	42,950,983
Total Amount of Revenues	\$47,617,484
Percentage of Revenues	
Base Fees	9.8%
Volumetric Fees	90.2%



Understanding Your Existing Rates

Before changing your rate structure, it is important to understand your existing rates

- Consider How your rates affect each of your customer classes (e.g. residential, multi-family, commercial)
 - Calculate the average revenue collected per 1,000 gallons (Total Class Revenue / Total Billed Units (1,000 Gallons))
 - Example – Single Family Customers Pay on Average 27% More than Other Customer Classes



Calculating Proposed Rates

How can I calculate proposed retail service rates that are fair and equitable

- Calculating retail service rates starts with identifying equivalent units (e.g., base vs. volumetric charges)
 - Volumetric Charges = Identify How Many Billing Units (1,000 Gallons) fall within each proposed tier (conservation rate structure)
 - Identify How Much Revenue You Want to Collect From the Charge Application (Increase Revenue Stability)
 - Identify the Basis for Equivalency Factor Used
 - Example Utility – Capacity Reserved Per ERC = 250 Gallons Per Day (Rounded to 7,000 Gallons Per Month)
 - Tier 2 has 1.25 Equivalency Factor Based on Base Charge amortized over 7,000 Gallons (Recovers Monthly Cost of Capacity Utility Could Sell to Another Customer)
 - Tier 3 has 1.56 Equivalency Factor Based on Base Charge + Impact Fee amortized over 7,000 Gallons (Recovers Total Cost of Capacity Utility Could Sell to Another Customer)

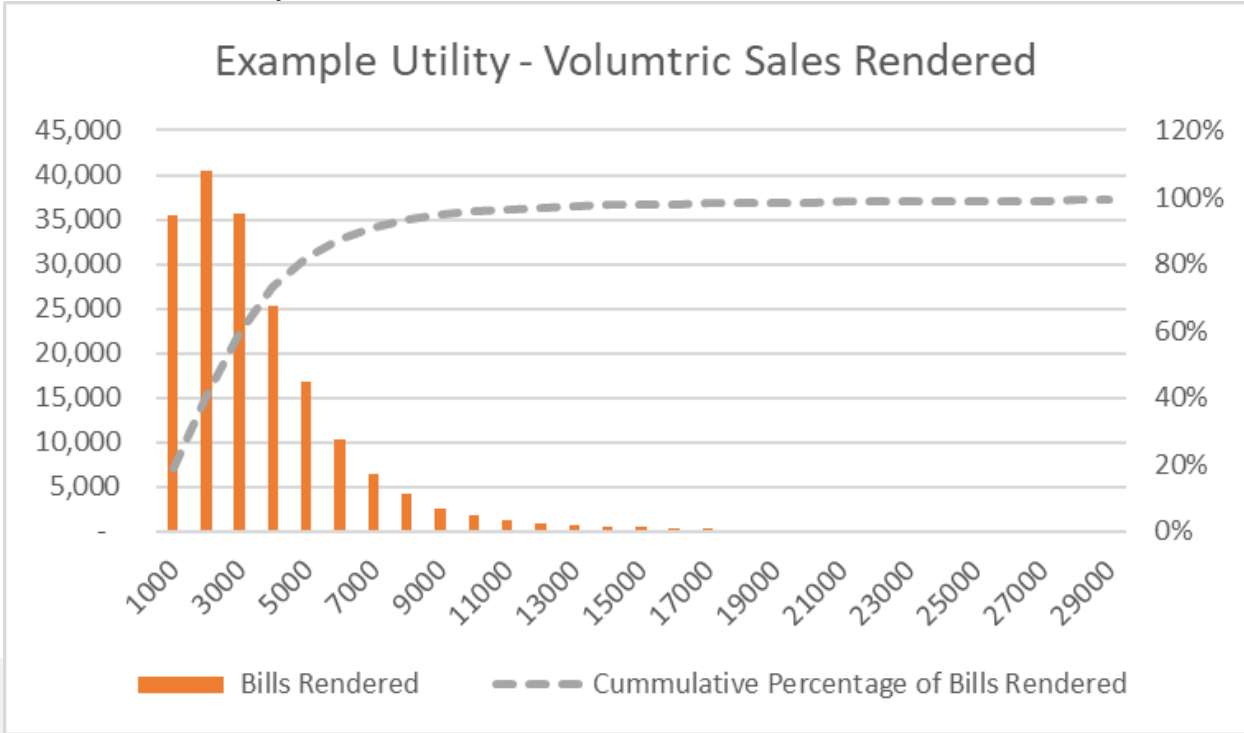
Description	Billed Sales 1,000 Gallons	Equivalent Units	Proposed Rates	Proposed Revenues
SINGLE FAMILY RESIDENTIAL				
Tier 1 - 0-7,000 Gallons	633,356	1.00	\$ 4.80	\$ 3,040,975
Tier 2 - 7,001-14,000 Gallons	64,889	1.25	6.00	389,657
Tier 3 - 14,001 Gallons and Up	122,841	1.56	7.48	918,810
Total Metered Flow	821,086			\$ 4,349,442
Total Equivalent Flow	905,876			



Calculating Proposed Rates

How can I calculate the flow billed in each proposed tier

- Summarize Billing Data For Equivalent Unit Calculation
 - Count the Number of Bills Rendered per 1,000 Gallon Increments
 - Example – Monthly Bill With 15,000 Gallons of Metered Flow
 - Tier 1 = 7,000 Gallons
 - Tier 2 = 7,000 Gallons
 - Tier 3 = 1,000 Gallons
 - Example Has 77% of Flow Billed at 7,000 Gallons and Below



			Tier 1	Tier 2	Tier 3
	Number of		Usage Blocks (incremental)		
Metered Gallons	Bills	Total Gallons	7,000	7,000	99,999,999
0	29,851	-	-	-	-
1000	35,404	35,404,000	35,404,000	-	-
2000	40,464	80,928,000	80,928,000	-	-
3000	35,625	106,875,000	106,875,000	-	-
4000	25,384	101,536,000	101,536,000	-	-
5000	16,775	83,875,000	83,875,000	-	-
6000	10,385	62,310,000	62,310,000	-	-
7000	6,374	44,618,000	44,618,000	-	-
8000	4,249	33,992,000	29,743,000	4,249,000	-
9000	2,635	23,715,000	18,445,000	5,270,000	-
10000	1,910	19,100,000	13,370,000	5,730,000	-
11000	1,320	14,520,000	9,240,000	5,280,000	-
12000	953	11,436,000	6,671,000	4,765,000	-
13000	746	9,698,000	5,222,000	4,476,000	-
14000	569	7,966,000	3,983,000	3,983,000	-
15000	477	7,155,000	3,339,000	3,339,000	477,000
16000	333	5,328,000	2,331,000	2,331,000	666,000
17000	283	4,811,000	1,981,000	1,981,000	849,000
18000	228	4,104,000	1,596,000	1,596,000	912,000
19000	201	3,819,000	1,407,000	1,407,000	1,005,000
20000	211	4,220,000	1,477,000	1,477,000	1,266,000
21000	173	3,633,000	1,211,000	1,211,000	1,211,000
22000	139	3,058,000	973,000	973,000	1,112,000
23000	132	3,036,000	924,000	924,000	1,188,000
24000	126	3,024,000	882,000	882,000	1,260,000
25000	125	3,125,000	875,000	875,000	1,375,000
26000	104	2,704,000	728,000	728,000	1,248,000
27000	67	1,809,000	469,000	469,000	871,000
28000	86	2,408,000	602,000	602,000	1,204,000
29000	73	2,117,000	511,000	511,000	1,095,000
30000	1,690	130,762,000	11,830,000	11,830,000	107,102,000
	217,092	821,086,000	633,356,000	64,889,000	122,841,000
Percent of Total			77.14%	7.90%	14.96%



Implementing Proposed Rates

How can I get my proposed rates approved?

- Identify who will be impacted
 - Changing Rate Structures Will Cause Winners and Losers (Some Customers Will See Bills Increase and Some Decrease)
 - Calculate Bill Comparisons – Calculate Monthly Bills Under Existing and Proposed Rates

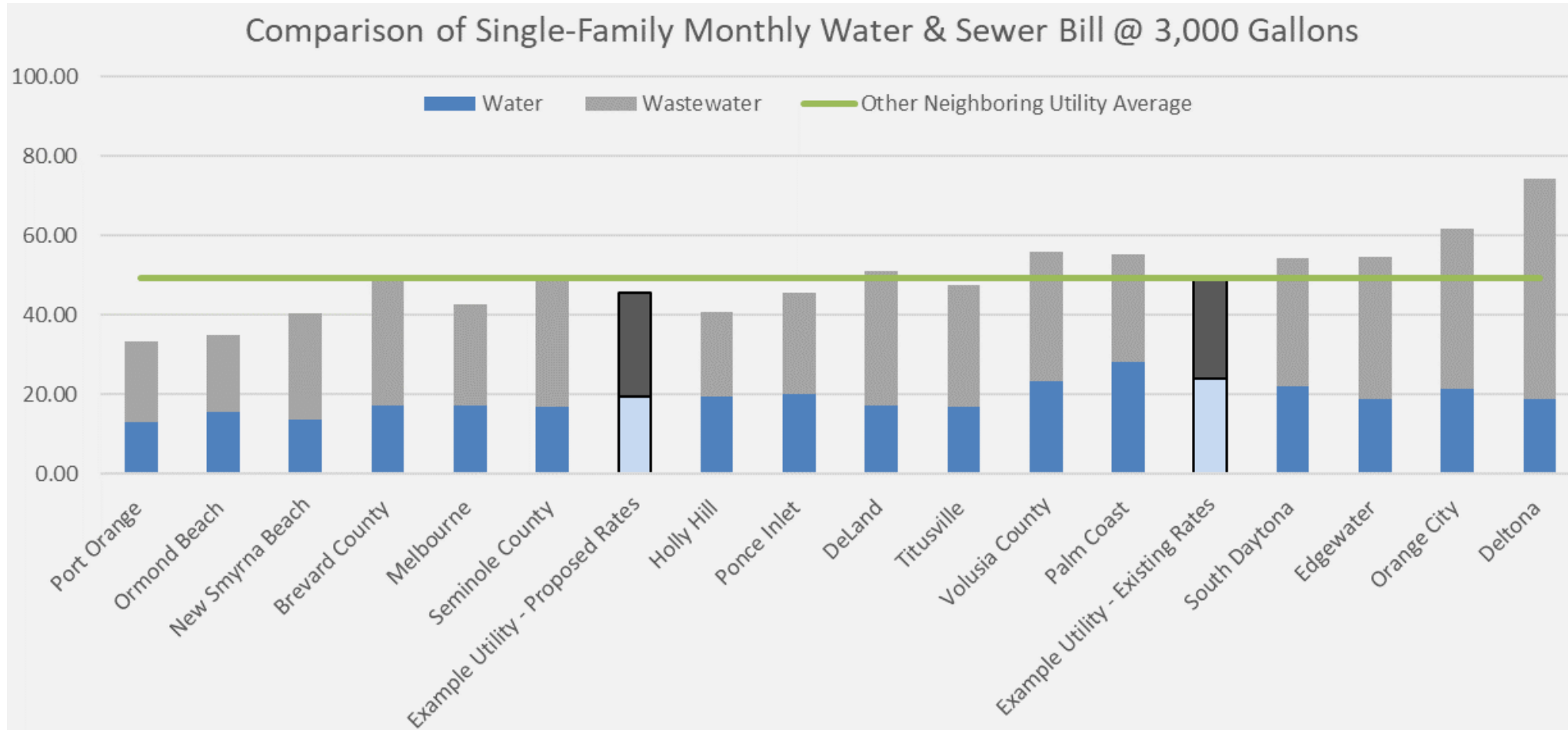
Monthly Metered Gallons	Existing Monthly Bill - FY2021 Rates			Proposed Monthly Bill - FY2022 Proposed Rates			Difference			
	Water	Wastewater	Combined	Water	Wastewater	Combined	Water	Wastewater	Combined Amount	Percent
0	\$ 17.98	\$ 14.91	\$ 32.89	\$ 9.07	\$ 8.87	\$ 17.94	\$ (8.91)	\$ (6.04)	\$ (14.95)	(45.5%)
1,000	17.98	14.91	32.89	14.24	17.54	31.78	(3.74)	2.63	(1.11)	(3.4%)
2,000	23.89	25.09	48.98	19.41	26.21	45.62	(4.48)	1.12	(3.36)	(6.9%)
3,000	29.80	35.27	65.07	24.58	34.88	59.46	(5.22)	(0.39)	(5.61)	(8.6%)
4,000	35.71	45.45	81.16	29.75	43.55	73.30	(5.96)	(1.90)	(7.86)	(9.7%)
5,000	41.62	55.63	97.25	34.92	52.22	87.14	(6.70)	(3.41)	(10.11)	(10.4%)
6,000	47.53	65.81	113.34	40.09	60.89	100.98	(7.44)	(4.92)	(12.36)	(10.9%)
7,000	53.44	75.99	129.43	45.26	69.56	114.82	(8.18)	(6.43)	(14.61)	(11.3%)
8,000	59.35	86.17	145.52	51.73	78.23	129.96	(7.62)	(7.94)	(15.56)	(10.7%)
9,000	65.26	96.35	161.61	58.20	86.90	145.10	(7.06)	(9.45)	(16.51)	(10.2%)
10,000	71.17	106.53	177.70	64.67	95.57	160.24	(6.50)	(10.96)	(17.46)	(9.8%)
11,000	77.08	116.71	193.79	71.14	104.24	175.38	(5.94)	(12.47)	(18.41)	(9.5%)
12,000	82.99	126.89	209.88	77.61	112.91	190.52	(5.38)	(13.98)	(19.36)	(9.2%)
13,000	88.90	137.07	225.97	84.08	121.58	205.66	(4.82)	(15.49)	(20.31)	(9.0%)
14,000	94.81	147.25	242.06	90.55	130.25	220.80	(4.26)	(17.00)	(21.26)	(8.8%)
15,000	100.72	157.43	258.15	98.61	138.92	237.53	(2.11)	(18.51)	(20.62)	(8.0%)
16,000	106.63	167.61	274.24	106.67	147.59	254.26	0.04	(20.02)	(19.98)	(7.3%)



Implementing Proposed Rates

How can I get my proposed rates approved?

- Know How Your Utility's Existing and Proposed Bills Compare



Rate Design Recap

- Know how your existing rates impact your customer
 - Are There Differences in the Average Revenue Collected By Class
 - How Do your Bills Compare to Your Peers
 - Are Your Rates Incentivizing Conservation
 - Do You Have a Basis For the Amounts Your Charging
- How is Your Rate Structure Affecting Revenue Stability
 - Fixed vs. Variable Revenue Recovery
- Implementing Your Rates
 - Be Prepared To Answer Questions
 - Who Gets Impacted (Who's Bill Is Going Up or Down)
 - Is it Fair and Reasonable
 - Give Yourself Time To Change Structure (Writing Resolution, Updating Billing Software, Noticing Customers)





Impact Fees

Recovering The Cost of Capacity



What are Impact Fees?

Capacity (Capital) Cost Recovery

- Fee Applied to New Development to Recover the Pro-rata Share of Infrastructure Built to Serve Growth
- Other Names - Connection Fees, Capacity Fees, Capital Facilities Fees, Capital Recovery Fees, Development Fees, etc.
- Fees Not Intended to Recover the Cost of Physical Connection (Water Main Tap, Meter Set, etc.)
- Fees Should Not be Used to Fund Deficiencies in Capital Needs or Operating Expenses
- Fees May Only be Used to Provide Funding for System Expansions – Related to New Growth

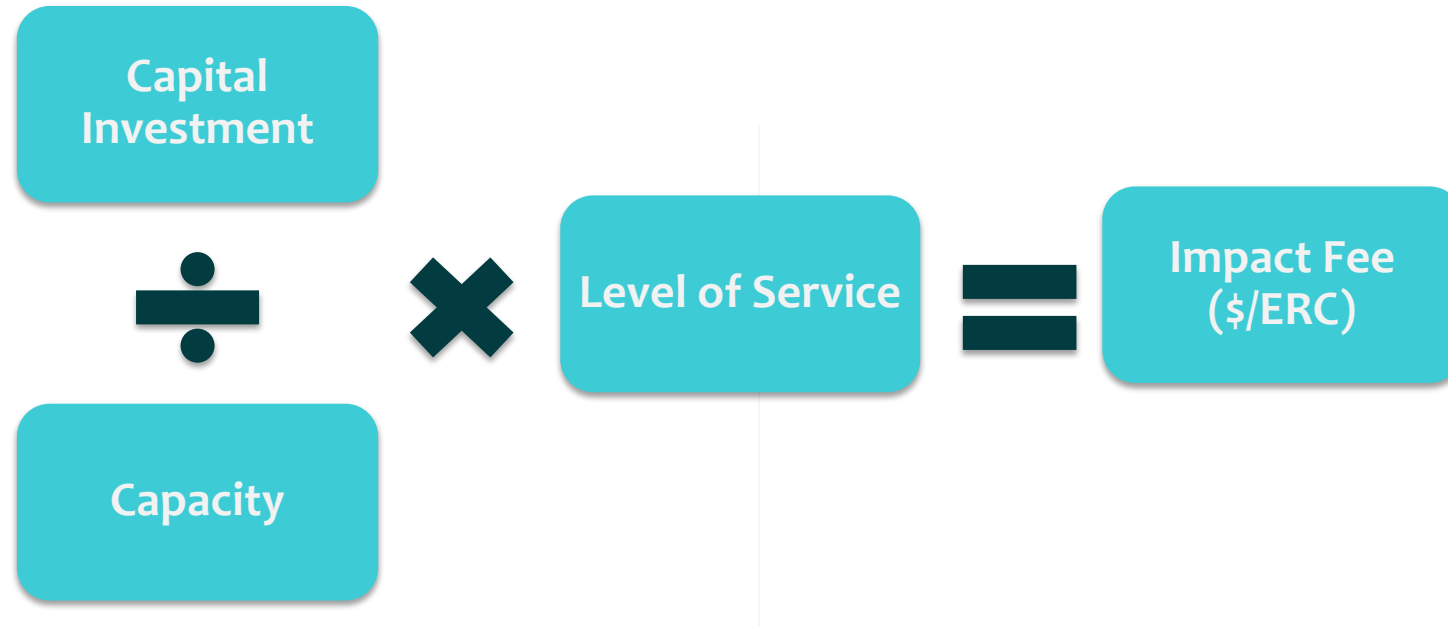
CURRENT USAGE	100 CU FEET	GALLONS	GALLONS/DAY	DAYS OF SERVICE
PREVIOUS YEAR USAGE	26	19,451	303.92	6
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Calculation of Impact Fee

Impact Fees in Their Most Basic Form are Unit Cost Calculation



- Capacity Investment = Infrastructure to Serve Growth (Localized Assets)
- Capacity = Total Daily Reliable System Capacity (Could Be Produced or Deliverable)
- Level of Service = Estimated Demand for One Customer (Equivalent Residential Connection or “ERC”)



Identifying Capital Investment (Cont'd.)

Calculation Methods For Identifying Capital Investment

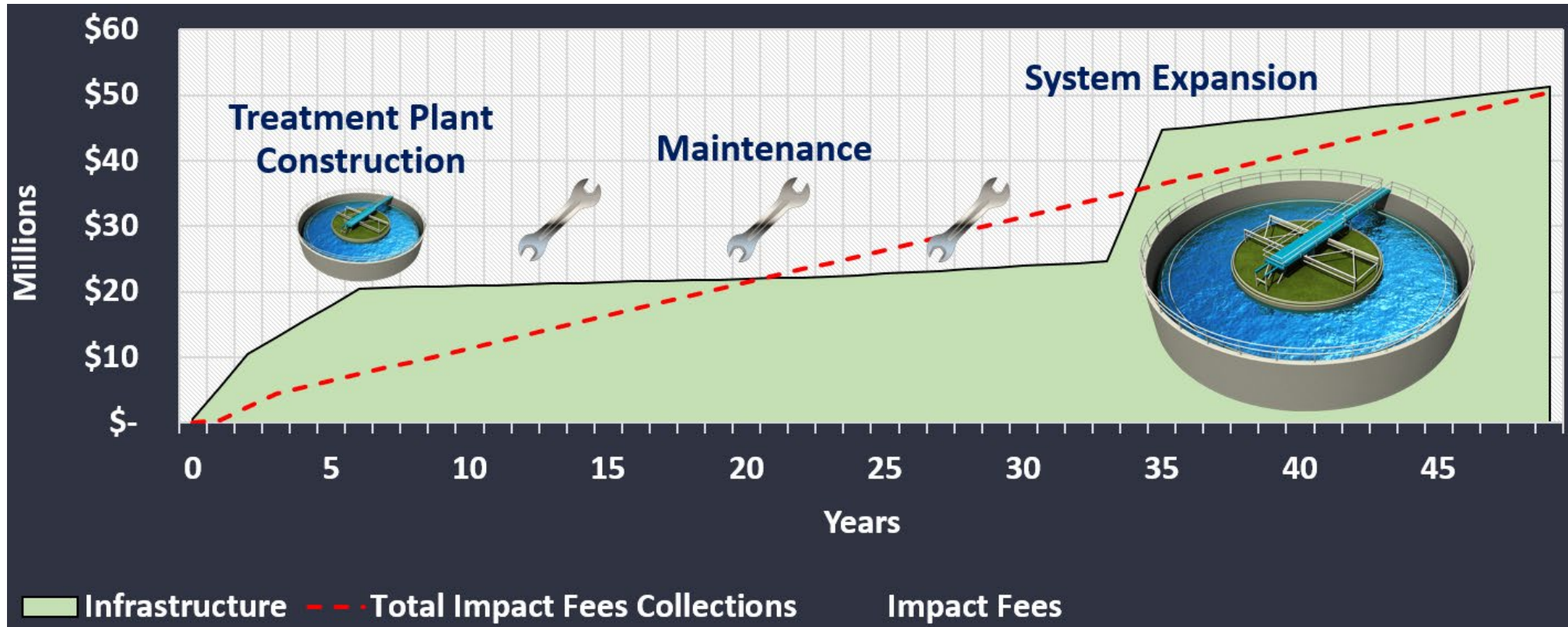
- Things to Consider when Establishing Most Recent and Localized Data:
- **Standard Method** – Cost of Next Increment of Capacity – Typically Highest Cost
 - Used when Existing Infrastructure has No Additional Capacity
- **Buy-In Method** – Cost of Existing Capacity – Typically Lowest Unit Cost
 - Used when Infrastructure has Excessive Capacity
- **Hybrid Method** – Blending Standard and Buy-In Methods
 - Most Commonly-Used Approach
 - Growth Receives the Benefit of Historical Costs
 - Recognizes Higher Cost of Future Capacity
 - Promotes the “One System” Concept



Identifying Capital Investment (Cont'd.)

How Can Your Selected Calculation Method Can Affect Your Capital Financing

- The Calculation Method Used Can Affect the Funds You Have Available For Capacity Projects



Identifying Capital Investment

What should and Shouldn't Be Included in your calculation

Included

- Assets that Benefit All Users
- Water and Sewer Treatment Plants
- Wells
- Wastewater Disposal Facilities
- Major Water and Sewer Mains
(Moving Water/Sewer from Plant to Neighborhood)
- Major Pump/Lift Stations
- Long Service Lives
- Major Expansions/Construction

Excluded

- Donated Assets – Developer Contributions
- Assets Funded From Other Sources
- Meters
- Vehicles
- Fire Hydrants
- Other Externally-Funded Assets
- Grants
- Assets with Short Service Lives



Identifying System Capacity

How can you identify the capacity (Denominator) of your system

- Things to Consider when Establishing System Capacity
 - What are the Factors That Limit Your Ability to Deliver Water or Receive Wastewater
 - Treatment Constraints – Are You limited by your Consumptive Use Permit (CUP) or how much water your plant can reliably produced
 - Transmission Constraints – You are limited by how much water can be delivered through your transmission system. Do you have high “line-loss” limiting how much can be delivered to customers
 - Peaking Demands – Your Customers Have Significant Hourly, Daily, or Monthly Peaking Demands
- Account for those constraints in your determination of capacity
- Example

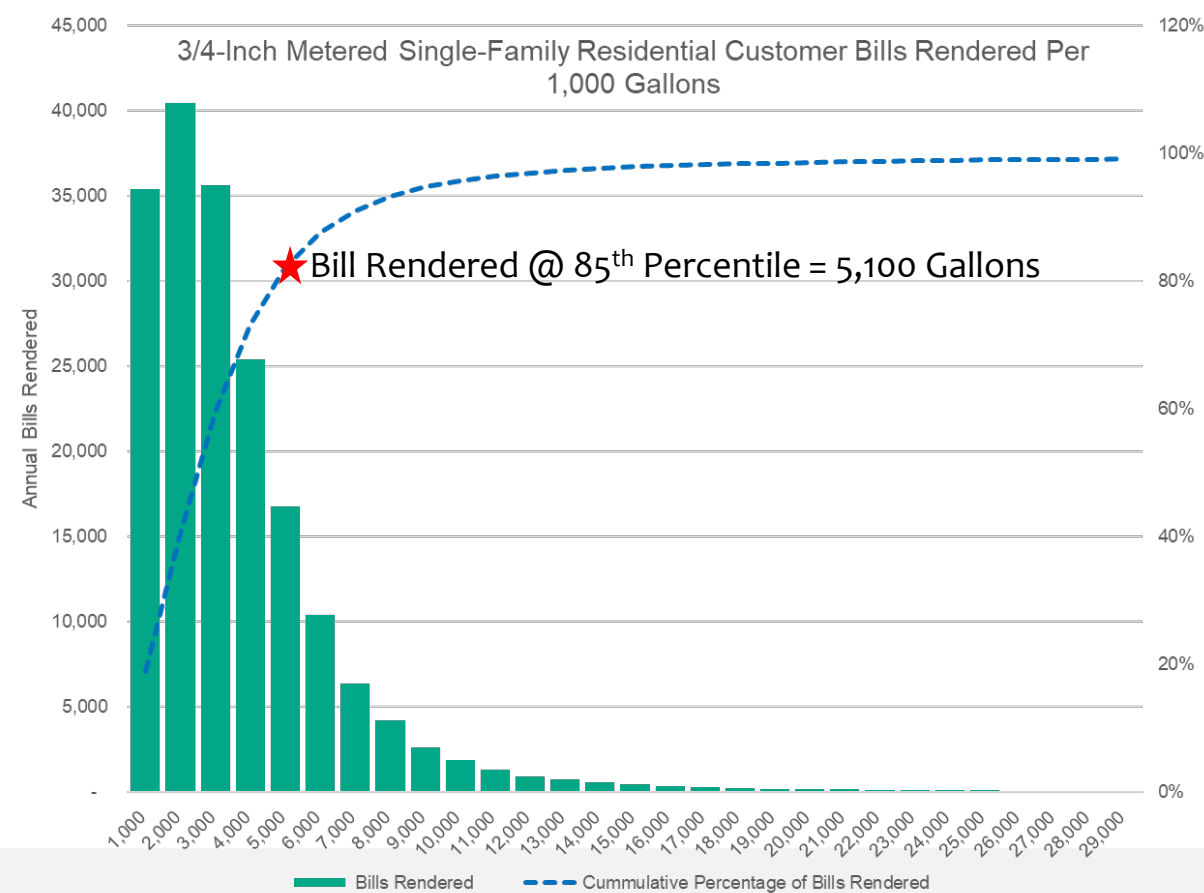
Water System – Reliable Daily Capacity (Gallons)	
Permitted Water Treatment Plant Capacity	14,000,000
Reliability Adjustment (Current Plant Conditions)	(4,000,000)
Reliable Capacity	10,000,000



What is Level of Service

How can you identify the level of service that is being provided to your customers

- Level of Service Analysis are Completed to Identify the Capacity that Must Be Reserved For A Single-Family Customer (1 ERC)
 - 85% Percentile Considered Normal (Non-Excessive) Usage = 5,100 Gallons

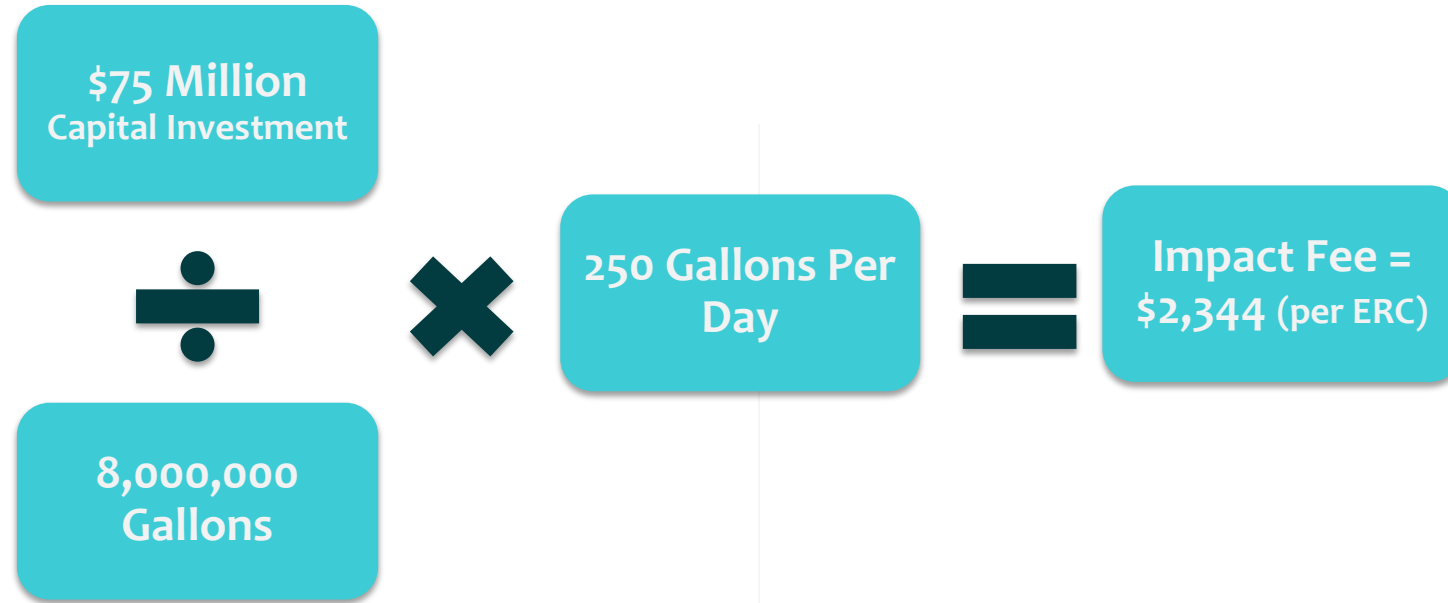


Calculation of Level of Service per ERC	
85 th Percentile of Class Use – Gallons Per Month	5,100
Average Gallons Per Day	168
Peak Hour Demands	135%
Unaccounted For Water (Line-Loss)	110%
Proposed Level-of-Service – Gallons Per Day	250



Calculation of Impact Fee

Impact Fees in Their Most Basic Form are Unit Cost Calculation



- Capacity Investment = Infrastructure to Serve Growth (Localized Assets)
- Capacity = Total Daily Reliable System Capacity (Could Be Produced or Deliverable)
- Level of Service = Estimated Demand for One Customer (Equivalent Residential Connection or “ERC”)



Florida Impact Fee Act

Consider Impact of 2021 Revisions to the Florida Impact Fee Act

- House Bill 337 Amended the Florida Impact Fee Act (Florida Statutes, Chapter 163.31801)
- New requirements to increase Impact Fees
 - 0%-25% increase must be implemented equally over two years
 - 26%-50% increase must be implemented equally over four years
 - No increases greater than 50%
- Exemption to requirements if the following are met:
 - Prepare study showing extraordinary circumstances necessitating exemption
 - Hold two public workshops dedicated to extraordinary circumstances
 - Previously adopted amounts are ratified by at least two-thirds vote
- Exclusion for Water and Sewer Connection Fees?
 - Impact Fee Act ends with *“This section does not apply to water and sewer connection fees”* and *“The specific purpose of the impact fee, including the specific infrastructure needs to be met, including, but not limited to, transportation, parks, **water**, **sewer**, and schools”*
 - Was the intent to exclude water and sewer impact fees or connection (meter) fees?
 - Consider following the requirements of the Impact Fee Act until legal precedent is available



Thank you

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