



Regional Service Through Unity... Meeting our Region's Needs Today and Tomorrow



REGIONAL WATER SYSTEM - CUSTOMER PREMIUM

Board Work Session
February 16, 2023



HISTORY/PRIOR ACTIONS

- Member City Settlement Agreement requires Independent Financial Review (IFR) of Regional Water System (RWS) every 3 years
- First IFR provided to Board in November 2021
 - District found to have reasonable expenses, appropriate balances, met contractual requirements
 - 16 recommendations provided for the Board's consideration
- Board reviewed options and feedback on recommendations from Members, Customers, and District staff
- Board adopted three resolutions, acting on the recommendations on April 28, 2022
 - 10 recommendations adopted as written
 - 4 recommendations adopted with modifications
 - 2 recommendations rejected



HISTORY

Two recommendations related to the Customer Premium

- *Implement a 10% rate premium for Customer Cities with an appropriate phase-in period*
 - Board Rejected
- *Conduct a formal study to refine and document the basis for a long-term premium*
 - Board Adopted

Report cites several reasons why a customer premium is appropriate

- Members' obligation to make up shortfalls, as and when needed, even on short notice
- Payments are a first lien on the Members' combined water and sewer revenues
- Members cannot leave RWS
- Members bear owners' risk of having to pay first, then recover from customers any shortfalls or extraordinary expenses



HISTORY

Board prioritized completing a premium study prior to taking any action on the current premium

- Staff conducted procurement process via RFP, selected utility rate consultant, Carollo Engineers, to conduct study
- Study topics include customer premium, potential buy-in charge for new members and buy in charge for new customers
- Study is more detailed than the preliminary calculations included in the IFR and also includes analysis of potential buy-in charges



CUSTOMER PREMIUM HISTORY

Year	Member Rate	Customer Premium	Customer Rate	Premium Percent of Member Rate
1972	0.242	0.05	0.292	20.7%
1982	0.369	0.05	0.419	13.6%
1992	0.669	0.05	0.719	7.5%
2002	0.800	0.05	0.850	6.3%
2012	1.490	0.05	1.540	3.4%
2022	2.990	0.05	3.040	1.7%
2023	3.390	0.05	3.440	1.5%

Customer premium has remained at \$0.05 per 1,000 gallons while the premium as a percent of the Member City rate has declined.

Regional Water System Revenue History

Source	FY2015 Actual	FY2016 Actual	FY2017 Actual	FY2018 Actual	FY2019 Actual	FY2020 Actual	FY2021 Actual	FY2022 Actual	FY2023 Budget
Members	\$179.48	\$209.43	\$233.74	\$260.11	\$276.60	\$287.47	\$290.09	\$294.94	\$344.96
Customers	35.46	42.20	47.89	55.02	58.22	63.23	64.94	71.90	83.75
Customer Premium	0.88	0.91	0.94	0.99	0.99	1.05	1.07	1.20	1.20
Other	9.29	12.49	14.18	13.08	16.04	1.84	17.57	0.86	0.56
Interest	0.02	0.08	0.19	0.42	0.79	0.25	0.04	0.32	0.18
Total	\$225.13	\$265.11	\$296.94	\$329.62	\$352.64	\$353.84	\$373.71	\$369.22	\$430.65
Percent of Total Revenue									
Members	79.7%	79.0%	78.7%	78.9%	78.4%	81.2%	77.6%	79.9%	80.1%
Customers	16.1%	16.3%	16.4%	17.0%	16.8%	18.2%	17.7%	19.8%	19.7%
Other	4.1%	4.7%	4.8%	4.1%	4.8%	0.6%	4.7%	0.3%	0.2%

Member and Existing Customer Projected Demands (MGD)

	2025	2030	2040	2050	2060	2070	2080
Members	307.04	334.09	394.78	430.32	458.75	468.97	480.74
Customer	85.28	107.33	140.66	162.68	184.78	205.18	226.75
Members	78.26%	75.69%	73.73%	72.57%	71.29%	69.56%	67.95%
Customer	21.74%	24.31%	26.27%	27.43%	28.71%	30.44%	32.05%

- Both Members and Customers continue to grow.
- Existing Customers projected growth rate higher than Members with Customers' overall percent of demand growing from 22% to 32% in 2080.



CUSTOMER CONTRACTS BY CATEGORY

39 Customer Contracts

Expiration dates range from 2023 to 2034 (previous standard form)

Earliest expiration – Milligan WSC -10/23

Latest expiration - East Fork SUD 2041

Average Customer has purchased water from NTMWD for 38 years

Majority of water purchased by customers in Groups 1 and 2 (approx. 89%)

Group 1

- Standard contract template (as of 2012)
- Clearly allows for rate adjustment now or Board action

Group 2

- Previous standard form/template
- Initial premium rate at \$0.05 but allows for adjustment

Groups 3-5

- Unique provisions
- Would require a contract amendment or renewal for adjustment



TENTATIVE SCHEDULE

February 27 Member and Customer meetings to review preliminary premium calculation with consultant

March – April Receive feedback on preliminary calculations from Members and Customers

April Board Work Session on Customer Premium, potential buy-in charge for an existing Customer to become a Member, and potential buy-in charge for a new customer

May – June Board direction on path forward

Customer Premium Approach

Customer Premium and Buy-In Study



COST OF SERVICE AND RATE DESIGN

PURPOSE AND PROCESS

STUDY PURPOSE:

to equitably allocate the revenue requirements to member cities and customer cities to determine an appropriate customer premium

PHASE 1

What are the annual revenue requirements of the utility?

REVENUE
REQUIREMENTS



PHASE 2

How should the revenue requirements be split between members and customers?

COST OF SERVICE
ANALYSIS



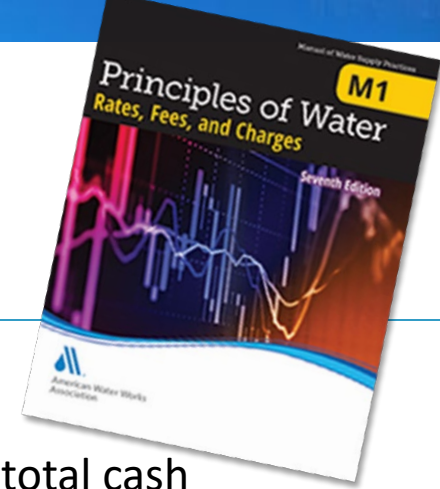
PHASE 3

How should the customer premium be calculated?

RATE DESIGN
STUDY



HOW TO DEFINE REVENUE REQUIREMENTS



Two methods for defining revenue requirements:

CASH BASIS: used by government-owned utilities and recovers the total cash basis revenue requirements

UTILITY BASIS: used to differentiate owner and non-owner revenue requirements

**COST
Differential**

CASH BASIS	UTILITY BASIS
+ Operations and Maintenance	+ Operations and Maintenance
+ Debt Service	+ Depreciation Expense
+ Other Expense and Transfers	+ Return on Rate Base (Asset Value)
- Non-Rate Revenues	- Non-Rate Revenues
= Revenue Requirement	= Revenue Requirement

**RISK
Differential**

NTMWD budgets are developed using the Cash Basis method.

HOW TO CALCULATE CUSTOMER PREMIUM

NTMWD provides regional water services to Members and Customers. Customers pay a premium because their contracts do not include the same risks as the Member contracts. Carollo proposes the following hybrid approach for calculating the Customer premium:

1. Use **CASH BASIS** to calculate **TOTAL RWS REVENUE REQUIREMENT**.
2. Use **UTILITY BASIS** to calculate **CUSTOMER REVENUE REQUIREMENT**.
3. The **DIFFERENCE** is the **MEMBER REVENUE REQUIREMENT**.
4. Calculate **MEMBER RATE** and **CUSTOMER RATE**; the difference is the **CUSTOMER PREMIUM**.



1

Use CASH BASIS to calculate TOTAL RWS REVENUE REQUIREMENT

CASH BASIS FORMULA	EXPENSE CATEGORY	SOURCE
+ Operations and Maintenance	Operating	Annual Budget
+ Annual Debt Service	Capital	Annual Budget
+ Cash-funded Capital	Capital	Annual Budget
+ Transfer to Operating Reserve	Operating	Annual Budget
+ Transfer to Contingency Reserve	Operating	Annual Budget
+ Capital Outlay	Capital	Annual Budget
- Non-Rate Revenue	Operating	Annual Budget
- Reserve Fund Surplus/(Deficit)	Operating	Annual Budget
= TOTAL RWS REVENUE REQUIREMENT		

2

Use UTILITY BASIS to calculate CUSTOMER REVENUE REQUIREMENT

UTILITY BASIS FORMULA	EXPENSE CATEGORY
+ Operations and Maintenance	Operating
+ Depreciation Expense	Capital
+ Return on Rate Base (Asset Value)	Capital
- Non-rate Revenues ¹	Operating
= CUSTOMER REVENUE REQUIREMENT	

¹ Non-rate revenues will be included with operations and maintenance expense for allocation purposes.



2 Use UTILITY BASIS to calculate CUSTOMER REVENUE REQUIREMENT

UTILITY BASIS FORMULA

+ Operations and Maintenance
 + Depreciation Expense
 + Return on Rate Base (Asset Value)
= CUSTOMER REVENUE REQUIREMENT

CASH BASIS FORMULA

EXPENSE CATEGORY

+ Operations and Maintenance	Operating
+ Annual Debt Service	Capital
+ Cash-funded Capital	Capital
+ Transfer to Operating Reserve	Operating
+ Transfer to Contingency Reserve	Operating
+ Capital Outlay	Capital
- Non-Rate Revenue	Operating
- Reserve Fund Surplus/(Deficit)	Operating

= TOTAL RWS REVENUE REQUIREMENT

Sum =
Total RWS
O&M

Operations and maintenance expense is allocated to Customers based on percent of contract minimums.

2 Use **UTILITY BASIS** to calculate **CUSTOMER REVENUE REQUIREMENT**

UTILITY BASIS FORMULA

+ Operations and Maintenance
+ Depreciation Expense
+ Return on Rate Base (Asset Value)
= CUSTOMER REVENUE REQUIREMENT

Total Regional Water System (RWS) depreciation is the annual depreciation expense for the RWS published in the Annual Comprehensive Financial Report (ACFR).

Annual depreciation expense is allocated to Customers based on percent of contract minimums.

2

Use **UTILITY BASIS** to calculate **CUSTOMER REVENUE REQUIREMENT**

Return on rate base (asset value) recognizes the risk associated with investing in infrastructure to serve non-owners of the system.

UTILITY BASIS FORMULA

+ Operations and Maintenance
+ Depreciation Expense
+ Return on Rate Base (Asset Value)
= CUSTOMER REVENUE REQUIREMENT

$$\text{Return on Rate Base} = \text{Customer Rate Base} * \text{Rate of Return}$$

2

Use UTILITY BASIS to calculate CUSTOMER REVENUE REQUIREMENT

Rate base includes booked assets, ongoing construction projects, and cash reserves.

DESCRIPTION	SOURCE
+ Utility plant in service	ACFR
- Accumulated depreciation	ACFR
+ Construction work in progress	ACFR
+ Cash reserve balances	ACFR
= TOTAL RWS RATE BASE (ASSET VALUE)	

UTILITY BASIS FORMULA

+ Operations and Maintenance

+ Depreciation Expense

+ Return on Rate Base (Asset Value)

= CUSTOMER REVENUE REQUIREMENT

Rate base (asset value) is allocated to Customers based on percent of contract minimums.

3

The DIFFERENCE is the MEMBER REVENUE REQUIREMENT

The District must recover the total RWS revenue requirement through Member and Customer rates. Therefore, the Member revenue requirement is the portion of the total RWS revenue requirement not allocated to Customers.

$$\begin{aligned} & \text{Member Revenue Requirement} \\ &= \text{Total RWS Revenue Requirement} - \text{Customer Revenue Requirement} \end{aligned}$$

4

Calculate **MEMBER RATE** and **CUSTOMER RATE**;
the difference is the **CUSTOMER PREMIUM**

$$\begin{aligned} &\text{Customer Rate} \\ &= \frac{\text{Customer Revenue Requirement}}{\text{Customer Contract Minimums}} \end{aligned}$$

$$\begin{aligned} &\text{Member Rate} \\ &= \frac{\text{Member Revenue Requirement}}{\text{Member Contract Minimums}} \end{aligned}$$

$$\text{Customer Premium} = \text{Customer Rate} - \text{Member Rate}$$

Rate of Return Discussion

HOW TO DETERMINE RATE OF RETURN

There are several accepted methodologies for calculating the rate of return:

- Weighted average cost of capital (WACC)
 - Cost of debt (effective annual interest rate on outstanding long-term debt)
 - Cost of equity: risk-free rate of return (e.g., 20-yr US Treasury Rate) + risk premium (e.g., Kroll Equity Risk Premium (ERP))
- Cost of debt plus appropriate risk factor
- Recent returns on equity permitted by Texas PUC in prior rate cases

UTILITY BASIS FORMULA

+ Operations and Maintenance

+ Depreciation Expense

+ Return on Rate Base (Asset Value)

**= CUSTOMER REVENUE
REQUIREMENT**

Carollo evaluated the customer premium using multiple methods of determining an appropriate rate of return.

CONSIDERATIONS FOR RATE OF RETURN

- Weighted average cost of capital (WACC)
 - Cost of equity is typically based on market-driven factors that can change daily and may introduce significant volatility into the calculation
- Cost of debt plus appropriate risk factor
 - District's effective interest rate on outstanding debt is relatively stable from year to year, minimizing volatility of rate of return
- Recent returns on equity permitted by Texas PUC in prior rate cases
 - Based on actual rate cases so provides some historical precedent
 - Rate cases are infrequent so few data points available (<10 in 5 years)

UTILITY BASIS FORMULA

+ Operations and Maintenance
+ Depreciation Expense
+ Return on Rate Base (Asset Value)
= CUSTOMER REVENUE REQUIREMENT

HOW OTHER UTILITIES DETERMINE RATE OF RETURN

UTILITY BASIS FORMULA

+ Operations and Maintenance
+ Depreciation Expense
+ Return on Rate Base (Asset Value)
= CUSTOMER REVENUE REQUIREMENT

UTILITY	RATE OF RETURN	RETURN ON EQUITY
Dallas Water Utilities	Debt + 1.5%	N/A
Fort Worth Water	Debt + 1.5%	N/A
San Antonio Water System Premium is set by policy based on WACC rate of return	WACC	20-yr Treasury + Kroll ERP
Arapahoe County Water and Wastewater Authority	WACC	Government AAA rate + 3%
Oklahoma City Utilities	5%	N/A

Executive Session



Adjourn Executive Session





**NORTH
TEXAS
MUNICIPAL
WATER
DISTRICT**