

UTILITY ADVISORY BOARD AGENDA

Thursday, June 14, 2018 – 5:15 p.m.
Lemon Creek Shop
5433 Shaune Drive

- I. CALL TO ORDER**

- II. APPROVAL OF AGENDA**

- III. APPROVAL OF MINUTES**
May 10, 2018 Draft UAB Meeting Minutes

- IV. PUBLIC PARTICIPATION**

- V. ACTION ITEMS**

- VI. INFORMATION ITEMS**
 - i. Dryer Update – N. Coffee
 - ii. Tabled Items from May 10, 2018 Meeting
 - 1. AWWA Utility Benchmarking – K. Buckland
 - a. AWWA Utility Benchmarking UAB 20180510 – enclosed
 - iii. Pending Board Matters – see supplemental, pg. 6
 - iv. Rate Study/Asset Valuation Update
 - 1. Staff Report – pg. 7
 - 2. FCS - Water/Sewer Revenue Requirements Presentation – pg. 9
 - 3. FCS – Water/Sewer Cost of Service Presentation – pg. 43
 - 4. FCS – Wastewater Benchmarking Analysis – pg. 89
 - 5. FCS – Water Benchmarking Analysis – pg. 119
 - v. Meeting schedule – M. Vigue

- VII. NON-AGENDA ITEMS**

- VIII. ADJOURNMENT – Next Meeting, July 12th**

UTILITY ADVISORY BOARD DRAFT MINUTES

Thursday, May 10, 2018 – 5:15 p.m. Lemon Creek Shop 5433 Shaune Drive

Board Members Present:; Geoff Larson – Vice-Chair; Andrew Campbell; Janet Hall-Schempf; Grant Ritter; Kevin Buckland; Brian Farrell

Board Members Absent: Leon Vance – Chair

Staff Present: Mike Vigue; Autumn Sapp; Cristian Crabtree

I. CALL TO ORDER

The meeting was called to order at 5:15 p.m. by Vice-Chair Larson.

II. APPROVAL OF AGENDA

Agenda was approved without amendment.

III. APPROVAL OF MINUTES

April 12, 2018 Draft UAB Meeting Minutes- Vice-Chair Larson motioned to approve the minutes with minor amendments. Motion passed with no objection.

IV. PUBLIC PARTICIPATION

None

V. ACTION ITEMS

Introductions of new staff members present.

1. Mike Vigue, Public Works/Engineering Director
2. Cristian Crabtree, Utilities Admin Assistant 1

I. Tabled items from April 12, 2018 Meeting

- a. **Pending Board Matters** – Mr. Buckland presented a table for organizing meeting tasks, deadlines, pg. 5 of Agenda packet. It would serve as a parking lot. Staff asked for clarification on how the board would like to have this presented. Group discussed the best way to present information and listing dates. Vice-Chair Larson suggested changing target date to estimated date. Staff asked for clarification where in the materials should appear in board packets. Board identified on a supplementary document titled, Pending Board Matters.

- b. **Policies and procedures** - Mr. Buckland recommended or best policies on how to direct rates. Mr. Buckland felt we are way off of on how most utilities fund items with revenue bonds. It would be a recommended policy on how to codify on policies regarding the amount of debt. Mr. Campbell asked for clarification and Mr. Buckland to be more specific. Mr. Buckland responded that it is not a policy and procedure as the agenda indicated but instead be a way to develop a recommended target debt ratio. He suggested that UAB policy would be to recommend certain amounts for example, CIPs for funding. Staff noted the CBJ Finance Director made a recommended fund balance target and reserve goal for the utilities and noted it was referenced in the dashboard document. Staff suggested the Finance Department are to be included if further funding source discussion if that is the direction the board would like to take. Board and staff noted that funding sources had been discussed during the November 2017 meeting.

Mr. Campbell asked if there were other policies or procedures that Mr. Buckland was wanting to develop and was worried that the broad terminology would never be able to be closed out and would remain on the pending board matters. Mr. Grant thought the FCS group had recommended the amount of debt that should be carried. Vice-Chair Larson stated it was from a third-party and noted the Assembly is the one who determines the debt. He stated the mandate from Assembly does spell out the board's direction and the board is representing the public.

Ms. Hall-Schempf asked if all members have taken the orientation. Mr. Buckland identified himself that he has not taken as it has not been offered. Staff will follow up with the Clerk's Office regarding orientation. Ms. Hall-Schempf stated that the board is an advisory board.

Mr. Buckland would like to capture good practices. He spoke further on the debt and financing. He asked if the board wants to do something different than the Finance Director recommends. Mr. Larson spoke to the debt capability of the City in the past. Staff recommended if there were policies to discuss we can identify the appropriate person that should be included. Staff also clarified that it is not the Finance Director or the City Manager who make the funding decisions, but they make recommendations to the Assembly.

Vice-Chair Larson asked if the board if they wish to adopt the table proposed by Mr. Buckland. Further discussion on what is included on the table and how it would be represented in the table continued. The table is to be included as supplementary material to the agenda.

- II. **UAB Annual Report** – Vice-Chair Larson overviewed the majority annual report. Staff listed the question the Assembly members asked of Chair Vance. Mr. Buckland gave a summary of the presentation of the minority report and staff followed with questions from the Assembly.
- a. Rate Study: cost and timeline - Staff presented the requests to the board from the Assembly after the annual report presentation. Staff included the 2014 rate study information in the meeting packet. Staff felt the 2003 rate study information was not as reliable due to the age of the report. Vice-Chair Larson noted the board also recommended an asset valuation to the board.

Mr. Campbell asked about asset tracking currently happening. Staff said it has not been completed and not sure of the progress. Staff outlined the how the Lucity software is being used, but did note that it does have an asset tracking portion, however, it has not been utilized at this time due to staff constraints. Ms. Hall-Schemph asked what needs to be completed such as data entry. Staff said everything needs to be completed from identification, valuation, and data entry. Vice-Chair Larson said the board's intent would be to get a basic evaluation. Mr. Ritter said an inventory of the utility infrastructure existed when he worked for CBJ and it was provided from the Finance Department.

Mr. Grant stated his issue with the majority Annual Report was page three, the goal of asset tracking, and it should be staff's job not the boards. Vice-Chair Larson noted this was the first the board was aware of his issue. Board discussed further Mr. Grant's issue with the asset management portion of the majority Annual Report. Mr. Campbell clarified that the recommendation was asset management be added to the RFP for a rate study. Further board discussion regarding asset management continued. Mr. Buckland distributed a memorandum dated November 11, 2014 from the FCS Group to former Publics Work Director, Kirk Duncan. Vice-Chair Larson noted the time of the meeting. Mr. Campbell asked if the Assembly gave a timeline to for board to return with the requested items. Staff responded no. Vice-Chair Larson asked the board to keep in mind there is a rate increase approved for this July. The board continued discussion on costs of a rate study and asset valuation.

Mr. Campbell noted he is only in favor of the asset management valuation, but only in favor of the rate study if the cost of the rate study is beneficial to consumers. Vice-Chair Larson said it is staff's duty to gather the rate study information and they need to also ask about asset valuation and rate models. Mr. Ritter noted that the staff needed to have the information before hiring a firm to perform an asset valuation. Vice-Chair Larson made comparison to his experience with asset valuations. Mr. Buckland suggested that it is looked at individual parts for the valuation and rate study and asked what the benefit of the asset valuation will provide to the utility. Mr. Campbell felt there were three parts to this, the asset valuation, overall rate analysis, and differential rate study. The board continued further debate on what took place regarding past rates, discussion on why we would perform another rate study, and differentiating

rates. Vice-Chair Larson interjected and again asked staff to gather the information. Further discussion and clarification commenced on the information that Mr. Grant used to review when employed regarding assets.

- III. **AWWA Benchmarking** - Mr. Buckland asked to table the item regarding benchmarking. Staff reported that they left a message with AWWA to determine the type and detail of data that would need to be provided to be included in the benchmarking. Staff noted the data may be expensive to obtain due to the amount of staff time required. Mr. Buckland noted he thought some of the data is optional to provide.

VII. Non-Agenda items

- i. Mr. Ritter asked if it would if staff can get the income difference between 2013 to 2018 and what are the projections to 2023.
- ii. Staff asked board members who seats expiring if they have reapplied. Vice-Chair Larson indicated he had and Mr. Campbell indicated he had not. Other board members asked about their seat status.

VIII. Adjournment

- The meeting adjourned at 6:44pm

Utility Advisory Board

Pending Board Matters

Date: 6/14/2018

Requestor	Task/Matter	Capture Date	Target Date	Date Completed	Notes
Board	Board Orientation	5/10/2018	8/1/2018	Not Started	Clerk's Office is hoping to hold the orientation in August
Board	Dryer Update	5/10/2018	6//12/2018	In progress	Nathan Coffee, CBJ Project Manager to present



DATE: June 14, 2018

TO: Utility Advisory Board
Leon Vance, Chair

FROM: Mike Vigue, Engineering & Public Works Director
Autumn Sapp, Engineering & Public Works Business Manager

SUBJECT: Staff Monthly Report

Rate Study/Asset Valuation Update-

Useful Terms-

Cost of Service – is the service of the utility recovering its direct cost, e.g. is residential water covering its cost to supply water and is it contributing to the overall fund balance of the utility.

Revenue Requirement Study – identifies the appropriate revenue requirements and assessing your existing rates to cover expenses and meet fund balance targets. It only allows rates to be adjusted across the board, but rates cannot be adjusted individually. This is the foundation to perform a cost of service study and rate design evaluation.

Rate Design – creates rates that haven't existed. It can also address policy issues (senior discounts).

Companies Contacted:

Parrish, Blessing, & Associates, Inc. ("PBA")

Contact: William Wilks

- Was FCS Manager for Alaska worked extensively on 2014 Rate Study for CBJ
- If we hire without needing an RFP will charge same amount from 2014 (\$214,978) will include:
 - Revenue study
 - Cost of service model
 - Rate Design
- Time frame would be 8 months
- Can also assist with phasing new rates in to avoid rate shock
- He suggests setting up a Continuing Property Records (CPR) system – A better CPR makes a better cost of service study.
 - In 2014 CBJ just had an excel spreadsheet with location and cost of installation (from treasury)
 - PBA can set up entire system
 - Provide updates
 - Provide guidance on partial closures of projects
 - Provide guidance for setting policies and procedures
 - Could include participation by utility managers to better understanding
- Asset valuation
 - Suggests we need a depreciation study not an asset valuation
 - Utility needs to identify what we are trying to accomplish with an asset valuation
 - Engineering valuation - if concerned with conditions of infrastructure including pipes we will need an engineer, they do partner with other firms to do this

- Just completed this Anchorage stormwater with Sentec. Cost \$200,000 for assessment of system and it wasn't enough money to complete a full assessment of the facilities.
- Benchmarking Analysis – see page X – X of previous work completed by FCS Group in 2013
 - Mr. Wilks believes the benchmarking analysis was a \$50,000 “waste of money”
 - Not comparable to other utilities since CBJ is so different. Comparing actual functionality is a “complete waste of money”
 - CBJ does secondary treatment of wastewater where most others do not
 - Can benchmark customer service representatives to total number of customers

FCS Group

Contact: Scott Lester

- Spoke with Scott he will provide an estimate and time frame for an update on the 2014 Rate Study and also will include suggested scope of service items to include in an RFP.
- FCS is also now doing asset valuations and he will speak to that division about getting information passed along as well.

Lucity (asset management software CBJ uses)

Left message



JUNEAU RATE STUDY

Water/Sewer Revenue Requirements *Preliminary Results*

by Karyn Johnson, FCS GROUP Principal

*December 9 , 2013 (Assembly meeting)
December 11, 2013 (Public meeting)*

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 **FCS GROUP**
Solutions-Oriented Consulting

Agenda

- Financial Performance Summary
- Proposed Financial Policies
- Revenue Requirement Results
 - ✓ Capital Program and Funding
 - ✓ Utility Revenue Needs Assessment
- Request for input & policy direction
- Next steps

Financial Performance Summary

	Financial/Accounting Reporting Perspective		Cash Perspective	
	WATER	WASTEWATER	WATER	WASTEWATER
Operating Revenue	\$ 4,269,637	\$ 9,524,807	\$ 4,269,637	\$ 9,524,807
Operating Expenses				
Operating & Maintenance	\$ (3,017,987)	\$ (8,198,514)	\$ (3,017,987)	\$ (8,198,514)
Depreciation Expense	<u>(2,742,498)</u>	<u>(2,739,718)</u>	<u>(176,993)</u>	<u>(637,712)</u>
Total	\$ (5,750,485)	\$ (10,938,232)	\$ 1,074,657	\$ 688,581
Operating Loss	\$ (1,480,848)	\$ (1,413,425)	Annual 10-Yr Capital Spending Plan	\$ (2,650,000) \$ (6,490,000)
Non-Operating Income(Expense)	\$ 92,595	\$ 325,888		
Capital Contributions	\$ 111,531	\$ 270,184		
Net Loss	\$ (1,276,722)	\$ (817,352)	Annual Funding Shortfall	\$ (1,575,343) \$ (5,801,419)

NOTE: Based on Unaudited 2013 Financial Statements

System Assets Divided by Useful Life in Years equals Depreciation Expense

Water \$95,784,429 / 35 = \$2,732,498 per year

Wastewater \$83,266,172 / 30 = \$2,739,718 per year

Amount Available for Capital Divided by Depreciation equals Percent Depreciation Funded by Rates

Water \$1,074,657 / \$2,732,498 = 39%

Wastewater \$688,581 / \$2,739,718 = 25%

Proposed Financial Policies

Description	Recommendation	Comments
<p>Operating Reserve</p> <p>Provide adequate working capital to accommodate fluctuations in the timing of revenues and expenditures</p>	<p>Maintain minimum balance equal to 30 - 45 days of O&M expense for each utility</p>	<p>May use available reserves above minimum thresholds to help smooth rate increases</p>
<p>Capital Reserve</p> <p>Provide a source of funding for emergency repairs and unanticipated capital expenditures</p>	<p>Maintain a minimum balance equal to 1% of system fixed assets for each utility</p>	<p>Sustained from capital revenues including system reinvestment funding, and operating cash above targets</p>
<p>System Reinvestment Funding</p> <p>Maintain rate stability, customer equity, and system integrity through predictable system reinvestment</p>	<p>Fund an amount annually from rates based on depreciation expense; alternative revenue requirement scenarios developed with varying levels of depreciation funding from rates</p>	<p>Depreciation is a non-cash expense representing the cost of the annual decline in asset value</p> <p>Funding a greater portion of depreciation from rates would improve the financial position and provide additional cash to help fund the capital program</p>

Scenario Descriptions

Water Utility	Baseline	Low	Middle	Top
Current O&M and Debt	Fully Funded			
Capital Program	50%	Fully Funded		
Current \$	\$11.0 million	\$22.0 million		
Escalated \$	\$13.2 million	\$26.5 million		
System Reinvestment	35% constant	35% Constant	Phase-In 68%	Phase-In 100%

Wastewater Utility	Baseline	Low	Middle	Top
Current O&M and Debt	Fully Funded			
Capital Program	50%	Fully Funded		
Current \$	\$25.5 million	\$51.1 million		
Escalated \$	\$32.4 million	\$64.9 million		
System Reinvestment	25% constant	25% Constant	Phase-In 63%	Phase-In 100%

Priority of Capital Funding Sources

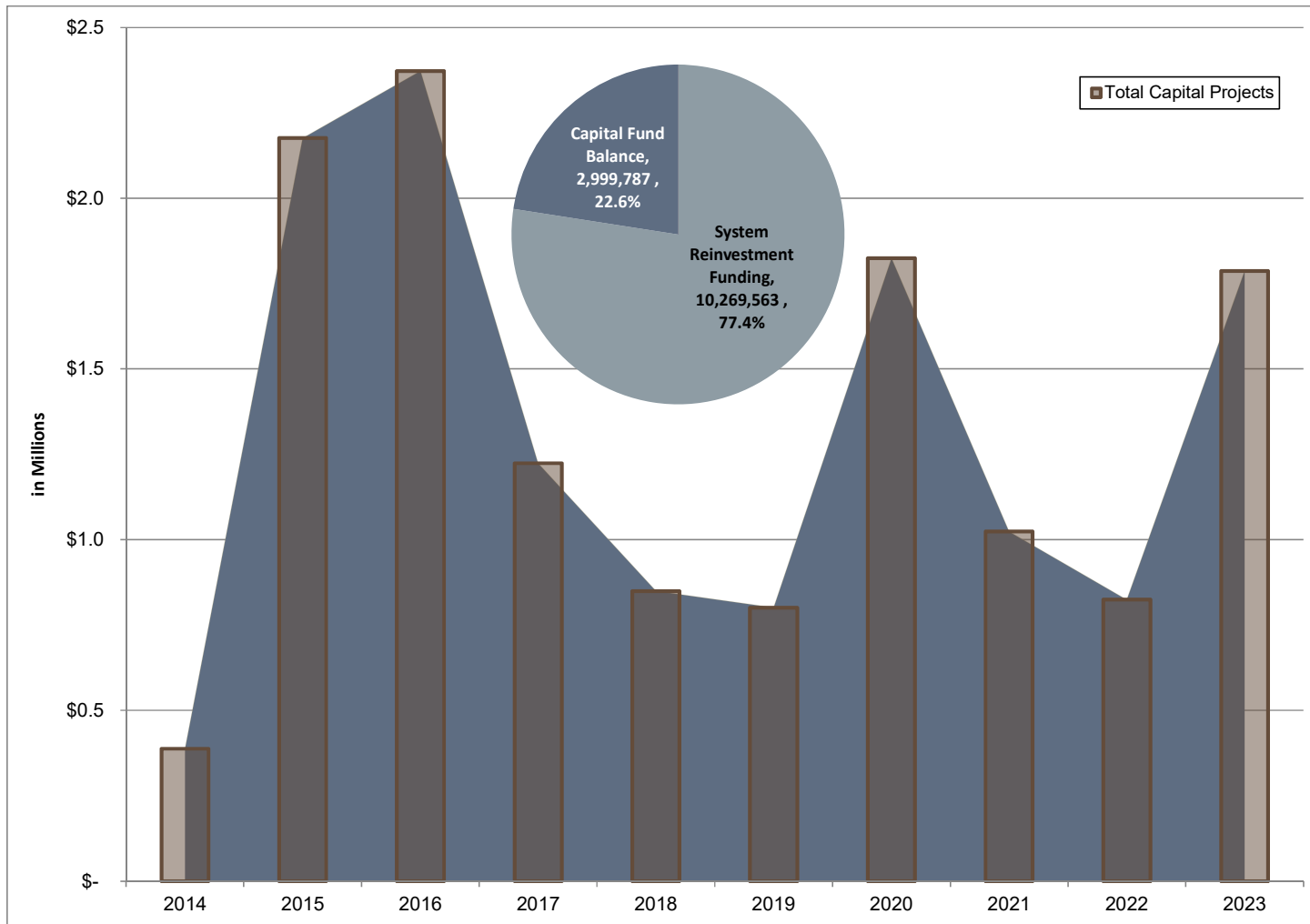
- Level of funding by source varies by scenario
 1. Available capital cash reserves
 2. System reinvestment funding from rates (depreciation funding)
 3. Outside sources: 1% sales tax and passenger fees
 4. Revenue bond debt

Revenue Requirement Assumptions

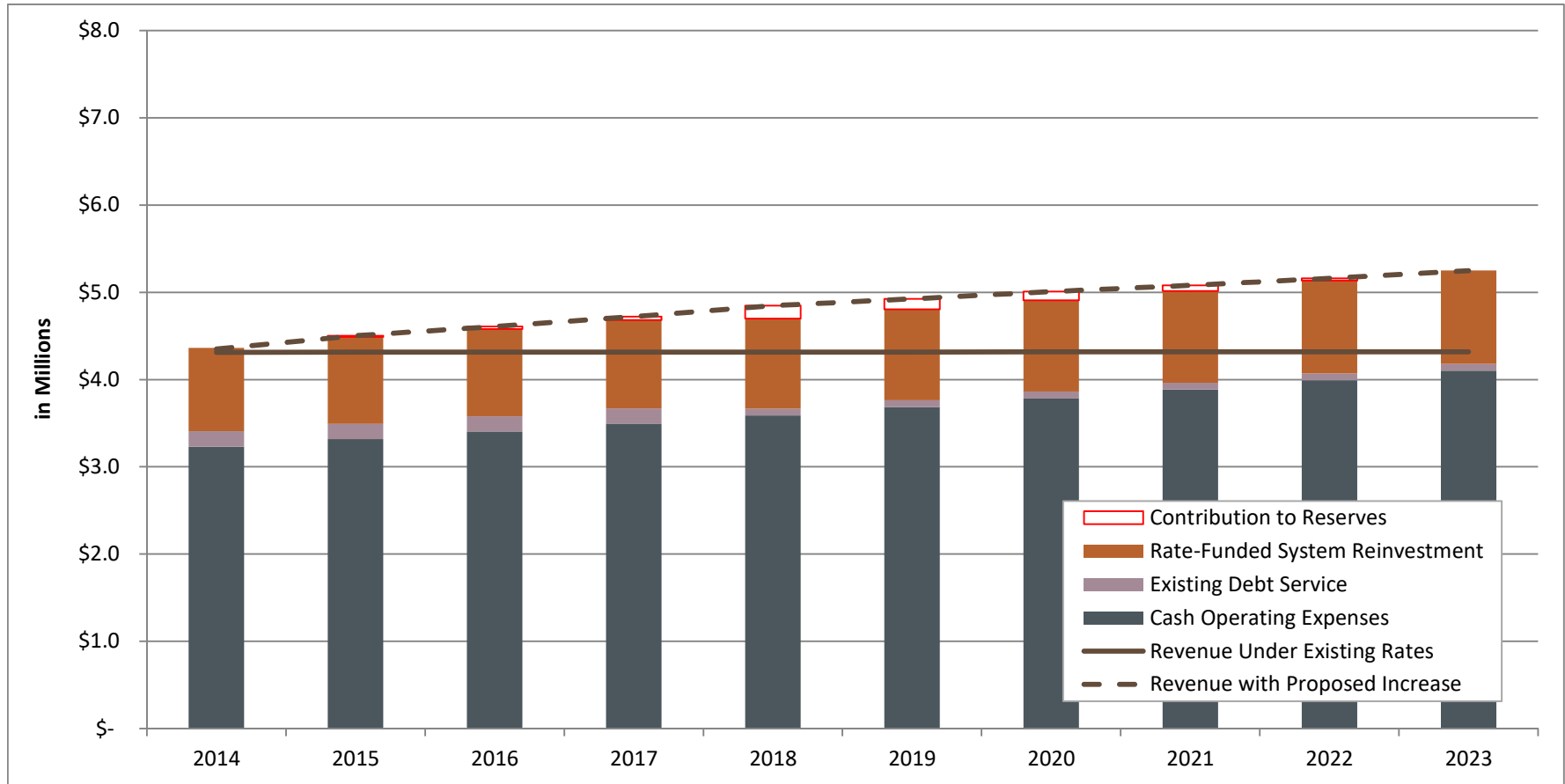
- No customer growth over study period
- O&M costs adjusted for annual inflation of 2.0%
- 10-year capital program stated in current day dollars, adjusted for annual escalation of 4.5%
- Assumed availability of outside funding sources for capital
 - ✓ \$8 million from passenger fees beginning FY 2017/18
 - ✓ \$21.2 million from 1% sales tax beginning FY 2019/20
- Proposed increases reflect utility-wide rate revenue increases; cost of service analysis will determine recovery by customer class

WATER UTILITY

Baseline Scenario: Capital Financing Plan

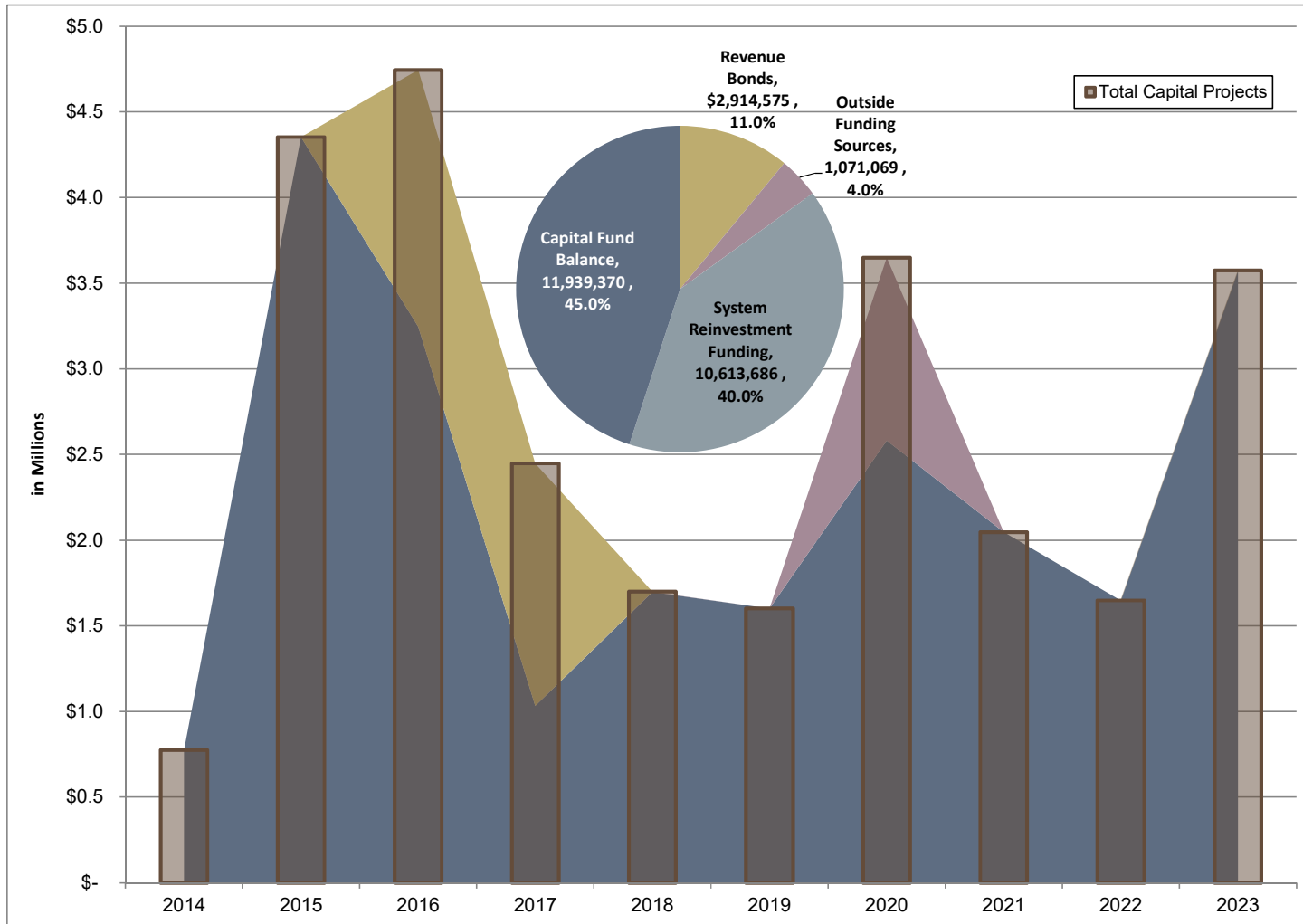


Baseline Revenue Requirements

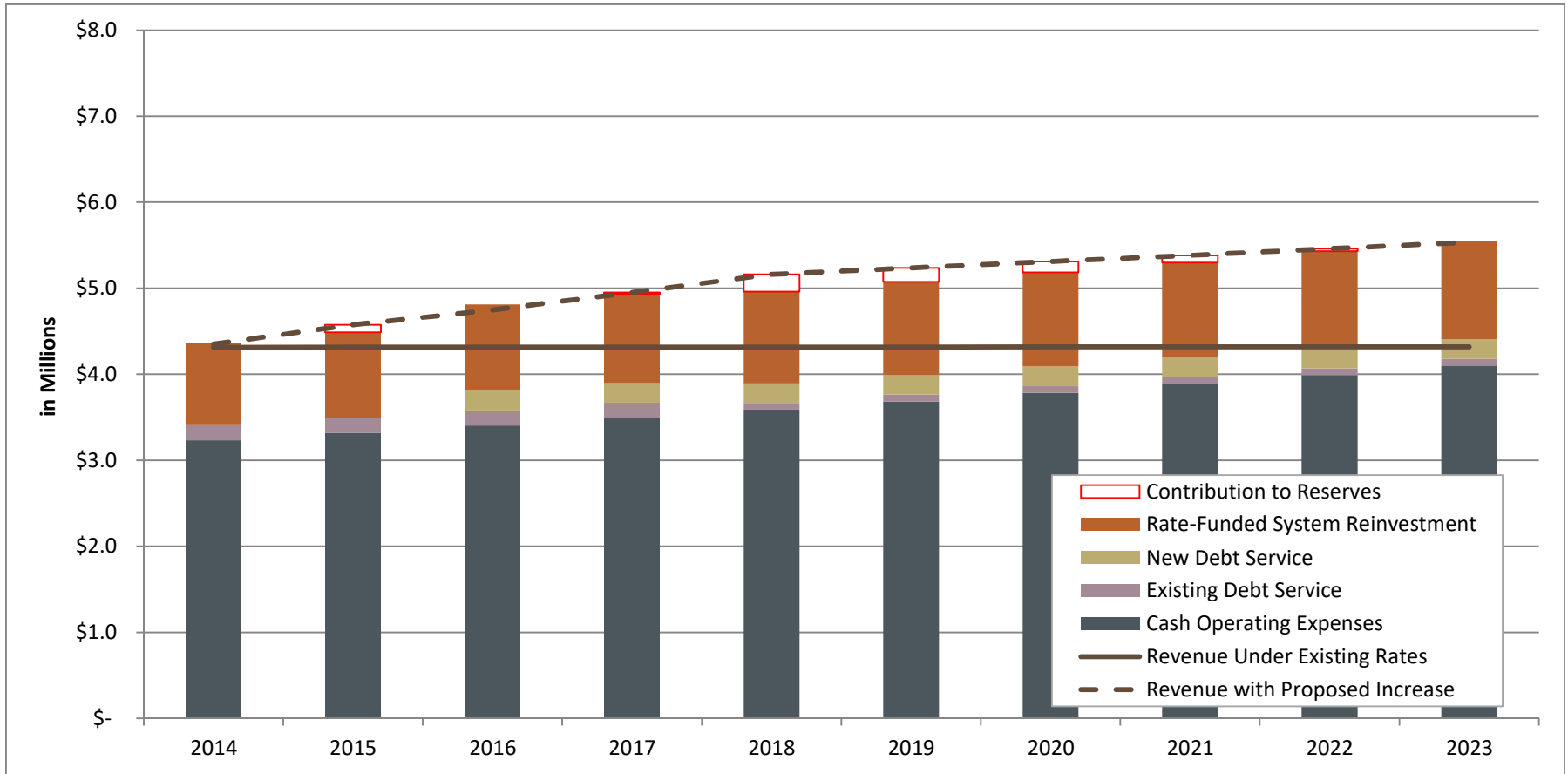


Rate Forecast	Existing	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Monthly Residential Rate	\$ 26.40	\$ 26.40	\$ 27.19	\$ 28.01	\$ 28.85	\$ 29.71	\$ 30.23	\$ 30.76	\$ 31.30	\$ 31.85	\$ 32.41
Monthly Dollar Impact		\$ -	\$ 0.79	\$ 0.82	\$ 0.84	\$ 0.87	\$ 0.52	\$ 0.53	\$ 0.54	\$ 0.55	\$ 0.56
Annual Rate Adjustments		0.00%	3.00%	3.00%	3.00%	3.00%	1.75%	1.75%	1.75%	1.75%	1.75%
Cumulative Rate Adjustment		0.00%	3.00%	6.09%	9.27%	12.55%	14.52%	16.52%	18.56%	20.64%	22.75%

Low Scenario: Capital Financing Plan

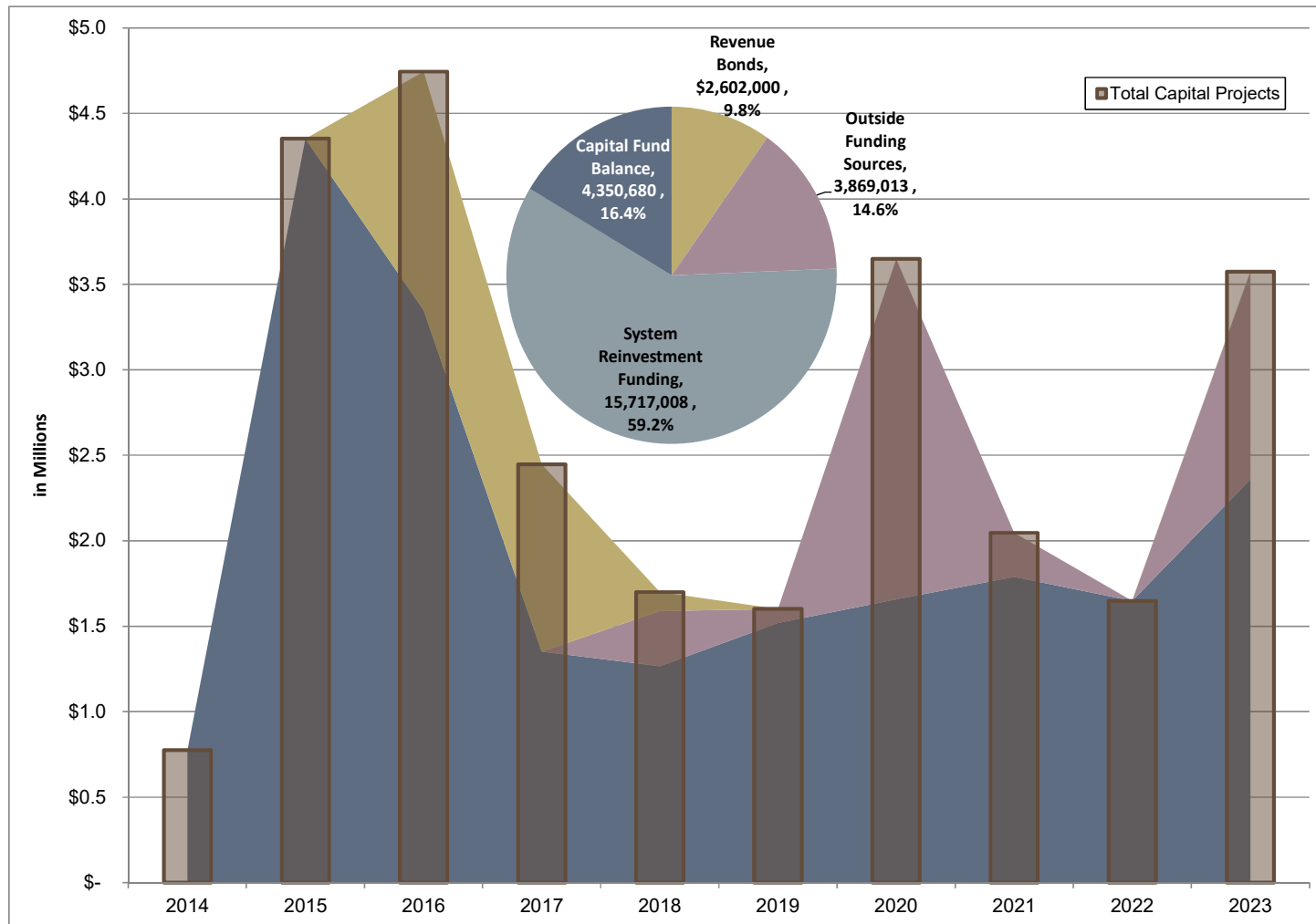


Low Scenario: Revenue Requirements

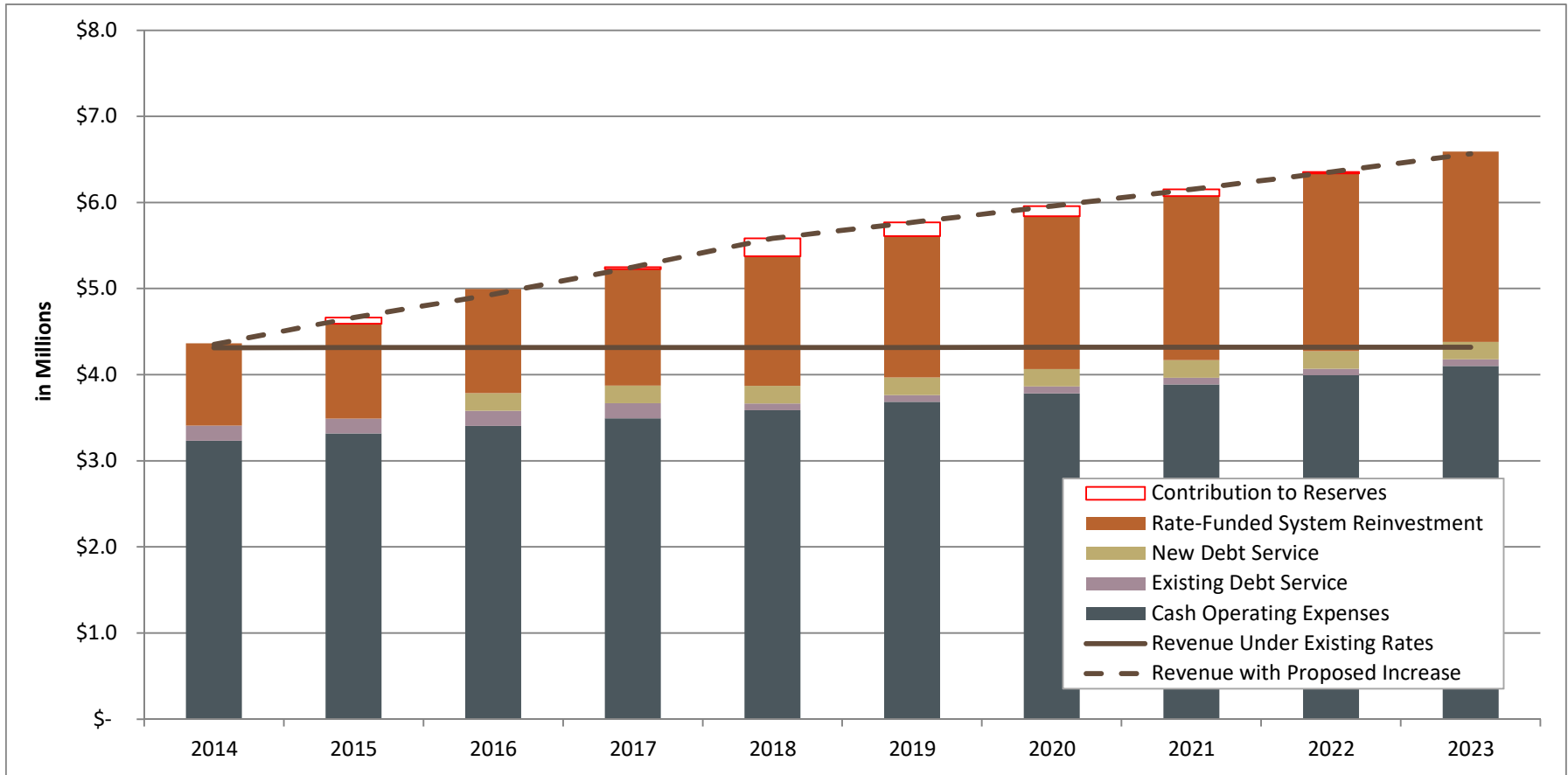


Rate Forecast	Existing	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Monthly Residential Rate	\$ 26.40	\$ 26.40	\$ 27.72	\$ 29.11	\$ 30.56	\$ 32.09	\$ 32.57	\$ 33.06	\$ 33.56	\$ 34.06	\$ 34.57
Monthly Dollar Impact		\$ -	\$ 1.32	\$ 1.39	\$ 1.46	\$ 1.53	\$ 0.48	\$ 0.49	\$ 0.50	\$ 0.50	\$ 0.51
Annual Rate Adjustments		0.00%	5.00%	5.00%	5.00%	5.00%	1.50%	1.50%	1.50%	1.50%	1.50%
Cumulative Rate Adjustment		0.00%	5.00%	10.25%	15.76%	21.55%	23.37%	25.22%	27.10%	29.01%	30.94%

Middle Scenario: Capital Financing Plan

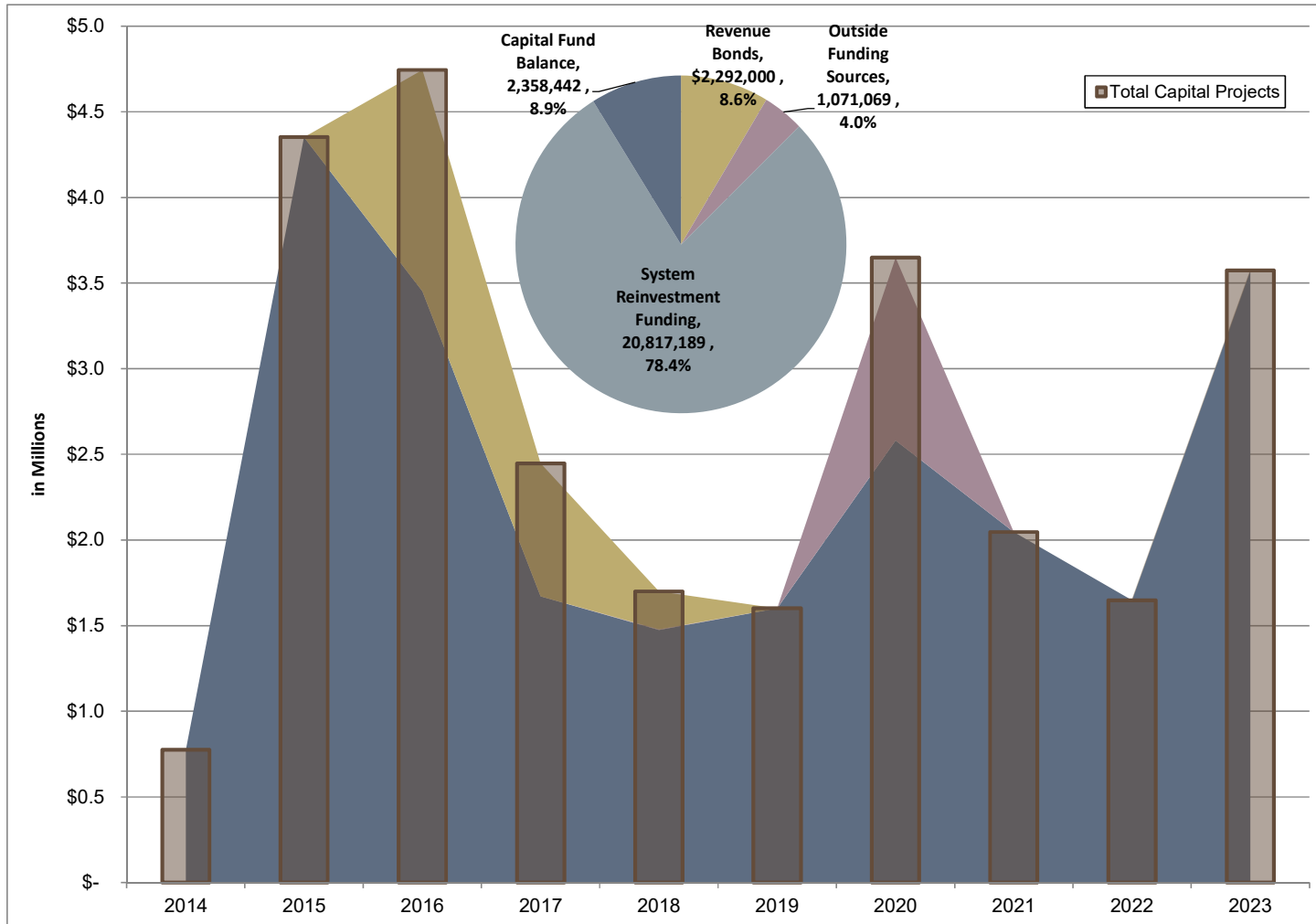


Middle Scenario: Revenue Requirements

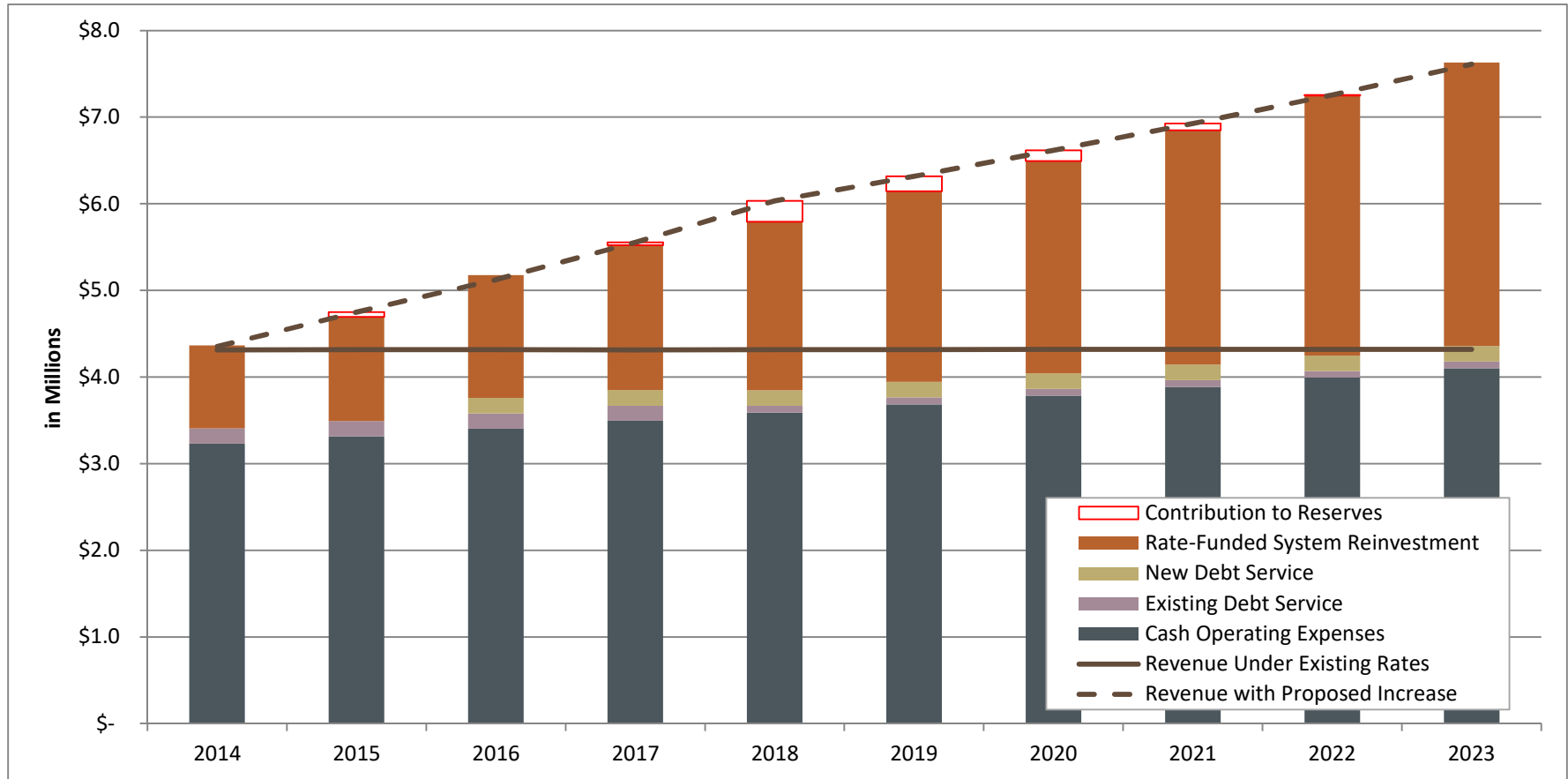


Rate Forecast	Existing	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Monthly Residential Rate	\$ 26.40	\$ 26.40	\$ 28.31	\$ 30.37	\$ 32.57	\$ 34.93	\$ 36.15	\$ 37.42	\$ 38.73	\$ 40.08	\$ 41.49
Monthly Dollar Impact		\$ -	\$ 1.91	\$ 2.05	\$ 2.20	\$ 2.36	\$ 1.22	\$ 1.27	\$ 1.31	\$ 1.36	\$ 1.40
Annual Rate Adjustments		0.00%	7.25%	7.25%	7.25%	7.25%	3.50%	3.50%	3.50%	3.50%	3.50%
Cumulative Rate Adjustment		0.00%	7.25%	15.03%	23.36%	32.31%	36.94%	41.73%	46.69%	51.83%	57.14%

Top Scenario: Capital Financing Plan



Top Scenario: Revenue Requirements



Rate Forecast	Existing	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Monthly Residential Rate	\$ 26.40	\$ 26.40	\$ 28.91	\$ 31.65	\$ 34.66	\$ 37.95	\$ 39.85	\$ 41.84	\$ 43.94	\$ 46.13	\$ 48.44
Monthly Dollar Impact		\$ -	\$ 2.51	\$ 2.75	\$ 3.01	\$ 3.29	\$ 1.90	\$ 1.99	\$ 2.09	\$ 2.20	\$ 2.31
Annual Rate Adjustments		0.00%	9.50%	9.50%	9.50%	9.50%	5.00%	5.00%	5.00%	5.00%	5.00%
Cumulative Rate Adjustment		0.00%	9.50%	19.90%	31.29%	43.77%	50.95%	58.50%	66.43%	74.75%	83.49%

Water Capital Funding Summary

Water Baseline Scenario			
Item No.	Description	Amount	Percent
1	Capital Fund Balance	\$ 2,999,787	22.6%
2	System Reinvestment Funding	10,269,563	77.4%
3	Outside Funding Sources	-	0.0%
4	Revenue Bonds	-	0.0%
5	Total Inflow	\$ 13,269,350	100.0%

Water Low Scenario			
Item No.	Description	Amount	Percent
6	Capital Fund Balance	\$ 11,939,370	45.0%
7	System Reinvestment Funding	10,613,686	40.0%
8	Outside Funding Sources	1,071,069	4.0%
9	Revenue Bonds	2,914,575	11.0%
10	Total Inflow	\$ 26,538,700	100.0%

Water Middle Scenario			
Item No.	Description	Amount	Percent
11	Capital Fund Balance	\$ 4,350,680	16.4%
12	System Reinvestment Funding	15,717,008	59.2%
13	Outside Funding Sources	3,869,013	14.6%
14	Revenue Bonds	2,602,000	9.8%
15	Total Inflow	\$ 26,538,700	100.0%

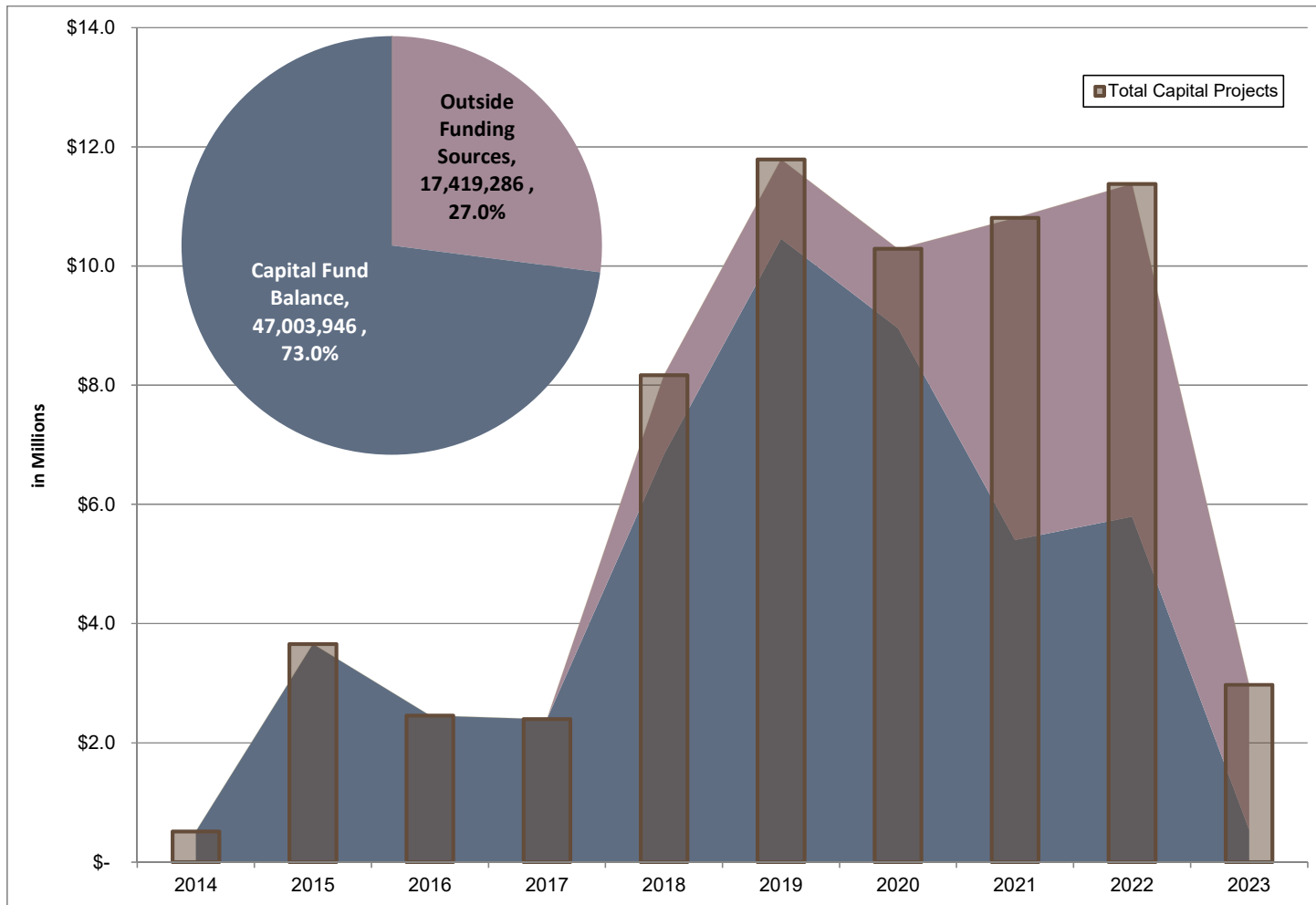
Water Top Scenario			
Item No.	Description	Amount	Percent
16	Capital Fund Balance	\$ 2,358,442	8.9%
17	System Reinvestment Funding	20,817,189	78.4%
18	Outside Funding Sources	1,071,069	4.0%
19	Revenue Bonds	2,292,000	8.6%
20	Total Inflow	\$ 26,538,700	100.0%

Water Revenue Requirement Summary

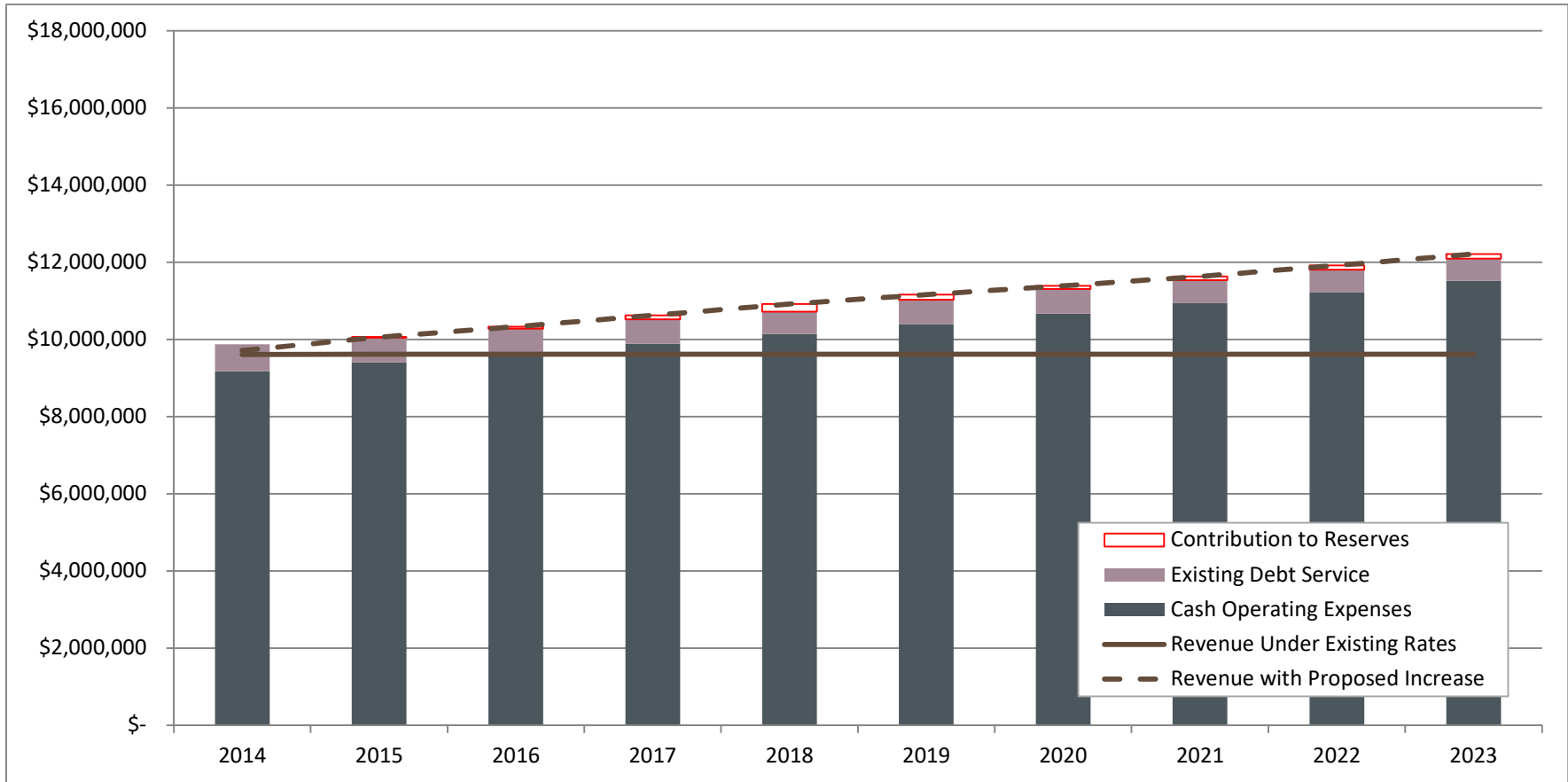
Water Utility	Baseline	Low	Middle	Top
	Results			
Annual Rate Increase	3.00% / 1.75%	5.00% / 1.50%	7.25% / 3.50%	9.50% / 5.00%
Cumulative Rate Increase	22.8%	30.9%	57.1%	83.5%
% of CIP Debt Financed	0.0%	11.0%	9.8%	8.6%
Ending Capital Fund Balance	\$3.8 million	\$1.5 million	\$2.5 million	\$4.5 million
Ending Operating Fund Balance	\$0.5 million	\$0.5 million	\$0.5 million	\$0.5 million
Ending Total Balance	\$4.3 million	\$2.3 million	\$3.0 million	\$5.0 million

WASTEWATER UTILITY

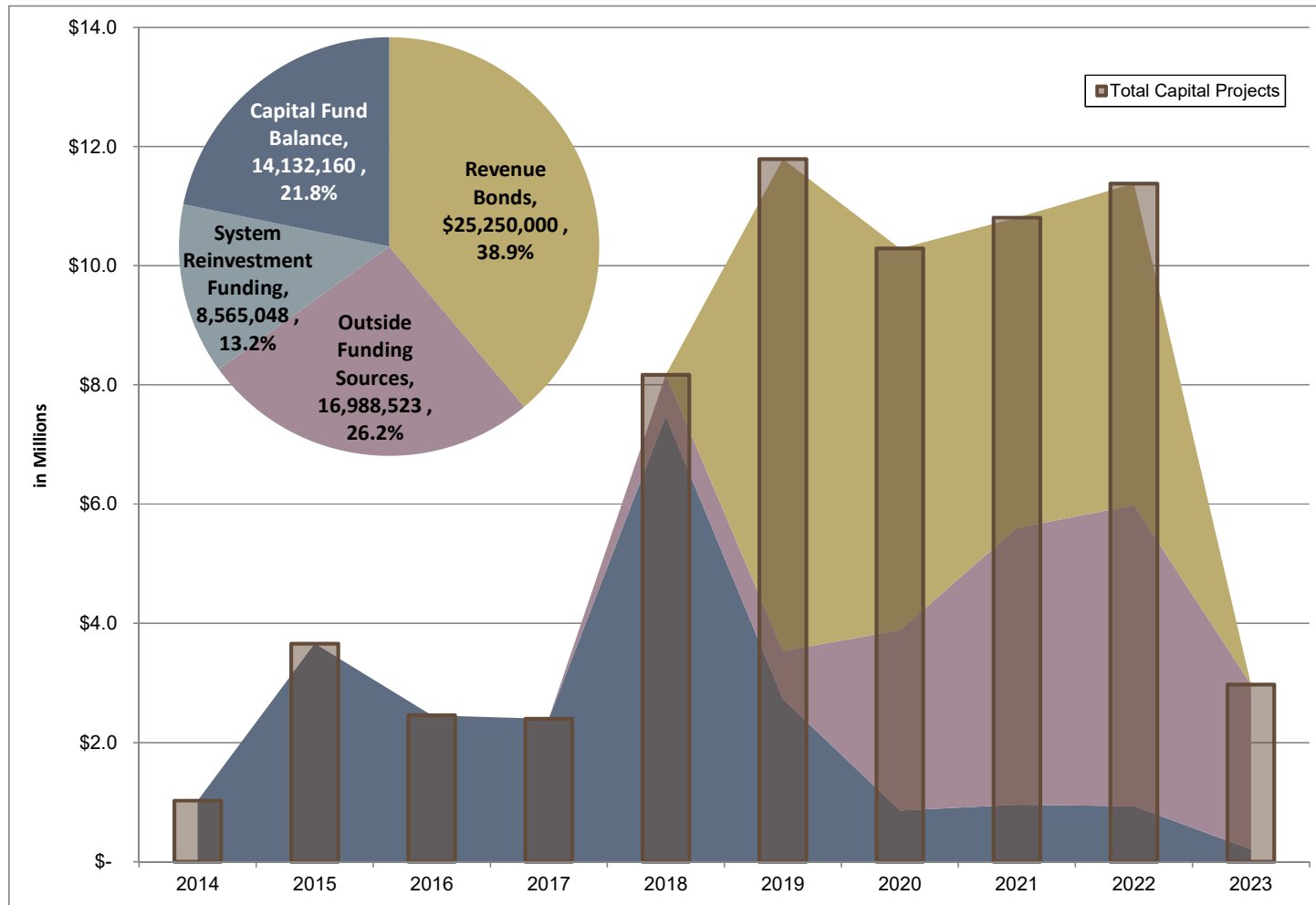
Baseline Scenario: Capital Financing Plan



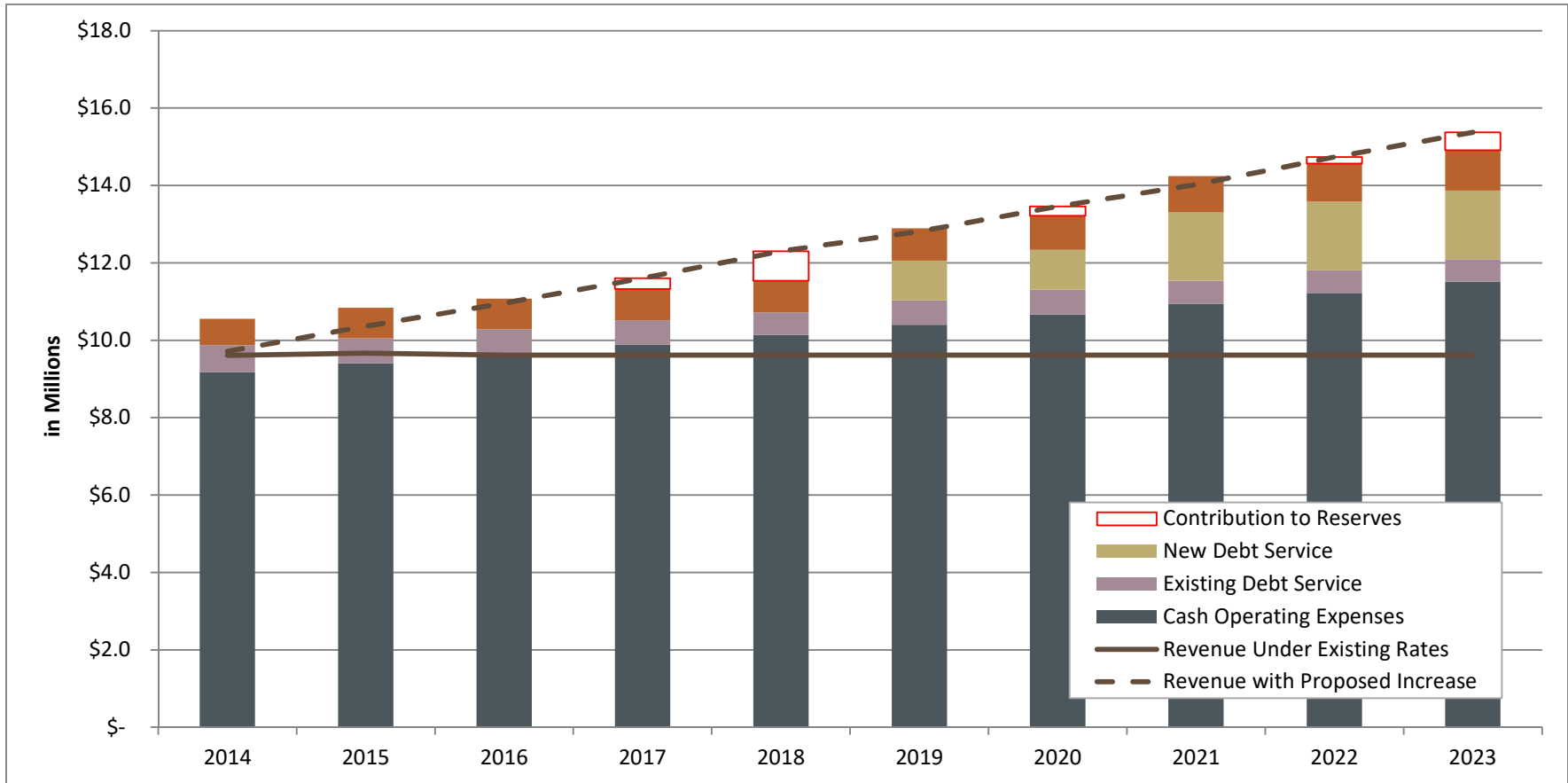
Baseline Scenario: Revenue Requirements



Low Scenario: Capital Financing Plan

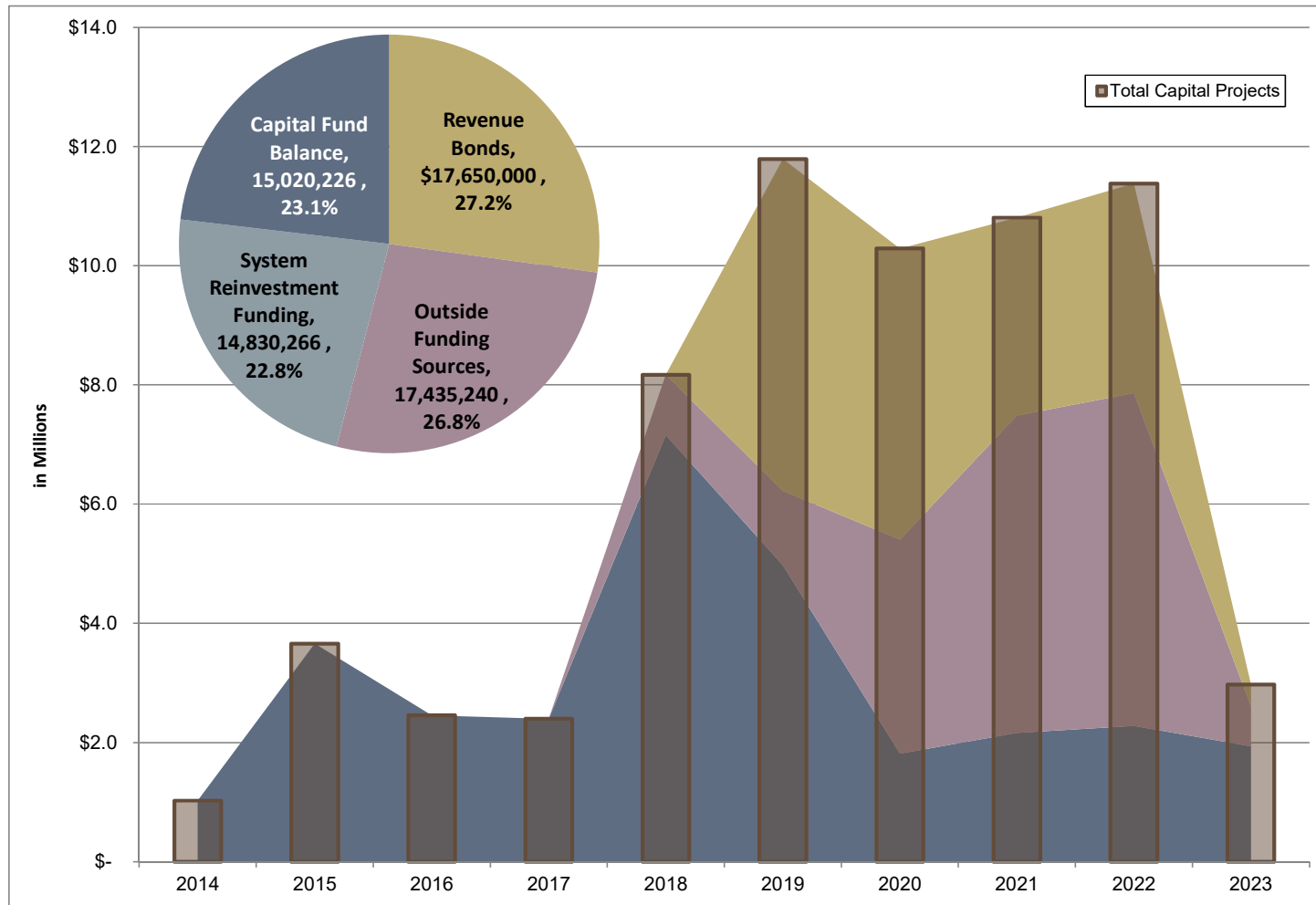


Low Scenario: Revenue Requirements

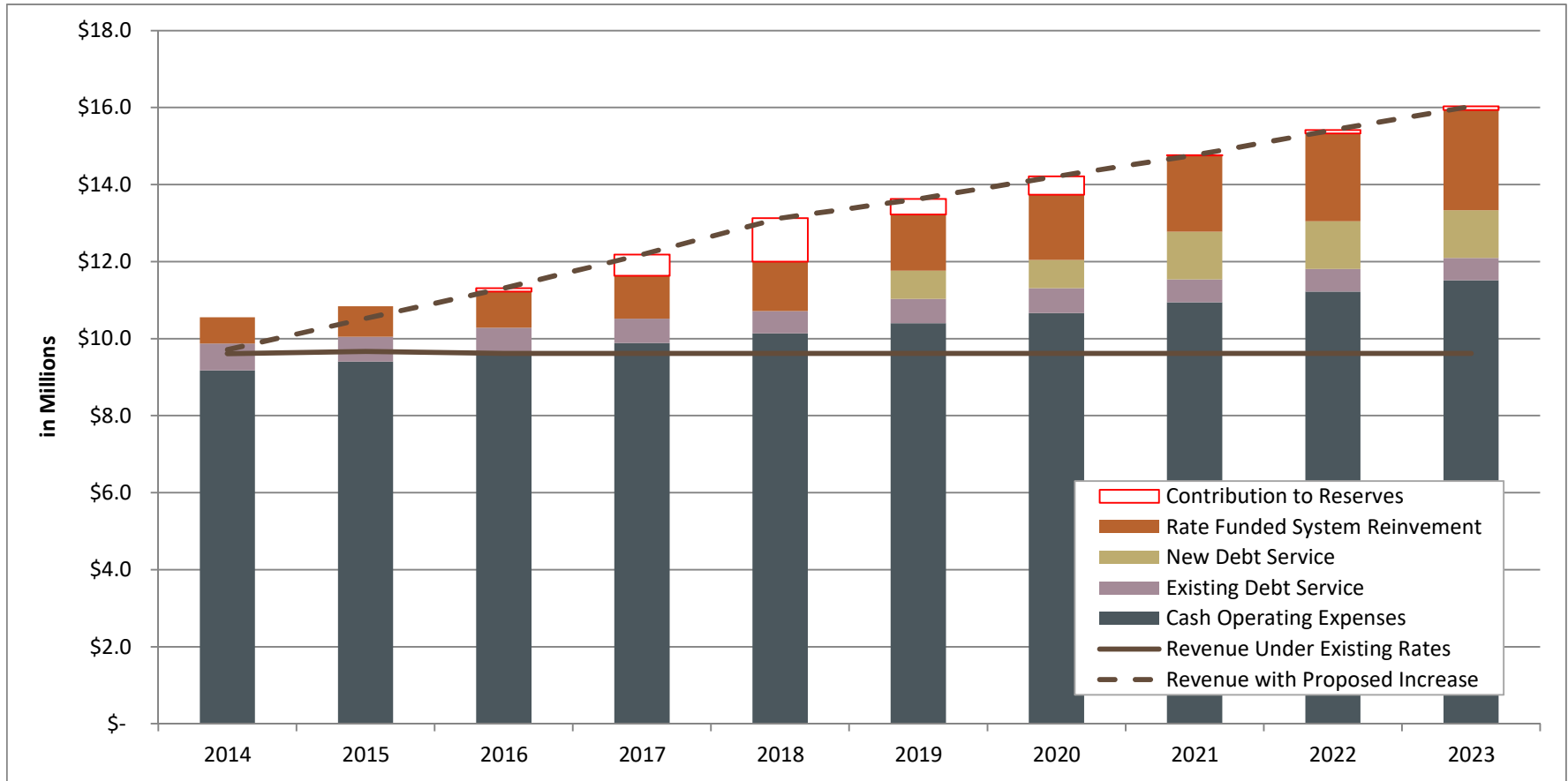


Rate Forecast	Existing	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Monthly Residential Rate	\$ 64.13	\$ 64.13	\$ 68.14	\$ 72.40	\$ 76.92	\$ 81.73	\$ 85.61	\$ 89.68	\$ 93.94	\$ 98.40	\$ 103.07
Monthly Dollar Impact		\$ -	\$ 4.01	\$ 4.26	\$ 4.52	\$ 4.81	\$ 3.88	\$ 4.07	\$ 4.26	\$ 4.46	\$ 4.67
Annual Rate Adjustments		0.00%	6.25%	6.25%	6.25%	6.25%	4.75%	4.75%	4.75%	4.75%	4.75%
Cumulative Rate Adjustment		0.00%	6.25%	12.89%	19.95%	27.44%	33.50%	39.84%	46.48%	53.44%	60.73%

Middle Scenario: Capital Financing Plan

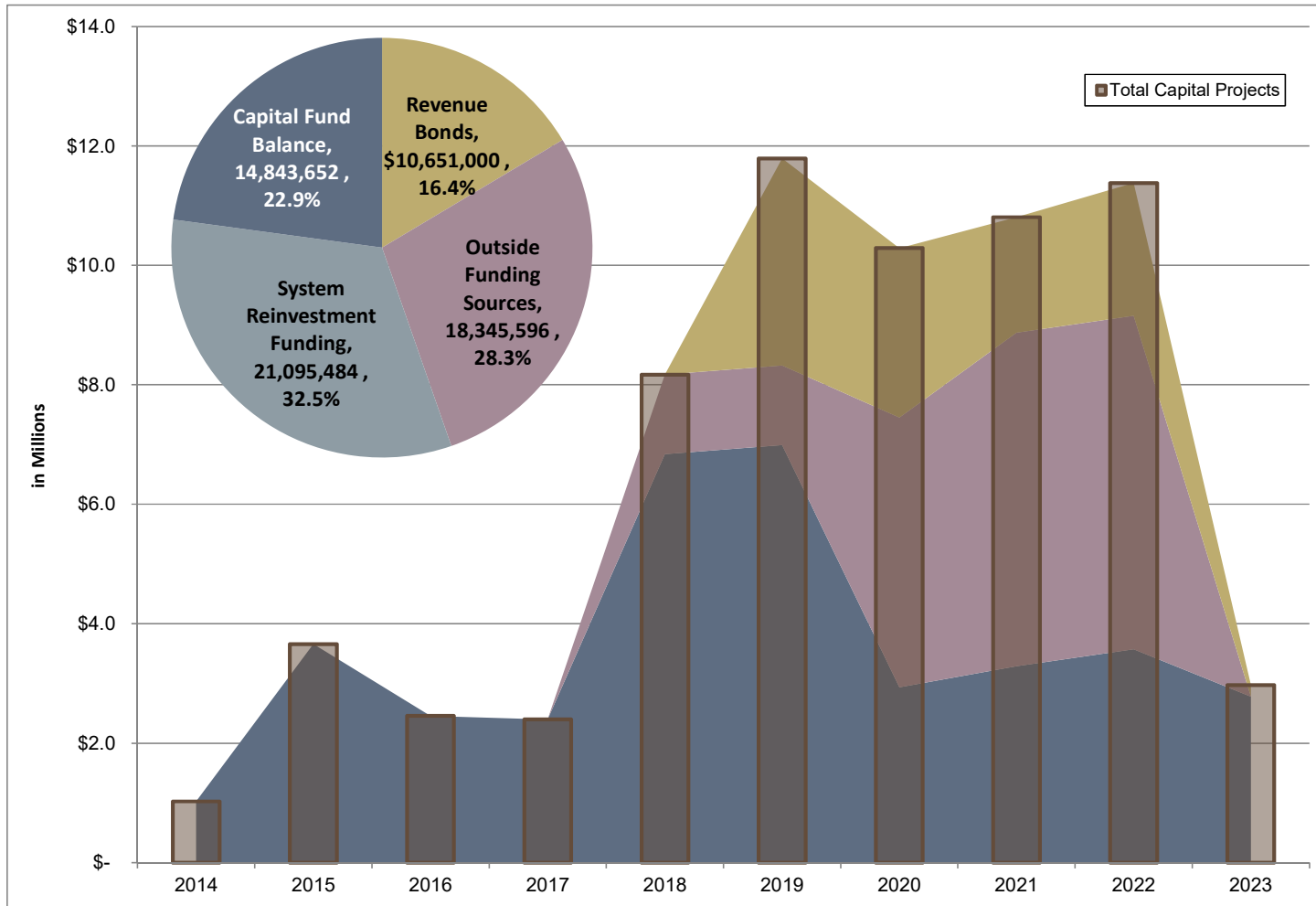


Middle Scenario: Revenue Requirements

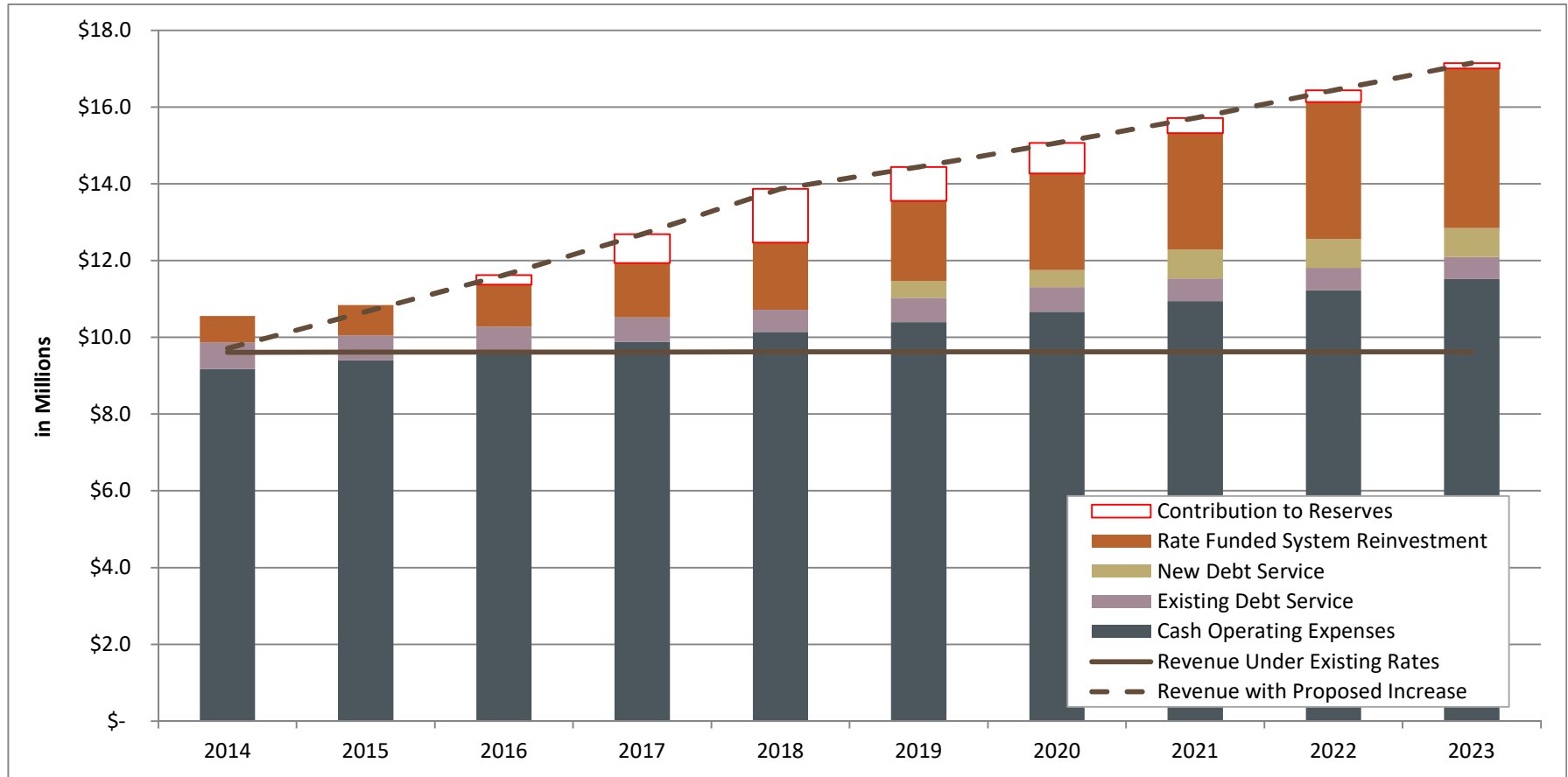


Rate Forecast	Existing	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Monthly Residential Rate	\$ 64.13	\$ 67.18	\$ 70.37	\$ 73.71	\$ 77.21	\$ 80.88	\$ 84.72	\$ 88.74	\$ 92.96	\$ 97.38	\$ 102.00
Monthly Dollar Impact		\$ 3.05	\$ 3.19	\$ 3.34	\$ 3.50	\$ 3.67	\$ 3.84	\$ 4.02	\$ 4.22	\$ 4.42	\$ 4.63
Annual Rate Adjustments		0.00%	8.00%	8.00%	8.00%	8.00%	4.25%	4.25%	0.00%	4.25%	4.25%
Cumulative Rate Adjustment		0.00%	8.00%	16.64%	25.97%	36.05%	41.83%	47.86%	0.00%	60.69%	67.52%

Top Scenario: Capital Financing Plan



Top Scenario: Revenue Requirements



Rate Forecast	Existing	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Monthly Residential Rate	\$ 64.13	\$ 64.13	\$ 70.22	\$ 76.89	\$ 84.20	\$ 92.20	\$ 96.35	\$ 100.68	\$ 100.68	\$ 105.21	\$ 109.95
Monthly Dollar Impact		\$ -	\$ 6.09	\$ 6.67	\$ 7.30	\$ 8.00	\$ 4.15	\$ 4.34	\$ -	\$ 4.53	\$ 4.73
Annual Rate Adjustments		0.00%	9.50%	9.50%	9.50%	9.50%	4.50%	4.50%	0.00%	4.50%	4.50%
Cumulative Rate Adjustment		0.00%	9.50%	19.90%	31.29%	43.77%	50.24%	57.00%	0.00%	71.44%	79.16%

Wastewater Capital Funding Summary

Wastewater Baseline Scenario			
Item No.	Description	Amount	Percent
1	Capital Fund Balance	\$47,003,946	73.0%
2	System Reinvestment Funding	-	0.0%
3	Outside Funding Sources	17,419,286	27.0%
4	Revenue Bonds	-	0.0%
5	Total Inflow	\$64,423,232	100.0%

Wastewater Low Scenario			
Item No.	Description	Amount	Percent
6	Capital Fund Balance	\$14,132,160	21.8%
7	System Reinvestment Funding	8,565,048	13.2%
8	Outside Funding Sources	16,988,523	26.2%
9	Revenue Bonds	25,250,000	38.9%
10	Total Inflow	\$64,935,732	100.0%

Wastewater Middle Scenario			
Item No.	Description	Amount	Percent
11	Capital Fund Balance	\$15,020,226	23.1%
12	System Reinvestment Funding	14,830,266	22.8%
13	Outside Funding Sources	17,435,240	26.8%
14	Revenue Bonds	17,650,000	27.2%
15	Total Inflow	\$64,935,732	100.0%

Wastewater Top Scenario			
Item No.	Description	Amount	Percent
16	Capital Fund Balance	\$14,843,652	22.9%
17	System Reinvestment Funding	21,095,484	32.5%
18	Outside Funding Sources	18,345,596	28.3%
19	Revenue Bonds	10,651,000	16.4%
20	Total Inflow	\$64,935,732	100.0%

Wastewater: Revenue Requirement Summary

Wastewater Utility	Baseline	Low	Middle	Top
	Results			
Annual Rate Increase	3.00% / 2.50%	6.25% / 4.75%	8.00% / 4.25%	9.50% / 4.50%
Cumulative Rate Increase	27.3%	60.7%	65.5%	79.2%
% of CIP Debt Financed	0.0%	38.9%	27.2%	16.4%
Ending Capital Fund Balance	\$1.9 million	\$2.1 million	\$2.7 million	\$5.1 million
Ending Operating Fund Balance	\$1.3 million	\$1.4 million	\$1.4 million	\$1.4 million
Ending Total Balance	\$3.2 million	\$3.5 million	\$4.1 million	\$6.5 million

Baseline Scenario: Combined Rate Impact

Rate Adjustment	Existing FYE	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Monthly Residential Rate											
Water	\$ 26.40	\$ 26.40	\$ 27.19	\$ 28.01	\$ 28.85	\$ 29.71	\$ 30.23	\$ 30.76	\$ 31.30	\$ 31.85	\$ 32.41
Sewer	64.13	64.13	66.05	68.04	70.08	72.18	73.98	75.83	77.73	79.67	81.66
Total	\$ 90.53	\$ 90.53	\$ 93.25	\$ 96.04	\$ 98.92	\$ 101.89	\$ 104.22	\$ 106.60	\$ 109.03	\$ 111.52	\$ 114.07
Total Annual Rate Adjustment		\$0.00	\$2.72	\$2.80	\$2.88	\$2.97	\$2.32	\$2.38	\$2.43	\$2.49	\$2.55
Total Annual Rate Adjustment		0.00%	3.00%	3.00%	3.00%	3.00%	2.28%	2.28%	2.28%	2.28%	2.29%
Total Cumulative Rate Increase		0.00%	3.00%	6.09%	9.27%	12.55%	15.12%	17.75%	20.43%	23.19%	26.00%

Low Scenario: Combined Rate Impact

Rate Adjustment	Existing FYE	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Monthly Residential Rate											
Water	\$ 26.40	\$ 26.40	\$ 27.72	\$ 29.11	\$ 30.56	\$ 32.09	\$ 32.57	\$ 33.06	\$ 33.56	\$ 34.06	\$ 34.57
Sewer	64.13	64.13	68.14	72.40	76.92	81.73	85.61	89.68	93.94	98.40	103.07
Total	\$ 90.53	\$ 90.53	\$ 95.86	\$ 101.50	\$ 107.48	\$ 113.82	\$ 118.18	\$ 122.74	\$ 127.49	\$ 132.46	\$ 137.64
Total Annual Rate Adjustment		\$0.00	\$5.33	\$5.64	\$5.98	\$6.34	\$4.36	\$4.56	\$4.76	\$4.97	\$5.18
Total Annual Rate Adjustment		0.00%	5.89%	5.89%	5.89%	5.89%	3.83%	3.85%	3.87%	3.89%	3.91%
Total Cumulative Rate Increase		0.00%	5.89%	12.12%	18.73%	25.72%	30.54%	35.58%	40.83%	46.31%	52.04%

Middle Scenario: Combined Rate Impact

Rate Adjustment	Existing FYE	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Monthly Residential Rate											
Water	\$ 26.40	\$ 26.40	\$ 28.31	\$ 30.37	\$ 32.57	\$ 34.93	\$ 36.15	\$ 37.42	\$ 38.73	\$ 40.08	\$ 41.49
Sewer	64.13	67.18	70.37	73.71	77.21	80.88	84.72	88.74	92.96	97.38	102.00
Total	\$ 90.53	\$ 93.58	\$ 98.68	\$ 104.08	\$ 109.78	\$ 115.81	\$ 120.87	\$ 126.16	\$ 131.69	\$ 137.46	\$ 143.49
Total Annual Rate Adjustment		\$3.05	\$5.10	\$5.40	\$5.70	\$6.03	\$5.06	\$5.29	\$5.52	\$5.77	\$6.03
Total Annual Rate Adjustment		3.36%	5.46%	5.47%	5.48%	5.49%	4.37%	4.38%	4.38%	4.38%	4.39%
Total Cumulative Rate Increase		3.36%	9.00%	14.96%	21.26%	27.92%	33.52%	39.36%	45.46%	51.84%	58.50%

Top Scenario: Combined Rate Impact

Rate Adjustment	Existing FYE	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Monthly Residential Rate											
Water	\$ 26.40	\$ 26.40	\$ 28.91	\$ 31.65	\$ 34.66	\$ 37.95	\$ 39.85	\$ 41.84	\$ 43.94	\$ 46.13	\$ 48.44
Sewer	64.13	64.13	70.22	76.89	84.20	92.20	96.35	100.68	100.68	105.21	109.95
Total	\$ 90.53	\$ 90.53	\$ 99.13	\$ 108.55	\$ 118.86	\$ 130.15	\$ 136.20	\$ 142.53	\$ 144.62	\$ 151.35	\$ 158.39
Total Annual Rate Adjustment		\$0.00	\$8.60	\$9.42	\$10.31	\$11.29	\$6.05	\$6.33	\$2.09	\$6.73	\$7.04
Total Annual Rate Adjustment		0.00%	9.50%	9.50%	9.50%	9.50%	4.65%	4.65%	1.47%	4.65%	4.65%
Total Cumulative Rate Increase		0.00%	9.50%	19.90%	31.29%	43.77%	50.45%	57.44%	59.75%	67.18%	74.96%

Next Steps

- Incorporate policy direction
- Finalize revenue requirements
- Begin cost of service analysis using selected revenue requirement scenario



JUNEAU RATE STUDY

Water/Sewer Cost of Service *Preliminary Results*

Assembly Presentation
by William Wilks, FCS GROUP Senior Project Manager

February 10, 2014

Purpose of Today's Meeting

- Overview of Rate Study Process
 - What has been accomplished
 - Where we are today
- Review Preliminary Cost of Service / Rate Results
- Next steps
- Questions / Comments

Cost Studies and Their Objectives

- Revenue Requirement Cost Study
 - Answers the question: “is the utility operating at a surplus or deficiency and what percent change in rates is required to achieve the utility’s revenue requirement”
 - The answer for CBJ: both utilities are operating at a deficiency
 - Scenarios were provided that show the percent change in rates to achieve revenue requirement: low, middle and high
- Cost of Service Cost Study – **What we are here for today**
 - Answers the question: “do existing rates by class of service cover the cost of that service”
 - The answer for CBJ: Cost of service indicates subsidies exist among customer classes within both utilities
- Rate Design:
 - Used to achieve public policy objectives once we know revenue requirement and cost of service results
 - Demonstrates impact to customer bills

Recap of Preliminary Revenue Requirement Results

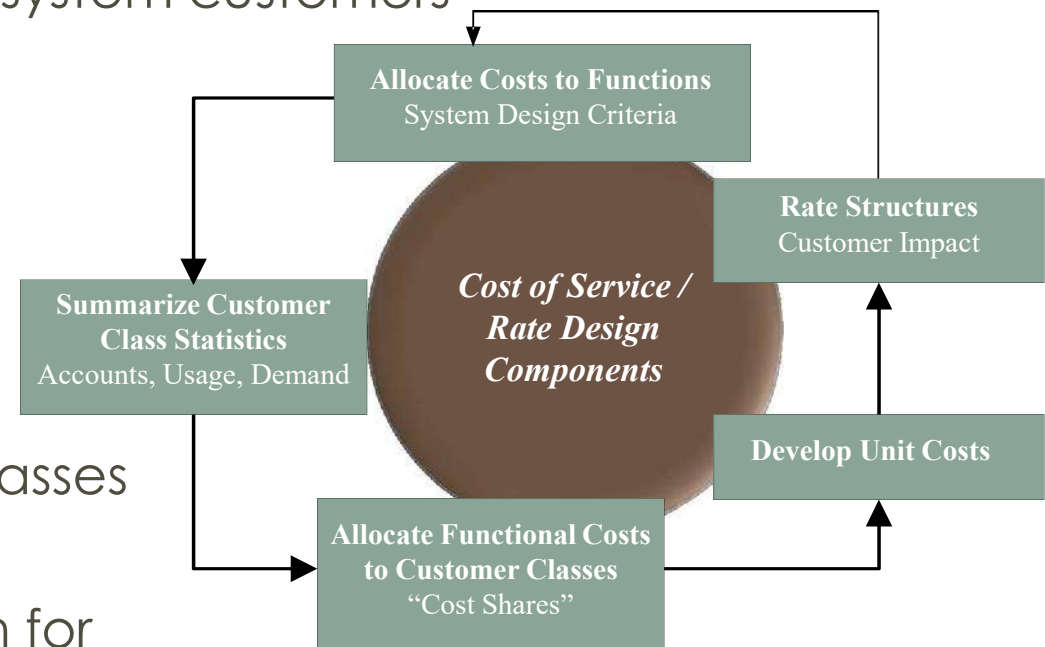
- Four Scenarios develop for water and sewer:

Water Utility	Baseline	Low	Middle	Top
Current O&M and Debt	Fully Funded			
Capital Program	\$11 million	\$22 million		
System Reinvestment Funding	35% constant	35% constant	Phase-In 68%	Phase-In 100%
Cumulate Rate Increase (2015 -2023)	3.00% - 22.75%	5.00% - 30.94%	7.25% - 57.14%	9.50 - - 83.49%

Wastewater Utility	Baseline	Low	Middle	Top
Current O&M and Debt	Fully Funded			
Capital Program	\$25.5 million	\$51 million		
System Reinvestment Funding	25% constant	25% constant	Phase-In 63%	Phase-In 100%
Cumulate Rate Increase (2015 -2023)	3.50% - 36.29%	6.25% - 60.73%	8.00% - 67.52%	9.50 - - 79.16%

Overview of Cost of Service

- Provides a defensible basis for assigning “cost shares” and establishing “equity” for system customers
 - Number of customers
 - Patterns of use
 - Level of service
 - Other
- Determines appropriate grouping of customer classes
- Serves as the foundation for rate structure designs



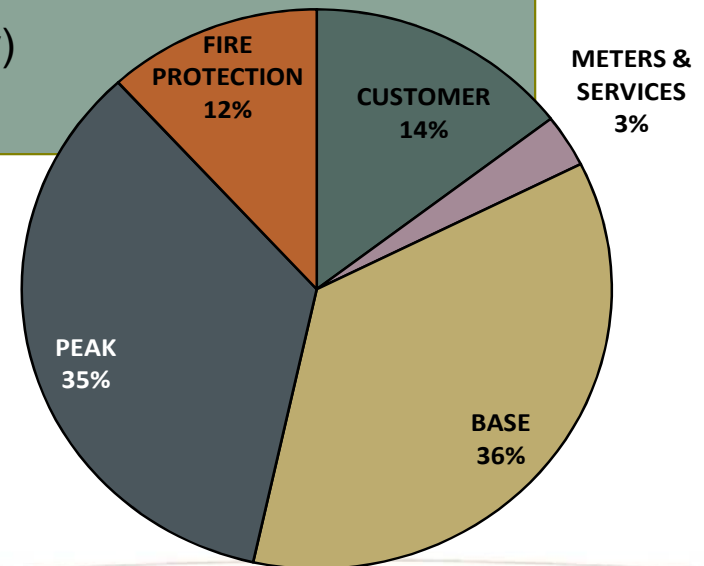
WATER UTILITY

Water Functional Cost Allocation

- Step 1 - Allocate total utility costs by function:
Based on CBJ Specific Costs

Water Utility Functions

- Customer (by number of customer accounts)
- Meters and Services (by number of customer accounts)
- Base Demand (by total consumption)
- Peak Demand (by peak usage/capacity)
- Fire Protection



Annual Water Usage Profiles

- Unmetered residential
 - Evaluated test meter usage per account (5 kgal/month)
 - Adjusted to assume unmetered customers use 10% more water than metered customers
 - Resulting usage per account (5.5 kgal/month) in line with industry experience
- All other customer classes based on actual metered usage
- Balanced to total water system records
 - Water production less actual metered usage less assumed unmetered usage = system loss/unaccounted for water
 - Resulting loss factor of 14% in line with industry experience

Peak Usage Profiles

- Peak period defined as May–September recorded billing system usage
- Peak season usage calculated as ratio to average annual usage
 - Unmetered residential – recorded test meter data; low peaking
 - Metered residential – actual metered data; immaterial peaking
 - Commercial - actual metered data
 - Regular commercial - moderate peaking
 - Large commercial production (Brewery) – low peaking
 - Large commercial seasonal (fish processors) – high peaking
 - Bulk water (cruise ships) – high peaking

Water Customer Statistics

	Monthly Usage (kgal/unit)		Peak Ratio	Number of Units
	Annual Average	Summer Average		
Residential Flat Rate	5.49	6.04	1.10	7,225
Residential Metered	4.58	4.58	1.00	4,790
Commercial Flat	5.00	5.47	1.09	47
Commercial Metered	24.51	26.79	1.09	902
Large Commercial: Brewery	1,451.00	1,673.75	1.15	1
Large Commercial: Seasonal	1,018.25	1,783.00	1.75	2
Bulk Water (Cruise Ships)	1,139.12	2,900.27	2.55	4

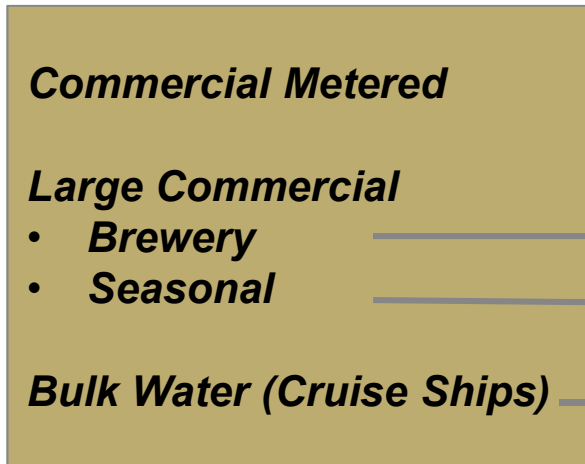
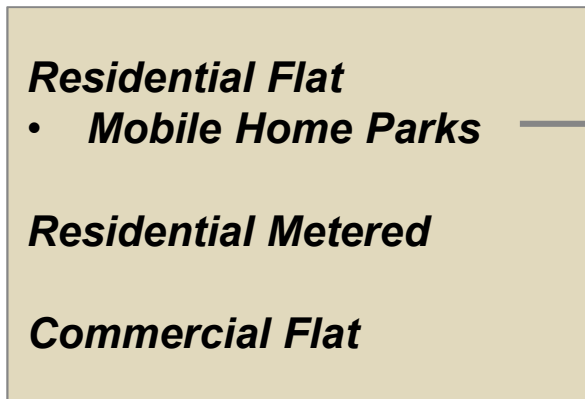
- While the brewery uses a large amount of water, it's peaking pattern is similar to regular commercial
- Seasonal customers and cruise ships have similar high peak patterns

Water Customer Class Changes

Existing

Baseline

Proposed



Water Customer Statistics

Baseline:

	Monthly Usage (kgal/unit)		Peak Ratio	Number of Units
	Annual Average	Summer Average		
Residential Flat Rate	5.49	6.04	1.10	7,225
Residential Metered	4.58	4.58	1.00	4,790
Commercial Flat	5.00	5.48	1.10	47
Commercial Metered	26.09	28.61	1.10	903
Large Commercial: Seasonal	1,099.38	2,532.95	2.30	6

Proposed:

	Monthly Usage (kgal/unit)		Peak Ratio	Number of Units
	Annual Average	Summer Average		
Residential Flat Rate	5.49	6.04	1.10	7,225
Residential Metered	4.58	4.58	1.00	4,790
Commercial Flat	5.00	5.47	1.09	47
Commercial Metered	24.51	26.79	1.09	902

Water Customer Class Cost Shares

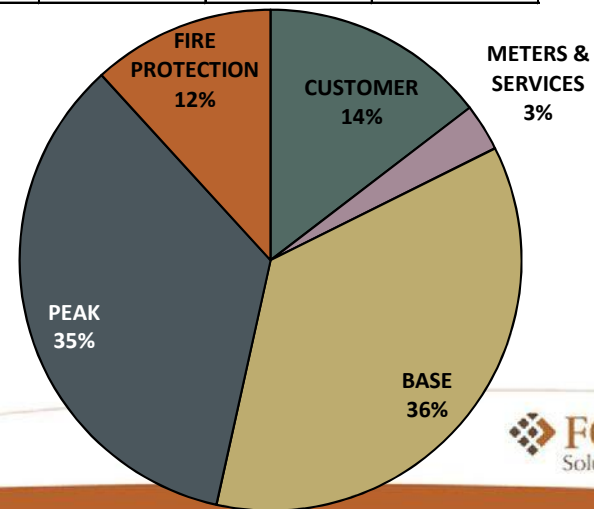
- Step 2 – Allocate functional costs to customer classes

Functional Categories:	Customer	Meters & Services	Base Demand	Peak Demand	Fire Protection	Total
<i>Allocation Basis:</i>	<i>No. of Accounts</i>	<i>No. of Accounts</i>	<i>Annual Use</i>	<i>Summer Use [a]</i>	<i>Weighted Accounts [b]</i>	
Residential Flat Rate	81.8%	81.8%	42.5%	40.3%	66.1%	51.4%
Residential Metered	8.8%	8.8%	23.9%	20.5%	16.5%	19.2%
Commercial Flat	0.5%	0.5%	0.2%	0.2%	0.4%	0.3%
Commercial Metered	8.9%	8.9%	26.2%	24.8%	16.7%	21.5%
Large Commercial: Seasonal	0.1%	0.1%	7.2%	14.2%	0.1%	7.5%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

[a] Summer period use [May-Sept]

[b] Number of accounts weighted with fire flow requirements

2014 revenue requirement: \$4.0 million



Baseline: Water Cost of Service Results

Customer Classes	Existing			2015	
	Revenue under Existing Rates	Cost of Service	Increase / (Decrease)	Cost of Service	Increase / (Decrease)
Residential Flat Rate	\$ 2,288,827	\$ 2,032,148	-11.2%	\$ 2,219,361	-3.0%
Residential Metered	749,236	758,217	1.2%	831,236	10.9%
Commercial Flat	14,758	12,582	-14.7%	13,729	-7.0%
Commercial Metered	744,213	851,290	14.4%	934,038	25.5%
Large Commercial: Seasonal	155,030	297,828	92.1%	329,147	112.3%
TOTAL	\$ 3,952,064	\$ 3,952,064	0.0%	\$ 4,327,511	9.5%

- Flat rate customers currently subsidizing metered customers
 - Historical assumption that unmetered customers use 50% more water than metered customers
- Seasonal customers paying significantly less than their share

Customer Class	Unit Cost	
	Under Existing Rates	Under Cost of Service
Residential Flat Rate	\$ 4.80	\$ 4.27
Residential Metered	2.80	2.84
Commercial Flat	5.28	4.50
Commercial Metered	2.53	2.90
Large Commercial: Seasonal	1.93	3.71
TOTAL SYSTEM	\$ 3.53	\$ 3.53

Proposed: Water Cost of Service Results

Customer Classes	Existing			2015	
	Revenue under Existing Rates	Cost of Service	Increase / (Decrease)	Cost of Service	Increase / (Decrease)
Residential Flat Rate	\$ 2,288,827	\$ 2,101,243	-8.2%	\$ 2,300,861	0.5%
Residential Metered	749,236	807,762	7.8%	884,499	18.1%
Commercial Flat	14,758	12,946	-12.3%	14,176	-3.9%
Commercial Metered	732,056	862,926	17.9%	944,904	29.1%
TOTAL	\$ 3,784,877	\$ 3,784,877	0.0%	\$ 4,144,440	9.5%
plus: Contract	\$ 167,187	\$ 167,187		\$ 183,070	
Total Rate Revenue	\$ 3,952,064	\$ 3,952,064		\$ 4,327,511	

Customer Class	Unit Cost	
	Under Existing Rates	Under Cost of Service
Residential Flat Rate	\$ 4.80	\$ 4.41
Residential Metered	2.80	3.02
Commercial Flat	5.28	4.63
Commercial Metered	2.65	3.12
TOTAL SYSTEM	\$ 3.70	\$ 3.70

Proposed: Water Cost of Service Rates

Metered Customer Class	Monthly Allowance (kgal) [a]	Existing Rates	2014 COS	Across-the-Board Increases								
				Rate Increase:	9.50%	9.50%	9.50%	9.50%	5.00%	5.00%	5.00%	5.00%
				2015	2016	2017	2018	2019	2020	2021	2022	2023
Residential Flat		\$ 26.40	\$ 24.24	\$ 26.54	\$ 29.06	\$ 31.82	\$ 34.84	\$ 36.59	\$ 38.42	\$ 40.34	\$ 42.35	\$ 44.47
Residential Metered												
Monthly Base Charge (per acct)	5	\$ 18.06	\$ 21.04	\$ 23.03	\$ 25.22	\$ 27.62	\$ 30.24	\$ 31.75	\$ 33.34	\$ 35.01	\$ 36.76	\$ 38.60
Volume Charge (per 1,000 gallons)		\$ 2.43	\$ 2.80	\$ 3.07	\$ 3.36	\$ 3.68	\$ 4.03	\$ 4.23	\$ 4.44	\$ 4.66	\$ 4.90	\$ 5.14
Commercial Flat		\$ 26.40	\$ 23.16	\$ 25.36	\$ 27.77	\$ 30.41	\$ 33.30	\$ 34.96	\$ 36.71	\$ 38.54	\$ 40.47	\$ 42.49
Commercial Metered												
Monthly Base Charge (per acct)	5	\$ 18.06	\$ 21.56	\$ 23.61	\$ 25.85	\$ 28.31	\$ 31.00	\$ 32.55	\$ 34.18	\$ 35.88	\$ 37.68	\$ 39.56
Volume Charge (per 1,000 gallons)		\$ 2.43	\$ 2.91	\$ 3.18	\$ 3.49	\$ 3.82	\$ 4.18	\$ 4.39	\$ 4.61	\$ 4.84	\$ 5.08	\$ 5.33

[a] Existing rates include 4 kgal/mo/acct allowance

Water Across the Board Rates

	Monthly Allowance (kgal)	Existing Rates	2015	2016	2017	2018	2019	2020	2021	2022	2023
			9.50%	9.50%	9.50%	9.50%	5.00%	5.00%	5.00%	5.00%	5.00%
Residential Flat		\$ 26.40	\$ 28.91	\$ 31.65	\$ 34.66	\$ 37.95	\$ 39.85	\$ 41.84	\$ 43.94	\$ 46.13	\$ 48.44
Residential Metered											
Monthly Base Charge (per acct)	4	\$ 18.06	\$ 19.78	\$ 21.65	\$ 23.71	\$ 25.96	\$ 27.26	\$ 28.63	\$ 30.06	\$ 31.56	\$ 33.14
Volume Charge (per 1,000 gallons)		\$ 2.43	\$ 2.66	\$ 2.91	\$ 3.19	\$ 3.49	\$ 3.67	\$ 3.85	\$ 4.04	\$ 4.25	\$ 4.46
Commercial Flat		\$ 26.40	\$ 28.91	\$ 31.65	\$ 34.66	\$ 37.95	\$ 39.85	\$ 41.84	\$ 43.94	\$ 46.13	\$ 48.44
Commercial Metered											
Monthly Base Charge (per acct)	4	\$ 18.06	\$ 19.78	\$ 21.65	\$ 23.71	\$ 25.96	\$ 27.26	\$ 28.63	\$ 30.06	\$ 31.56	\$ 33.14
Volume Charge (per 1,000 gallons)		\$ 2.43	\$ 2.66	\$ 2.91	\$ 3.19	\$ 3.49	\$ 3.67	\$ 3.85	\$ 4.04	\$ 4.25	\$ 4.46
Large Commercial											
Monthly Base Charge (per acct)	500	\$ 347.42	\$ 380.42	\$ 416.57	\$ 456.14	\$ 499.47	\$ 524.45	\$ 550.67	\$ 578.20	\$ 607.11	\$ 637.47
Volume Charge (per 1,000 gallons)		\$ 0.70	\$ 0.77	\$ 0.84	\$ 0.92	\$ 1.01	\$ 1.06	\$ 1.11	\$ 1.16	\$ 1.22	\$ 1.28
Bulk Water (Cruise Ships)											
Monthly Base Charge (per acct)	4	\$ 18.06	\$ 19.78	\$ 21.65	\$ 23.71	\$ 25.96	\$ 27.26	\$ 28.63	\$ 30.06	\$ 31.56	\$ 33.14
Volume Charge (per 1,000 gallons)		\$ 2.43	\$ 2.66	\$ 2.91	\$ 3.19	\$ 3.49	\$ 3.67	\$ 3.85	\$ 4.04	\$ 4.25	\$ 4.46

Proposed: Water Sample Customer Bills

Flat Rate Customers:

2015 Average Monthly Bill (9.5% system increase)					
Customer Class	Current Rates	Across-the-Board Increases	Cost of Service Shifts	\$ Difference from Current	% Difference from Current
Residential Flat	\$ 26.40	\$ 28.91	\$ 26.54	\$ 0.14	0.5%
Commercial Flat	\$ 26.40	\$ 28.91	\$ 25.36	\$ (1.04)	-3.9%

2023 Average Monthly Bill (83% system increase)					
Customer Class	Current Rates	Across-the-Board Increases	Cost of Service Shifts	\$ Difference (cumulative)	% Difference (cumulative)
Residential Flat	\$ 26.40	\$ 48.44	\$ 44.47	\$ 18.07	68.4%
Commercial Flat	\$ 26.40	\$ 48.44	\$ 42.49	\$ 16.09	61.0%

Proposed: Water Sample Customer Bills

Residential Metered Customers:

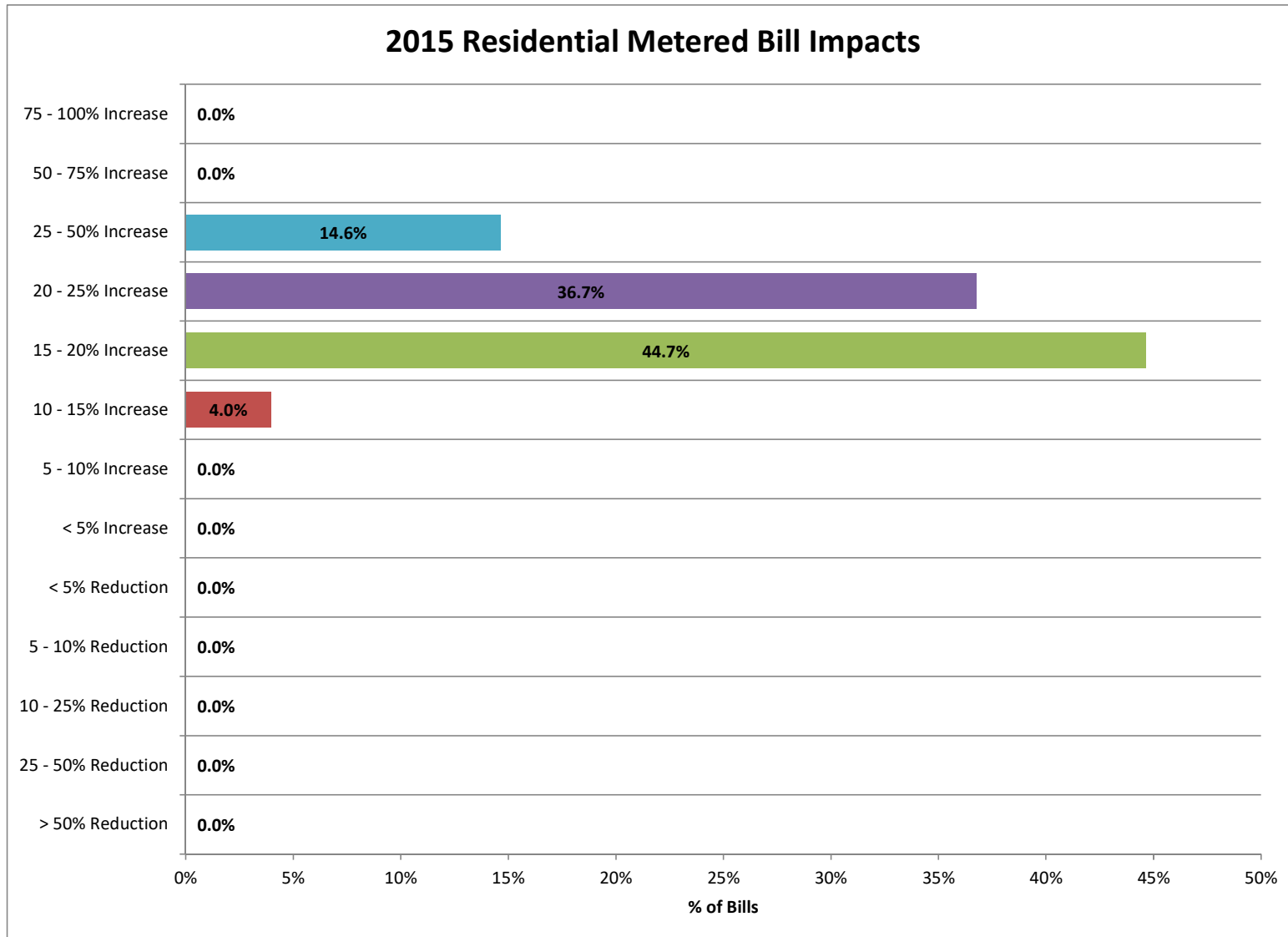
Customer Class	Avg Monthly Use	Current Rates	2015 Average Monthly Bill (9.5% system increase)			
			Across-the-Board Increases	Cost of Service Shifts	\$ Difference from Current	% Difference from Current
Duplex (low use)	2.50	\$ 18.06	\$ 19.78	\$ 23.03	\$ 4.97	27.5%
Duplex (medium use)	6.08	\$ 23.12	\$ 25.32	\$ 26.36	\$ 3.23	14.0%
Duplex (high use)	13.17	\$ 40.34	\$ 44.17	\$ 48.09	\$ 7.75	19.2%
Multifamily (low use)	7.50	\$ 26.57	\$ 29.09	\$ 30.70	\$ 4.14	15.6%
Multifamily (medium use)	53.33	\$ 137.94	\$ 151.04	\$ 171.30	\$ 33.36	24.2%
Multifamily (high use)	182.25	\$ 451.21	\$ 494.07	\$ 566.77	\$ 115.57	25.6%

Proposed: Water Sample Customer Bills

Residential Metered Customers:

Customer Class	Avg Monthly Use	Current Rates	2023 Average Monthly Bill (83% system increase)			
			Across-the-Board Increases	Cost of Service Shifts	\$ Difference (cumulative)	% Difference (cumulative)
Duplex (low use)	2.50	\$ 18.06	\$ 33.14	\$ 38.60	\$ 20.54	113.7%
Duplex (medium use)	6.08	\$ 23.12	\$ 42.43	\$ 44.17	\$ 21.04	91.0%
Duplex (high use)	13.17	\$ 40.34	\$ 74.01	\$ 80.58	\$ 40.24	99.8%
Multifamily (low use)	7.50	\$ 26.57	\$ 48.74	\$ 51.45	\$ 24.88	93.7%
Multifamily (medium use)	53.33	\$ 137.94	\$ 253.10	\$ 287.05	\$ 149.11	108.1%
Multifamily (high use)	182.25	\$ 451.21	\$ 827.90	\$ 949.73	\$ 498.52	110.5%

Proposed: Water Sample Customer Bill Impacts



Proposed: Water Sample Customer Bills

Mobile Home Customers:

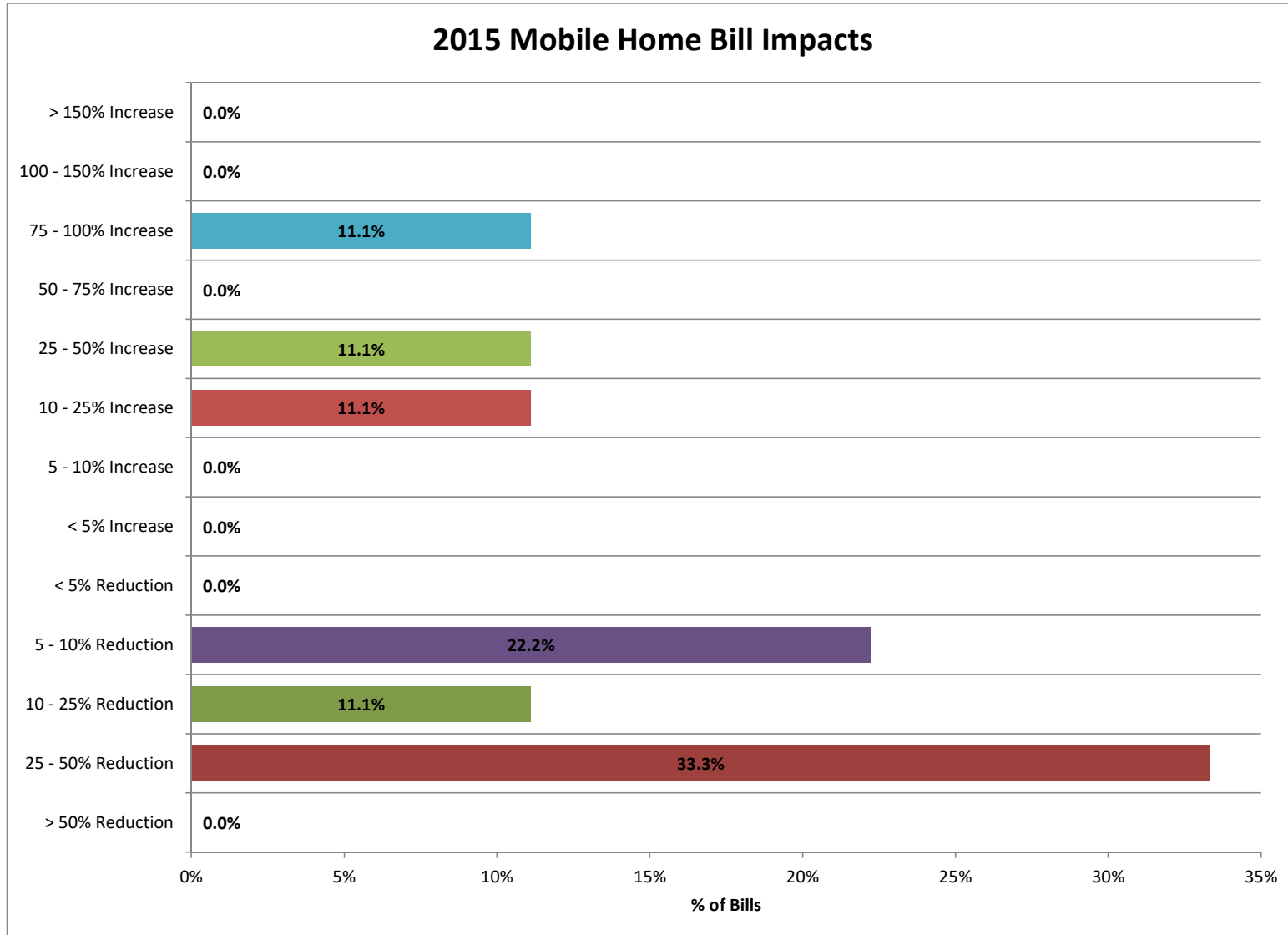
2015 Average Monthly Bill (9.5% system increase)						
Customer Class	Avg Monthly Use / Unit	Current Rates	Across-the-Board Increases	Cost of Service Shifts	\$ Difference from Current	% Difference from Current
Creekside - 91 units	5.73	\$ 2,402.40	\$ 2,630.63	\$ 1,606.20	\$ (796.20)	-33.1%
Switzer - 301 units	11.48	\$ 7,946.40	\$ 8,701.31	\$ 10,603.87	\$ 2,657.47	33.4%
Kodzoff II - 41 units	5.03	\$ 1,082.40	\$ 1,185.23	\$ 639.89	\$ (442.51)	-40.9%
Kodzoff I - 44 units	7.69	\$ 1,161.60	\$ 1,271.95	\$ 1,045.58	\$ (116.02)	-10.0%
Glacierview - 133 units	10.33	\$ 3,511.20	\$ 3,844.76	\$ 4,223.16	\$ 711.96	20.3%
Sprucewood - 104 units	7.73	\$ 2,745.60	\$ 3,006.43	\$ 2,474.09	\$ (271.51)	-9.9%
Waterside - 32 units	16.13	\$ 844.80	\$ 925.06	\$ 1,591.37	\$ 746.57	88.4%
Mountainview - 6 units	5.47	\$ 158.40	\$ 173.45	\$ 108.42	\$ (49.98)	-31.6%
Class Average - 85 units	9.59	\$ 2,255.73	\$ 2,470.03	\$ 2,520.70	\$ 264.96	11.7%

Proposed: Water Sample Customer Bills

Mobile Home Customers:

Customer Class	Avg Monthly Use / Unit	Current Rates	2023 Average Monthly Bill (83% system increase)			
			Across-the-Board Increases	Cost of Service Shifts	\$ Difference (cumulative)	% Difference (cumulative)
Creekside - 91 units	5.73	\$ 2,402.40	\$ 4,408.07	\$ 2,691.46	\$ 289.06	12.0%
Switzer - 301 units	11.48	\$ 7,946.40	\$ 14,580.53	\$ 17,768.61	\$ 9,822.21	123.6%
Kodzoff II - 41 units	5.03	\$ 1,082.40	\$ 1,986.05	\$ 1,072.24	\$ (10.16)	-0.9%
Kodzoff I - 44 units	7.69	\$ 1,161.60	\$ 2,131.37	\$ 1,752.06	\$ 590.46	50.8%
Glacierview - 133 units	10.33	\$ 3,511.20	\$ 6,442.56	\$ 7,076.63	\$ 3,565.43	101.5%
Sprucewood - 104 units	7.73	\$ 2,745.60	\$ 5,037.79	\$ 4,145.76	\$ 1,400.16	51.0%
Waterside - 32 units	16.13	\$ 844.80	\$ 1,550.09	\$ 2,666.61	\$ 1,821.81	215.7%
Mountainview - 6 units	5.47	\$ 158.40	\$ 290.64	\$ 181.67	\$ 23.27	14.7%
Class Average - 85 units	9.59	\$ 2,255.73	\$ 4,138.96	\$ 4,223.86	\$ 1,968.13	87.3%

Proposed: Water Sample Customer Bill Impacts



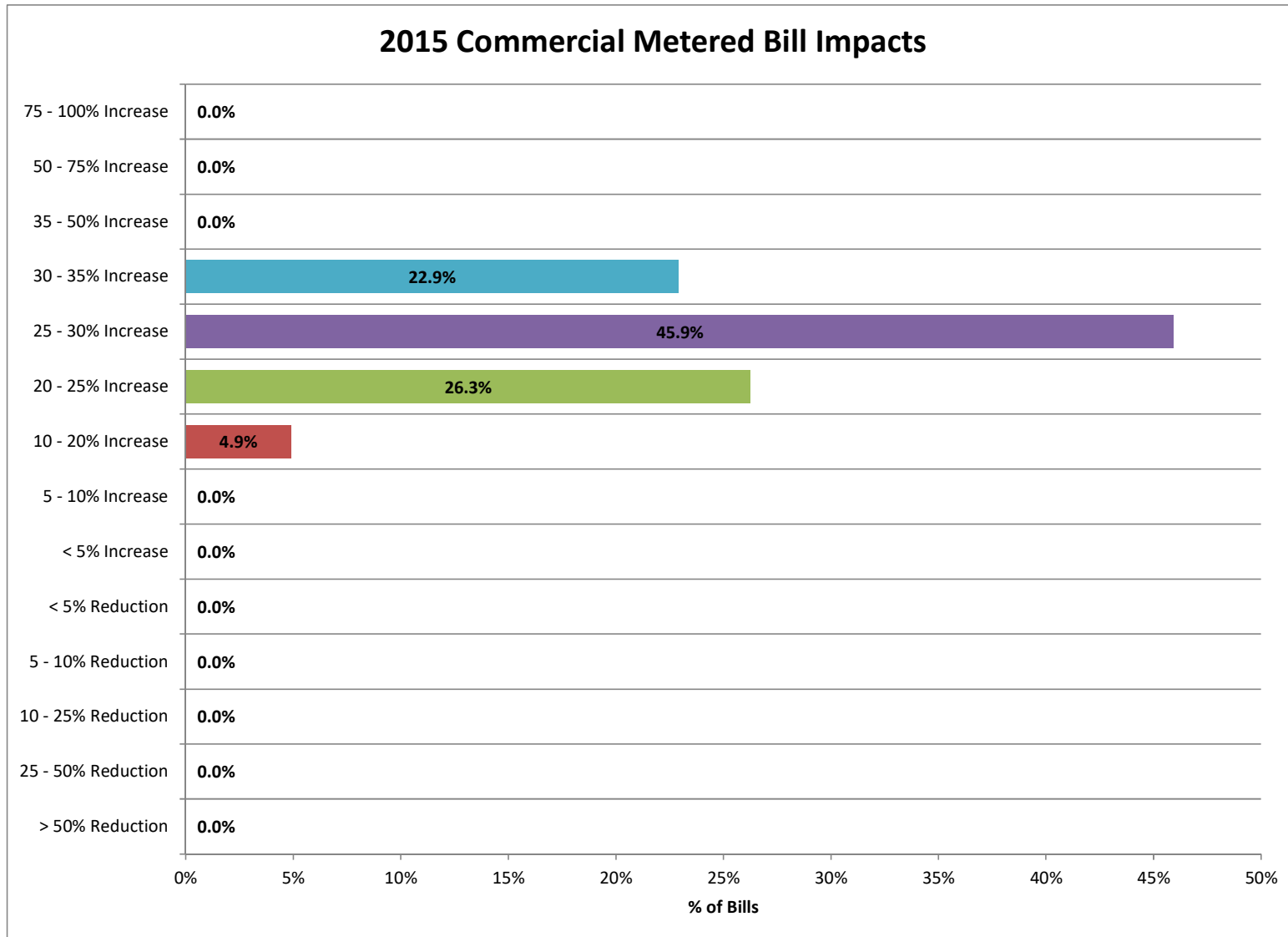
Proposed: Water Sample Customer Bills

Commercial Metered Customers:

			2015 Average Monthly Bill (9.5% system increase)			
Customer Class	Avg Monthly Use	Current Rates	Across-the-Board Increases	Cost of Service Shifts	\$ Difference from Current	% Difference from Current
Commercial (low use)	2.42	\$ 18.06	\$ 19.78	\$ 23.61	\$ 5.55	30.7%
Commercial (medium use)	24.92	\$ 68.89	\$ 75.43	\$ 87.00	\$ 18.12	26.3%
Commercial (high use)	140.50	\$ 349.76	\$ 382.98	\$ 454.91	\$ 105.15	30.1%

			2023 Average Monthly Bill (83% system increase)			
Customer Class	Avg Monthly Use	Current Rates	Across-the-Board Increases	Cost of Service Shifts	\$ Difference (cumulative)	% Difference (cumulative)
Commercial (low use)	2.42	\$ 18.06	\$ 33.14	\$ 39.56	\$ 21.50	119.1%
Commercial (medium use)	24.92	\$ 68.89	\$ 126.40	\$ 145.79	\$ 76.90	111.6%
Commercial (high use)	140.50	\$ 349.76	\$ 641.75	\$ 762.27	\$ 412.52	117.9%

Proposed: Water Sample Customer Bill Impacts



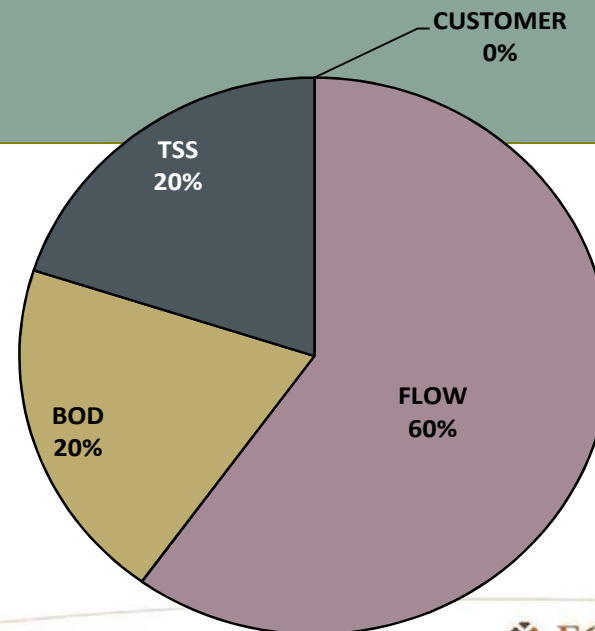
WASTEWATER (SEWER) UTILITY

Sewer Functional Cost Allocation

- Step 1 Allocate total utility costs by function: Based on CBJ Specific Costs

Sewer Utility Functions

- Customer (by number of customer accounts)
- Flow (by contributed flow)
- BOD (by contributed flow)
- TSS (by contributed flow)



Sewer Cost of Service Assumptions

■ Annual Sewer Contribution Profiles

- Unmetered residential - annual water usage, adjusted downward to eliminate estimated outdoor usage (5 kgal/month)
- Meter residential – annual water usage
 - Mobile home water usage indicates very high winter usage (typically used to estimate contributed sewer)
 - Assumed to be leakage and/or running water to avoid pipe freezing

■ All customer classes assume domestic level strength

Sewer Customer Statistics

	Annual Avg Flow / Unit (kgal)	Number of Units
Residential Flat	5.00	6,363
Residential Metered	4.58	4,767
Commercial Flat	5.00	42
Commercial Metered	23.37	820
Brewery	1,451.00	1
Cruise Ships (Contract; seasonal)	877.86	1

Proposed to be a contract customer

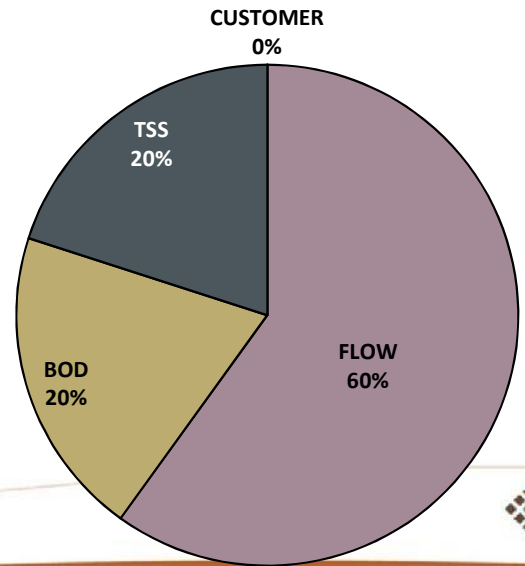
Already a contract customer

Septage haulers also proposed to be contract customers

Baseline: Sewer Customer Class Cost Shares

Functional Categories:	Customer	Flow	BOD	TSS	Total
<i>Allocation Basis:</i>	<i>No. of Accounts</i>	<i>Contributed Flow</i>	<i>Wtd. Flow</i>	<i>Wtd. Flow</i>	
Residential Flat	81.1%	41.8%	41.8%	41.8%	41.8%
Residential Metered	9.4%	29.9%	29.9%	29.9%	29.9%
Commercial Flat	0.6%	0.3%	0.3%	0.3%	0.3%
Commercial Metered	8.9%	26.2%	26.2%	26.2%	26.2%
Brewery	0.0%	1.9%	1.9%	1.9%	1.9%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%

2014 revenue requirement: \$9.7 million



Baseline: Sewer Cost of Service Results

Customer Classes	Existing			2015	
	Revenue under Existing Rates	Cost of Service	Increase / (Decrease)	Cost of Service	Increase / (Decrease)
Residential Flat	\$ 4,896,774	\$ 4,040,642	-17.5%	\$ 4,424,503	-9.6%
Residential Metered	2,363,477	2,887,728	22.2%	3,162,062	33.8%
Commercial Flat	31,937	26,353	-17.5%	28,857	-9.6%
Commercial Metered	2,232,557	2,534,626	13.5%	2,775,416	24.3%
Brewery	148,884	184,281	23.8%	201,788	35.5%
TOTAL	\$ 9,673,630	\$ 9,673,630	0.0%	\$ 10,592,625	9.5%

Customer Class	Unit Cost	
	Under Existing Rates	Under Cost of Service
Residential Flat	\$ 12.83	\$ 10.58
Residential Metered	\$ 8.66	\$ 10.58
Commercial Flat	\$ 12.83	\$ 10.58
Commercial Metered	\$ 9.32	\$ 10.58
Brewery	\$ 8.55	\$ 10.58
TOTAL SYSTEM	\$ 10.58	\$ 10.58

Proposed: Sewer Cost of Service Results

Customer Classes	Existing			2015	
	Revenue under Existing Rates	Cost of Service	Increase / (Decrease)	Cost of Service	Increase / (Decrease)
Residential Flat	\$ 4,896,774	\$ 4,055,714	-17.2%	\$ 4,441,007	-9.3%
Residential Metered	2,363,477	2,898,500	22.6%	3,173,857	34.3%
Commercial Flat	31,937	26,451	-17.2%	28,964	-9.3%
Commercial Metered	2,232,557	2,544,081	14.0%	2,785,769	24.8%
TOTAL	\$ 9,524,746	\$ 9,524,746	0.0%	\$ 10,429,596	9.5%
plus: Contract (Brewery)	\$ 148,884	\$ 148,884		\$ 163,029	
Total Rate Revenue	\$ 9,673,630	\$ 9,673,630		\$ 10,592,625	

Customer Class	Unit Cost	
	Under Existing Rates	Under Cost of Service
Residential Flat	\$ 12.83	\$ 10.62
Residential Metered	\$ 8.66	\$ 10.62
Commercial Flat	\$ 12.83	\$ 10.62
Commercial Metered	\$ 9.32	\$ 10.62
TOTAL SYSTEM	\$ 10.62	\$ 10.62

Proposed: Sewer Cost of Service Rate Schedule

Metered Customer Class	Monthly Allowance (kgal) [a]	Across-the-Board Increases										
		Rate Increase:		9.50%	9.50%	9.50%	9.50%	4.50%	4.50%	4.50%	4.50%	4.50%
		Existing Rates	2014 COS	2015	2016	2017	2018	2019	2020	2021	2022	2023
Residential Flat		\$ 64.13	\$ 53.12	\$ 58.16	\$ 63.69	\$ 69.74	\$ 76.36	\$ 79.80	\$ 83.39	\$ 87.14	\$ 91.06	\$ 95.16
Residential Metered												
Base Charge (per month per acct)	5	\$ 64.13	\$ 53.12	\$ 58.16	\$ 63.69	\$ 69.74	\$ 76.36	\$ 79.80	\$ 83.39	\$ 87.14	\$ 91.06	\$ 95.16
Volume Charge (per kgal)		\$ 8.53	\$ 10.62	\$ 11.63	\$ 12.74	\$ 13.95	\$ 15.27	\$ 15.96	\$ 16.68	\$ 17.43	\$ 18.21	\$ 19.03
Commercial Flat		\$ 64.13	\$ 53.12	\$ 58.16	\$ 63.69	\$ 69.74	\$ 76.36	\$ 79.80	\$ 83.39	\$ 87.14	\$ 91.06	\$ 95.16
Commercial Metered												
Base Charge (per month per acct)	5	\$ 64.13	\$ 53.12	\$ 58.16	\$ 63.69	\$ 69.74	\$ 76.36	\$ 79.80	\$ 83.39	\$ 87.14	\$ 91.06	\$ 95.16
Volume Charge (per kgal)		\$ 8.53	\$ 10.62	\$ 11.63	\$ 12.74	\$ 13.95	\$ 15.27	\$ 15.96	\$ 16.68	\$ 17.43	\$ 18.21	\$ 19.03

[a] Existing allowance is 4 kgal/account/month

Sewer Across-the-Board Rate Schedule

	Monthly Allowance (kgal)	Existing Rates	2015	2016	2017	2018	2019	2020	2021	2022	2023
			9.50%	9.50%	9.50%	9.50%	4.50%	4.50%	4.50%	4.50%	4.50%
Residential Flat		\$ 64.13	\$ 70.22	\$ 76.89	\$ 84.20	\$ 92.20	\$ 96.35	\$ 100.68	\$ 105.21	\$ 109.95	\$ 114.89
Residential Metered											
Monthly Base Charge (per acct)	4	\$ 64.13	\$ 70.22	\$ 76.89	\$ 84.20	\$ 92.20	\$ 96.35	\$ 100.68	\$ 105.21	\$ 109.95	\$ 114.89
Volume Charge (per 1,000 gallons)		\$ 8.53	\$ 9.34	\$ 10.23	\$ 11.20	\$ 12.26	\$ 12.82	\$ 13.39	\$ 13.99	\$ 14.62	\$ 15.28
Commercial Flat		\$ 64.13	\$ 70.22	\$ 76.89	\$ 84.20	\$ 92.20	\$ 96.35	\$ 100.68	\$ 105.21	\$ 109.95	\$ 114.89
Commercial Metered											
Monthly Base Charge (per acct)	4	\$ 64.13	\$ 70.22	\$ 76.89	\$ 84.20	\$ 92.20	\$ 96.35	\$ 100.68	\$ 105.21	\$ 109.95	\$ 114.89
Volume Charge (per 1,000 gallons)		\$ 8.53	\$ 9.34	\$ 10.23	\$ 11.20	\$ 12.26	\$ 12.82	\$ 13.39	\$ 13.99	\$ 14.62	\$ 15.28

Proposed: Sewer Sample Customer Bills

Flat Rate Customers:

		2015 Average Monthly Bill (9.5% system increase)			
Customer Class	Current Rates	Across-the-Board Increases	Cost of Service Shifts	\$ Difference from Current	% Difference from Current
Residential Flat	\$ 64.13	\$ 70.22	\$ 58.16	\$ (5.97)	-9.3%
Commercial Flat	\$ 64.13	\$ 70.22	\$ 58.16	\$ (5.97)	-9.3%

		2023 Average Monthly Bill (79% system increase)			
Customer Class	Current Rates	Across-the-Board Increases	Cost of Service Shifts	\$ Difference (cumulative)	% Difference (cumulative)
Residential Flat	\$ 70.22	\$ 114.89	\$ 95.16	\$ 31.03	48.4%
Commercial Flat	\$ 70.22	\$ 114.89	\$ 95.16	\$ 31.03	48.4%

Proposed: Sewer Sample Customer Bills

Residential Metered Customers:

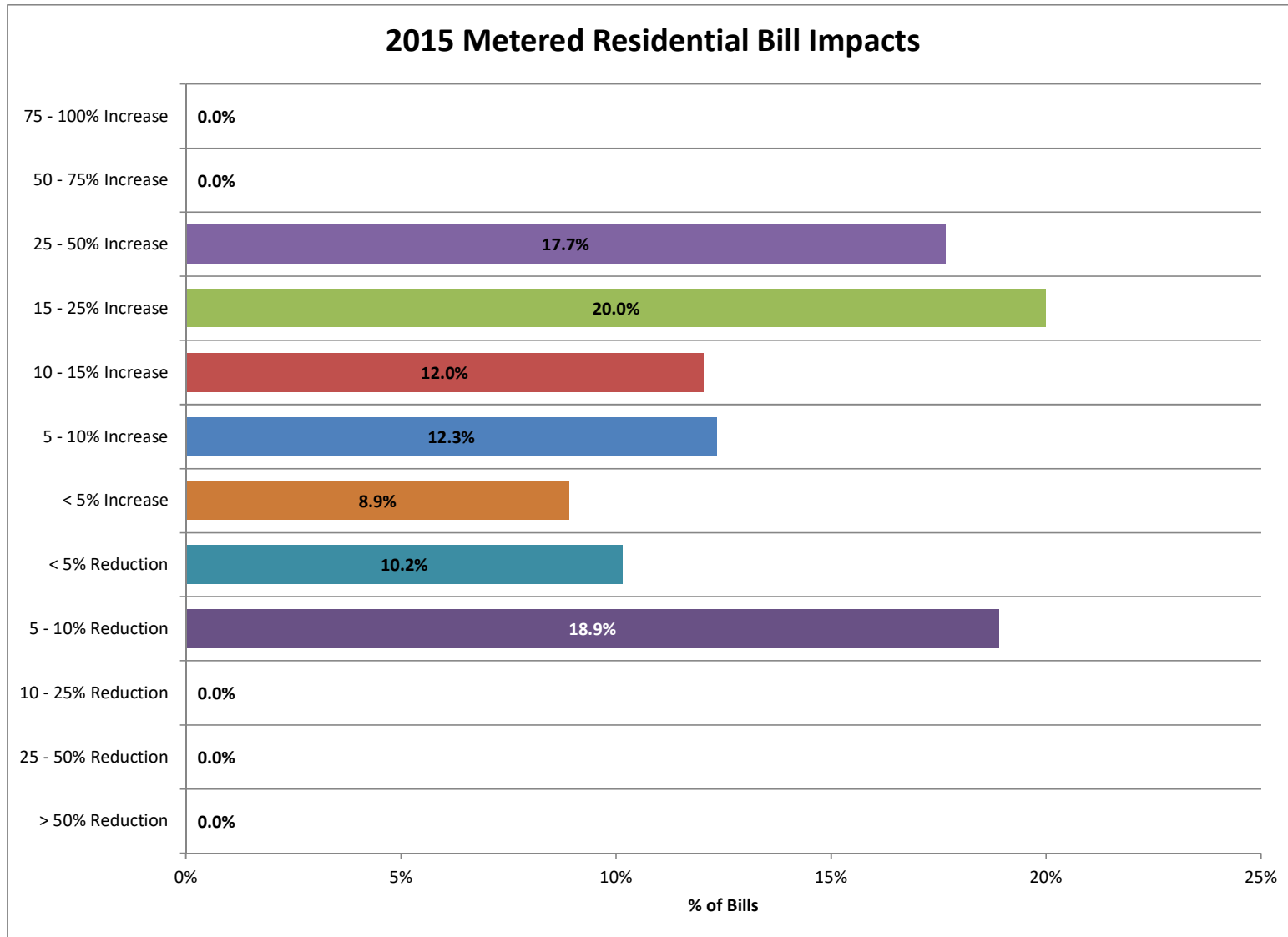
Customer Class	Avg Monthly Flow	Current Rates	2015 Average Monthly Bill (9.5% system increase)			
			Across-the-Board Increases	Cost of Service Shifts	\$ Difference from Current	% Difference from Current
Duplex (low use)	2.75	\$ 64.13	\$ 70.22	\$ 58.16	\$ (5.97)	-9.3%
Duplex (medium use)	6.25	\$ 83.32	\$ 91.24	\$ 84.33	\$ 1.01	1.2%
Duplex (high use)	12.25	\$ 134.50	\$ 147.28	\$ 154.13	\$ 19.62	14.6%
Multifamily (low use)	4.33	\$ 68.40	\$ 74.89	\$ 63.98	\$ (4.42)	-6.5%
Multifamily (medium use)	25.17	\$ 244.68	\$ 267.93	\$ 304.38	\$ 59.69	24.4%
Multifamily (high use)	168.42	\$ 1,466.60	\$ 1,605.93	\$ 1,970.69	\$ 504.09	34.4%

Proposed: Sewer Sample Customer Bills

Residential Metered Customers:

Customer Class	Avg Monthly Flow	Current Rates	2023 Average Monthly Bill (79% system increase)			
			Across-the-Board Increases	Cost of Service Shifts	\$ Difference (cumulative)	% Difference (cumulative)
Duplex (low use)	2.75	\$ 64.13	\$ 114.89	\$ 95.16	\$ 31.03	48.4%
Duplex (medium use)	6.25	\$ 83.32	\$ 149.28	\$ 137.98	\$ 54.66	65.6%
Duplex (high use)	12.25	\$ 134.50	\$ 240.97	\$ 252.18	\$ 117.67	87.5%
Multifamily (low use)	4.33	\$ 68.40	\$ 122.54	\$ 104.68	\$ 36.28	53.0%
Multifamily (medium use)	25.17	\$ 244.68	\$ 438.37	\$ 498.01	\$ 253.32	103.5%
Multifamily (high use)	168.42	\$ 1,466.60	\$ 2,627.55	\$ 3,224.35	\$ 1,757.75	119.9%

Proposed: Sewer Sample Customer Bill Impacts



Proposed: Sewer Sample Customer Bills

Mobile Home Customers:

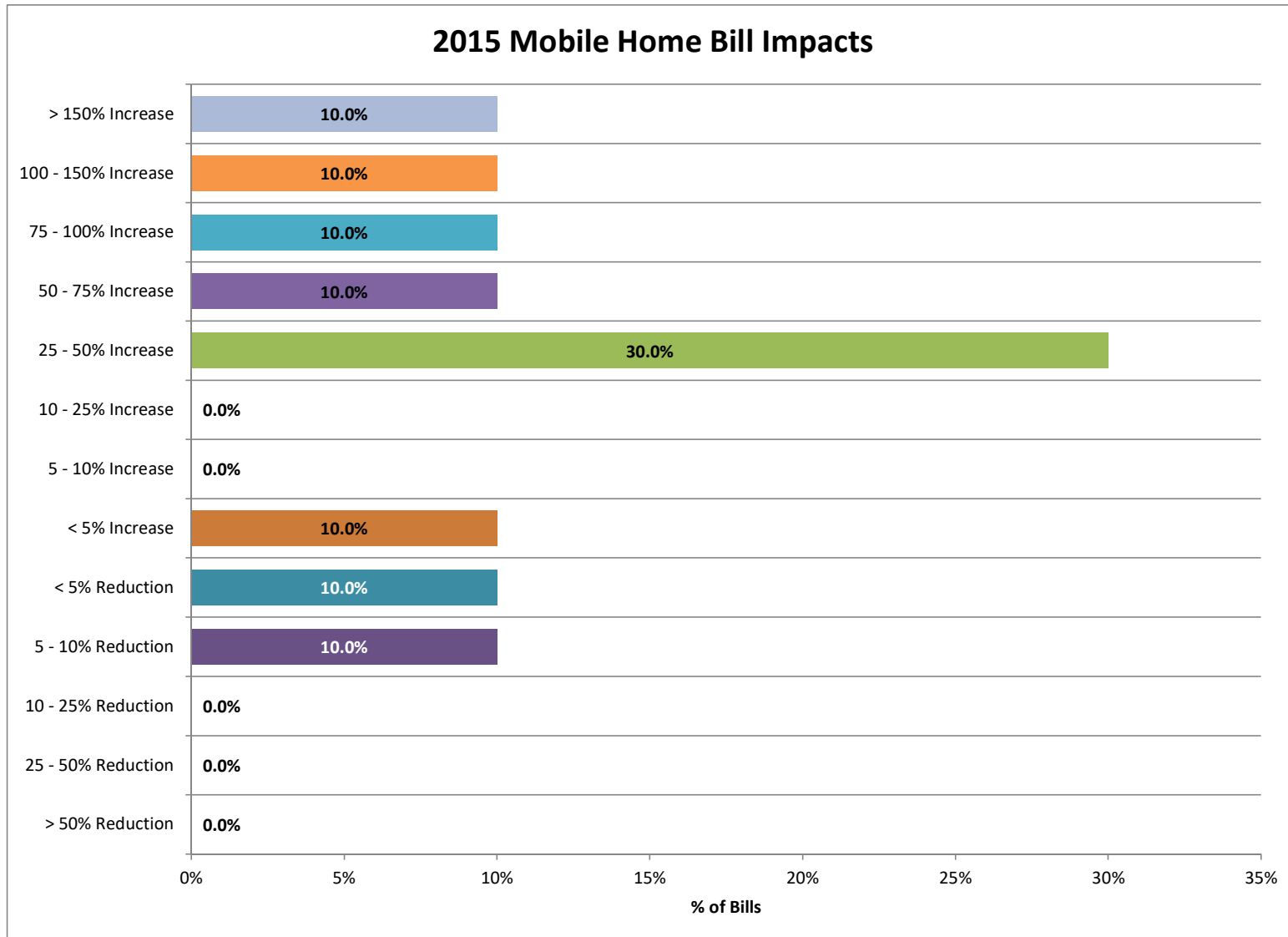
Customer Class	Avg Monthly Use / Unit	Current Rates	2015 Average Monthly Bill (9.5% system increase)			
			Across-the-Board Increases	Cost of Service Shifts	\$ Difference from Current	% Difference from Current
Creekside - 91 units	5.73	\$ 5,835.83	\$ 6,390.23	\$ 6,061.36	\$ 225.53	3.9%
Switzer - 301 units	11.48	\$ 19,303.13	\$ 21,136.93	\$ 40,179.62	\$ 20,876.49	108.2%
Kodzoff II - 41 units	5.03	\$ 2,629.33	\$ 2,879.12	\$ 2,397.21	\$ (232.12)	-8.8%
Kodzoff I - 44 units	7.69	\$ 2,821.72	\$ 3,089.78	\$ 3,935.57	\$ 1,113.85	39.5%
Glacierview - 133 units	10.33	\$ 8,529.29	\$ 9,339.57	\$ 15,984.61	\$ 7,455.32	87.4%
Sprucewood - 104 units	7.73	\$ 6,669.52	\$ 7,303.12	\$ 9,352.30	\$ 2,682.78	40.2%
Waterside - 32 units	16.13	\$ 2,052.16	\$ 2,247.12	\$ 6,005.13	\$ 3,952.97	192.6%
Mountainview - 6 units	5.47	\$ 384.78	\$ 421.33	\$ 381.92	\$ (2.86)	-0.7%
Channel View - 17 units	7.40	\$ 1,090.21	\$ 1,193.78	\$ 1,463.72	\$ 373.51	34.3%
Class Average - 85 units	9.59	\$ 5,479.55	\$ 6,000.11	\$ 9,535.24	\$ 4,055.69	74.0%

Proposed: Sewer Sample Customer Bills

Mobile Home Customers:

Customer Class	Avg Monthly Use / Unit	Current Rates	2023 Average Monthly Bill (79% system increase)			
			Across-the-Board Increases	Cost of Service Shifts	\$ Difference (cumulative)	% Difference (cumulative)
Creekside - 91 units	5.73	\$ 5,835.83	\$ 10,455.40	\$ 9,917.30	\$ 4,081.47	69.9%
Switzer - 301 units	11.48	\$ 19,303.13	\$ 34,583.24	\$ 65,739.99	\$ 46,436.86	240.6%
Kodzoff II - 41 units	5.03	\$ 2,629.33	\$ 4,710.67	\$ 3,922.20	\$ 1,292.87	49.2%
Kodzoff I - 44 units	7.69	\$ 2,821.72	\$ 5,055.36	\$ 6,439.19	\$ 3,617.47	128.2%
Glacierview - 133 units	10.33	\$ 8,529.29	\$ 15,280.97	\$ 26,153.26	\$ 17,623.97	206.6%
Sprucewood - 104 units	7.73	\$ 6,669.52	\$ 11,949.03	\$ 15,301.80	\$ 8,632.28	129.4%
Waterside - 32 units	16.13	\$ 2,052.16	\$ 3,676.62	\$ 9,825.31	\$ 7,773.15	378.8%
Mountainview - 6 units	5.47	\$ 384.78	\$ 689.37	\$ 624.89	\$ 240.11	62.4%
Channel View - 17 units	7.40	\$ 1,090.21	\$ 1,953.21	\$ 2,394.87	\$ 1,304.66	119.7%
Class Average - 85 units	9.59	\$ 5,479.55	\$ 9,817.10	\$ 15,601.12	\$ 10,121.56	184.7%

Proposed: Sewer Sample Customer Bill Impacts



Proposed: Sewer Sample Customer Bills

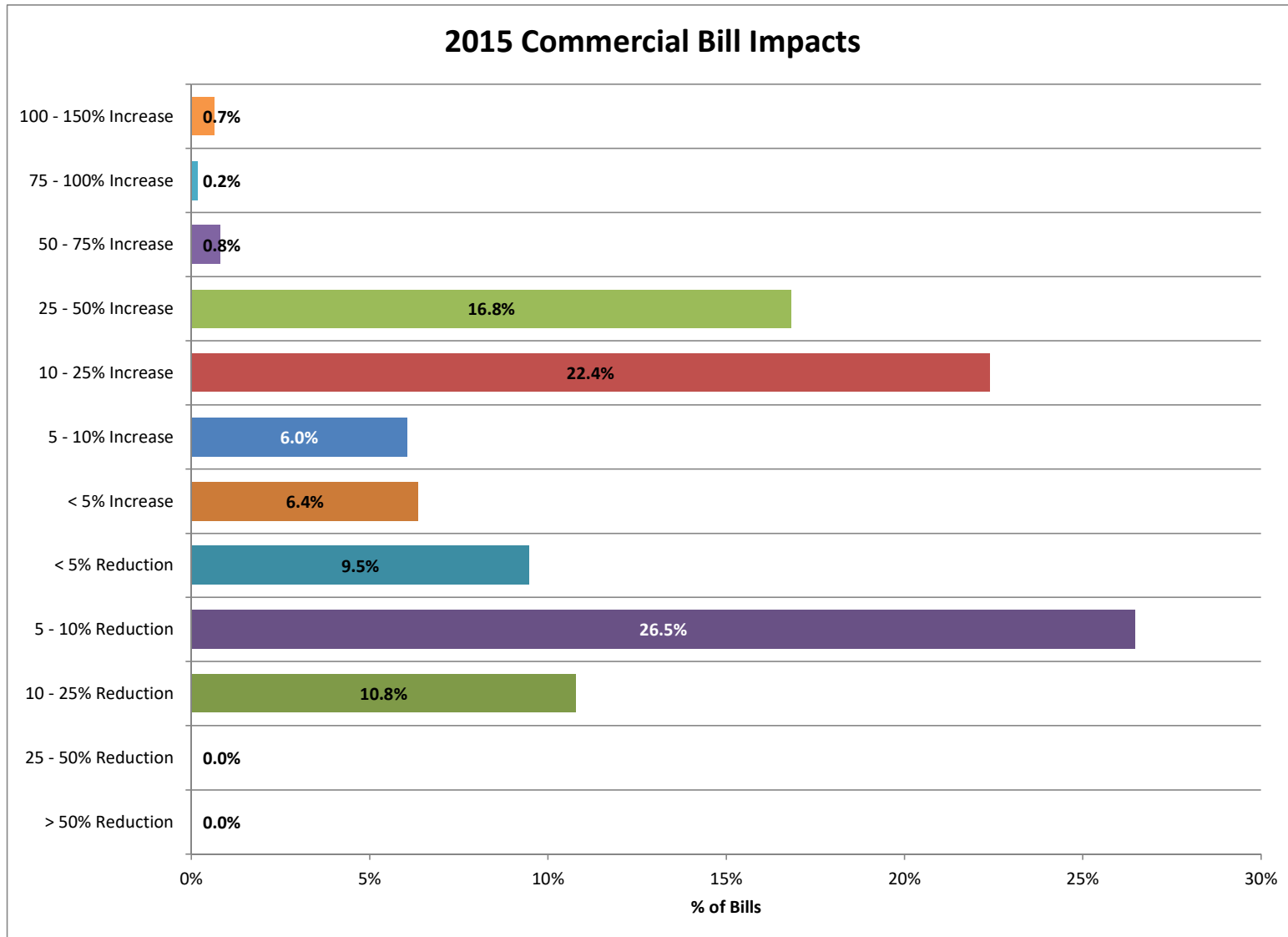
Commercial Metered Customers:

			2015 Average Monthly Bill (9.5% system increase)			
Customer Class	Avg Monthly Flow	Current Rates	Across-the-Board Increases	Cost of Service Shifts	\$ Difference from Current	% Difference from Current
Commercial (low use)	8.17	\$ 99.67	\$ 109.14	\$ 95.00	\$ (4.68)	-4.7%
Commercial (medium use)	23.75	\$ 232.60	\$ 254.69	\$ 276.27	\$ 43.67	18.8%
Commercial (high use)	118.92	\$ 1,044.37	\$ 1,143.58	\$ 1,383.26	\$ 338.90	32.4%

			2023 Average Monthly Bill (79% system increase)			
Customer Class	Avg Monthly Flow	Current Rates	Across-the-Board Increases	Cost of Service Shifts	\$ Difference (cumulative)	% Difference (cumulative)
Commercial (low use)	8.17	\$ 99.67	\$ 178.57	\$ 155.43	\$ 55.76	55.9%
Commercial (medium use)	23.75	\$ 232.60	\$ 416.72	\$ 452.01	\$ 219.41	94.3%
Commercial (high use)	118.92	\$ 1,044.37	\$ 1,871.08	\$ 2,263.23	\$ 1,218.86	116.7%



Proposed: Sewer Sample Customer Bill Impacts



Proposed: Combined Water/Sewer Single Family Bill

2015 Average Monthly Bill					
Single Family Sample Bill	Current Rates	Across-the-Board Increases	Cost of Service Shifts	\$ Difference from Current	% Difference from Current
Water	\$ 26.40	\$ 28.91	\$ 26.54	\$ 0.14	0.5%
Wastewater	\$ 64.13	\$ 70.22	\$ 58.16	\$ (5.97)	-9.3%
TOTAL	\$ 90.53	\$ 99.13	\$ 84.70	\$ (5.83)	-6.4%

2023 Average Monthly Bill					
Single Family Sample Bill	Current Rates	Across-the-Board Increases	Cost of Service Shifts	\$ Difference (cumulative)	% Difference (cumulative)
Water	\$ 26.40	\$ 48.44	\$ 44.47	\$ 18.07	68.4%
Wastewater	\$ 70.22	\$ 114.89	\$ 95.16	\$ 31.03	48.4%
TOTAL	\$ 96.62	\$ 163.33	\$ 139.63	\$ 49.10	54.2%

Next Steps

- Incorporate policy direction:
 - Finalize revenue requirements
 - Finalize cost of service based on preferred revenue requirement scenario
 - Potentially develop cost of service phase-in strategies to mitigate near term customer bill impacts
- Finalize benchmarking evaluation
- Final series of Assembly / public presentations to present proposed rates
- Begin evaluation of contract rates

To: Kirk Duncan, Public Works Director
Juneau, Alaska

Date: December 6, 2013

From: William Wilks, Senior Project Manager
Karyn Johnson, Principal

RE: CBJ – Wastewater Benchmarking Analysis

A. INTRODUCTION

In conjunction with the Wastewater Rate Study FCS GROUP is conducting for the City and Borough of Juneau (“CBJ”), a benchmarking analysis was prepared to evaluate CBJ’s wastewater utility performance in comparison to industry benchmarks. Relevant performance indicators were evaluated and compared against the results from an industry benchmarking survey as well as FCS GROUP experience within the industry. This memorandum summarizes the findings and conclusions of our review.

It is important to note that benchmarking results are only a start to the evaluation of utility performance and do not necessarily reflect good or bad performance in all cases. There are many internal and external factors that affect how a specific utility compares to the benchmarking standards provided. Elements to consider when evaluating these results include:

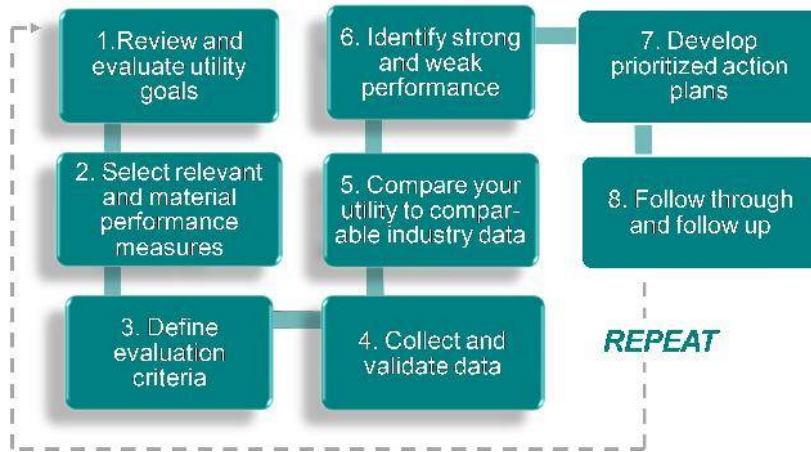
- Regional Climate
- Customer Base
- Geographic Footprint
- Local & Regional Regulations
- Density of Population
- Age of Infrastructure
- Treatment Processes
- Organizational Goals

These explanatory factors can have a significant influence on the documented performance of a specific utility. Further analysis with those closely familiar with a utility may reveal additional insight on performance indicators.

It is also important to note that an initial benchmarking analysis provides a snap shot of utility performance for the given year of review. Subsequent, multi-year analyses would allow CBJ to evaluate utility performance and trends over time in order to make better informed decisions.

Exhibit A-1 presents the suggested benchmarking process.

Exhibit A-1: Steps to Benchmarking



B. METHODOLOGY

Sources for the utility benchmarks include a publication by the American Water Works Association (AWWA) entitled *Benchmarking Performance Indicators for Water and Wastewater Utilities: Survey Data and Analyses Report (2007)*, as well as FCS GROUP industry knowledge and experience gained through our work with utilities throughout the western United States. Note that the financial data sources and results for CBJ reflect performance for year 2012, which might not be representative of all results reflected in the 2007 AWWA publication, particularly those measures related to current O&M costs and monthly rates.

The AWWA industry survey compiled utility financial and operational information from 180 participants¹. Participation in the survey was voluntary and information submitted was self-reported by the participating utilities. For performance indicators used within this publication, we referenced the following benchmark categories:

- Utility Service or Operation Type: For CBJ, “**Combined Operations**” was selected. This represents survey participants designated as providing both wastewater and water services. Combined Operations was selected as the most representative category since CBJ provides both wastewater and water services.
- Size of Service Population: This represents the size of the population served by the designated utility service. Juneau’s wastewater service population falls within the “**10,001 -50,000**” population category.
- Geographical Region: CBJ falls within the “**West**” region which includes the State of Alaska (along with AZ, CA, CO, NM, NV, OR, UT, WA and WY).

Exhibit B-1 lists the performance indicators selected for this analysis based upon available information and applicability to CBJ’s domestic wastewater system / utility.

¹ Participating Alaskan utilities include Anchorage Water and Wastewater Utility and Golden Heart Utilities, Inc.

Exhibit B-1: Index of Performance Indicators

#	Performance Indicator	#	Performance Indicator
1	Organization Best Practices Index Survey	18	Operating Working Capital
2	Employee Health & Safety Severity Rate	19	O&M Coverage Ratio
3	Training Hours per Employee	20	Debt Coverage Ratio
4	Customer Accounts per Employee	21	Planned Maintenance Ratios (Hours)
5	MGD of Wastewater Processed per Employee	22	Customer Service Related Complaints
6	Sewer Overflow Rate	23	Technical Quality Related Complaints
7	Collection System Integrity	24	Average Monthly Residential Sewer Bill
8	Wastewater Treatment Effectiveness Rate		
9	O&M Cost per Customer Account		
10	O&M Cost per Million Gallons Processed		
11	Debt to Total Asset Ratio (Debt Ratio)		
12	Debt to Equity (Net Asset) Ratio		
13	Return on Assets		
14	Return on Fixed Assets		
15	Accounts Receivable Turnover		
16	Accounts Receivable Collection Period		
17	Current Ratio		

Results for these indicators are organized into the following categories: Organizational Development, Wastewater Operations, Business & Finance Operations, and Customer Relations.

The analysis calculates a formula-based (or in some cases, subjective) result for CBJ’s wastewater utility for each performance indicator and then assigns a score to each indicator based on how well CBJ compares to the industry benchmark.

Benchmarks are shown for the bottom quartile, top quartile and median responses from participants. For additional indicators, not included in the AWWA publication, general industry standards are shown. An overall (or average) score is then assigned to the category as a whole, assuming equal weight for each indicator within the category. **Exhibit B-2** presents the scoring system for this exercise.

Exhibit B-2: Scoring System

Scoring Table	
Score	Description
1	Very Good
2	Good
3	Fair
4	Poor

In general, the scores are assigned as follows:

- “1 – Very Good” - results equal to or better than the top quartile;
- “2 - Good” - results close to the median;
- “3 - Fair” - results better than the bottom quartile but worse than the median; and
- “4 – Poor” - results equal to or worse than the bottom quartile.

The intent of the scoring system is to assist CBJ in identifying areas for further investigation and potential improvement. For example, CBJ might consider tagging those areas that are scored either “Fair” or “Poor” as priority targets for improvement.

C. SUMMARY OF RESULTS

Exhibit C-1 summarizes the results, including individual scores and an overall score for the category. Additional detail is provided in Section D, including both a numerical and graphical result for each indicator. Note that the bar line in each graphic depicts the range from bottom to top quartile results and the triangle depicts the median result as well as CBJ’s results.

Exhibit C-1: Performance Indicator and Score by Category

Organizational Development		Wastewater Operations		Business & Finance Operations		Customer Relations	
Organization Best Practices Index Survey	4	Sewer Overflow Rate	1	Debt to Total Asset Ratio (Debt Ratio)	1	Customer Service Related Complaints	2
Employee Health & Safety Severity Rate	1	Collection System Integrity	2	Debt to Equity (Net Asset) Ratio	1	Technical Quality Related Complaints	1
Training Hours per Employee	1	Wastewater Treatment Effectiveness Rate	4	Return on Assets	2	Average Monthly Residential Sewer Bill	4
Customer Accounts per Employee	4	O&M Cost per Customer Account	4	Return on Fixed Assets	4		
MGD of Wastewater Processed per Employee	4	O&M Cost per Million Gallons Processed	4	Accounts Receivable Turnover	4		
				Accounts Receivable Collection Period	4		
				Current Ratio	1		
				Operating Working Capital	1		
				O&M Coverage Ratio	3		
				Debt Coverage Ratio	1		
				Planned Maintenance Ratios (Hours)	4		
Average	2.8		3.0		2.4		2.3

Organizational Development received an overall (average) score of 2.8, indicating “fair” performance. Areas warranting further investigation and potential improvement include the Organization Best Practices, Customer Accounts per Employee and MGD of Wastewater Processed Per Employee.

Wastewater Operations received an average score of 3.0, indicating “fair” performance. Areas warranting further investigation and potential improvement include Wastewater Treatment Effectiveness Rate, O&M Cost per Customer Account and O&M Costs per MG Processed.

Business & Finance Operations received a score of 2.4, indicating “good” performance. This is likely the direct result of CBJ’s limited debt financing for capital projects. Areas warranting further input and potential improvement include Return on Fixed Assets, Accounts Receivable Turnover, Accounts Receivable Collection Period and planned Maintenance Ratios.

Customer Relations received a score of 2.3, indicating “good” performance. All operational/technical indicators within this category received a score of very good, with customer service indicators receiving lower scores. Both Customer Service and Technical quality related Complaints received a “very good” and “good” score respectively. The only “poor” score in this category is for Average Monthly Residential Sewer Bill performance measurement. This score may be misleading because CBJ’s current rates are compared against a 2007 AWWA survey of at least a 6 year reporting lag.

D. RESULTS OF BENCHMARKING ANALYSIS

ORGANIZATIONAL DEVELOPMENT

1. Organizational Best Practices Index Survey

Description: The purpose of the Best Practices (BP) survey is to summarize a utility's implementation of management programs important to a wastewater utility. Generally, higher values are desirable. Practices are likely to be more formal and extensive in larger utilities.

Exhibit D-1(a): Formula and Comparative Benchmarks

Organization Best Practices Index Survey	
Formula: Results of "Best Practices" Survey (min 7 - max 35 at each utility)	
Juneau Result:	7.00

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	22.80	30.00	26.50
Population Served: 10k-50k	19.00	29.00	24.00
Type: Combined Operations	21.90	30.00	24.90

Exhibit D-1(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s result for this performance measurement is significantly below the bottom quartile of all three survey groups resulting in a Score: 4 - “Poor”. Improvement in this area can be achieved with the successful implementation of an Asset Management Plan, Strategic Planning and Long-Term Financial Planning. It was the lack of these management plans which led to the overall low score for this benchmark performance measurement.

2. Employee Health & Safety Severity Rate

Description: Quantifies the rate of employee days lost from work due to illness or injury. Generally, lower values are desirable. Excessive lost workdays affect productivity and can cost utilities in a number of ways. Health care, insurance premiums and overtime can all be adversely impacted by lost work due to injury or health reasons. Indicator measures the rate of days lost per 100 employees per year.

Exhibit D-2(a): Formula and Comparative Benchmarks

Employee Health & Safety Severity Rate	
Formula: $200,000 \times (\text{Total Workdays away from Work}) \div \text{Total Hours Worked by All Employees}$	
Days Away (Work Injury & Illness)	0
Total Hours Worked	54,080
Juneau Result:	0.00

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	88.10	0.10	21.20
Population Served: 10k-50k	49.30	0.00	1.30
Type: Combined Operations	81.40	5.00	21.20

Exhibit D-2(b): Graphical Results



Analysis: Lower values are desirable. CBJ’s result is exemplary with no reported work injuries or illnesses resulting in a Score: 1 – “Very Good”.

3. Training Hours per Employee

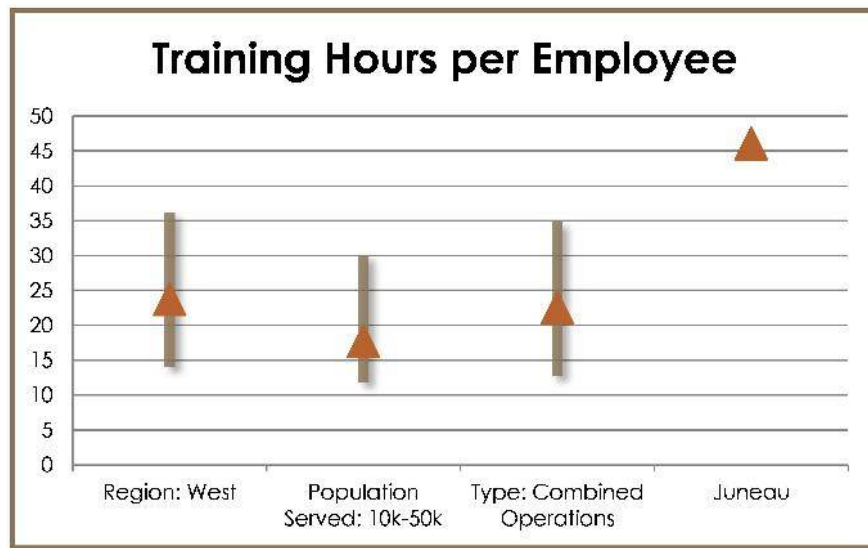
Description: Measures the quantity of formal training that utility employees are actually completing. This indicator is expressed as the number of formal training hours per employee per year. Generally, higher values are desirable. This measure is intended to reflect the organization's commitment to formal training as a means of improving employee knowledge and skills.

Exhibit D-3(a): Formula and Comparative Benchmarks

Training Hours per Employee	
Formula: Total Qualified Formal Training Hours for All Employees ÷ Total FTEs Worked by Employees During Reporting Period	
Training Hours	1,650
Number of FTEs	35.84
Juneau Result:	46.04

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	14.1	36.1	23.7
Population Served: 10k-50k	11.9	30.1	17.7
Type: Combined Operations	12.7	34.9	22.5

Exhibit D-3(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s result is significantly above the top quartile for all three survey groups resulting in a Score: 1 – “Very Good”.

4. Customer Accounts per Employee

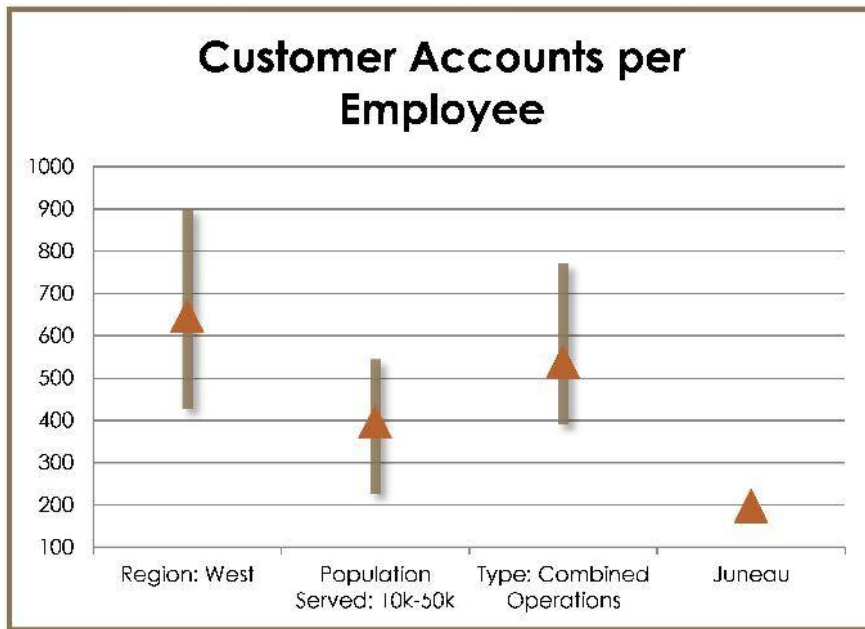
Description: This indicator is intended to measure employee efficiency. Generally, higher values are desirable.

Exhibit D-4(a): Formula and Comparative Benchmarks

Customer Accounts per Employee	
Formula: Number of Accounts ÷ Number of FTEs	
Number of Accounts	7,076
Number of FTEs	35.84
Juneau Result:	197

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	426	901	646
Population Served: 10k-50k	226	545	396
Type: Combined Operations	390	771	538

Exhibit D-4(b): Graphical Results



Analysis: In general, higher values are desirable. CBJ’s resulting score of 197 is significantly below the bottom quartile for all three sample survey groups, indicating further investigation is warranted. Score: 4 – “Poor”.

5. MGD of Wastewater Processed per Employee

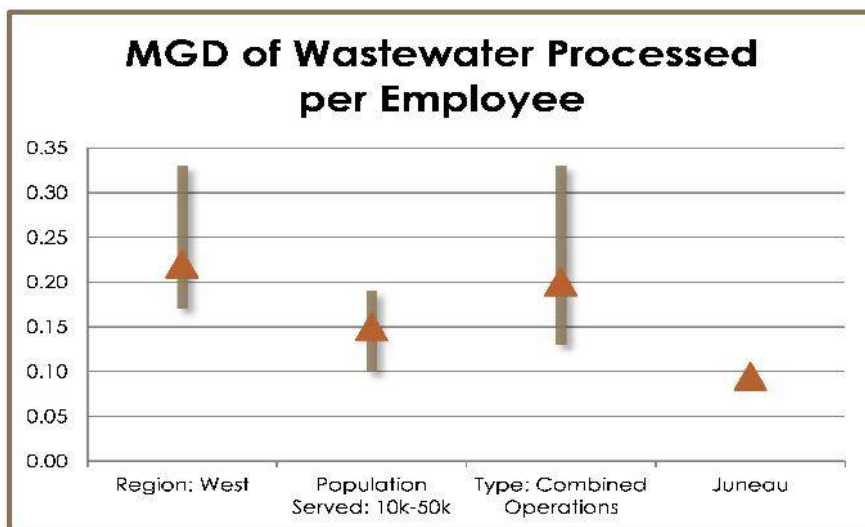
Description: This indicator is intended to measure employee efficiency. Generally, higher values are desirable.

Exhibit D-5(a): Formula and Comparative Benchmarks

MGD of Wastewater Processed per Employee	
Formula: Average MGD Delivered ÷ FTEs	
MGD	3.39
Number of FTEs	35.84
Juneau Result:	0.09

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	0.17	0.33	0.22
Population Served: 10k-50k	0.10	0.19	0.15
Type: Combined Operations	0.13	0.33	0.20

Exhibit D-5(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s results are significantly below the bottom quartile for all three sample survey groups warranting further investigation and potential improvement may be required. Score: 4 – “Poor”.

WASTEWATER OPERATIONS

6. Sewer Overflow Rate

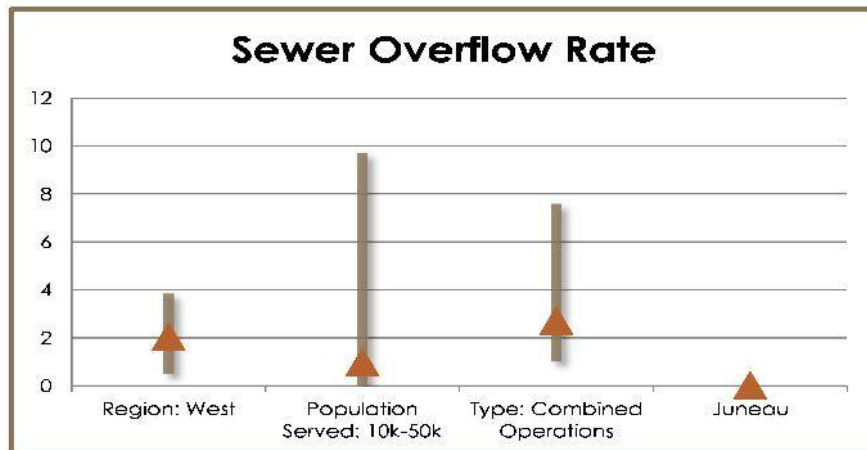
Description: This indicator provides a measure of collection system piping condition and the effectiveness of routine maintenance by qualifying the number of sewer overflows per 100 miles of collection piping.

Exhibit D-6(a): Formula and Comparative Benchmark

Sewer Overflow Rate	
Formula: Number of sewer overflows during period ÷ Total miles of pipe in sewage collection system	
Number of sewer overflows during period	0
total miles of pipe	148
Juneau Result:	0

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	3.85	0.49	2.04
Population Served: 10k-50k	9.72	0.00	0.97
Type: Combined Operations	7.60	1.00	2.70

Exhibit D-6(b): Graphical Results



Analysis: A utility should strive to an overflow rate at or close to zero percent of the time. CBJ has achieved this target. Score: 1 – “Very Good”.

7. Collection System Integrity

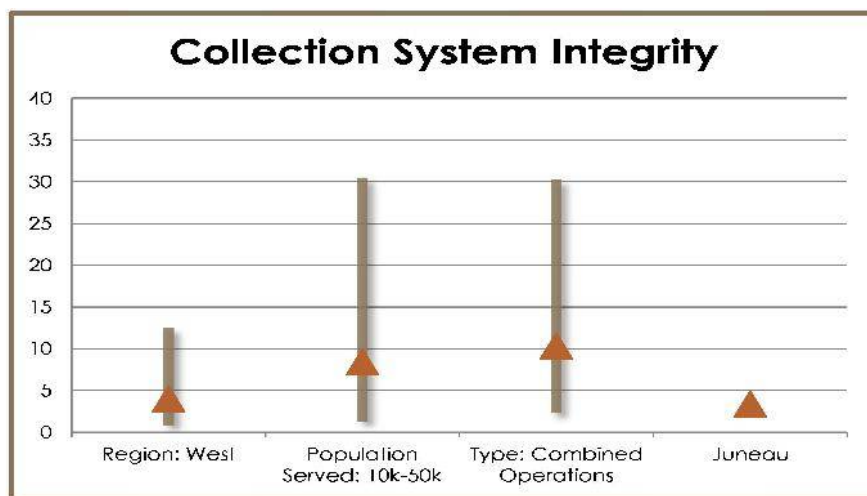
Description: This indicator provides a measure of the condition of a sewage collection system. The indicator expresses the number of collection system failures each year per 100 miles of collection system piping.

Exhibit D-7(a): Formula and Comparative Benchmarks

Collection System Integrity	
Formula: [Failure Rate = 100 (total number of collection system failures during the year) / Total miles of collection system piping	
Number of system failures	5
Total miles of collection system piping	148
Juneau Result:	3.4

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	12.50	0.90	4.00
Population Served: 10k-50k	30.50	1.30	8.40
Type: Combined Operations	30.20	2.30	10.30

Exhibit D-7(b): Graphical Results



Analysis: Lower values are desirable. CBJ’s result fall slightly below the top quartile but above the median for all three sample survey groups resulting in a Score: 2 – “good”.

8. Wastewater Treatment Effectiveness Rate

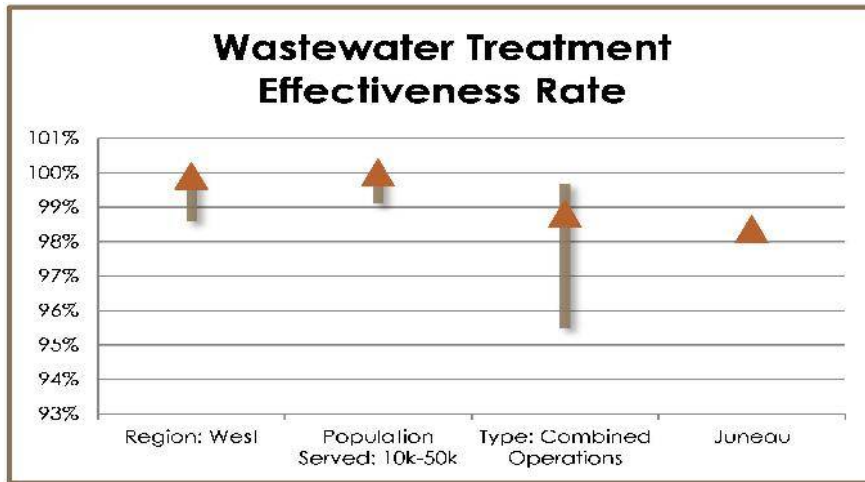
Description: This indicator quantifies a utility's compliance with the effluent quality standards in effect at each of its wastewater treatment facilities. This indicator is expressed as the percent of time each year that an individual wastewater treatment facility is in full compliance with applicable effluent quality requirements.

Exhibit D-8(a): Formula and Comparative Benchmark

Wastewater Treatment Effectiveness Rate	
Formula: $100 \times (\text{Annual number of standard non-compliance days}) \div \text{Total number of days per year}$	
Annual number of standard non-compliance days	6.0
Total number of days per year	365
Juneau Result:	98.4%

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	98.6%	100.0%	99.9%
Population Served: 10k-50k	99.1%	100.0%	100.0%
Type: Combined Operations	95.5%	99.7%	98.8%

Exhibit D-8(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s result fall within the bottom quartile for this performance measurement, warranting further investigation and potential improvement may be required. Score: 4 – “Poor”.

9. O&M Cost per Customer Account

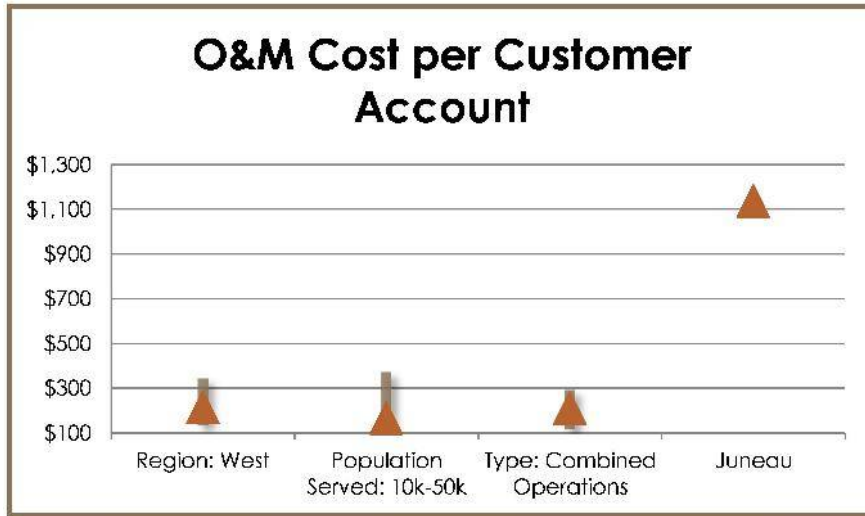
Description: Generally, higher values are not desirable. Higher O&M costs per customer account may indicate inefficient procedures or may be the result of aging infrastructure. However, this may not always be the case. Higher costs per account may be the desired outcome to improve customer satisfaction or to make up for deferred maintenance practices.

Exhibit D-9(a): Formula and Comparative Benchmarks

O&M Cost per Customer Account	
Formula: Total O&M less depreciation ÷ Total number of customer accounts	
Total O&M (less dep.)	\$8,030,676
Total Customer Accounts	7,076
Juneau Result:	\$1,135

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	\$343	\$133	\$213
Population Served: 10k-50k	\$371	\$66	\$164
Type: Combined Operations	\$291	\$114	\$209

Exhibit D-9(b): Graphical Results



Analysis: In general, lower values are desirable. CBJ’s result is significantly higher than all three survey groups in the bottom quartile warranting further investigation and potential improvement may be necessary. Score: 4 – “Poor”.

10. O&M Cost per Million Gallons of Wastewater Processed

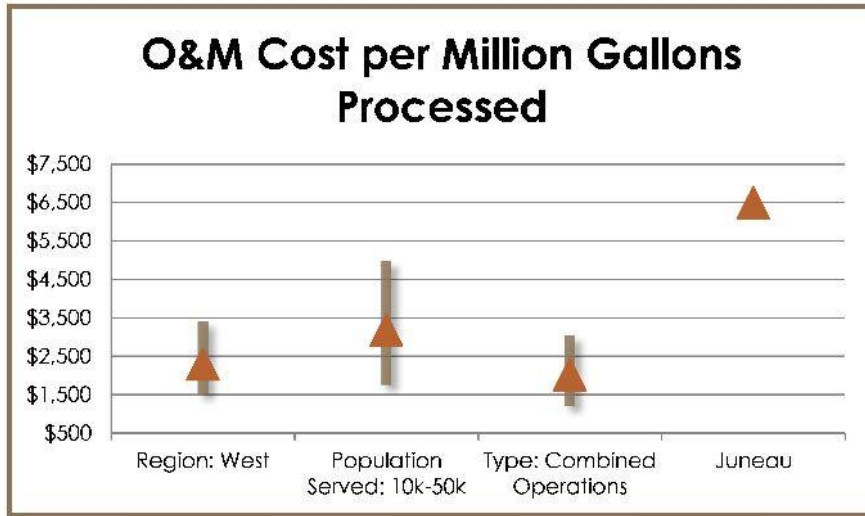
Description: Generally, higher values are not desirable. Higher O&M costs per million gallons may indicate inefficient procedures or may be the result of aging infrastructure. However, this may not always be the case. Higher costs per million gallons distributed may be the desired outcome to improve customer satisfaction or to make up for deferred maintenance practices.

Exhibit D-10(a): Formula and Comparative Benchmark

O&M Cost per Million Gallons Processed	
Formula: Total O&M less depreciation ÷ Volume (in MG) Processed During the Reporting Period	
Total O&M (less dep.)	\$8,030,676
Total Volume Processed (MG)	1,238
Juneau Result:	\$6,487

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	\$3,398	\$1,523	\$2,293
Population Served: 10k-50k	\$4,968	\$1,757	\$3,193
Type: Combined Operations	\$3,044	\$1,200	\$2,022

Exhibit D-10(b): Graphical Results



Analysis: Lower values are desirable. CBJ’s results are significantly higher than all three sample survey groups indicating additional review may be necessary in this performance measurement. Score: 4 – “Poor”.

BUSINESS & FINANCE OPERATIONS

11. Debt to Total Asset Ratio (Debt Ratio)

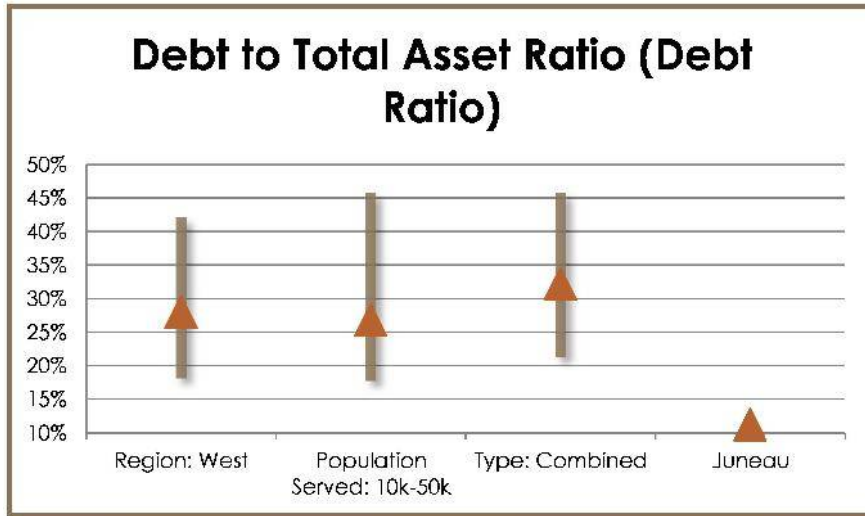
Description: This indicator quantifies the utility's level of indebtedness. Generally, the higher the ratio, the more dependent the utility is on debt financing. A higher dependence on debt can cause larger long-term costs for interest repayments when compared with cash financing capital. Lower values are generally desirable.

Exhibit D-11(a): Formula and Comparative Benchmark

Debt to Total Asset Ratio (Debt Ratio)	
Formula: Total Liabilities ÷ Total Assets	
Total Liabilities	\$8,673,886
Total Assets	\$77,402,291
Juneau Result:	11.2%

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	42.1%	18.1%	28.0%
Population Served: 10k-50k	45.8%	17.7%	26.8%
Type: Combined	45.8%	21.2%	32.2%

Exhibit D-11(b): Graphical Results



Analysis: Lower values are generally desirable. CBJ’s result scores better than the top quartile.
Score: 1 – “Very Good.”

12. Debt to Equity (Net Asset) Ratio

Description: This ratio gives insight into a utility's equity-liability relationship in terms of funded capital assets. The lower the percentage, the less leveraged a utility is, which can imply more potential to fund future projects fully with debt. A ratio of 1.5 (60% debt / 40% equity) is a generally accepted industry target.

Exhibit D-12(a): Formula and Comparative Benchmark

Debt to Equity (Net Asset) Ratio	
Formula: Total Current & Non-Current Borrowed Debt ÷ Net Assets.	
Total Borrowed Debt	\$7,171,290
Net Assets	\$68,728,405
Juneau Result:	0.10 to 1 (9% debt / 91% equity)
Benchmarks	FCS GROUP Experience
Generally Accepted Debt / Equity Ratio	1.50
Juneau	0.10
Benchmarks	FCS GROUP Experience
Generally Accepted Debt Target	60.0%
Juneau	9.4%

Exhibit D-12(b): Graphical Results



Analysis: Lower values are generally desirable. CBJ’s results are well below the generally accepted targets, indicating the potential to fund additional capital projects with debt while still maintaining a healthy capital structure. Score: 1 – “Very Good”. This high score is likely due to historical levels of grant funding. The future will be likely different resulting in the need to finance capital programs using debt, thereby putting upward pressure to cover debt costs through rate increases.

13. Return on Assets

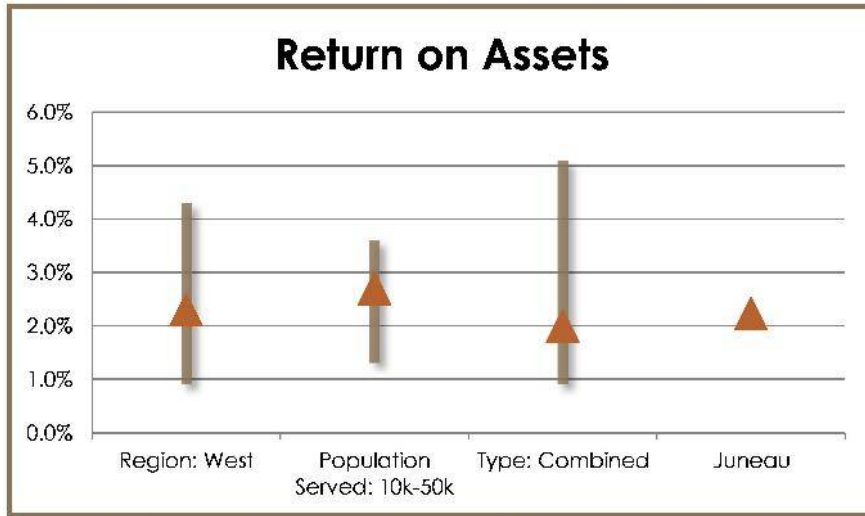
Description: In general, utilities are seeking a higher return on asset ratio performance where possible. This indicator is a measure of a utility's financial effectiveness.

Exhibit D-13(a): Formula and Comparative Benchmark

Return on Assets	
Formula: Net Income ÷ Total Assets	
Net Income	\$1,724,730
Total Assets	\$77,402,291
Juneau Result:	2.23%

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	0.90%	4.30%	2.30%
Population Served: 10k-50k	1.30%	3.60%	2.70%
Type: Combined	0.90%	5.10%	2.00%

Exhibit D-13(b): Graphical Results



Analysis: Higher values are desirable. The CBJ’s result places it within the median benchmarks, but above the bottom quartile in each category resulting in a Score: 3 – “Good”.

14. Return on Fixed Assets

Description: In general, this value indicates whether the utility is earning sufficient net operating income (before any non-operating revenues & expenses) as a return on its investment in capital assets to equal or exceed its weighted cost of capital for the reporting period. A return equal to or greater than the entity’s average cost of capital is a prudent financial objective. CBJ’s estimated weighted average cost of capital (WACC) is 1.89% based on debt issues from its 2012 CAFR.

Exhibit D-14(a): Formula and Comparative Benchmark

Return on Fixed Assets		
Formula: Net Operating Income ÷ Total Net Plant-in-Service (less dep.)		
Net Operating Income	-\$1,140,058	
Total Plant-in-Service	\$59,261,032	Net of depreciation. Excl. Intangibles and Unamortized
Juneau Result:	-1.92%	

City of Juneau	FCS GROUP Experience
Juneau's Estimated Weighted Cost of Capital	1.89%

Exhibit D-14(b): Graphical Results



Analysis: In general, a utility would want to have a return that exceeds its weighted average cost of capital. CBJ’s result is significantly below its weighted cost of capital warranting further investigation and potential improvement may be necessary. Score: 4 – “Poor”.

15. Accounts Receivable Turnover

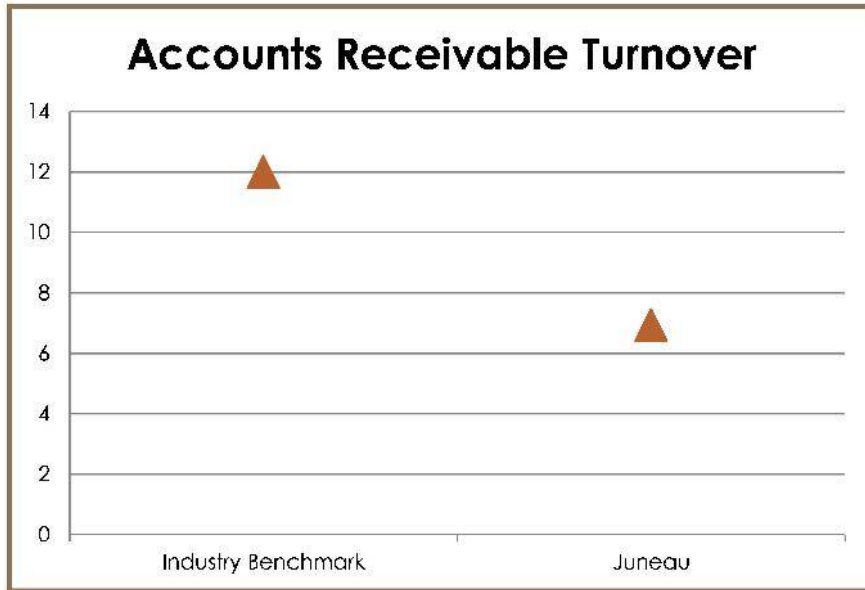
Description: In general, higher values are desirable. A result of greater than 12 is very good. Less than 12 can be okay if it is explained by bi-monthly billing cycles or some other lag creating factor. Otherwise, a lower ratio may suggest that a utility should assess their collection results against policies in relation to customer accounts and average collections per period.

Exhibit D-15(a): Formula and Comparative Benchmark

Accounts Receivable Turnover	
Formula: Annual Billings ÷ End of Year A/R Balance	
Annual Billings	\$9,418,987
End of Year A/R Balance	\$1,359,409
Juneau Result:	6.93

Benchmarks	FCS GROUP Experience
Industry Benchmark	12

Exhibit D-15(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s result significantly lags the industry benchmark, indicating further review on the billing and collection operation may be necessary. Score: 4 – “Poor”.

16. Accounts Receivable Collection Period

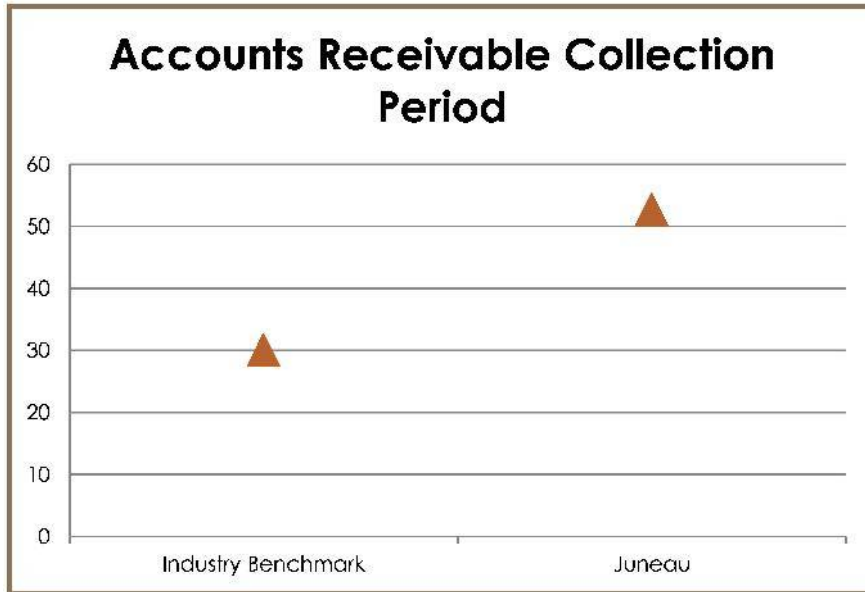
Description: This indicator measures the number of days from when a customer is billed to when the payment is received by the Utility. In general, lower values are desirable. Less than 30 days improves cash flow from operations and the ability for a utility to meet short-term obligations, after working capital is depleted.

Exhibit D-16(a): Formula and Comparative Benchmark

Accounts Receivable Collection Period	
Formula: 365 days ÷ Accounts Receivable Turnover	
Formula Piece #1	365 days
Accounts Receivable Turnover	6.93
Juneau Result:	52.68

Benchmarks	FCS GROUP Experience
Industry Benchmark	30

Exhibit D-16(b): Graphical Results



Analysis: Lower values are desirable. CBJ’s result significantly lags the industry benchmark, indicating further review on the billing and collection operation may be necessary. Score: 4 – “Poor”.

17. Current Ratio

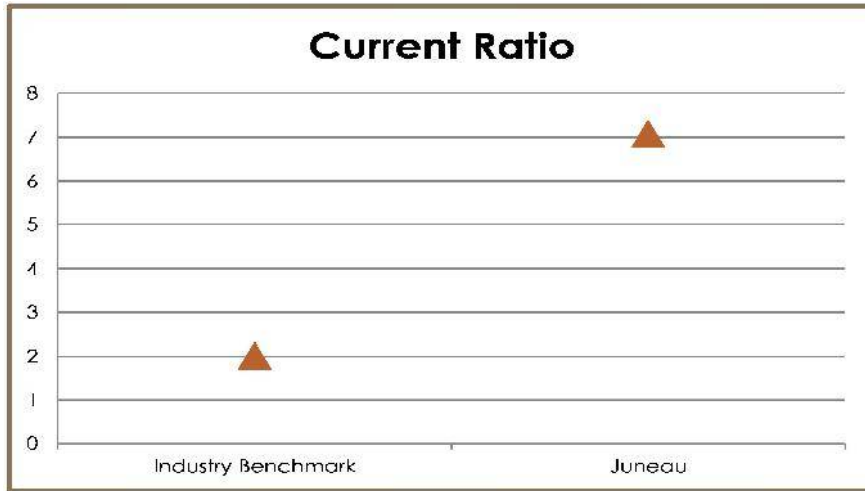
Description: In general, higher values are desirable. This is a liquidity ratio and a ratio of 2:1 is good to excellent. Generally, a consistent ratio of greater than 1:1 indicates that the utility can pay its current operating obligations without borrowing working capital.

Exhibit D-17(a): Formula and Comparative Benchmark

Current Ratio	
Formula: Current Assets ÷ Current Liabilities	
Current Assets	\$7,694,304
Current Liabilities	\$1,088,188
Juneau Result:	7.07

Benchmarks	FCS GROUP Experience
Industry Benchmark	2

Exhibit D-17(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s results are much higher than the targeted benchmark, indicating that the utility can pay its current operating obligations with current assets, avoiding the use of working capital reserves. Score: 1 – “Very Good”.

18. Operating Working Capital

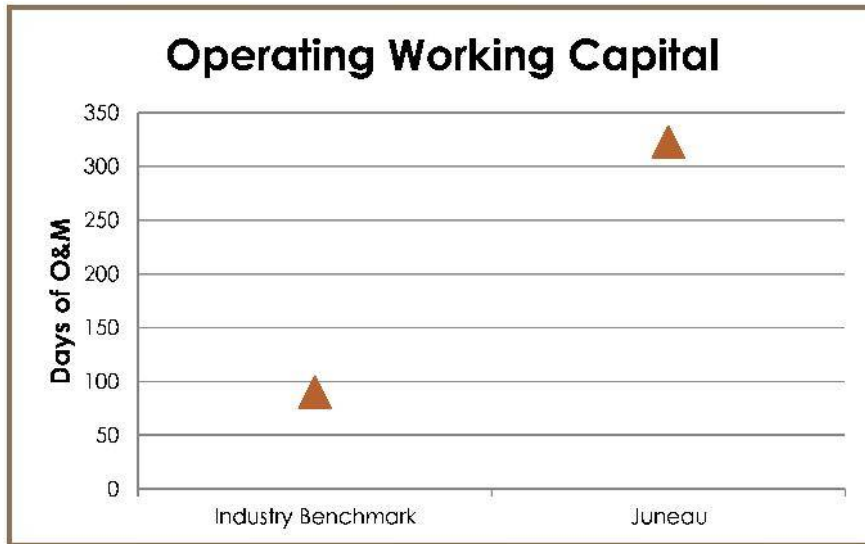
Description: Today, Financial Advisors and rating agencies would like to see up to 180 days of total unrestricted cash, cash equivalents and longer term forms of liquidity, of which 30-90 days could be working capital. Try to achieve a positive number sufficient to cover at least 30-45 days of expense. Up to 90 days may be prudent depending on the volatility of revenue. In general, this indicator shows how much cash plus current assets a utility has on hand, to make up for any short-term variances in service revenue, to cover current liabilities. We cannot assure that “unrestricted” assets are all actually available for working capital, but that is the general assumption.

Exhibit D-18(a): Formula and Comparative Benchmark

Operating Working Capital	
Formula: [(Current Assets - Current Liabilities (not devoted to debt or capital projects)) ÷ Operating Expenses (less dep.)] X 365 days	
Current Assets	\$7,694,304
Current Liabilities (less Debt portion)	\$589,274
Operating Expenses	\$8,030,676
Juneau Result:	323 days

Benchmarks	FCS GROUP Experience
Industry Benchmark	90 days

Exhibit D-18(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s result significantly exceeds the targeted benchmark, indicating that current cash and cash equivalents on hand can act as a buffer against short-term variances in revenues and/or expenses resulting in a Score 1 – “Very Good”.

19. O&M Coverage Ratio

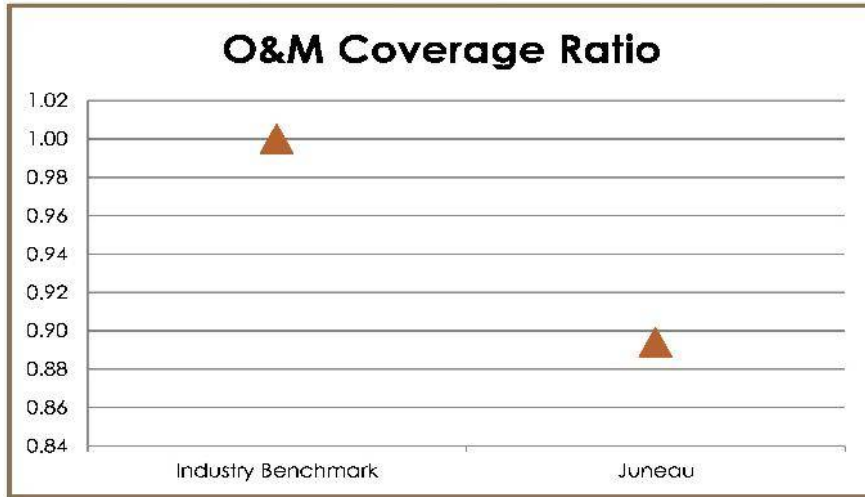
Description: This ratio shows how operating revenues compare to operating expenses. A utility should strive to be above 1.0, which would mean that operating expenses are being covered by operating revenues, and operating expenses are not being paid for with non-operating revenues such as interest income or capital connection charges. Less than 1.0 will not ultimately lead to a healthy financial trend over the long run, especially during periods of negative non-operating income.

Exhibit D-19(a): Formula and Comparative Benchmark

O&M Coverage Ratio	
Formula: Total Operating Revenues ÷ Operating Expenses (incl dep.)	
Total Operating Revenues	\$9,604,454
Total Operating Expenses (incl. dep.)	\$10,744,512
Juneau Result:	0.89

Benchmarks	FCS GROUP Experience
Industry Benchmark	1.00

Exhibit D-19(b): Graphical Results



Analysis: A utility should strive to be above 1.0, implying that operating revenues can cover operating expenditures (including depreciation). CBJ’s result is somewhat below the industry benchmark resulting in a Score: 3 – “Fair”.

20. Debt Coverage Ratio

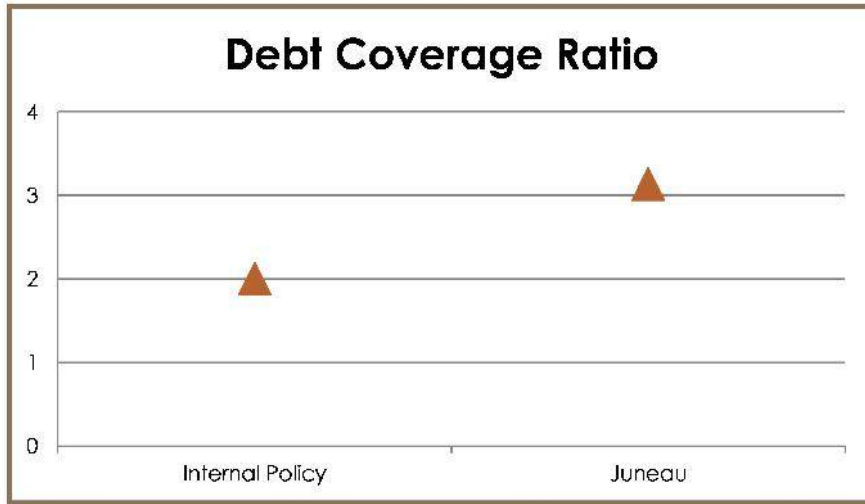
Description: In general, higher values are desirable. The Debt Service Coverage (DSC) ratio is an indicator that measures the average amount of net operating income available to pay annual debt service. The typical debt service coverage retirement for revenue bonds is 1.25 times annual debt service. The DSC is essentially an instantaneous measurement of estimated cash income generating performance. It is considered in rate making as a critical factor and driver in projecting needed annual rate revenue requirements.

Exhibit D-20(a): Formula and Comparative Benchmark

Debt Coverage Ratio			
Formula: Net Revenue ÷ Period Interest and Principal (Only Revenue Bonds)			
Total Operating Revenue	\$9,604,454		
Total Operating Expenses (less dep.)	\$8,030,676		
Net Revenue	\$1,573,778	Rev. - Exp. (Excludes depreciation)	
Period Principal	\$421,423	Revenue Bond P&I Only from 2012 CAFR	
Period Interest	\$80,808		
Juneau Result:	3.13		

Benchmarks	FCS GROUP Experience
Internal Policy	1.25

Exhibit D-20(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s result is much higher than the internal target resulting in a Score: 1 – “Very Good”.

21. Planned Maintenance Ratios

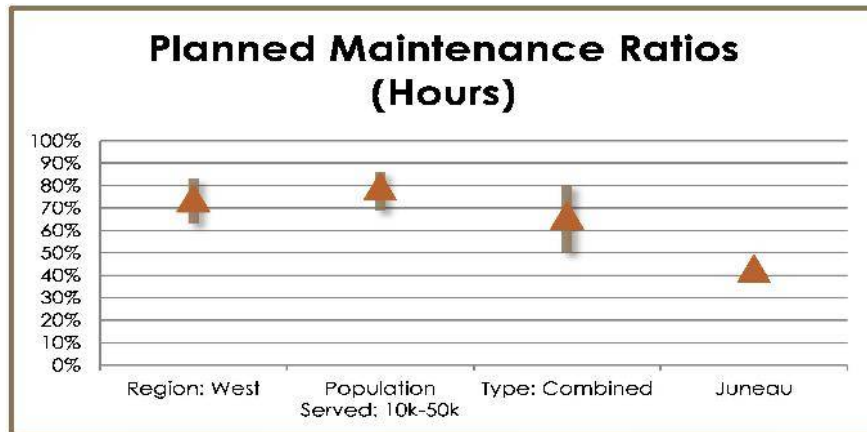
Description: This indicator is designed to allow comparison of how effectively utilities are investing in planned maintenance. Planned maintenance ratio is all maintenance undertaken in advance of asset failure.

Exhibit D-21(a): Formula and Comparative Benchmark

Planned Maintenance Ratios (Hours)	
Formula: 100 hours of planned Maintenance / (Hours of Planned + Corrective Maintenance)	
Hours of Planned Maintenance	11,000
Hrs of Planned Maintenance + corrective Maintenance	14,650
Juneau Result:	43%

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	63.0%	83.1%	74.2%
Population Served: 10k-50k	68.8%	86.3%	79.6%
Type: Combined	50.0%	80.6%	66.6%

Exhibit D-21(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s result is below all survey groups within the bottom quartile warranting further investigation and potential improvement may be necessary. Score: 4 – “Poor”.

CUSTOMER RELATIONS

22. Customer Service Related Complaints

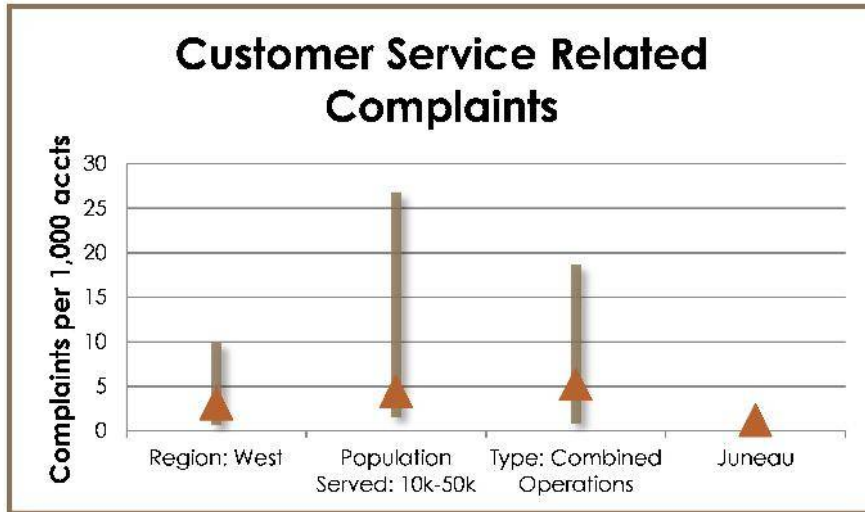
Description: This indicator measures the complaint rate experienced by the utility associated with customer service, expressed as complaints per 1,000 customer accounts. Generally, lower values are desirable. The number of complaints is a good measure of customer service. This indicator may include complaints about an employee's helpfulness, timeliness, personal appearance, adhering traffic laws while driving, customer bills etc.

Exhibit D-22(a): Formula and Comparative Benchmark

Customer Service Related Complaints	
Formula: 1,000 X Number of Customer Service Complaints ÷ Number of Active Water Accounts	
Customer Service Complaints	8
Accounts	7,076
Juneau Result:	1.13

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	9.9	0.6	3.0
Population Served: 10k-50k	26.8	1.5	4.4
Type: Combined Operations	18.6	0.8	5.2

Exhibit D-22(b): Graphical Results



Analysis: Lower values are desirable. CBJ’s results are below two of three of the survey group in the top quartile but above the median for all groups resulting in a Score: 2 – “Good”.

23. Technical Quality Related Complaints

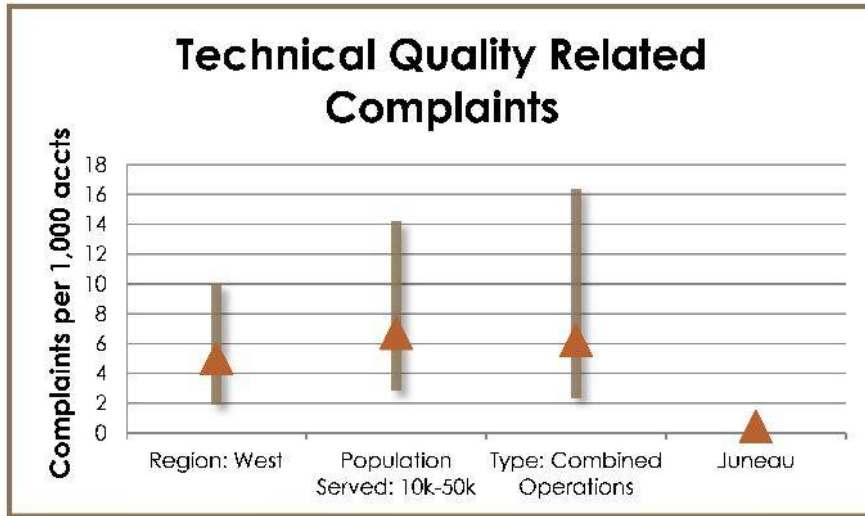
Description: This indicator measures the complaint rate experienced by the utility associated with technical quality, expressed as complaints per 1,000 customer accounts. Generally, lower values are desirable. This indicator represents complaints related to wastewater quality, color, odor, pressure, etc.

Exhibit D-23(a): Formula and Comparative Benchmark

Technical Quality Related Complaints	
Formula: 1,000 X Number of Technical Quality Complaints ÷ Number of Active Water Accounts	
Technical Quality Complaints	3
Accounts	7,076
Juneau Result:	0.42

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	10.0	1.9	5.0
Population Served: 10k-50k	14.2	2.8	6.7
Type: Combined Operations	16.4	2.3	6.2

Exhibit D-23(b): Graphical Results



Analysis: Lower results are desirable. CBJ’s result places it among the top quartile of survey participants resulting in a Score: 1 – “Very Good”.

24. Monthly Cost of Using 7,500 gallons (Wastewater – Residential)

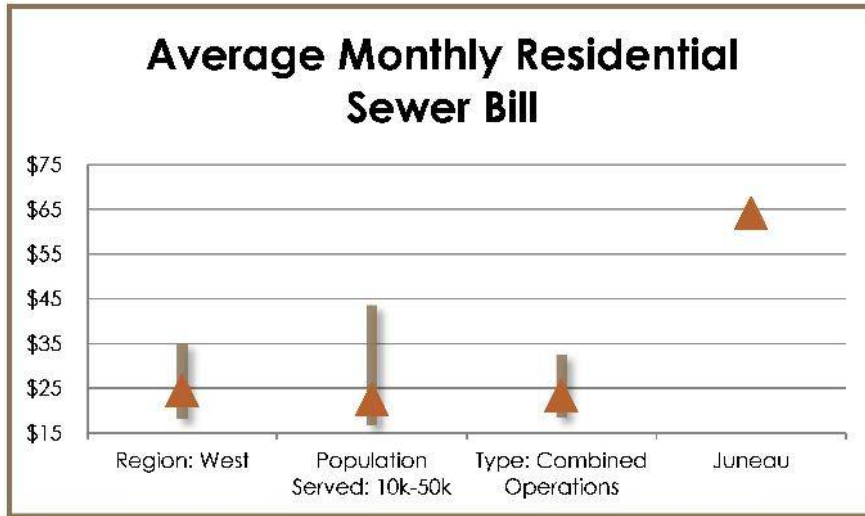
Description: Allows for a utility to compare the residential cost of wastewater service with a large sample of the industry. In general, lower values are desirable. Each utility is unique, however, and different circumstances may be the cause of a specific result.

Exhibit D-24(a): Formula and Comparative Benchmark

Average Monthly Residential Sewer Bill	
Formula: Calculated value of a monthly bill.	
Fixed	\$64.13
Juneau Result:	\$64.13

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	\$35.15	\$18.05	\$24.47
Population Served: 10k-50k	\$43.62	\$16.63	\$22.49
Type: Combined Operations	\$32.62	\$18.40	\$23.30

Exhibit D-24(b): Graphical Results



Analysis: In general, lower values are desirable. CBJ’s results are significantly higher than those survey groups in the bottom quartile. However, it should be noted that all three survey group rates are based on a 2007 test year data, while CBJ’s rate are rates that are currently in effect at 2013. Further investigation should be done using similarly situated utilities and using the same time period for benchmarking monthly wastewater rates. Based simply on survey data a score of 4 is given. Score: 4 – “Poor” but further evaluation is necessary as noted herein.

APPENDIX: BENCHMARK MODEL

To: Kirk Duncan, Public Works Director
Juneau, Alaska

Date: December 6, 2013

From: William Wilks, Senior Project Manager
Karyn Johnson, Principal

RE: CBJ – Water Benchmarking Analysis

A. INTRODUCTION

In conjunction with the Water Rate Study FCS GROUP is conducting for the City and Borough of Juneau (“CBJ”), a benchmarking analysis was prepared to evaluate the CBJ’s water utility performance in comparison to industry benchmarks. Relevant performance indicators were evaluated and compared against the results from an industry benchmarking survey as well as FCS GROUP experience within the industry. This memorandum summarizes the findings and conclusions of our review.

It is important to note that benchmarking results are only a start to the evaluation of utility performance and do not necessarily reflect good or bad performance in all cases. There are many internal and external factors that affect how a specific utility compares to the benchmarking standards provided. Elements to consider when evaluating these results include:

- Regional Climate
- Customer Base
- Density of Population
- Local & Regional Regulations
- Geographic Footprint
- Age of Infrastructure
- Treatment Processes
- Organizational Goals

These explanatory factors can have a significant influence on the documented performance of a specific utility. Further analysis with those closely familiar with a utility may reveal additional insight on performance indicators.

It is also important to note that an initial benchmarking analysis provides a snap shot of utility performance for the given year of review. Subsequent, multi-year analyses would allow CBJ to evaluate utility performance and trends over time in order to make better informed decisions.

Exhibit A-1 presents the suggested benchmarking process.

Exhibit A-1: Steps to Benchmarking



B. METHODOLOGY

Sources for the utility benchmarks include a publication by the American Water Works Association (AWWA) entitled *Benchmarking Performance Indicators for Water and Wastewater Utilities: Survey Data and Analyses Report (2007)*, as well as FCS GROUP industry knowledge and experience gained through our work with utilities throughout the western United States. Note that the financial data sources and results for CBJ reflect performance for year 2012, which might not be representative of all results reflected in the 2007 AWWA publication, particularly those measures related to current O&M costs and monthly rates.

The AWWA industry survey compiled utility financial and operational information from 180 participants¹. Participation in the survey was voluntary and information submitted was self-reported by the participating utilities. For performance indicators used within this publication, we referenced the following benchmark categories:

- Utility Service or Operation Type: For CBJ, “**Combined Operations**” was selected. This represents survey participants designated as providing both water and wastewater services. Combined Operations was selected as the most representative category since CBJ provides both water and wastewater services.
- Size of Service Population: This represents the size of the population served by the designated utility service. Juneau’s water service population falls within the “**10,001 -50,000**” population category.
- Geographical Region: The CBJ of Juneau falls within the “**West**” region which includes the State of Alaska (along with AZ, CA, CO, NM, NV, OR, UT, WA and WY).

Exhibit B-1 lists the performance indicators selected for this analysis based upon available information and applicability to CBJ’s domestic water system / utility.

¹ Participating Alaskan utilities include Anchorage Water and Wastewater Utility and Golden Heart Utilities, Inc.

Exhibit B-1: Index of Performance Indicators

#	Performance Indicator	#	Performance Indicator
1	Organization Best Practices Index Survey	18	O&M Coverage Ratio
2	Employee Health & Safety Severity Rate	19	Debt Coverage Ratio
3	Training Hours per Employee	20	Customer Service Related Complaints
4	Customer Accounts per Employee	21	Technical Quality Related Complaints
5	MGD of Water Delivered per Employee	22	Planned Disruptions (< 4 hours) per 1,000 Customers
6	Drinking Water Compliance Rate	23	Planned Disruptions (4 hours - 12 hours) per 1,000 Customers
7	Distribution System Loss / Leakage	24	Planned Disruptions (>12 hours) per 1,000 Customers
8	O&M Cost per Customer Account	25	Unplanned Disruptions (< 4 hours) per 1,000 Customers
9	O&M Cost per Million Gallons of Water Distributed	26	Unplanned Disruptions (4 hours - 12 hours) per 1,000 Customers
10	Debt to Total Asset Ratio (Debt Ratio)	27	Unplanned Disruptions (>12 hours) per 1,000 Customers
11	Debt to Equity (Net Asset) Ratio	28	Monthly cost of using 7,500 gallons (Water - Residential)
12	Return on Assets		
13	Return on Fixed Assets		
14	Accounts Receivable Turnover		
15	Accounts Receivable Collection Period		
16	Current Ratio		
17	Operating Working Capital		

Results for these indicators are organized into the following categories: Organizational Development, Water Operations, Business & Finance Operations, and Customer Relations.

The analysis calculates a formula-based (or in some cases, subjective) result for CBJ’s water utility for each performance indicator and then assigns a score to each indicator based on how well CBJ compares to the industry benchmark.

Benchmarks are shown for the bottom quartile, top quartile and median responses from participants. For additional indicators, not included in the AWWA publication, general industry standards are shown. An overall (or average) score is then assigned to the category as a whole, assuming equal weight for each indicator within the category. **Exhibit B-2** presents the scoring system for this exercise.

Exhibit B-2: Scoring System

Scoring Table	
Score	Description
1	Very Good
2	Good
3	Fair
4	Poor

In general, the scores are assigned as follows:

- “1 – Very Good” - results equal to or better than the top quartile;
- “2 - Good” - results close to the median;
- “3 - Fair” - results better than the bottom quartile but worse than the median; and
- “4 – Poor” - results equal to or worse than the bottom quartile.

The intent of the scoring system is to assist CBJ in identifying areas for further investigation and potential improvement. For example, CBJ might consider tagging those areas that are scored either “Fair” or “Poor” as priority targets for improvement.

C. SUMMARY OF RESULTS

Exhibit C-1 summarizes the results, including individual scores and an overall score for the category. Additional detail is provided in Section D, including both a numerical and graphical result for each indicator. Note that the bar line in each graphic depicts the range from bottom to top quartile results and the triangle depicts the median result as well as CBJ’s results.

Exhibit C-1: Performance Indicator and Score by Category

Organizational Development		Water Operations		Business & Finance Operations		Customer Relations	
Organization Best Practices Index Survey	4	Drinking Water Compliance Rate	1	Debt to Total Asset Ratio (Debt Ratio)	1	Customer Service Related Complaints	1
Employee Health & Safety Severity Rate	4	Distribution System Loss / Leakage	4	Debt to Equity (Net Asset) Ratio	1	Technical Quality Related Complaints	1
Training Hours per Employee	1	O&M Cost per Customer Account	3	Return on Assets	4	Planned Disruptions (< 4 hours) per 1,000 Customers	4
Customer Accounts per Employee	2	O&M Cost per Million Gallons of Water Distributed	3	Return on Fixed Assets	4	Planned Disruptions (4 hours - 12 hours) per 1,000 Customers	2
MGD of Water Delivered per Employee	2			Accounts Receivable Turnover	3	Planned Disruptions (>12 hours) per 1,000 Customers	1
				Accounts Receivable Collection Period	3	Unplanned Disruptions (< 4 hours) per 1,000 Customers	2
				Current Ratio	1	Unplanned Disruptions (4 hours - 12 hours) per 1,000 Customers	2
				Operating Working Capital	1	Unplanned Disruptions (>12 hours) per 1,000 Customers	4
				O&M Coverage Ratio	4	Monthly cost of using 7,500 gallons (Water - Residential)	2
				Debt Coverage Ratio	1		
Average	2.6		2.8		2.3		2.1

Organizational Development received an overall (average) score of 2.6, indicating “fair” performance. Areas warranting further investigation and potential improvement include the Organization Best Practices Index Survey and Employee Health and Safety Rate. The remaining performance indicators in this category received either a “good” or “very good” score.

Water Operations received an average score of 2.8, indicating “fair” performance. Areas warranting further investigation and potential improvement include Distribution System Loss/Leakage, O&M Cost per Customer Account and O&M Cost per MG of Water Distributed.

Business & Finance Operations received a score of 2.3, indicating “good” performance. This is likely the direct result of CBJ’s limited debt financing for capital projects. Improvement to the results for Return on Assets and O&M Coverage Ratio could improve the overall score for this category.

Customer Relations received a score of 2.1, indicating “good” performance with Customer Services and Technical Quality Related Complaint indicators receiving a “very good” score. Low scores were received for various Planned and Unplanned Disruption performance indicators as will be more fully addressed herein warranting further investigation and potential improvements.

D. RESULTS OF BENCHMARKING ANALYSIS

ORGANIZATIONAL DEVELOPMENT

1. Organizational Best Practices Index Survey

Description: The purpose of the Best Practices (BP) survey is to summarize a utility's implementation of management programs important to a water utility. Generally, higher values are desirable. Practices are likely to be more formal and extensive in larger utilities.

Exhibit D-1(a): Formula and Comparative Benchmarks

Organization Best Practices Index Survey	
Formula: Results of "Best Practices" Survey (min 7 - max 35 at each utility)	
Juneau Result:	7

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	22.80	30.00	26.50
Population Served: 10k-50k	19.00	29.00	24.00
Type: Combined Operation	21.90	30.00	24.90

Exhibit D-1(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s result for this performance measurement is significantly below the bottom quartile of all three survey groups resulting in a Score: 4 - “Poor”. Improvement in this area can be achieved with the successful implementation of an Asset Management Plan, Strategic Planning and Long-Term Financial Planning. It was the lack of these management plans which led to the overall low score for this performance indicator.

2. Employee Health & Safety Severity Rate

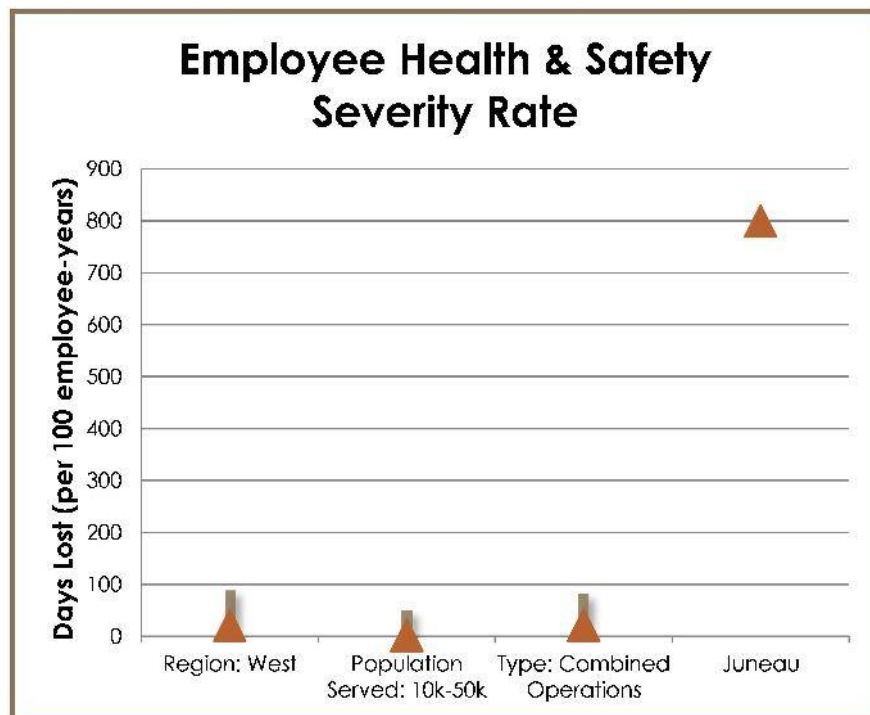
Description: Quantifies the rate of employee days lost from work due to illness or injury. Generally, lower values are desirable. Excessive lost workdays affect productivity and can cost utilities in a number of ways. Health care, insurance premiums and overtime can all be adversely impacted by lost work due to injury or health reasons. Indicator measures the rate of days lost per 100 employees per year.

Exhibit D-2(a): Formula and Comparative Benchmarks

Employee Health & Safety Severity Rate	
Formula: 200,000 X (Total Workdays away from Work) ÷ Total Hours Worked by All Employees	
Days Away (Work Injury & Illness)	88
Total Hours Worked	22,099
Juneau Result:	799

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	88.10	0.10	21.20
Population Served: 10k-50k	49.30	0.00	1.30
Type: Combined Operations	81.40	50.00	21.20

Exhibit D-2(b): Graphical Results



Analysis: Lower values are desirable. The CBJ’s result is significantly higher than all three survey groups in the bottom quartile resulting a Score: 4 – “Poor”.

3. Training Hours per Employee

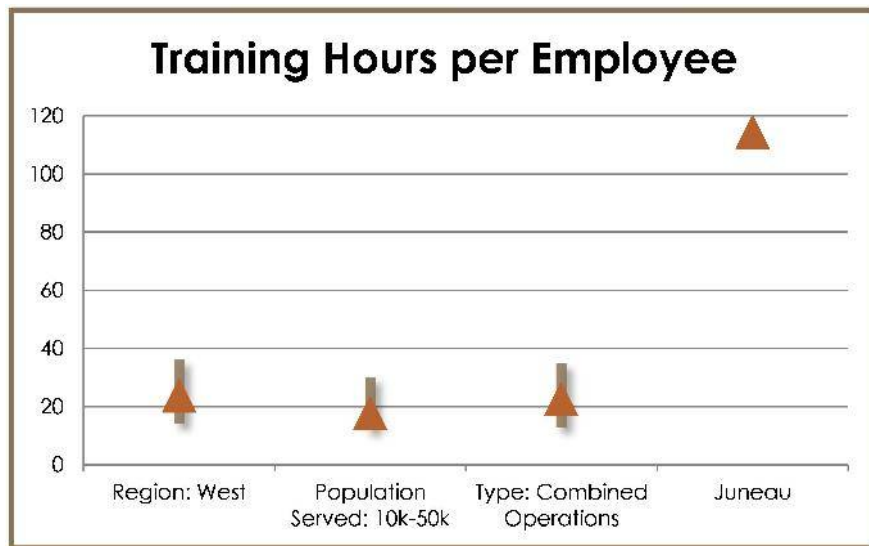
Description: Measures the quantity of formal training that utility employees are actually completing. This indicator is expressed as the number of formal training hours per employee per year. Generally, higher values are desirable. This measure is intended to reflect the organization's commitment to formal training as a means of improving employee knowledge and skills.

Exhibit D-3(a): Formula and Comparative Benchmarks

Training Hours per Employee	
Formula: Total Qualified Formal Training Hours for All Employees ÷ Total FTEs Worked by Employees During Reporting Period	
Training Hours	1,599
Number of FTEs	14.00
Juneau Result:	114.21

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	14.10	36.10	23.70
Population Served: 10k-50k	11.90	30.10	17.70
Type: Combined Operations	12.70	34.90	22.50

Exhibit D-3(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s result is significantly above the top quartile for all three survey sample groups resulting in a Score: 1– “Very Good”.

4. Customer Accounts per Employee

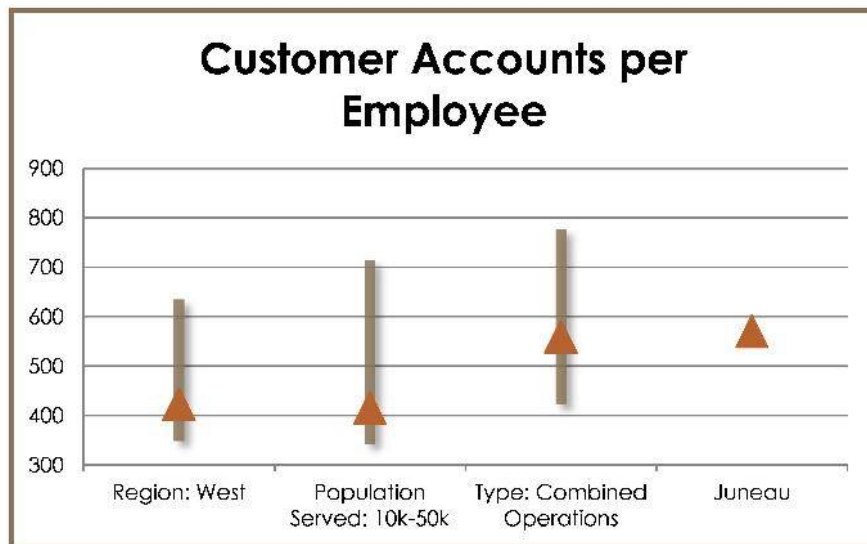
Description: This indicator is intended to measure employee efficiency. Generally, higher values are desirable.

Exhibit D-4(a): Formula and Comparative Benchmarks

Customer Accounts per Employee	
Formula: Number of Accounts ÷ Number of FTEs	
Number of Accounts	7,977
Number of FTEs	14.00
Juneau Result:	570

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	349	635	422
Population Served: 10k-50k	343	715	414
Type: Combined Operations	422	778	559

Exhibit D-4(b): Graphical Results



Analysis: In general, higher values are desirable. CBJ’s result is above the median for all three survey groups but below the top quartile resulting in a Score: 2 – “Good”.

5. MGD of Water Delivered per Employee

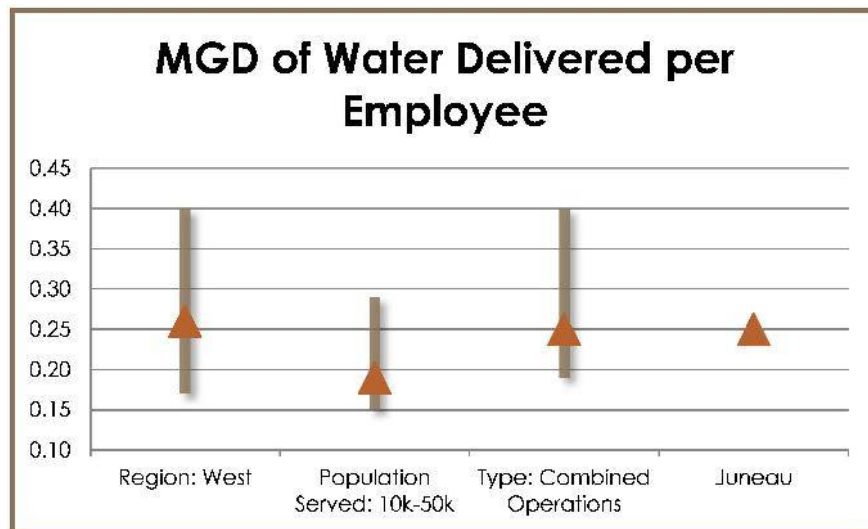
Description: This indicator is intended to measure employee efficiency. Generally, higher values are desirable.

Exhibit D-5(a): Formula and Comparative Benchmarks

MGD of Water Delivered per Employee	
Formula: Average MGD Delivered ÷ FTEs	
MGD	3.50
Number of FTEs	14.00
Juneau Result:	0.25

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	0.17	0.40	0.26
Population Served: 10k-50k	0.15	0.29	0.19
Type: Combined Operations	0.19	0.40	0.25

Exhibit D-5(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s result is within the median of the three survey groups resulting in a Score: 2 – “Good”.

WATER OPERATIONS

6. Drinking Water Compliance Rate

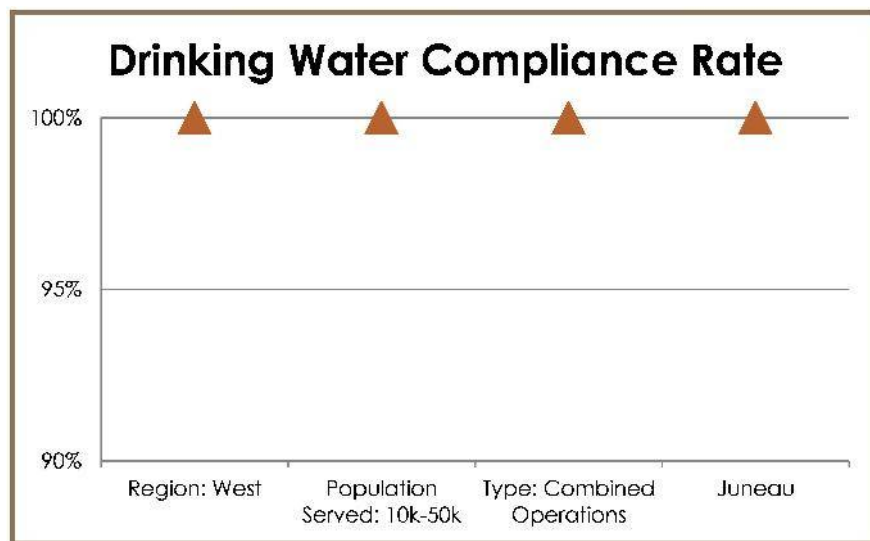
Description: This indicator quantifies the percentage of time each year that a water utility meets all of the health-related drinking water standards in U.S. National Primary Drinking Water Regulations.

Exhibit D-6(a): Formula and Comparative Benchmark

Drinking Water Compliance Rate	
Formula: Number of Days in Full Compliance ÷ 365 Days	
Days in Full Compliance	365
Formula Piece #2	365
Juneau Result:	100%

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	100.0%	100.0%	100.0%
Population Served: 10k-50k	100.0%	100.0%	100.0%
Type: Combined Operations	100.0%	100.0%	100.0%

Exhibit D-6(b): Graphical Results



Analysis: A utility should strive for a 100% compliance rate for the entire year. CBJ has achieved this target. Score: 1 – “Very Good”.

7. Distribution System Loss/Leakage

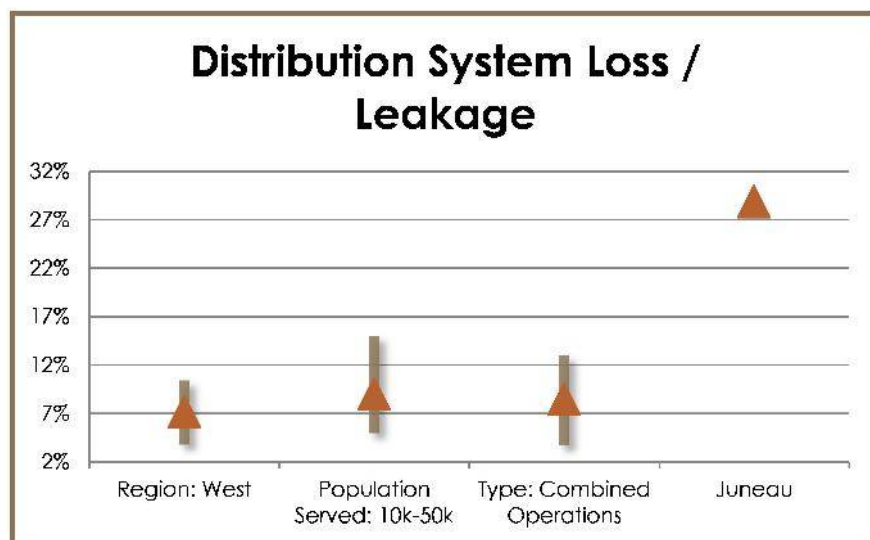
Description: This indicator quantifies the percentage of produced water that fails to reach customers and cannot otherwise be accounted for through authorized usage.

Exhibit 7(a): Formula and Comparative Benchmarks

Distribution System Loss / Leakage	
Formula: $[\text{Volume distributed} - (\text{volume billed} + \text{volume unbilled but authorized}) \div \text{volume distributed}]$	
Volume Distributed	1,277,508,729
Volume Billed & Authorized	908,748,717
Juneau Result:	28.87%

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	10.4%	3.8%	7.2%
Population Served: 10k-50k	15.0%	5.0%	9.0%
Type: Combined Operations	13.0%	3.7%	8.5%

Exhibit 7(b): Graphical Results



Analysis: Lower values are desirable. CBJ’s result fall significantly below the bottom quartile of all three survey groups resulting in a Score: 4 – “Poor” and is likely a result of being primarily an unmetered system which limits ability to fully assess this indicator.

8. Operations and Maintenance Cost Per Customer Account

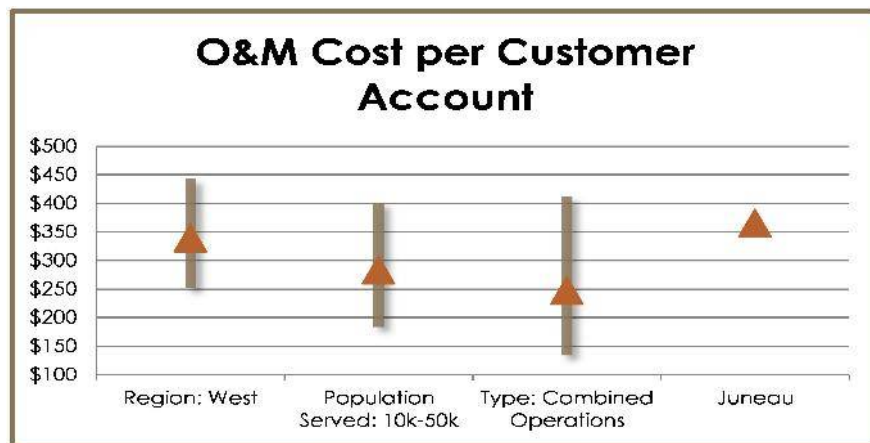
Description: Generally, higher values are not desirable. Higher O&M costs per customer account may indicate inefficient procedures or may be the result of aging infrastructure. However, this may not always be the case. Higher costs per account may be the desired outcome to improve customer satisfaction or to make up for deferred maintenance practices.

Exhibit D-8(a): Formula and Comparative Benchmark

O&M Cost per Customer Account	
Formula: Total O&M less depreciation ÷ Total number of customer accounts	
Total O&M (less dep.)	\$2,912,798
Total Customer Accounts	7,977
Juneau Result:	\$365

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	\$443	\$252	\$339
Population Served: 10k-50k	\$401	\$183	\$283
Type: Combined Operations	\$411	\$134	\$247

Exhibit D-8(b): Graphical Results



Analysis: CBJ’s result is below the median but above the bottom quartile for all three survey groups resulting in a Score: 3 – “Fair”.

9. Operations and Maintenance Cost Per MG of Water Distributed

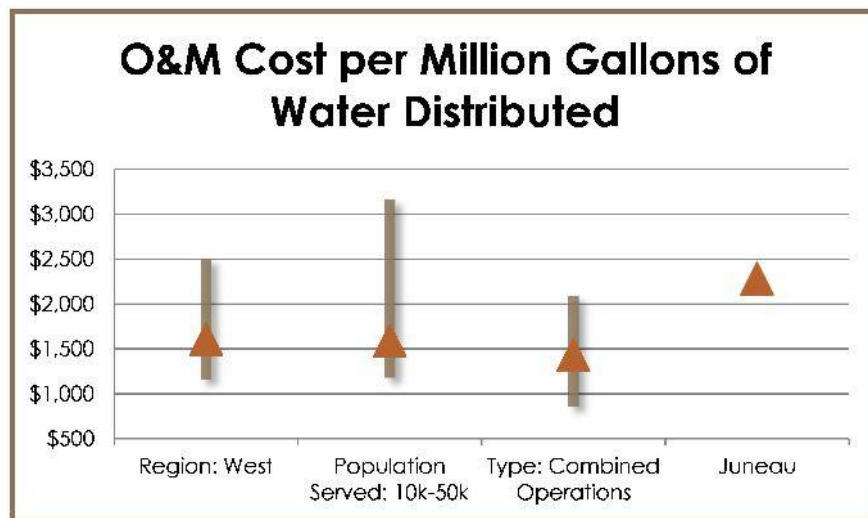
Description: Generally, higher values are not desirable. Higher O&M costs per MG of water distributed may indicate inefficient procedures or may be the result of aging infrastructure. However, this may not always be the case. Higher costs per account may be the desired outcome to improve customer satisfaction or to make up for deferred maintenance practices.

Exhibit D-9(a): Formula and Comparative Benchmarks

O&M Cost per Million Gallons of Water Distributed	
Formula: Total O&M less depreciation ÷ Volume (in MG) Distributed During the Reporting Period	
Total O&M (less dep.)	\$2,912,798
Volume Distributed (in MG)	1,278
Juneau Result:	\$2,280

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	\$2,509	\$1,163	\$1,608
Population Served: 10k-50k	\$3,172	\$1,181	\$1,592
Type: Combined Operations	\$2,089	\$863	\$1,431

Exhibit D-9(b): Graphical Results



Analysis: The CBJ’s result is below the median but above the bottom quartile for two of the three survey groups resulting in a Score: 3 – “Fair”.

BUSINESS & FINANCE OPERATIONS

10. Debt to Total Asset Ratio (Debt Ratio)

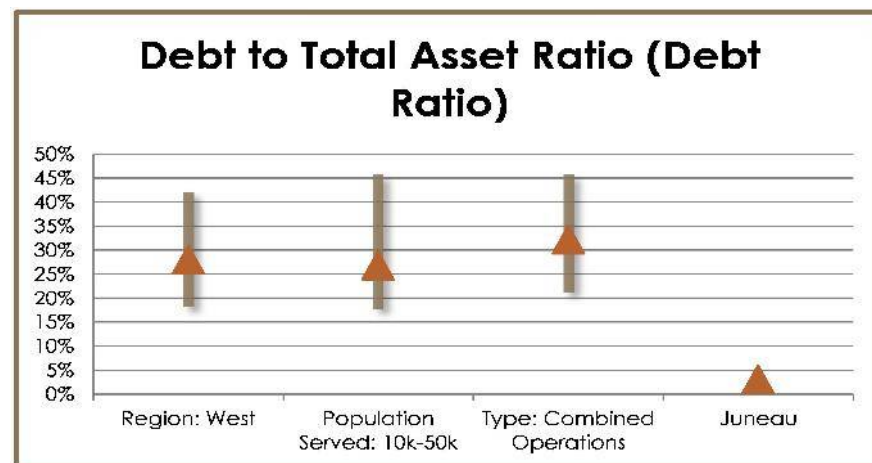
Description: This indicator quantifies the utility's level of indebtedness. Generally, the higher the ratio, the more dependent the utility is on debt financing. A higher dependence on debt can cause larger long-term costs for interest repayments when compared with cash financing capital. Lower values are generally desirable.

Exhibit D-10(a): Formula and Comparative Benchmark

Debt to Total Asset Ratio (Debt Ratio)	
Formula: Total Liabilities ÷ Total Assets	
Total Liabilities	\$1,791,961
Total Assets	\$57,299,613
Juneau Result:	3.1%

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	42.1%	18.1%	28.0%
Population Served: 10k-50k	45.8%	17.7%	26.8%
Type: Combined Operations	45.8%	21.2%	32.2%

Exhibit D-10(b): Graphical Results



Analysis: Lower values are generally desirable. CBJ’s result is significantly above the top quartile and likely due to successfully obtaining grant funding which is unlikely to continue as availability of grant funds diminish. CBJ’s resulting score is a: 1 – “Very Good.”

11. Debt to Equity (Net Asset) Ratio

Description: This ratio gives insight into a utility's equity-liability relationship in terms of funded capital assets. The lower the percentage, the less leveraged a utility is, which can imply more potential to fund future projects fully with debt. A ratio of 1.5 (60% debt / 40% equity) is a generally accepted industry target.

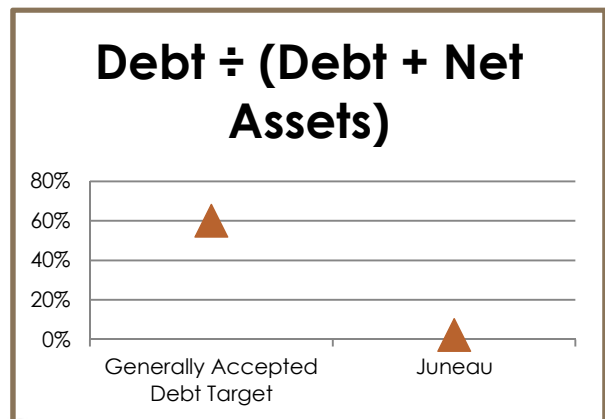
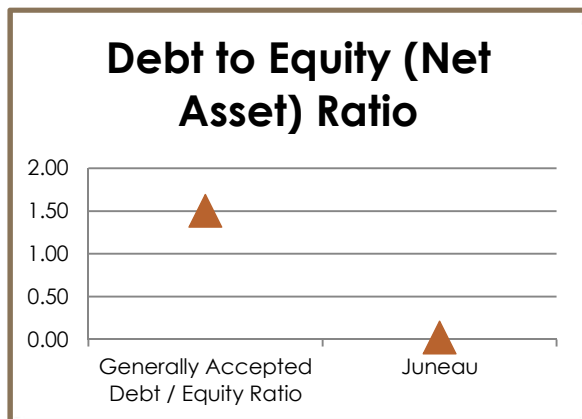
Exhibit D-11(a): Formula and Comparative Benchmark

Debt to Equity (Net Asset) Ratio	
Formula: Total Current & Non-Current Borrowed Debt ÷ Net Assets.	
Total Borrowed Debt	\$1,239,690
Net Assets	\$55,507,652
Juneau Result:	0.02 to 1 (2% debt / 98% equity)

Benchmarks	FCS GROUP Experience
Generally Accepted Debt / Equity Ratio	1.50
Juneau	0.02

Benchmarks	FCS GROUP Experience
Generally Accepted Debt Target	60.0%
Juneau	2.2%

Exhibit D-11(b): Graphical Results



Analysis: Lower values are generally desirable. CBJ’s results are well below the generally accepted targets, indicating the potential to fund additional capital projects with debt while still maintaining a healthy capital structure. Score: 1 – “Very Good”. This high score is likely due to historical levels of grant funding. The future will be likely different resulting in the need to finance capital programs using debt, thereby putting upward pressure to cover debt cost through rate increases.

12. Return on Assets

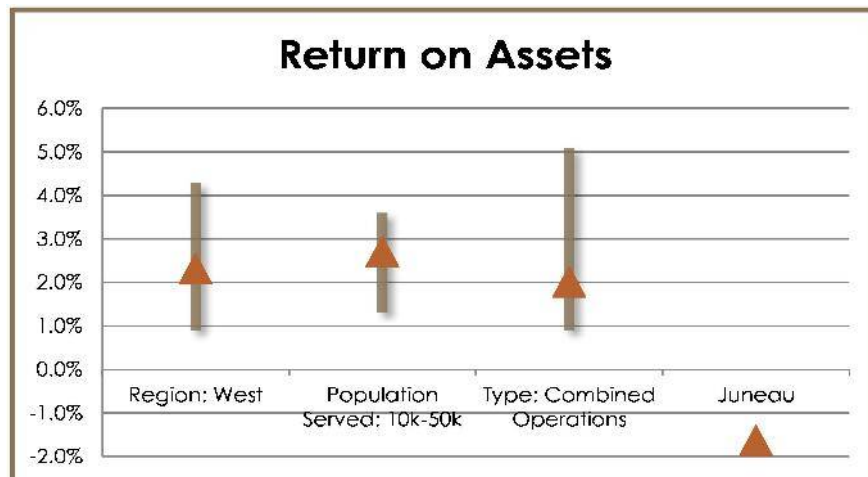
Description: In general, utilities are seeking a higher return on asset ratio performance where possible. This indicator is a measure of a utility's financial effectiveness.

Exhibit D-12(a): Formula and Comparative Benchmark

Return on Assets	
Formula: Net Income ÷ Total Assets	
Net Income	-\$939,888
Total Assets	\$57,299,613
Juneau Result:	-1.64%

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	0.90%	4.30%	2.30%
Population Served: 10k-50k	1.30%	3.60%	2.70%
Type: Combined Operations	0.90%	5.10%	2.00%

Exhibit D-12(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s result places it significantly below the bottom quartile for all three survey groups in each category because rates are not set at a sufficient level to cover depreciation. CBJ should consider setting rates over time to cover depreciation and if implemented would improve the score of this indicator. Score: 3 – “Poor”.

13. Return on Fixed Assets

Description: In general, this value indicates whether the utility is earning sufficient net operating income (before any non-operating revenues & expenses) as a return on its investment in capital assets to equal or exceed its weighted cost of capital for the reporting period. A return equal to or greater than the entity’s average cost of capital is a prudent financial objective. The CBJ’s estimated weighted average cost of capital (WACC) is 2.68% based on debt issues from its 2012 CAFR.

Exhibit D-13(a): Formula and Comparative Benchmark

Return on Fixed Assets		
Formula: Net Operating Income ÷ Total Net Plant-in-Service (less dep.)		
Net Operating Income	-\$1,198,060	
Total Plant-in-Service	\$50,573,383	Net of depreciation. Excl. Intangibles and Unamortized
Juneau Result:	-2.37%	

City of Juneau	FCS GROUP Experience
Juneau's Estimated Weighted Cost of Capital	2.68%

Exhibit D-13(b): Graphical Results



Analysis: CBJ’s result is significantly below its weighted cost of capital warranting further investigation and potential improvement may be necessary resulting in a Score: 4 – “Poor”.

14. Accounts Receivable Turnover

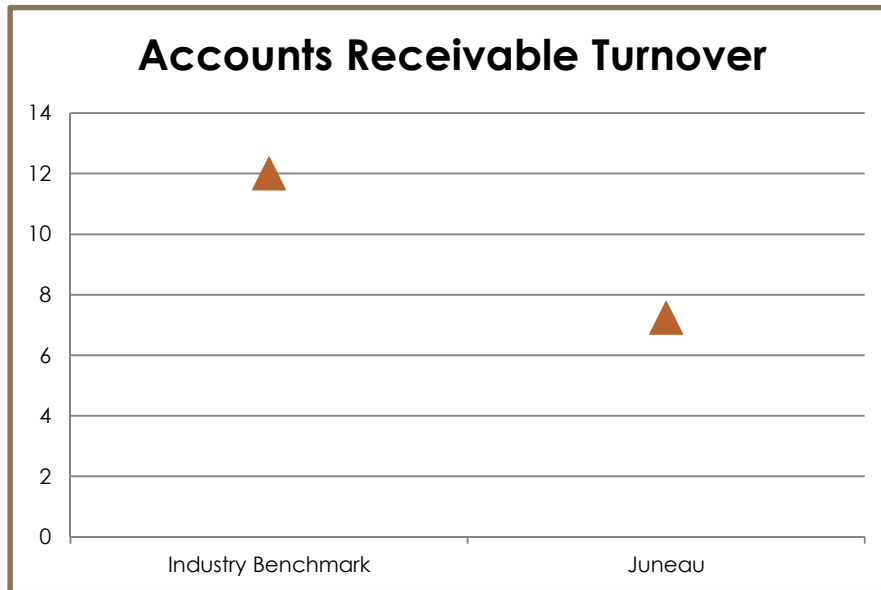
Description: In general, higher values are desirable. A result of greater than 12 is very good. Less than 12 can be okay if it is explained by bi-monthly billing cycles or some other lag creating factor. Otherwise, a lower ratio may suggest that a utility should assess their collection results against policies in relation to customer accounts and average collections per period.

Exhibit D-14(a): Formula and Comparative Benchmark

Accounts Receivable Turnover	
Formula: Annual Billings ÷ End of Year A/R Balance	
Annual Billings	\$3,972,418
End of Year A/R Balance	\$548,991
Juneau Result:	7.24

Benchmarks	FCS GROUP Experience
Industry Benchmark	12

Exhibit D-14(b): Graphical Results



Analysis: CBJ’s result is somewhat below the industry benchmark, indicating further review on the billing and collection operation may be necessary. Score: 4 – “Fair”.

15. Accounts Receivable Collection Period

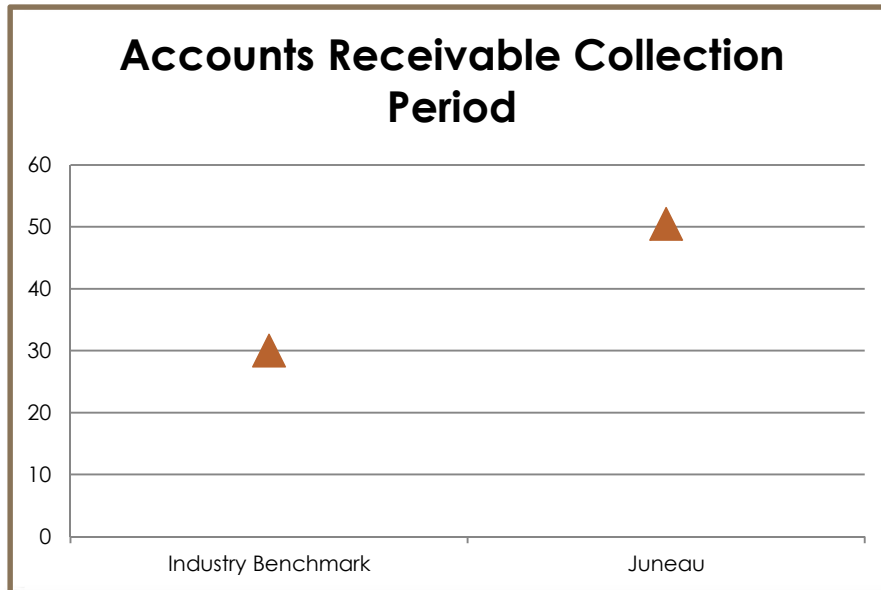
Description: This indicator measures the number of days from when a customer is billed to when the payment is received by the Utility. In general, lower values are desirable. Less than 30 days improves cash flow from operations and the ability for a utility to meet short-term obligations, after working capital is depleted.

Exhibit D-15(a): Formula and Comparative Benchmark

Accounts Receivable Collection Period	
Formula: 365 days ÷ Accounts Receivable Turnover	
Formula Piece #1	365 days
Accounts Receivable Turnover	7.24
Juneau Result:	50.44

Benchmarks	FCS GROUP Experience
Industry Benchmark	30

Exhibit D-15(b): Graphical Results



Analysis: CBJ’s result significantly lags the industry benchmark, indicating further review on the billing and collection operation may be necessary. Score: 4 – “Poor”.

16. Current Ratio

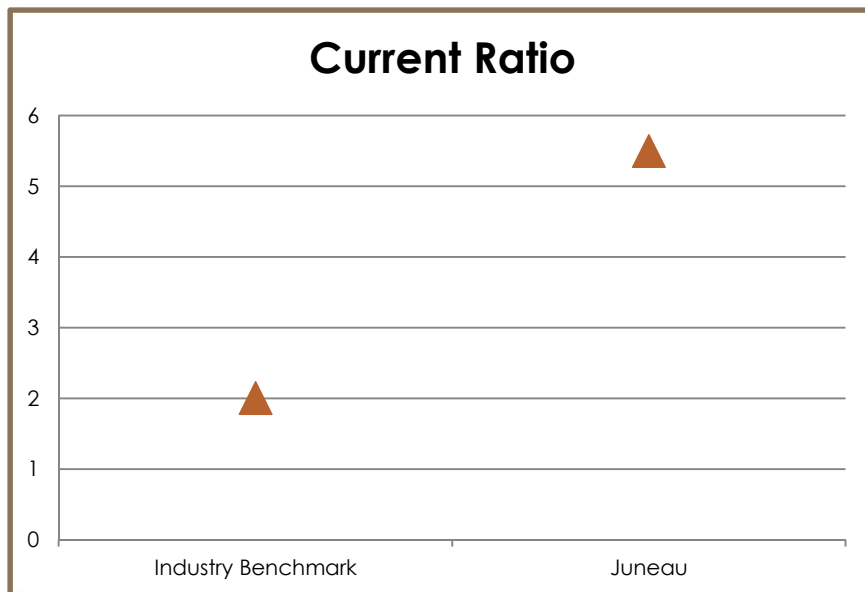
Description: In general, higher values are desirable. This is a liquidity ratio and a ratio of 2:1 is good to excellent. Generally, a consistent ratio of greater than 1:1 indicates that the utility can pay its current operating obligations without borrowing working capital.

Exhibit D-16(a): Formula and Comparative Benchmark

Current Ratio	
Formula: Current Assets ÷ Current Liabilities	
Current Assets	\$2,267,814
Current Liabilities	\$412,627
Juneau Result:	5.50

Benchmarks	FCS GROUP Experience
Industry Benchmark	2

Exhibit D-16(b): Graphical Results



Analysis: CBJ’s results are much higher than the targeted benchmark, indicating that the utility can pay its current operating obligations with current assets, avoiding the use of working capital reserves. Score: 1 – “Very Good”.

17. Operating Working Capital

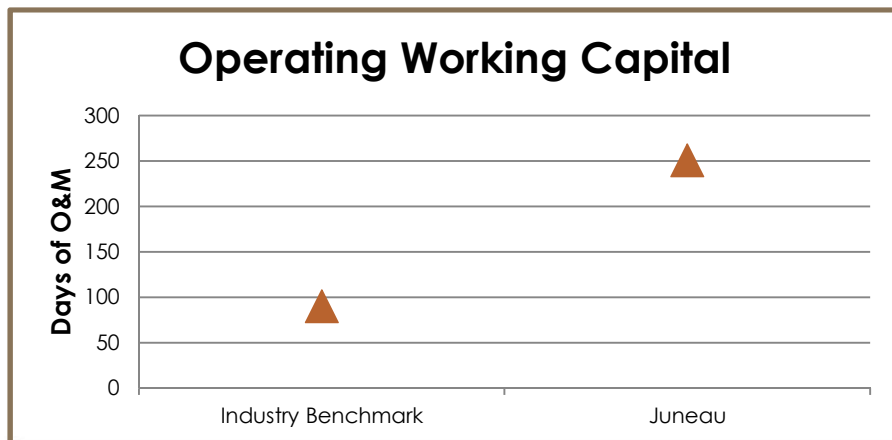
Description: Today, Financial Advisors and rating agencies would like to see up to 180 days of total unrestricted cash, cash equivalents and longer term forms of liquidity, of which 30-90 days could be working capital. Try to achieve a positive number sufficient to cover at least 30-45 days of expense. Up to 90 days may be prudent depending on the volatility of revenue. In general, this indicator shows how much cash plus current assets a utility has on hand, to make up for any short-term variances in service revenue, to cover current liabilities. We cannot assure that “unrestricted” assets are all actually available for working capital, but that is the general assumption.

Exhibit D-17(a): Formula and Comparative Benchmark

Operating Working Capital	
Formula: [(Current Assets - Current Liabilities (not devoted to debt or capital projects)) ÷ Operating Expenses (less dep.)] X 365 days	
Current Assets	\$2,267,814
Current Liabilities (less Debt portion)	\$267,140
Operating Expenses	\$2,912,798
Juneau Result:	251 days

Benchmarks	FCS GROUP Experience
Industry Benchmark	90 days

Exhibit D-17(b): Graphical Results



Analysis: CBJ’s result significantly exceeds the targeted benchmark, indicating that current cash and cash equivalents on hand can act as a buffer against short-term variances in revenues and/or expenses resulting in a Score 1 – “Very Good”.

18. O&M Coverage Ratio

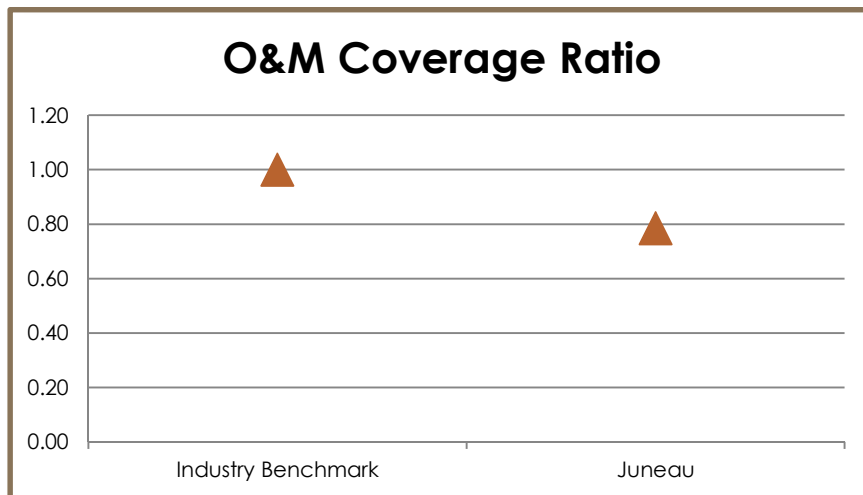
Description: This ratio shows how operating revenues compare to operating expenses. A utility should strive to be above 1.0, which would mean that operating expenses are being covered by operating revenues, and operating expenses are not being paid for with non-operating revenues such as interest income or capital connection charges. Less than 1.0 will not ultimately lead to a healthy financial trend over the long run, especially during periods of negative non-operating income.

Exhibit D-18(a): Formula and Comparative Benchmark

O&M Coverage Ratio	
Formula: Total Operating Revenues ÷ Operating Expenses (incl dep.)	
Total Operating Revenues	\$4,381,884
Total Operating Expenses (incl. dep.)	\$5,579,944
Juneau Result:	0.79

Benchmarks	FCS GROUP Experience
Industry Benchmark	1.00

Exhibit D-18(b): Graphical Results



Analysis: A utility should strive to be above 1.0, implying that operating revenues can cover operating expenditures (including depreciation). CBJ’s result is somewhat below the industry benchmark. Score: 3 – “Poor”.

19. Debt Coverage Ratio

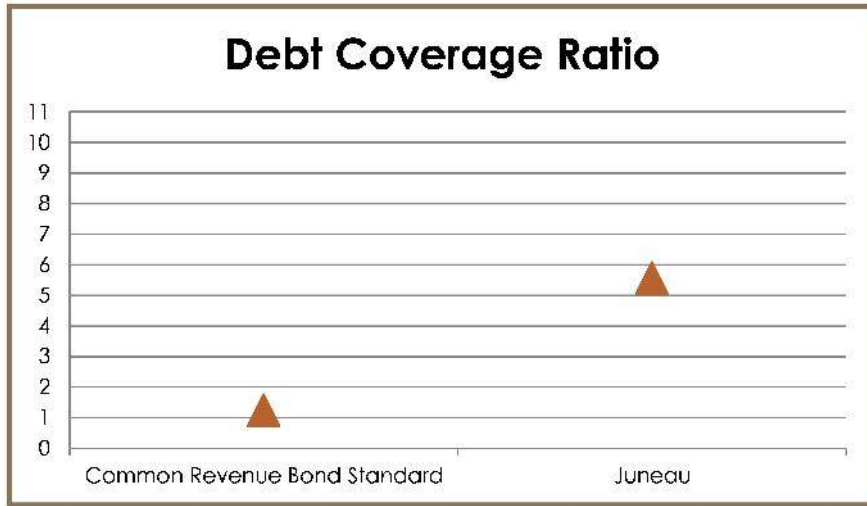
Description: In general, higher values are desirable. The Debt Service Coverage (DSC) ratio is an indicator that measures the average amount of net operating income available to pay annual debt service. The typical debt service coverage retirement for revenue bonds is 1.25 times annual debt service. The DSC is essentially an instantaneous measurement of estimated cash income generating performance. It is considered in rate making as a critical factor and driver in projecting needed annual rate revenue requirements.

Exhibit D-19(a): Formula and Comparative Benchmark

Debt Coverage Ratio			
Formula: Net Revenue ÷ Period Interest and Principal (Only Revenue Bonds)			
Total Operating Revenue	\$4,381,884		
Total Operating Expenses (less dep.)	\$2,912,798		
Net Revenue	\$1,469,086	Rev. - Exp. (Excludes depreciation)	
Period Principal	\$225,000		2012 CAFR at page 219
Period Interest	\$39,063		2012 CAFR at page 219
Juneau Result:	5.56		

Benchmarks	FCS GROUP Experience
Common Revenue Bond Standard	1.25

Exhibit D-19(b): Graphical Results



Analysis: Higher values are desirable. CBJ’s result is much higher than the internal target. Score: 1 – “Very Good”.

CUSTOMER RELATIONS

20. Customer Service Related Complaints

Description: This indicator measures the complaint rate experienced by the utility associated with customer service. Generally, lower values are desirable. The number of complaints is a good measure of customer service. This indicator may include complaints about an employee's helpfulness, timeliness, personal appearance, adhering traffic laws while driving, customer bills etc.

Exhibit D-20(a): Formula and Comparative Benchmark

Customer Service Related Complaints	
Formula: 1,000 X Number of Customer Service Complaints ÷ Number of Active Water Accounts	
Customer Service Complaints	2
Accounts	7,977
Juneau Result:	0.25

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	9.9	0.6	3.0
Population Served: 10k-50k	26.8	1.5	4.4
Type: Combined Operations	18.6	0.8	5.2

Exhibit D-20(b): Graphical Results



Analysis: Lower values are desirable. CBJ’s results are above all survey groups sampled within the top quartile resulting in a Score: 1 – “Very Good”.

21. Technical Quality Related Complaints

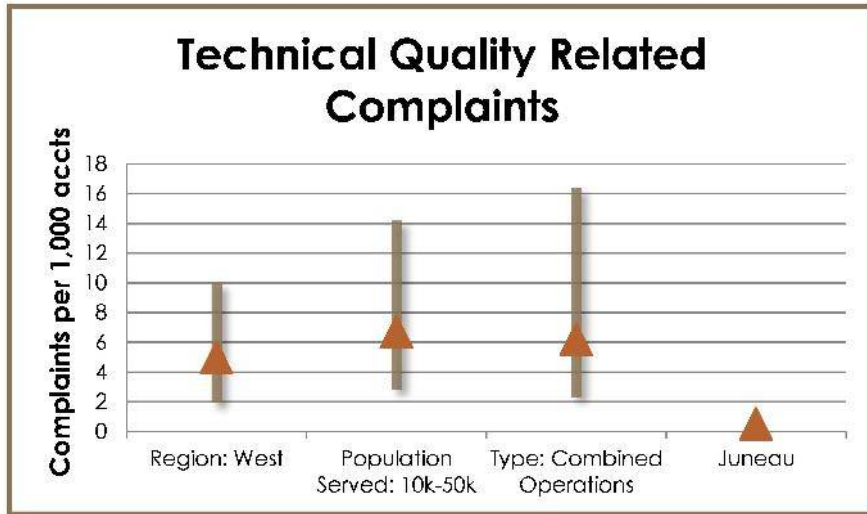
Description: This indicator measures the complaint rate experienced by the utility associated with technical quality, expressed as complaints per 1,000 customer accounts. Generally, lower values are desirable. This indicator represents complaints related to water quality, color, odor, pressure, etc.

Exhibit D-21(a): Formula and Comparative Benchmark

Technical Quality Related Complaints	
Formula: 1,000 X Number of Technical Quality Complaints ÷ Number of Active Water Accounts	
Technical Quality Complaints	4
Accounts	7,977
Juneau Result:	0.50

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	10.0	1.9	5.0
Population Served: 10k-50k	14.2	2.8	6.7
Type: Combined Operations	16.4	2.3	6.2

Exhibit D-21(b): Graphical Results



Analysis: Lower results are desirable. CBJ’s result places it among the top quartile of survey participants. Score: 1 – “Very Good”.

22. Planned Disruptions (< 4 hours) per 1,000 Customers

Disruption Indicator Summary (Following 6 indicators): Maintenance and repair work that results in water outages or substantially reduced water pressure disrupts customer plans, brings customer complaints, and diminishes goodwill toward the utility. Large numbers and proportions of unplanned disruptions likely reflect on distribution system inadequacies. Outages of long durations may be indicative of poor repair practices. These indicators are separated between planned and unplanned disruptions as well as by duration. ***Note:** An assumption is made relating to the formula: it is assumed that the number of Customers Experiencing Disruptions equates to number of disruptions.

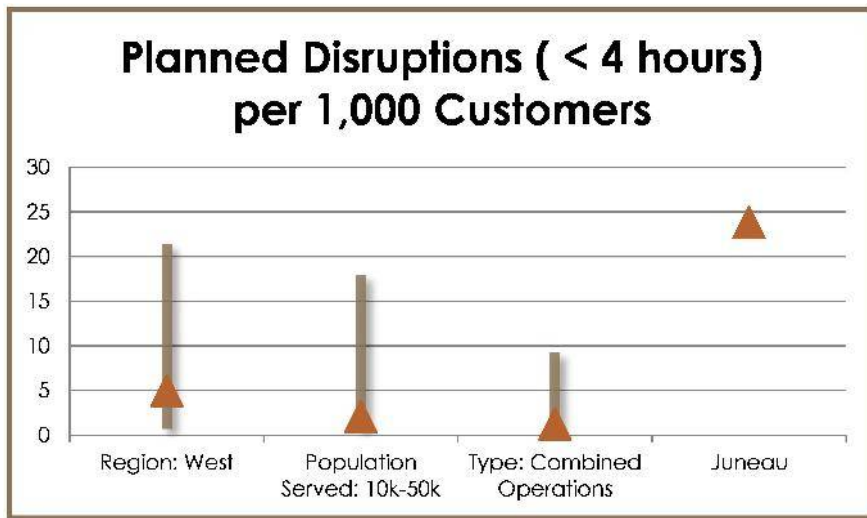
Description: This indicator quantifies the number of planned water outages experienced by utility customers for duration less than 4 hours. It is expressed as the number of customers experiencing disruptions per 1,000 customer accounts per year. Generally, lower values are desirable.

Exhibit D-22(a): Formula and Comparative Benchmark

Planned Disruptions (< 4 hours) per 1,000 Customers	
Formula: 1,000 X Number of Customers Experiencing Disruptions* ÷ Number of Active Customer Accounts	
Disruptions (<4 h)	190
Accounts	7,977
Juneau Result:	23.82

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	21.40	0.67	5.00
Population Served: 10k-50k	17.96	0.63	2.08
Type: Combined Operations	9.29	0.22	1.26

Exhibit D-22(b): Graphical Results



Analysis: In general, lower values are desirable. CBJ’s results are significantly higher than those survey groups in the bottom quartile resulting in a Score: 4 –“Poor”. Further analysis and potential improvement may be necessary for the performance indicator.

23. Planned Disruptions (4 hours - 12 hours) per 1,000 Customers

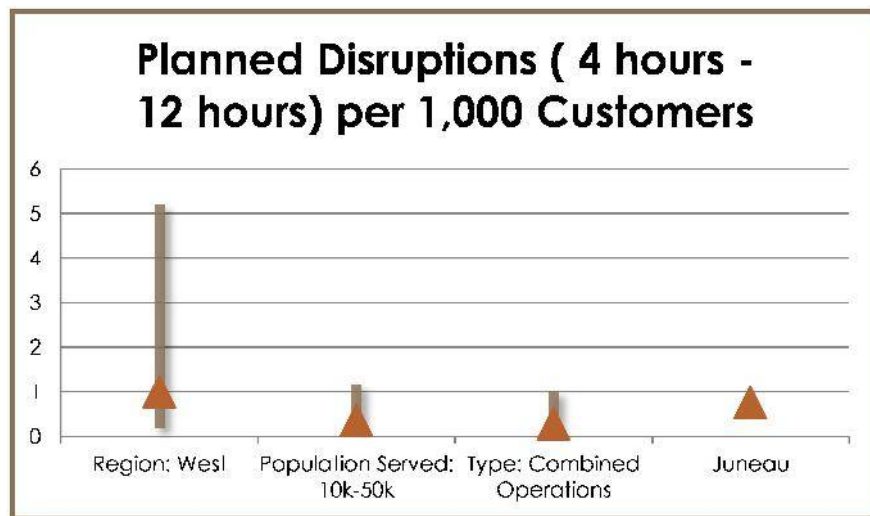
Description: This indicator quantifies the number of planned water outages experienced by utility customers for duration between 4 and 12 hours. It is expressed as the number of customers experiencing disruptions per 1,000 customer accounts per year. Generally, lower values are desirable.

Exhibit D-23(a): Formula and Comparative Benchmark

Planned Disruptions (4 hours - 12 hours) per 1,000 Customers	
Formula: 1,000 X Number of Customers Experiencing Disruptions* ÷ Number of Active Customer Accounts	
Disruptions (4 h - 12 h)	6
Accounts	7,977
Juneau Result:	0.75

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	5.20	0.18	1.00
Population Served: 10k-50k	1.16	0.16	0.36
Type: Combined Operations	1.02	0.03	0.28

Exhibit D-23(b): Graphical Results



Analysis: In general, lower values are desirable. CBJ’s result falls within the median of the survey sample group resulting in a Score: 2 – “Good”.

24. Planned Disruptions (> 12 hours) per 1,000 Customers

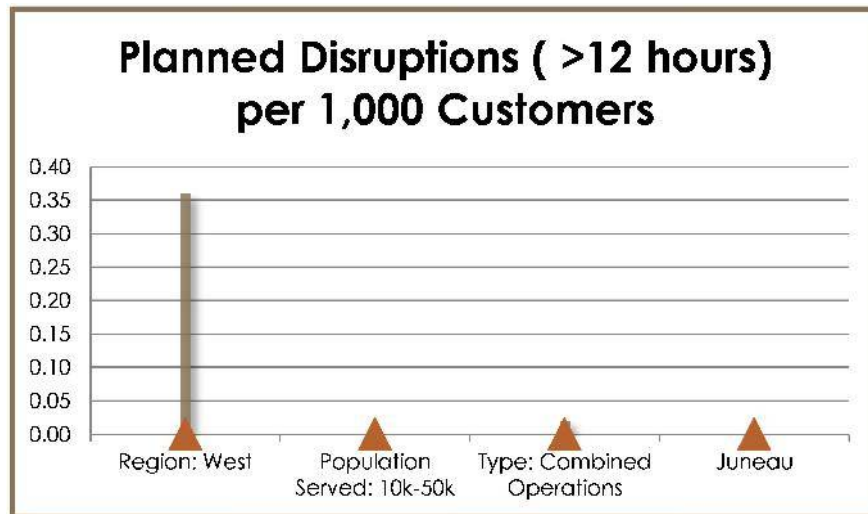
Description: This indicator quantifies the number of planned water outages experienced by utility customers for duration between 4 and 12 hours. It is expressed as the number of customers experiencing disruptions per 1,000 customer accounts per year. Generally, lower values are desirable.

Exhibit D-24(a): Formula and Comparative Benchmark

Planned Disruptions (>12 hours) per 1,000 Customers	
Formula: 1,000 X Number of Customers Experiencing Disruptions* ÷ Number of Active Customer Accounts	
Disruptions (>12 h)	0
Accounts	7,977
Juneau Result:	0.00

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	0.36	0.00	0.00
Population Served: 10k-50k	0.00	0.00	0.00
Type: Combined Operations	0.02	0.00	0.00

Exhibit D-24(b): Graphical Results



Analysis: In general, lower values are desirable. CBJ did not experience any planned disruptions of this duration in the test year resulting in a Score: 1 –“Very Good”.

25. Unplanned Disruptions (< 4 hours) per 1,000 Customers

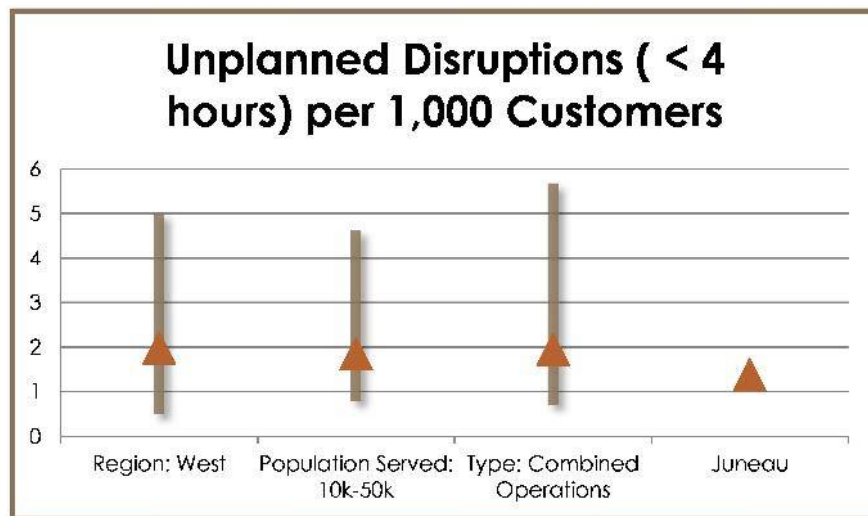
Description: This indicator quantifies the number of unplanned water outages experienced by utility customers for duration less than 4 hours. It is expressed as the number of customers experiencing disruptions per 1,000 customer accounts per year. Generally, lower values are desirable.

Exhibit D-25(a): Formula and Comparative Benchmark

Unplanned Disruptions (< 4 hours) per 1,000 Customers	
Formula: 1,000 X Number of Customers Experiencing Disruptions* ÷ Number of Active Customer Accounts	
Disruptions (<4 h)	11
Accounts	7,977
Juneau Result:	1.38

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	5.00	0.50	1.98
Population Served: 10k-50k	4.63	0.78	1.84
Type: Combined Operations	5.68	0.70	1.94

Exhibit D-25(b): Graphical Results



Analysis: In general, lower values are desirable. CBJ’s results are slightly below the top quartile but above the median for all three surveyed sample groups resulting in a Score: 2 – “Good”. Further analysis and potential improvement may be necessary for the performance indicator.

26. Unplanned Disruptions (4 hours – 12 hours) per 1,000 Customers

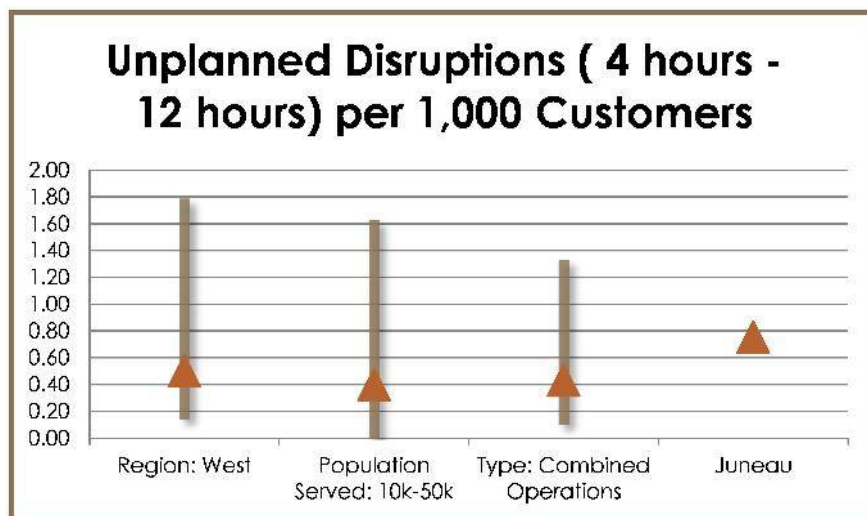
Description: This indicator quantifies the number of unplanned water outages experienced by utility customers for duration between 4 and 12 hours. It is expressed as the number of customers experiencing disruptions per 1,000 customer accounts per year. Generally, lower values are desirable.

Exhibit D-26(a): Formula and Comparative Benchmark

Unplanned Disruptions (4 hours - 12 hours) per 1,000 Customers	
Formula: 1,000 * Number of Customers Experiencing Disruptions* ÷ Number of Active Customer Accounts	
Disruptions (4 h - 12 h)	6
Accounts	7,977
Juneau Result:	0.75

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	1.79	0.14	0.50
Population Served: 10k-50k	1.63	0.00	0.40
Type: Combined Operations	1.33	0.10	0.43

Exhibit D-26(b): Graphical Results



Analysis: In general, lower values are desirable. CBJ’s result falls within the median range of the survey sample group and clearly above the bottom quartile resulting in a Score: 2 – “Good”.

27. Unplanned Disruptions (> 12 hours) per 1,000 Customers

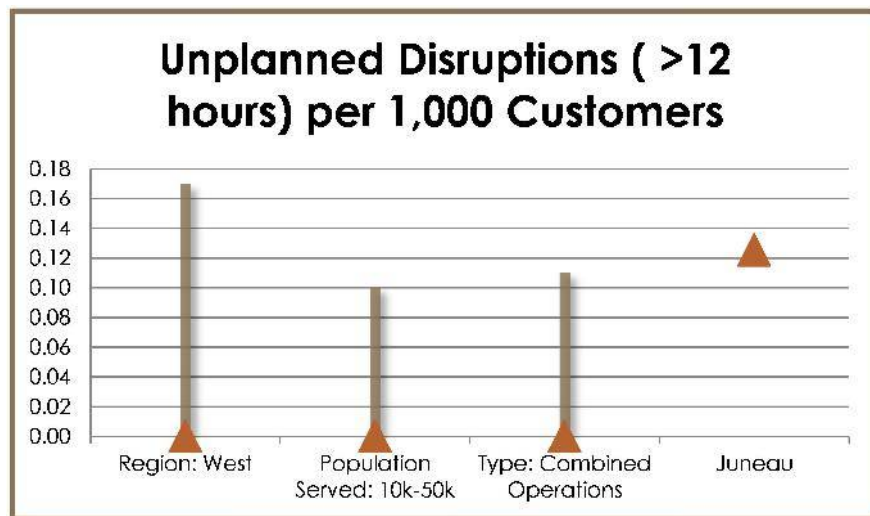
Description: This indicator quantifies the number of planned water outages experienced by utility customers for duration between 4 and 12 hours. It is expressed as the number of customers experiencing disruptions per 1,000 customer accounts per year. Generally, lower values are desirable.

Exhibit D-27(a): Formula and Comparative Benchmark

Unplanned Disruptions (>12 hours) per 1,000 Customers	
Formula: 1,000 X Number of Customers Experiencing Disruptions* ÷ Number of Active Customer Accounts	
Disruptions (>12 h)	1
Accounts	7,977
Juneau Result:	0.13

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	0.17	0.00	0.00
Population Served: 10k-50k	0.10	0.00	0.00
Type: Combined Operations	0.11	0.00	0.00

Exhibit D-27(b): Graphical Results



Analysis: In general, lower values are desirable. CBJ experiences a single unplanned disruption during the test period resulting in placing the utility within the bottom quartile range of the sample

survey group indicting a **Score: 4 –“Poor”**. Further analysis and investigation may determine that this was an unusual event not likely to occur in the immediate future.

28. Monthly Cost of Using 7,500 gallons (Water – Residential)

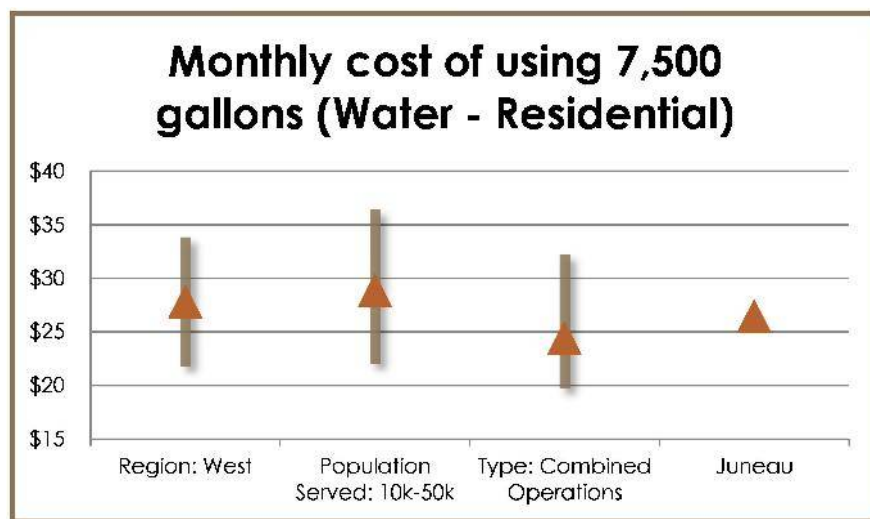
Description: Allows for a utility to compare the residential cost of water service with a large sample of the industry. In general, lower values are desirable. Each utility is unique, however, and different circumstances may be the cause of a specific result.

Exhibit D-28(a): Formula and Comparative Benchmark

Monthly cost of using 7,500 gallons (Water - Residential)	
Formula: Calculated value of a monthly bill based upon 7,500 gallons or about 10 ccfs.	
Fixed	\$26.40
Volume	\$0.00
Juneau Result:	\$26.40

Benchmarks	Bottom Quartile	Top Quartile	Median
Region: West	\$33.84	\$21.77	\$27.75
Population Served: 10k-50k	\$36.42	\$22.00	\$28.83
Type: Combined Operations	\$32.26	\$19.69	\$24.39

Exhibit D-28(b): Graphical Results



Analysis: In general, lower values are desirable. CBJ’s results place it within the median quartile of the survey group resulting in a Score: 4 – “Good”. As noted earlier herein the AWWA survey was published in 2007 and participating utility over the past six years may have likely increased rate since the survey was taken. As a result it is very probable that CBJ’s water rates may very well rank as a Score 1 “Very Good”.

APPENDIX: BENCHMARK MODEL