Water Rate Study

Fairview Water District

Final Report

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Oregon Association of Water Utilities

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Executive Summary:

The Fairview Water District (FWD) asked the Oregon Association of Water Utilities to conduct a water rate study to determine the adequacy of the water rates in conjunction with the current 2024-2025 fiscal year and anticipating the 2026-2027 budget to be similar. With subsequent adjustments for the years 2027-2030, use of the consumer price index will provide examples of such adjustments. The purpose of the study was to forecast financial requirements and rates that:

- Provide examples of rates which meet the projected capital prerequisites, operation and maintenance (O&M) costs of the system.
- Determine equitable costs among the several types of system users.
- Encourage efficient use of the water.
- Are simple to administer, understand, and are consistent with industry standards.

The water rate study stems from a justification of a single expenditure line created and managed by the District's Administration Staff. This figure includes personnel services, materials and services, contingency funding, capital improvement and debt service. The future capital improvement costs are reviewed in this study and implemented to align the system anticipated costs to future rates. The current rates are figured using a base rate and consumption rate deployed to create revenues that match total expenditures. The rates are calculated on a single unit of water, or 1,000 gallons.

The overall financial planning strategy for the District's water utility is based on a "cash-needs" approach, or methodology. The cash needs approach is a generally accepted methodology, as outlined in the American Water Works Association (AWWA) M1 Manual Principles of Water Rates, Fees, and Charges. This approach compares revenues to expenses on an annual basis so that, over the planning period, revenue will be equal to the water utility's expenses. A planning period should coincide with a short-term timetable that supports flexibility in financing capital improvement projects with necessary dollars. The exhibit displays a summary of the cash needs approach used to develop the water revenue requirement for updating the District's financial obligations. This method provides almost real time evidence of potential shortage or surplus of dollars.

Overview "Cash Basis Methodology	
+	Operations & Maint Expenses
+	Taxes - Transfer Payments
+	Rate Funded Capital Improvement
+	Debt Service
=	**Total Revenue Requirement**
-	Miscellaneous Revenues
=	**Net Total Revenue Requirement**

Current Revenues / Expenditures:

To solidify the current revenues required for the FWD to operate, they must be initiated by a set of standard data that includes, a) total annual water produced, total annual water sold, c) unaccounted for water, all supported as averages over three years. Additional information, if available, will include average monthly usage by the largest class, single-family residential users. The single category of users represents ≈94 percent of all users, while multi-family, commercial entities are the balance of customers.

The proposed revenue requirements for the fiscal year 2026-27 are $750,000.00. This budget has included capital improvement funds as an average, fixed over three years to reflect the higher priority projects listed in the OAWU Checklist document. The annual total capital outlay is $250,000.00, and

reviewed from a two-point perspective, a) priority of necessity and, b) impact on rate payers. A series of scenarios are developed to align with future projects, scenarios that applied designated reserves for a prioritized list of capital projects. As funds are expended throughout the fiscal year, dedicated revenues will replenish the monies. This method of using established annual revenues for capital outlay also provides evidence towards mechanical integrity. If set dollars cannot maintain a higher level of system infrastructure, then long-term loans would be an approach to consider.

The current base rate revenues equal $211,318.20 or 28.18 percent of the budget. The revenues include a monthly meter size fee per month associated with the additional costs for larger meters. The figures used in this study will include the monthly size meter fee. The widespread practice when budgeting for a water fund is to have base rates cover fixed expenditures, which range from 60-75 percent, depending on the size of the water system correlating to total number of service connections. The remaining revenues are received through the consumption of water sold at an additional charge, by the unit, or 1,000 gallons.

The consumption rate for FWD is deemed to be a flat rate, a single charge per unit of water, regardless of the amount of water consumed in a billing period. The district has various charges pending the location of the district where the water is served.

The revenues associated with the consumption side generate approximately $296,325.77 or 39.51 percent of the budget. The unit charges range from $1.55 inside the district to $1.70 per unit for out of district. Area specific rates are associated with additional pumping requirements to deliver water, and those per unit rates range from $2.15 to $3.80 per unit. The estimated total revenues generated using the current rate figures show $507,643.97 or 67.69 percent. The low percentage is not indicative of poorly defined rates, it is an estimate based on the budget of $750,000.00 dollars. The Current Rate table shows a snapshot of the monthly charge for an SFR consumer.

Current Rate Information Table:

Current Rate Information						
Connection Size	# Connections	Allowance Units	Base Rates	Unit Rate	Ave Consumption	Typcial Mo Costs
5/8 Residential	747	0.00	$20.00	$1.55	16.58	$45.69
5/8 Residential - out	56	0.00	$22.00	$1.70	NA	NA
5/8 Commercial	18	0.00	$20.00	$3.65	NA	NA
1.00	16	0.00	$23.25	$3.80	NA	NA
1.50	8	0.00	$31.05	$2.15	NA	NA
2.00	3	0.00	$38.75	$2.55	NA	NA
3.00	2	0.00	$51.85	$2.55	NA	NA
4.00	2	0.00	$68.75	$2.55	NA	NA
8.00	1	0.00	$100.00	$2.55	NA	NA
Total Connections	853					
Total Annual Base			$	211,318.20		
Total Annual Consumption			$	296,325.77		
Combined Base and Consumption			$	507,643.97	67.69%	
Proposed Budget			$	750,000.00		

Notes: Meters larger then 5/8 have a monthly meter fee from $3.25 - 1.00-inch meter to $80.00 - 8-inch meter.
Marvin Road, Aldercrest Drive, Westwood Drive have increase consumption charge rates
16.58 average consumption founded on total available water to be sold used by 853 connections. Billing reports are not availabe per class

The initial review of the FWD water rates show two points that stand out, a) the low percentage of revenue from the monthly base rates and b) the consumption rates related to the cost of delivery of a unit of water by the district. With FWD producing a required 234 MG to support the demand of the constituents, estimates the price per gallon conveyed to each tap served costs $0.00319 or $3.19 per 1,000 gallons. Even with the significant increase in budgeted items, the FWD can provide water for less than one-half cent per gallon. The $3.19 delivery cost per unit is also higher than most of the current per unit charge rates.

Delivery Costs:

Water rate designs involve outlining charges necessary to generate a level of revenue to meet proposed budget forecasts for the water district to maintain all aspects of the water delivery system. At this point, we reviewed the amount of water produced and divided the new expenditure line to determine the cost associated with producing a single unit of water, 1,000 gallons. Using the sold numbers from 2021-2023 and applying those same totals against a new fiscal year expenditure, provides a way for the price per unit that is used as a reference point to ascertain the effectiveness of new rates for FWD. See Table Cost per Unit for Delivery Cost per Unit.

Delivery Cost per Unit Table:

Delivery Cost per Unit				
Total Expenditures: Used in this study				$ 750,000.00
Water Sold: Gallons - Units		169,670,000	169,670	
Unaccounted for Water: Gallons - Units		65,100,000	65,100	28%
Expense per Gallons	$0.00319	Current Rate per Unit		Difference
Expense per Unit	$3.19	$1.55 - $3.65		$1.33 - $3.43
Unaccounted for Water Cost: [1]				$ 207,969.50
1 - Tracking unaccounted for water can reduce demand on system and reduce overall operating expenses, units multiplied by expense per unit				

Key points from the Cost per Unit for Delivery Table:

- Twenty-eight (28) percent unaccounted for water.
    - The above percentage does not consider water used for operations.
- The unaccounted water impact is $207,969.50 cost.
    - This measurement supports the continued review of water balance, water produced and used in operations subtracted from metered water sold.
- Operating expenses per gallon are low compared to the State average at $0.01-$0.012.
    - FWD's delivery cost per gallon is $0.00319 or $3.19 per unit.
- 75 percent of all charges per unit are lower than the delivery cost.

Revenue / Loss per Unit vs Delivery Costs

The data set in the following table indicates how the current rates compare to the delivery cost the district incurs to provide water. The row across the top shows the size of a meter, while the left column is the total units of water served during a specific billing cycle (usually monthly), with other columns showing the price per unit that FWD receives for the monthly service. The figures show the price per unit as it relates to the delivery cost at $3.19 per unit.

Delivery Rate per Unit								
Red Figure indicates water sold at a loss - various levels of consumption								
Delivery Cost per Unit							$3.19	
	Service Meter Size							
Units	**5/8" in**	**5/8" out**	**1"**	**1.5"**	**2"**	**3"**	**4"**	**8"**
4.00	$6.55	$7.20	$7.36	$9.31	$11.24	$14.51	$18.74	$26.55
5.00	$5.55	$6.10	$6.20	$7.76	$9.30	$11.92	$15.30	$21.55
6.00	$4.88	$5.37	$5.43	$6.73	$8.01	$10.19	$13.01	$18.22
7.00	$4.41	$4.84	$4.87	$5.99	$7.09	$8.96	$11.37	$15.84
9.00	$3.77	$4.14	$4.13	$5.00	$5.86	$7.31	$9.19	$12.66
10.00	$3.55	$3.90	$3.88	$4.66	$5.43	$6.74	$8.43	$11.55
11.00	$3.37	$3.70	$3.66	$4.37	$5.07	$6.26	$7.80	$10.64
12.00	$3.22	$3.53	$3.49	$4.14	$4.78	$5.87	$7.28	$9.88
13.00	$3.09	$3.39	$3.34	$3.94	$4.53	$5.54	$6.84	$9.24
14.00	$2.98	$3.27	$3.21	$3.77	$4.32	$5.25	$6.46	$8.69
15.00	$2.88	$3.17	$3.10	$3.62	$4.13	$5.01	$6.13	$8.22
20.00	$2.55	$2.80	$2.71	$3.10	$3.49	$4.14	$4.99	$6.55
25.00	$2.35	$2.58	$2.48	$2.79	$3.10	$3.62	$4.30	$5.55

This table shows the highest level consumed is 25 units, but it does not show the increased losses as the consumption increases. The table expands to 100 units of water sold per month and as more water is consumed the level of loss increases for the district. For the consumer requiring 25 units (25K gallons) of water, the district loses $0.84 per unit or ≈ $21.00 per month. This is shown looking at the lowest left-hand corner of the table with $2.35 received per unit when the delivery cost is $3.19.

A significant point that should not be assumed is the higher revenues per unit for larger size meters. Figures associated with larger meters using lower units of consumption show substantial revenues, but the dollar amounts include the monthly service fee plus the units of consumption sold at the current consumption rate.

This information is shared to bring about awareness of the impact of operating costs to revenue reliability. Many factors will impact the total revenues, a) the percentage of consumers using under five units, the percentage of consumers using 30+ units and, b) the price a particular unit was sold.

The Fairview Water District currently uses a meter and water consumption to generate water revenues, with the total number of service connections at 853 of which 803 are residential service connections, single family residential (SFR). Most of the proposed data will focus on the SFR as any change in water rates will impact the largest user group.

The Fairview Water District serves ≈ 60 customers outside the district limits, while the remaining users are classified as commercial entities. A challenge during any water rate study is designing water rates that are fair for the commercial entities due to the potential varied quantities of water consumed. Occasionally, it is discovered a single entity can consume greater than 20 percent of all water produced, and a change in rates can have a significant impact. All sized service connections are charged a set base rate according to the size of the meter. The single eight-inch service line is the largest service connection for the District.

The proposed format will simply use the number of service connections the water system serves, then consider the base rate determined the fixed expenses and the size of the meter. The meter base rate recommended with this study applies a meter ratio according to American Water Works Association (AWWA) meter ratios as it relates to infrastructure replacement costs. For the unit charges, industry standards will be applied according to routine practices.

User Characteristics:

Equitable fees assessed to customers begin with a determination of the type of users. For the Fairview Water District, the classification of customers is categorized as follows:

- 747 – Single-family inside residential (SFR) = 88 percent of users.
- 56 – Single-family outside residential = 7 percent of users.
- 50 – Classified as commercial (inside) = 5 percent of users.

Cost Evaluations:

If the operating expenditure were equally divided by the number of service connections, the cost per user for the district would be $73.27 per month. This simplistic approach immediately proves unfair because the average amounts of water consumed will vary among all users.

$750.000.00 divided by 12 months divided by 853 connections = $73.27

Believed as the highest priority regarding water costs, all consumers pay for those costs associated with the amount of water delivered and the infrastructure that provides continued high quality, safe, clean drinking water.

When determining the cost for water, consumption should be the decisive method and applied across the spectrum of users, (meter size and classification of the connection). This is accomplished by means of determining the price per unit and the amount of consumption per month. The intrinsic value associated with water service and the consumption of water during each billing cycle make up a fair rate for all customers.

When base and consumption rates are aligned with expenditures, the district can adjust water rates using the Consumer Price Index (CPI) to account for inflation, though this may not cover capital

planning expenses. Two aspects pertaining to a water rate review, a) looking at CPI each year, and b) reviewing upcoming capital spending requirements and the potential impacts on water rates.

Existing Rates:

This first step provides a concise view of the existing rates (both base and consumption rates) which currently provides an indication of the overall revenues generated using current water rates. The Fairview Water District's priority request was to discern an upcoming increase in CIP and an overall equitable approach to water rates. If no steps are taken to the existing water rates, FWD will generate approximately $507K of revenue or 67 percent of the goal of $750,000.00 dollars. This is the first formal water rate study conducted by FWD. Relating to the SFR user (inside district) consuming 5,000 gallons of water (5-units), the recent monthly charge would be $27.75 while the delivery cost is $24.90. The FWD receives $2.85 per month revenue for operations, maintenance and capital improvements for each consumer using said volume of water. As water consumption increases, the FWD begins to operate in a deficit due to the low rate per unit charged.

Preliminary Observations:

In this example, the emphasis is on both the base rate and per unit charge, consumption rate, and how the price per unit influences, plays a role in the total proposed budget. Discussions for CIP ranged from $250K to $400K annually, with the primary focus on distribution line replacement. Also listed was rehabilitation of well one to sustain water flow during the peak season. Necessary funds to be appropriated each year were determined by prioritizing the projects, assessing the costs of each project. Necessary for the selected projects was annual funding at ≈ $250K.

If there is no decision made to increase the base rates, the minimum charge for the per unit consumption charge should be $3.20, which would generate ≈ $545K dollars. This figure is calculated using the three-year average units of water sold of 169, 670. When coupled with the $211K revenues from base rate charges create ≈$754K dollars of revenue annually.

The SFR user (88% of service connections) will see an increase of $8.25 per month, based on 5,000 gallons usage. As the study progresses, evidence will indicate that a better approach will balance both the base rate with the consumption rate for a more reasonable set of rates.

Meter Multiplier Base Rate:

Discovered during the water rate study is a multi-level base rate simply applying a meter surcharge for the larger sized meters. The chart compares the ratios used by FWD current ratios with American Water Works Association (AWWA) standard that relates a monthly cost based on replacement of a meter and adjacent infrastructure over the life of the meter. The significant difference between the two ratios is found with the higher meter sizes. The AWWA standard supports an evidenced approach in creating a fair method in applying base rates.

AWWA Meter Ratios	Current Ratios
5/8" = 1.0	1.00
3/4" = 1.1	NA
1" = 1.4	1.16
1 1/2" = 1.8	1.55
2" = 2.9	1.94
3" = 11.0	2.59
4" = 14.0	3.44
6" = 21.0	NA
8" = 29.0	5.00

The chart provides the meter ratios used as an industry standard, and the current meter ratios used by FWD. If the standard meter ratios are adopted, an evidence-based balance to the base rates will be incorporated for this water rate study and future studies.

With an attempt to set base rates to meet the fixed expenses of the budget, the findings during this study would incline to be too significant of an increase for a single step. The goal of fixed expenses supported by base rates must be applied incrementally if the district wanted to obtain a higher percentage (60% goal) of revenues from the base rates.

The two tables are a comparison of the existing base rates (monthly service fee) to the proposed base rate using the AWWA meter ratios. Note the new Base Rate chart has the six-inch meter size equivalent.

Existing Base Rates	Residential	Commercial	Outside
3/4" in	$20.00	$20.00	$0.00
3/4" out	$0.00	$0.00	$22.00
1"	$0.00	$23.25	$0.00
1 1/2"	$0.00	$31.05	$0.00
2"	$0.00	$38.75	$0.00
3"	$0.00	$51.85	$0.00
4"	$0.00	$68.75	$0.00
8"	$0.00	$100.00	$0.00

New Base Rates	Residential	Commercial	Outside
3/4" in	$31.00	$37.20	$0.00
3/4" out	$0.00	$0.00	$37.20
1"	$43.40	$52.08	$0.00
1 1/2"	$55.80	$66.96	$0.00
2"	$89.90	$107.88	$0.00
3"	$341.01	$409.21	$0.00
4"	$434.01	$520.81	$0.00
6"	$651.02	$781.22	$0.00
8"	$899.03	$1,078.83	$0.00

Consumption Rates:

The focus now moves to the consumption side of this rate structure as it aligns with the current base rates. Additional monies (70 percent) must be generated from the sale of water. When calculating the balance of required revenues against the per unit charge, the minimum charge per unit was factored at $3.20 for all water sold. The $3.20 unit charge is twice the current inside district rate. The $3.20 unit charge matches the additional revenues required that the base rate revenues cannot attain.

The minimum unit rate will deliver a balanced budget based on the $750,000.00 adopted budget if all aspects of the rate structure remain the same. By lifting the monthly base rates to a level appropriate to meet established goals, the consumption rate per unit can be lowered.

The FWD does not offer an allowance of water associated with the base rate. This practice was common at one time, but the idea is waning. Information pertaining to a water allowance is given strictly as an idea for the Board to comprehend if the concept is mentioned.

If an allowance is incorporated in the rate structure, too low an allowance can create higher than necessary water bills, too high an allowance can artificially make the total available units to be false. Allowances of water play a significant role is actual monthly water charges and should consider average monthly usage before a figure is chosen. Attempting to blend water consumption against water conservation, allowances again play a role that impacts total revenues. The consumption rate, as part of the overall budget, secures funds for the variable operating, maintenance and capital improvements expenditures.

The existing consumption charge is considered a flat rate, and the segment of the water rate study will show a tiered arrangement, using an increase block method is required to ensure the fairest approach to applying water rates and meeting the delivery cost per unit. This format charges a higher unit rate with the increase in consumption. A three-tier increased block rate structure will be prepared in the main report.

The main body of the water rate study will be set on the criteria finalized by the Board of Directors. Adjusting the base rates to meet fixed expenses, either applying a single step or incrementally, will impact the unit rate towards balancing the budget.

Creating a Balance:

A balance of revenues from both the base and consumption charges has an approach that exercises payment for water that is fair for all quantities of consumption. The total classes of users are defined using various categorizations, but most consumers are defined as:

- Residential
    - Low Usage.
    - Normal Usage.
    - High Usage.
- Commercial
    - Low or High Usage.

The balance in establishing a set of water rates with the least impact on all users is the challenge. Routine findings are that a single class of users is out of balance with the other users. Water rate scenarios show:

Base Rates:

- Too low of a base rate increases the consumption charge.
    - Fixed and low-volume users benefit.
    - Large users pay significantly more.
- Too high of a base rate keep the consumption charge lower.
    - Low volume water users pay higher rates.
    - Large users intrinsically pay lower per unit rates.

Allowances:

- No allowance – the base rate is established by fixed expenses.
- Small allowance – the base rate must cover the delivery cost.
- Large allowance – increases the per unit consumption charge.
    - Too high an allowance may be above the average monthly usage.
    - Too high an allowance falsifies the actual production capabilities of the water system.

Consumption Charges:

- Too low a unit rate creates revenue loss at higher consumption levels.
- A unit rate conforms to revenue gains at all levels of consumption.
- The first tier establishes the upper tiered rates, so to eliminate revenue loss at any level.
- Too high a unit rate at the first tier, the upper tiers are unaffordable for the larger users.

For the FWD the current base rate (≈ $20+ dollars) provides 28 percent of the total revenue when the percentage is best served in the 40-60 percent range. For FWD, this goal would be administered through

step approach, possibly over 2–3-year interval. At the top of the range of 60 percent revenues would create a monthly base rate at $44.00, twice the current base rate for SFR.

A recommended first step is setting the base rate charge for a 3/4 -inch service connection at $31.00 from the average $20.00 dollar rate. Couple this change with a meter multiplier for the larger service connections, increasing the base rate revenue to 48 percent. The minimum consumption charge would begin at $2.30 per unit for all water sold. This is the water rate format the Board has chosen to implement. Information regarding multi-tier consumption will be mentioned for future consideration. Pages 25-28 of the main report outline the Boards request for a meter multiplier base rate with a fixed single tier consumption rate.

Multi-tier Charges:

Aligning the per unit charge with actual customer demand sets the tone for the first tiered range. The FWD does not provide an allowance of water with the base rate charge. The recommended base rate that accompanies the multi-tier format is $30.71 per month for a SFR user, with the AWWA standard meter ratios applied to the larger service connections.

The established tiers are designed to meet three goals, a) preserve the lowest cost for water for the SFR constituent, b) arrange tiers to accommodate the larger users, with the first tier set a minimum charge and c) meet the required revenues for FWD.

The tier structure will form two set of tiers: the first designed for the smaller meter services (3/4 – 1.5 inch) and the second for 2.0 inch through 8.0-inch service connections.

Smaller service connections tiers and rates per 1,000 gallons:

	Inside District	Outside District
• Zero – 10,000 gallons -	$2.00 per	$2.50 per
• 10,001 – 25,000 gallons -	$3.00 per	$3.75 per
• 25,001 + gallons -	$4.00 per	$5.00 per

Larger service connection tiers and rates per 1,000 gallons:

• Zero – 20,000 gallons	$2.00 per	$2.50 per
• 20,001 – 50,000 gallons	$3.00 per	$3.75 per
• 50,001 + gallons	$4.00 per	$5.00 per

A recommendation for FWD is implementing a routine review of water usage per meter size and extracting data of average usage per class of user to better define the start/stop points of each tier. Tier levels arranged in a specific format can be adjusted to better match actual usage per customer class. This will support any changes in future rates related to tiers. The structure created for consideration by the Board is derived from experience, practicality in implementation and consideration of impact on the District's consumers.

Water Rate Study

Introduction:

In October 2024, the Fairview Water District authorized the Oregon Association of Water Utilities to review current water rates. The purpose of this study is to develop examples of financial strategies and rates that:

- Provide adequate revenue to meet the operation and maintenance costs, capital improvement. costs, as well as review contingency funding.
- Determine and distribute costs among the various consumer types.
- Are relatively simple to understand and implement, being consistent with industry practices.

It is the Oregon Association of Water Utilities' privilege to provide this level of rate study assessment as a member service to the Fairview Water District. When conducting a water rate study, the best results are based on the most accurate data obtained, equity among the consumers, and revenues that meet demands and allow the water system to operate per state regulations.

After careful review of the written materials provided by the district's staff, along with discussions with key personnel, some points are necessary to mention to maintain continuity, they are:

- Changes in necessary monies for capital improvement.
- Continuation in funding the contingency account for emergency purposes.
- Existing expenditures based on a billing unit of 1,000 gallons.
- Monthly costs are based on the number of active meter connections and 1,000-gallon units sold.

Current budget numbers regarding this rate study indicate that a modification in the existing water rates is necessary to create a fair and equitable structure. The last formal rate review is unknown, yet sporadic informal adjustments were made when evidence presented itself.

Reserves have been created for future capital replacement projects, contingencies, and for major maintenance and repairs. System Development Charges (SDCs) will not be part of this study, but it is recommended that they be reviewed on a regular basis.

A recommended contingency fund for emergencies may be 10 to 20 percent of the operational portion of the budget. The current contingency dollars for the FWD is $30,000.00 or 4 percent of the budget.

The figures utilized in this water rate study, if unchanged, would apply to the 2026-27 fiscal year as circumstances delayed the start of the study. These contingencies need to be expanded to compensate for an eventual emergency incident. It is advisable to carry unused contingencies not expended over to next year's working capital expense line item.

The following fiscal year set aside a new contingency figure for the next budget cycle. Oregon Association of Water Utilities will recommend an annual adjustment based on the basket of services entailing water, sewer operations and maintenance.

One main interest (goal) within this study was the equitability of usage for all customers and their charges, respectively. Fairness across the user classification is often defined in a manner that low volume consumption should pay a fair share, while large consumers should not receive a volume discount.

Several water rates, examples and options for the FWD's Board to review are included in this report. In addition to the general expectations of a water rate study, the Oregon Association of Water Utilities considers policies, ordinances, and customer relations as factors in the development of sound water rates. Special interests, political climate, and ease of understanding also play a role in the formation of rates.

Oregon Association of Water Utilities utilizes the information provided by the water system that is most pertinent when performing a water rate study. The information includes the existing/adopted budget that consists of revenues necessary for O&M, personnel, contingency, capital outlay, loan debt service, and loan debt reserve fund if required. We ask our Members to also consider policies, practices, resolutions, and ordinances that have been adopted from an operational view, not a legal review or opinion. The system figures are based upon as close an estimate as can be determined from the existing records and future needs as discussed and outlined in the proposed budget.

As with any formal study, information obtained requires a foundation to substantiate and solidify the findings. Said information is derived from a dataset that includes water production, water sold, expenditures and revenues along with engineering figures assessed for the future. This water rate study reviewed three-year averages of those listed items to prove the need for a rate structure to support the water district moving forward.

The $250,000.00 CIP line-item budget was a median cost associated with projects outlined in the water rate study checklist and confirmed through continued conversations. As projects are completed, using the same budgeted dollars each year, unexpended dollars can be rolled into the upcoming fiscal year, while additional projects are chosen, listed for completion.

Using the above figures estimates the overall system charges for water will equate to ≈ $3.19 per 1,000 gallons, which can be averaged over the base rate, consumption rate or a combination of the two. Applying the CIP dollars to the consumption rate will prove the fairest method as consumers can control the water usage and manage their monthly water bills. Large water consumers will also pay an appropriate charge for the higher usage of water. Consumers using less water can internally manage their water bill, keeping their monthly water charge lower.

Additional pertinent information is as follows: approximately 853 active connections with an approximate ninety percent of customers are classified single family residential (SFR). Also included in the calculation of rates is the average amount of water produced at approximately a) 234.7 million gallons (MG) or 234,000 units (1,000-gallons per unit) annually, b) amount of average water sold at 169.6 MG, or 169 K units, and c) amount of average unaccounted for water at 65.1 MG. The remaining unaccounted-for water at 28 percent is significant, as most public water systems are required by rule to achieve 15 percent or less unaccounted-for water.

Table 1: Current Budget Information

Table 1: Current Budget Information			
Personnel and Materials Services:	$	470,000.00	62.67%
Contingency Reserve/Transfers: [1]	$	30,000.00	4.00%
Capital Outlay:	$	250,000.00	33.33%
Annual Debt Service: [2]	$	-	0.00%
		Total Expenditures:	$ 750,000.00
Notes:			
1 - Contingency monies are out of range with normal percentages - 10 to 20 percent			

While reviewing revenues and expenditures, the primary emphasis was directed at a) fair and equitable rates for all users, b) assure no single classified group supplements, another group, c) low volume usage customers would maintain a relatively set monthly rate, d) all water sold meets the delivery cost at $3.19 per unit.

The concept of emphasizing annual short-term projects is in providing funding for maintenance for projects often tabled for a later time. This step coordinates the completion of projects for the water system during the timeframes the District Board adopts resolutions for monies allocated for such. The District's approach to short-term (low cost) projects is balancing monthly revenues against necessary maintenance. These small projects, short-term CIP, should be considered paid for with revenues from the water rates.

Two factors hinder routine maintenance, a) monies necessary to complete smaller projects to improve the system, i.e., equipment services are not allocated and b) time allocation of the existing crew, i.e., only enough time per day to complete routine tasks. Either a lack of funds and or no time for the crew to include routine maintenance causes a ripple effect that leads to reactionary maintenance, i.e., emergencies.

Annual production and delivery of water provide insight as to the efficiency of the water system when correlating deliverables against the total operating expenses. Viewed as cost per unit of water, 1,000-gallons, the water system can determine the actual system cost as it relates to each consumer in each billing cycle.

Table 2: Cost per Unit for Delivery

Table 2: Delivery Cost per Unit				
Total Expenditures: Used in this study				$ 750,000.00
Water Sold: Gallons - Units		169,670,000	169,670	
Unaccounted for Water: Gallons - Units		65,100,000	65,100	28%
Expense per Gallons	$0.00319	Current Rate per Unit		Difference
Expense per Unit	$3.19	$1.55 - $3.80		$0.61 - $1.64
Unaccounted for Water Cost: [1]				$ 207,969.50
1 - Tracking unaccounted for water can reduce demand on system and reduce overall operating expenses, units multiplied by expense per unit				

Table 2, Cost per unit for delivery is figured as a running average of all water produced over a *given period*. When water is not accounted for through meter readings, it is seen as a 100 percent loss associated with the expense to produce and deliver a unit of water. The exception to this is when operations can provide accurate water use for completing maintenance tasks. This water is then considered non-billable water used rather than unaccounted for water. Water that cannot be accounted for should be considered potential lost revenues, depicted in Table 2.

Rate structures vary from utility to utility but generally include three elements, a) first, is consideration of the classification of customers served, i.e., residential, commercial, and industrial and the prospective cost differences, b) all customers have an established frequency in billing, and c) the schedule of charges will be identified and assessed.

For water utilities using a cost-of-service approach, the level of the utility rates is a direct reflection of the utility's costs and customer's demands. A cost-of-service rate analysis develops water rates by assigning expenses to services that are provided.

Setting the base rate per size of connection, multiply by the number of connections and then multiply by 12 (12 months/yr.) forecasts annual revenues are sufficient to meet most annual "fixed" expenditures.

It is normally suggested that the base rate covers fixed expenses as a percentage of the annual water budget, ranging from 40- 75 percent, pending the size of the water utility. This allows for the balance of revenues to be generated by what is termed a *volume rate.* The meter amount of water can be charged by a unit, measured in gallons or cubic feet. The meters, measured in 1,000-gallon units and a dollar amount can be charged per unit.

In table 3, the FWDs revenues are derived from three factors, a) the size of the connection and if applicable, an allowance of water granted in the base rate, and b) the average monthly consumption per meter size, and c) the meter size fee surcharge. Revenues not earned from the monthly base rates, including the meter fee charge and the volume (consumption) rate should create income to match necessary expenditures.

When developing a rate structure that meets the water system requirements, the rate study results, suggestions, and final decision to be fair to all customers will outline the following key points.

- Total revenues generated by base rates.
- Total gallons of water are associated with the base rates, if applicable.
- The price per unit establishes equitability among all consumers.
- Amount of available water for sale and the price per unit.
- Total revenues generated by volume (consumption) rates.
- Total base and consumption revenues.

When these points are defined, Oregon Association of Water Utilities can utilize the gathered information, and apply it to various scenarios, providing a method to better understand the effects from an assortment of various rate approaches. A snapshot of revenues is found in Table 3: *Current Rate Information.* The table exhibits the monthly base rates; consumption rates and the expected monthly costs associated with average consumption. The figures are based on the comparison between the expected annual revenues against the newly adopted budget.

The figures are not a reflection of the District operating at a shortfall, but a comparison of revenue generated against an adopted budget, one that has incrementally increased over the past years

Table 3: Current Rate Information

Table 3: Current Rate Information

Connection Size	# Connections	Allowance Units	Base Rates	Unit Rate	Ave Consumption	Typcial Mo Costs
5/8 Residential	747	0.00	$20.00	$1.55	16.58	$45.69
5/8 Residential - out	56	0.00	$22.00	$1.70	NA	NA
5/8 Commercial	18	0.00	$20.00	$3.65	NA	NA
1.00	16	0.00	$23.25	$3.80	NA	NA
1.50	8	0.00	$31.05	$2.15	NA	NA
2.00	3	0.00	$38.75	$2.55	NA	NA
3.00	2	0.00	$51.85	$2.55	NA	NA
4.00	2	0.00	$68.75	$2.55	NA	NA
8.00	1	0.00	$100.00	$2.55	NA	NA
Total Connections	853					
Total Annual Base			$	211,318.20		
Total Annual Consumption			$	296,325.77		
Combined Base and Consumption			$	507,643.97	67.69%	
Proposed Budget			$	750,000.00		

Notes: Meters larger then 5/8 have a monthly meter fee from $3.25 - 1.00-inch meter to $80.00 - 8-inch meter.

Marvin Road, Aldercrest Drive, Westwood Drive have increase consumption charge rates

16.58 average consumption founded on total available water to be sold used by 853 connections. Billing reports are not availabe per class

Cost Evaluations:

If the total operating expenditure is equally segregated by the number of connections, the cost per connection for the Fairview Water District would be $73.27 per month.

$750,000.00 divided by 12 months divided by 853 users = $73.27 per month

An important factor regarding water costs is consumers paying for those costs associated with the infrastructure that provides continued high quality, safe, clean water. The costs directly relate to water consumption. When determining the cost for water, equity centered on water consumption should be applied across the spectrum of users, (meter size and classification of the connection) and this is accomplished by means of determining the price per unit and the amount of consumption per month. The intrinsic value associated with water service and the consumption of water each billing cycle makes up a fair and equitable rate for all customers.

Rate Study Approach:

Many diverse and competing models can be applied to any water rate study, but when they are not well understood and evaluated, they can cause confusion among those that are affected by a change in the water utility rates. It is the goal of this water rate study to bridge revenues to expenditure costs and provide an informational tool for the District to draw on in selecting an appropriate rate structure, one that is easily adopted and understood by your customers.

Examples shown in this rate study are based on a single line budget to operate and maintain the District's water system**.** Additionally, the monthly figures throughout this water rate study will be focused on the SFR users with supplemental information being steadfast on the other groups or classes of users. While there are many approaches to determining a monthly consumer's cost, this study builds on a methodical style with the following points:

- Affordability Index – rates allowed by the affordability index and historical monthly costs as comparative information only.
- System Data – information relevant to the study.
- Existing Rates – current revenues and expenditures, speculation of gains and losses.
- Multi-meter – Single Charge Unit Rate.
- Multi-meter - Tiered Charge Unit Rate – conservation mindset.
- Capital Improvement Planning – future monies for improving system operations.
- Long term Debt – comparison of charge per unit over a long-term assumption.

The varied points will show base rates established, what percentage of revenues is generated from said base rates, and how consumption charges make up any revenue deficits. Examples provided will compare monthly cost fluctuations when an amount of water is or is not included in the base rate. As the examples are presented, it will become evident that no single method satisfies all the requirements for every community.

Alternative rate structures identify aspects in rate studies that assist in highlighting the dynamics of the water system. Although rate structures are generally composed of three components, a) classification of user, b) how often and, c) how much, additional attention is centered on the structure's consumption charge. Typically, there are four basic types of consumption charges: declining block, uniform block, inclining block, and seasonal.

As rates are adjusted, policy rates are the responsibility of the utility decision makers. Public involvement is not required to design and approve water rates, though it is important to keep the public relations door open by allowing for comment at a public meeting. The level of impact on the consumer, and the values and views of the decision makers play a key role in sustaining rates that will meet the operation and maintenance costs of the District's water system, all the while maintaining and building customer trust.

Factors that affect actual total forecasted revenues include the following: water conservation, weather, economic conditions, number of actual billable customers, etc. These are the points mentioned to consider when forecasting the revenue needed to meet budgeted expenditure. As an example, a

decision may be to adopt water rates that exceed expected revenues by ten percent, yet the impact on the users must be considered and outlined.

Affordability Index:

One measurement on the impact of water cost for the median household incomes (MHI) of the area is the affordability index, a tool that federal and state agencies review to determine loan interest rates, loan fees, any percentage of principal forgiveness (if possible), loan repayment periods and the effect on the single-family residential user. These concerns may impact economically disadvantaged areas. For certain loan processes to continue, a review of the index may establish a pre-determined rate for a specific amount of water each month. For this rate study using the 2021 Median Household Income at $55,730.00 and the 2022 Affordability Index of 1.25% ($/Mo) for the 97130-zip code area, equates to $58.05 for a monthly water bill. See Table 4

Table 4: Median Household Income – Tillamook County

Table 4: Affordability Index - Tillamook County

Certified Population [1]	Zip Code	Population 2020	Annual Growth	MHI 2023 [2]	2023 Monthly Cost @1.25%
27,623	97131	27,390	0.25	$57,413.00	$59.81

1 - Population Research Center - Portland State University, 2024, 2020 Annual Oregon Population Report,
1 - https://www.pdx.edu/population-research/population-estimate-reports
2 - City-data.com/income

Historical Rates:

With the initial onset of figures, the Fairview Water District water rates are essentially $20.00 base rate per month for a 3/4-inch service connection for inside the district single family residential (SFR) users, with a monthly surcharge for larger service connections. The Fairview Water District has a single consumption rate per unit (inside district) and a higher rate per unit (outside district) for all units of water purchased. The outside district consumption rates have a varied unit charge due to pumping cost associated with water delivery in and around specific areas. The district does not provide an allowance with the base rate. This structured format is labeled a multi-base rate with a flat block consumption rate.

It is unknown as to the last formal water rate study. The structure of the current rates and how it was developed was not known at the time of writing this water rate study. One recommendation relating to future annual adjustments is to follow the basket of services for water and wastewater maintenance associated with the consumer price index. Since 2020, the average annual inflation rate for water and sewer services is 4.26 [1] percent or approximately $1.32 increase per month, annually.

1 - https://www.in2013dollars.com/Water-and-sewerage-maintenance/price-inflation/2020-to-2025?amount=20

System Data:

Information compiled in the "System Data" spreadsheet (see next page) outlines those factors that influence the required monthly revenues based on the annual proposed operating budget. Water produced, water sold, and water losses are criteria that affect the rates charged. Relating the volumes of water to the operating expenses will define the cost per unit, at 1,000 gallons per.

The number of connections, the size of connections, and the monthly rates determine if a residual or deficit in revenues is associated with the current rate structure. One important factor to consider is the amount of water allowed at the base rate. All the information will relate to how much the percentage of total expenditure is generated from the base rate. Consumption rates will be included in the existing rate spreadsheet. (See Table 5: System Data)

Table 5: System Data

Table 5: System Data			
Total Gallons Produced		234,770,000	
Total Gallons Sold		169,670,000	
Cost per Unit (1,000 gallons)		$3.19	
Total Operating Budget	$ 750,000.00	% Total Budget	28.18%
Notes: 28.18 percent of revenues is from base rates only - should be 40-50% of adopted, proposed budget			

Additional information relates to the initial review of the figures associated with the Fairview Water District's water rate study is:

- Budget set at $750,000.00.
- Current base rates are figured based on the number of service connections at 853.
    - 94 percent of all service connections are single family residential class.
    - 50 service connections are one inch and larger, with a single 8-inch connection.
- Current base rates equal 28.18 percent of the proposed budget.
- 234 MG from production wells – 169MG water sold – 65 MG unaccounted for water.
    - Unaccounted for water correlates to ≈$200,000.00 in operating expenses.
- Current consumption rates equal 39.51 percent of the budget.
- Total revenues collected annually average 67.69 percent.
    - The above percentage is founded on a budget of $750,000.00 dollars.
    - 67.69 percent is not indicative of past fiscal years.
- Proposed base rates will be applied using 42.31 percent of the budget.
    - SFR rates at $31.00 for inside district users.
    - Using a meter multiplier for larger service connections, base rates total 69.74 percent.
- Current "base rates" require all units of water to be sold at a minimum $3.20.
- Proposed annual adjustments will follow the Consumer's Price Index (CPI).
    - Applying the inflationary index for water, wastewater operations and maintenance.

System Data spreadsheet:

System Data Spreadsheet

Water Rate Study
for
Fairview Water District

System Data - Gallons

For Year:	2026-'27
Date completed:	November-25

	Gallons (annual)	Units (annual)		
Amount of Water Produced	234,770,000	234,770		
Amount of Water Sold	169,670,000	169,670		
Non-Revenue Water	65,100,000	65,100		27.73%

	Dollars			
Personnel / Materials	$470,000.00			Delivery Cost [1]
Contingency	$30,000.00	Cap Outlay Cost	Cost per Gallon	Per 1000 Gals
Debt Service	$0.00	Per Unit of Water	$0.00319	$3.19
Capital Outlay [2]	$250,000.00	$1.47		
Total Annual Budget	$750,000.00	$0.0015	Non-Revenue Costs [3]	$ 207,969.50
Suggested CIP Dollars [4]	$0.00	0.004420		

Connection Information
Base Rate Only

Size	# of connections Residential	Commercial	Outside	Aldercrest, Marvin, Westwood
3/4" in	747	18		19, 18, 6
3/4" out			56	
1"		16		
1 1/2"		8		
2"		3		
3"		2		
4"		2		Total Connections
8"		1		853

Current Rate information (base)

Meter FEE per MO	Size	Residential	Commercial	Outside	
	3/4" in	$20.00	$20.00		
	3/4" out			$22.00	
$3.25	1"		$23.25		
$11.05	1 1/2"		$31.05		
$18.75	2"		$38.75		
$31.85	3"		$51.85		
$48.75	4"		$68.75		Base Rate Revenues
$80.00	8"		$100.00		$ 211,318.20
Residential Consumption Rate	Per 1000 gals.	$1.55	$1.55	$1.70	
Commercial Consumption Rate	Per 1000 gals.	NA			

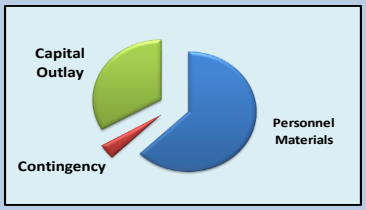
Operating Budget Outline

Personnel / Materials	$470,000.00	62.67%
Contingency	$30,000.00	4.00%
Capital Outlay	$250,000.00	33.33%
Annual Debt Service	$0.00	0.00%
		Base Rate % Total Cost
TOTAL OPERATING EXPENDITURES	$750,000.00	28.18%

Percentage of budget without any consumption revenue

Notes:

A unit of water - referenced by a #, will be multiplied by 1000 to understand total gallons
1 - Delivery Cost is the estimate of all units of water delivered to the tap based on two-three year average water produced
2 - Figure estimate for small CIP to be completed each year over the next three years, $250,000.00
3 - Non revenue water expenses associated with un-accounted for water
Capital Outlay per $100K is $9.75 per month or $0.60 per unit additional costs
Delivery of water per gallon is $00319
$3.19 delivery cost per unit of water (1,000 gallons)
4 - Suggested CIP dollars dependent on current budget allocations
The FWD is currently operating under no debt



Existing Rates:

The "Existing Rates" spreadsheet details much of the same information as the system data spreadsheet yet expands the details on how the consumption rates parlay with base rates and the allowance of water included in the base rate (if applicable) affect theoverall budget. Since the Fairview Water District provides no allowance of water with the base rate, the consumption charge begins once the meter shows consumption. Aligning the base rate revenue with the consumption revenue will determine any overages or deficits of the current rate structure as it relates to the total budgeted goal. Included at the bottom of the "Existing rate spreadsheet" are supposed residential figures of monthly rates supported by three hypothetical levels of monthly consumption. These three levels of consumption will be utilized to compare recommended examples to the current monthly charges.

Table 6: Existing Rates

Table 6: Existing Rates

Total Connections [1]		747	
Production of Water (1,000 gals)	234,770,000	Sold water	169,670,000
Consumption Charge per Unit	$1.55	Total Billable Units	169,670
Base Rate Revenues [2]	$ 211,318.20	Revenue Percentage	28.18%
Consumption Rate Revenues [3]	$ 296,325.77	Non-Revenue Water	$ 207,969.50
Total Revenues	$ 507,643.97	% of Total Budget	67.69%
Proposed / Adopted Budget	$ 750,000.00	Budget Shortfall [4]	$ 242,356.03
Cost per Unit [5]	$3.19	Allowed Unit in Base rate	0.00
Cost to Deliver [6]	$0.00	Base Rate	$20.00

1 - Total Connections - SFR - inside boundary, actual total connections are 853

2 - Figure determined by current base rates annual revenues only, base rates should cover fixed expenses, most fixed expenses are ≈ 60-75 percent of budget

3 - Revenues based on remaining units of water sold at $2.60 per unit, though FWD charges are varied charge per unit

4 - Shortfall is based on new budget, not indicative of past budgets

5 - Total budget divided by available units for purchase

6 - Cost associated with allowed unit delivered to the tap, zero dollars indicate zero allowance of water with the base rate monthly service fee

Existing Rates spreadsheet:

Water Rate Study
for
Fairview Water District

Existing Rates - Gallons

For Year:	2026-'27
Date completed:	November-25

	Annual Gals	Annual Units	Unaccounted Water
Amount of Water Produced	234,770,000	234,770	
Amount of Water Sold	169,670,000	169,670	
Unaccounted for Water	65,100,000	65,100	28%

	Dollars
Annual Operating Budget	$750,000.00
Designated Reserves	$0.00
Total Annual Budget	$750,000.00

Min Charge per Connection
$73.27

Delivery Cost [1]
Cost per 1,000 gallons
$ 3.19

Connection information

Size	# of connections Residential	Commercial	Outside
3/4" in	747	18	0
3/4" out	0	0	56
1"	0	16	0
1 1/2"	0	8	0
2"	0	3	0
3"	0	2	0
4"	0	2	0
8"	0	1	0
Consumption w/ base Unit of Water = 1000 gallons	0	0	0

Total Connections: 853

Current Rate information

Size	Residential	Commercial	Outside	Cost with Allowance
3/4" in	$20.00	$20.00	$0.00	$0.00
3/4" out	$0.00	$0.00	$22.00	
1"	$0.00	$23.25	$0.00	
1 1/2"	$0.00	$31.05	$0.00	
2"	$0.00	$38.75	$0.00	
3"	$0.00	$51.85	$0.00	
4"	$0.00	$68.75	$0.00	Average Mo Usage
8"	$0.00	$100.00	$0.00	16.58

Above Monthly Base Rates Includes Meter Size Fee per Month

Consumption Charge	per 1000 gals.	$1.55	$2.55	$3.65

Current Base Revenue

	Residential	Commercial	Outside	Totals
3/4" in	$14,940.00	$360.00	$0.00	$ 15,300.00
3/4" out	$0.00	$0.00	$1,232.00	$ 1,232.00
1"	$0.00	$372.00	$0.00	$ 372.00
1 1/2"	$0.00	$248.40	$0.00	$ 248.40
2"	$0.00	$116.25	$0.00	$ 116.25
3"	$0.00	$103.70	$0.00	$ 103.70
4"	$0.00	$137.50	$0.00	$ 137.50
8"	$0.00	$100.00	$0.00	$ 100.00
Total/month	$14,940.00	$1,437.85	$1,232.00	$ 17,609.85
Base Rate Totals 12 mo. Total	$179,280.00	$17,254.20	$14,784.00	$ 211,318.20
% of operating budget	23.90%	2.30%	1.97%	28.18%

Water with base charge				
Total/month	0	0	0	0
12 mo. Total	0	0	0	0
	0%	0%	0%	
Total Water Included in Base Rate 12 mo. Total	0	0%		Total Revenue Generated
Available Units Added Tiers		169,670	Consumption $	$ 296,325.77
				39.51%

Potential Lost Revenue Cost		
Non-Revenue Units	65,100	$207,969.50

	$ 507,643.97
Annual Gain / Shortfall	$ (242,356.03)
	67.69%

Notes:
Residential Water Bill is based on average usage per month - annually
6.58 units average per user per month, all users combined, entire year, used for reference only
1 - Cost incurred by FWD for 1,000 gallons of water to customer tap
Non-revenue units show the cost associated with unaccounted gallons

Average Usage	Typical Residential Water Bill: Units of Water	Residential Water Bill
3/4 service	5.00	$27.75
16.58	16.58	$45.69
	25.00	$58.75

Preliminary Observations:

Expanding on existing rates using the figures provided by the District, some discoveries will be noted to enhance and support the methodology of a new rate structure. The figures discovered in the Preliminary Observation are focused on the SFR dwelling customer, who account for 90 plus percent of all users. All analysis and the examples associated with this water rate study use $750,000.00 dollars as its goals in supporting water system operations.

As the above budget was confirmed, a review of the base rates with respect to classes of users indicated consistency in the base rates, yet the surcharge and pumping charge were factored using an unknown source. The oversight in this approach is the comparison of the same sized metered connection, yet the application is dissimilar. Currently, FWD uses a single monthly rate at $20.00 ($22.00 for outside district service) for all service connections, then applies a meter size surcharge each month, increasing with the meter size. Another aspect of the current rates is an increase in the consumption rates determined by the service area location, coupled with the increased power surcharge for pumping water either outside the district boundary or applying a surcharge for an elevated position.

With a review of the consumption rate charge, a significant increase in the unit rate is required. If no decision is made to adjust the base rates according to the various classes of users, then a minimum unit charge should be increased to $3.20 per unit. The current consumption charge per unit starts at $1.55 and ranges upward to $3.80. Consumption rates with the current base are required to cover approximately 80 plus percent of the capital required with the adopted budget, hence a shortfall is created.

- The Fairview Water District produces nearly 14.2 MG monthly to meet the needs of the community.
- Approximately 28 percent of production water is considered “non-accounted” water which for water system operations exceeds State’s guideline.
- This water equates to approximately 65,000 units (65 MG) of unaccounted (non-revenue) water that is produced does not reach the consumer’s tap to recoup the delivery cost.
- By utilizing the current base rates, all water sold per unit should be increased to **a minimum of $3.20.**
- Current consumption rates using the flat tier structure combined with the base rates generate approximately 39.5 percent of the revenues necessary for the proposed budget.
- When using the number of service connections (853 total) and applying a base rate to match fixed expenditures (60 percent) the SFR monthly rate would be $68.55 per month (too aggressive), recommending a multi-year approach with increasing the base rate.
- This is only a recommendation for the Board to consider a future goal.
- If the new base rates (meter multiplier structure) are incorporated into the revenue equation, all consumption charge per unit should be increased **to a minimum of $2.30 using a multi-tier format**.
- The above points discern the relationship between base and consumption rates.
- Preliminary Observations spreadsheet shows the current rate structure and revenues generated from both base and consumption rates, with notes further explaining the findings.

Preliminary Observation Spreadsheets:

Preliminary Observation

Rate Study
for

Fairview Water District

For Year:	2026-'27
Date completed:	November-25

	Gallons MG	Annual Units	Units / Month
Amount of Water Produced	234,770,000	234,770	19,564
Amount of Water Sold	169,670,000	169,670	
Unaccounted for Water	65,100,000	65,100	28%

	Dollars
Annual Operating Budget	$750,000.00
Annual Debt Service	$0.00
Total Annual Budget	$750,000.00

Monthly Cost per Connection
$73.27

Connection information	Size	# of connections Residential	Commercial	Outside	Cost per 1,000 gallons
	3/4" in	747	18	0	$ 3.19
	3/4" out	0	0	56	
	1"	0	16	0	
	1 1/2"	0	8	0	
	2"	0	3	0	
	3"	0	2	0	
	4"	0	2	0	
	8"	0	1	0	
					Connections
Consumption w/ base (cu.ft.)		0	0	0	853

Current Rate (base)		Residential	Commercial	Outside
	3/4" in	$20.00	$20.00	$0.00
	3/4" out	$0.00	$0.00	$22.00
	1"	$0.00	$23.25	$0.00
	1 1/2"	$0.00	$31.05	$0.00
	2"	$0.00	$38.75	$0.00
	3"	$0.00	$51.85	$0.00
	4"	$0.00	$68.75	$0.00
	8"	$0.00	$100.00	$0.00
Consumption Charge	per 1000 gals.	$3.20		

Current Base revenue		Residential	Commercial	Outside	Totals
	3/4" in	$14,940.00	$360.00	$0.00	$ 15,300.00
	3/4" out	$0.00	$0.00	$1,232.00	$ 1,232.00
	1"	$0.00	$372.00	$0.00	$ 372.00
	1 1/2"	$0.00	$248.40	$0.00	$ 248.40
	2"	$0.00	$116.25	$0.00	$ 116.25
	3"	$0.00	$103.70	$0.00	$ 103.70
	4"	$0.00	$137.50	$0.00	$ 137.50
	8"	$0.00	$100.00	$0.00	$ 100.00
	Total/month	$14,940.00	$1,437.85	$1,232.00	$ 17,609.85
	12 mo. Total	$179,280.00	$17,254.20	$14,784.00	$ 211,318.20
% of operating budget		23.90%	2.30%	1.97%	28.18%
Water with base charge	Total/month	0	0	0	0
	12 mo. Total	0	0	0	0
Typical 5/8" Usage (gals)	16,576				

		Residential	Commercial	Other	Total Revenue Generated
Total Water Included in Base Rate	12 mo. Total	0			
0.00%	12 mo. Total		0		
	12 mo. Total			0	$ 211,318.20
Available water to be sold	169670				$ 542,944.00
Consumption Revenues	Potential Annual Revenues			100.57%	$ 754,262.20
	Total Revenue Generated				$ 4,262.20
	Annual Gain/(Shortfall)				100.57%

Notes:

To meet budget, the charge per unit should be increased to a minimum of $3.20 per unit

Reduction in unaccounted for water will create better revenues and maintain rates

$3.20 per unit is formulated using a single tier unit charge

Typical Residential Water Bill	
Units of Water	Res. Water Bill
5.00	$36.00
16.58	$73.04
25.00	$100.00

Meter Multiplier:

With a water rate study, industry standards are reviewed for applicability and incorporated when deemed necessary. Using meters as the primary method of setting water rates, we once again expand on key points to better understand the approach, the depth of using meter multipliers to establish base rates. Generally, meter ratios are designed from two separate theories, where meter multiplier cost ratios are used when assigning elements of costs specifically related to meters, and meter capacity ratios, are most often used when estimating the potential water demand requirements from a single customer.

Maintenance costs of meters and the supporting infrastructure vary by size and recognize said costs are associated with the size of service pipe, materials used, locations of meters, and other local characteristics for various sized meters as compared to 3/4-inch meter service. With a 3/4-inch meter being the starting point and using a one-to-one ratio, increasing the size of the meter increases those ratios as they relate to the cost for repair and replacement on the life of a meter and the infrastructure necessary to support said meter. Table 7 provides specific ratios.

Currently, the Fairview Water District has an established meter ratio in place, and the factors that verify the various monthly rates are undeterminable. The suggested meter ratios outlined in Table 7: Meter Cost Equivalencies/ Dollar Ratios will be a modification considered by the Board for the future. The ratios are constructed and found in American Water Works, Principles of Water Rates, Fees, and Charges – M1.

Table 7: Meter Cost Equivalencies / Dollar Ratios

Table 7: Meter Cost Equivalencies / Dollar Ratios

Meter Size (Inches)	Equivalent Meter Cost Ratio	Equivalent Dollar Ratio
5/8 - 3/4	1.10	$1.00
1	1.40	$1.40
1.5	1.80	$1.80
2	2.90	$2.90
3	11.00	$11.00
4	14.00	$14.00
6	21.00	$21.00
8	29.00	$29.00

The Board of Directors has chosen to implement this aspect of the water rate study to realign operating expenses with the understanding of the costs associated with larger infrastructure.

Using Table 7, an example of a two-inch meter equivalency to the 3/4-inch meter correlates as being 2.9 times more costly to repair and or replace during the service life for the smaller meter. If a 3/4-inch meter service costs the consumer $10.00 per month, then a two-inch meter has a monthly rate of $29.00.

AWWA Meter Ratios	Current Ratios
5/8" = 1.0	1.00
3/4" = 1.1	NA
1" = 1.4	1.16
1 1/2" = 1.8	1.55
2" = 2.9	1.94
3" = 11.0	2.59
4" = 14.0	3.44
6" = 21.0	NA
8" = 29.0	5.00

Using this approach in determining costs associated with various meter sizes places less emphasis on the distinction of class categorization, i.e., residential, commercial, or industrial. Even though the size of the meter is the focus in determining appropriate monthly base rates, increased demand from commercial and industrial users will warrant higher base rates. The classification of users will play a smaller role in rate settings applied with this study.

By applying the meter equivalency structure, this technique again merges two methods into a single set of rates. Setting the rate for a 3/4-inch meter and aligning the cost to meet a goal of 60 percent of total expenditures. The larger service connections will automatically synchronize the larger meters and their respective monthly base charges. Using the meter-multiplier cost ratio, the District's efforts on routine rate adjustments will allow the meter multiplier to be applied to the existing 3/4-inch meter base rate as the start point.

Table 8: Meter Multiplier Revenues

Table 8: Meter Multiplier Revenues			***Budget***	***$ 750,000.00***
Total # of Connections	853	Allowance		0.00
Base Rate [1]	$31.00	Annual Base Revenues		$ 366,504.79
Total Allowance of Water (units)		0		0
Available Water for Sale (units)		169,670		169,670,000
Required Balance of Revenues	$ 169,670.00	Total Billable Units		169,670
Consumption Rate per Units [2]	$2.50	Annual Consumption Revenues		$ 0.52
		Total Revenues		*$ 366,505.32*
Typical Monthly Costs (SFR) [3]		16.58	16,575.81	$69.13
Increase from Current Rates				$23.43
1 - 3/4-inch meter SFR inside boundary, 2 - minimum charge per unit, 3 - average usage for all customers				

Table 8 stipulates key points:

- $31.00 base rate for 3/4-inch meter (inside district).
- 48 percent of budget is derived from the base rates from the current 28 percent
- Consumption rate is established from the required remaining revenues at ≈$2.50.
- Typical monthly usage of 16 units will see a $23.00 increase.
    - 16 units reflect water sold by all users; the more accurate average consumption is approximately 6-7 units.
    - Data to determine the average monthly usage for a SFR class is not available from billing reports.

MM Cost Spreadsheet:

Rate Study for

Fairview Water District

Meter Multiplier

For Year:	2026-'27
Date completed:	November-25

	Annual Units				
Amount of Water Produced	234,770				
Amount of Water Sold	169,670				
Unaccounted for Water	65,100	27.73%			
	Dollars				
Annual Operating Budget	$750,000.00				Delivery Cost
Annual Debt Service	$0.00		# of connections		Cost per 1,000 gallons
Total Annual Budget	$750,000.00	Residential	Commercial	Outside	$3.19
Connection Information	Size				
	3/4" in	747	18	0	
	3/4" out	0	0	56	
	1"	0	16	0	
	1 1/2"	0	8	0	
	2"	0	3	0	
	3"	0	2	0	
	4"	0	2	0	Total Connections
	6"	0	0	0	
	8"	0	1	0	853
Consumption w/ base (gal.)		See Units Allowed (x1000 gals.)			
Units Allowed		Residential	Commercial	Outside	Meter Multiplier In Use
0.0	3/4" in	$31.00	$37.20	$0.00	3/4" = 1.0
0.0	3/4" out	$0.00	$0.00	$37.20	3/4" = 1.1
0.0	1"	$43.40	$52.08	$0.00	1" = 1.4
0.0	1 1/2"	$55.80	$66.96	$0.00	1 1/2" = 1.8
0.0	2"	$89.90	$107.88	$0.00	2" = 2.9
0.0	3"	$341.01	$409.21	$0.00	3" = 11.0
0.0	4"	$434.01	$520.81	$0.00	4" = 14.0
0.0	6"	$651.02	$781.22	$0.00	6" = 21.0
0.0	8"	$899.03	$1,078.83	$0.00	8" = 29.0
Consumption Charge	per 1000 gals		$2.30		
Current Base Revenue		Residential	Commercial	Outside	Totals
	3/4" in	$23,157.66	$669.62	$0.00	$ 23,827.28
	3/4" out	$0.00	$0.00	$2,083.26	$ 2,083.26
	1"	$0.00	$833.30	$0.00	$ 833.30
	1 1/2"	$0.00	$535.70	$0.00	$ 535.70
	2"	$0.00	$323.65	$0.00	$ 323.65
	3"	$0.00	$818.42	$0.00	$ 818.42
	4"	$0.00	$1,041.63	$0.00	$ 1,041.63
	6"	$0.00	$0.00	$0.00	
	8"	$0.00	$1,078.83	$0.00	$ 1,078.83
	Total/month	$23,157.66	$5,301.15	$2,083.26	$ 30,542.07
	12 mo. Total	$277,891.88	$63,613.80	$24,999.11	$ 366,504.79
% of operating budget		37.05%	8.48%	3.33%	48.87%
Water with base charge	Total/month	0	0	0	0
	12 mo. Total	0	0	0	0
Typical 3/4" Usage		Percentage of Allowed Water			0.00%
		Residential			
Water Consumption	12 mo. Total	0	Commercial		
	12 mo. Total		0	Other	Total Revenue Generated
	12 mo. Total			0	$ 390,241.00
Available Water to be Sold [1]				169,670	52.03%
Consumption Revenues		Potential Annual Revenues			$ 756,745.79
			Total Revenue Generated		$ 6,745.79
Cost per 1000 gals	$0.00		Annual Gain/(Shortfall)		100.90%
Notes:	All available water sold at $2.30 per unit balances the budget at $750,000.00				

Chart 1: Single Tier Unit Charge

Proposed Water Consumption - Monthly Rate Comparison									
Base Rate Water Allowance		0	0	0	0	0	0	0	0
Base Rate		$31.00	$37.20	$52.08	$66.96	$107.88	$409.21	$520.81	$1,078.83
Consumer Class									
Residential		747	0	0	0	0	0	0	0
Commercial		0	18	16	8	3	2	2	1
Outside			56	0	0	0	0	0	0
Monthly Usage and Hypothetical Cost at Various Consumption Levels									
Tier Rates	Inside T1	$2.30		T2	$2.30		T3	$2.30	
Consumption Levels	Outside T1	$2.88		T2	$2.88		T3	$2.88	
	Units	3/4" in	3/4" out	1"	1.5"	2"	3"	4"	8"
4.0	4000	$ 40.20	$ 48.70	$ 61.28	$ 76.16	$ 117.08	$ 418.41	$ 530.01	$ 1,088.03
5.0		$ 42.50	$ 51.58	$ 63.58	$ 78.46	$ 119.38	$ 420.71	$ 532.31	$ 1,090.33
6.0		$ 44.80	$ 54.45	$ 65.88	$ 80.76	$ 121.68	$ 423.01	$ 534.61	$ 1,092.63
7.0		$ 47.10	$ 57.33	$ 68.18	$ 83.06	$ 123.98	$ 425.31	$ 536.91	$ 1,094.93
9.0		$ 51.70	$ 63.08	$ 72.78	$ 87.66	$ 128.58	$ 429.91	$ 541.51	$ 1,099.53
10.0	10000	$ 54.00	$ 65.95	$ 75.08	$ 89.96	$ 130.88	$ 432.21	$ 543.81	$ 1,101.83
11.0		$ 56.30	$ 68.83	$ 77.38	$ 92.26	$ 133.18	$ 434.51	$ 546.11	$ 1,104.13
12.0		$ 58.60	$ 71.70	$ 79.68	$ 94.56	$ 135.48	$ 436.81	$ 548.41	$ 1,106.43
13.0		$ 60.90	$ 74.58	$ 81.98	$ 96.86	$ 137.78	$ 439.11	$ 550.71	$ 1,108.73
14.0		$ 63.20	$ 77.45	$ 84.28	$ 99.16	$ 140.08	$ 441.41	$ 553.01	$ 1,111.03
15.0	15000	$ 65.50	$ 80.33	$ 86.58	$ 101.46	$ 142.38	$ 443.71	$ 555.31	$ 1,113.33
20.0		$ 77.00	$ 94.70	$ 98.08	$ 112.96	$ 153.88	$ 455.21	$ 566.81	$ 1,124.83
25.0	25000	$ 88.50	$ 109.08	$ 109.58	$ 124.46	$ 165.38	$ 466.71	$ 578.31	$ 1,136.33
28.0		$ 95.40	$ 117.70	$ 116.48	$ 131.36	$ 172.28	$ 473.61	$ 585.21	$ 1,143.23
30.0		$ 100.00	$ 123.45	$ 121.08	$ 135.96	$ 176.88	$ 478.21	$ 589.81	$ 1,147.83
32.0		$ 104.60	$ 129.20	$ 125.68	$ 140.56	$ 181.48	$ 482.81	$ 594.41	$ 1,152.43
36.0		$ 113.80	$ 140.70	$ 134.88	$ 149.76	$ 190.68	$ 492.01	$ 603.61	$ 1,161.63
40.0		$ 123.00	$ 152.20	$ 144.08	$ 158.96	$ 199.88	$ 501.21	$ 612.81	$ 1,170.83
45.0		$ 134.50	$ 166.58	$ 155.58	$ 170.46	$ 211.38	$ 512.71	$ 624.31	$ 1,182.33
48.0		$ 141.40	$ 175.20	$ 162.48	$ 177.36	$ 218.28	$ 519.61	$ 631.21	$ 1,189.23
50.0	50000	$ 146.00	$ 180.95	$ 167.08	$ 181.96	$ 222.88	$ 524.21	$ 635.81	$ 1,193.83
56.0		$ 159.80	$ 198.20	$ 180.88	$ 195.76	$ 236.68	$ 538.01	$ 649.61	$ 1,207.63
57.0		$ 162.10	$ 201.08	$ 183.18	$ 198.06	$ 238.98	$ 540.31	$ 651.91	$ 1,209.93
60.0		$ 169.00	$ 209.70	$ 190.08	$ 204.96	$ 245.88	$ 547.21	$ 658.81	$ 1,216.83
65.0		$ 180.50	$ 224.08	$ 201.58	$ 216.46	$ 257.38	$ 558.71	$ 670.31	$ 1,228.33
70.0		$ 192.00	$ 238.45	$ 213.08	$ 227.96	$ 268.88	$ 570.21	$ 681.81	$ 1,239.83
75.0		$ 203.50	$ 252.83	$ 224.58	$ 239.46	$ 280.38	$ 581.71	$ 693.31	$ 1,251.33
80.0		$ 215.00	$ 267.20	$ 236.08	$ 250.96	$ 291.88	$ 593.21	$ 704.81	$ 1,262.83
85.0		$ 226.50	$ 281.58	$ 247.58	$ 262.46	$ 303.38	$ 604.71	$ 716.31	$ 1,274.33
95.0		$ 249.50	$ 310.33	$ 270.58	$ 285.46	$ 326.38	$ 627.71	$ 739.31	$ 1,297.33
100.0	100,000	$ 261.00	$ 324.70	$ 282.08	$ 296.96	$ 337.88	$ 639.21	$ 750.81	$ 1,308.83

The single tiered rate per unit at $2.30 inside and $2.90 outside services is displayed in the above chart. The chart presents a monthly cost for each sized meter consuming from 4,000 gallons to 100,000 gallons. What the chart does not show is the revenues or deficits associated with the various levels of consumption.

The $2.30 inside and $2.90 outside service rate is set for FWD to meet budget at $750,000.00, but it falls short when the larger levels of water consumption are purchased. This price structure will lose dollars above 36 units (36,000 gallons) for a 3/4-inch meter (inside) with the 1.0-inch and 1.5-inch meters losing revenue above 60 units of water, or 60,000 gallons. This example is shared with the Board to better understand the dynamics associated with water rates. Two questions:

- How often does a 3/4- inch service consume greater than 36 units (36,000 gals.) of water?
- Should FWD sell all water above the delivery rate at $3.19 per unit?

Using the single tiered format for the consumption charge, inside unit charge is $2.30 for all consumed water, while the outside district unit charge is $2.90 per unit for all water consumed. The exhibit below delivers the unit rate adjustments each year, unless the Board chooses to amend the water rate structure to a multi-tier format. *Table 12: Projected Annualized Rate Increases* offers the anticipated adjustments for the multi-tier format.

Single Tier Rate Increase			2027	2028	2029	2030
Projected Consumption Rates - Inside Boundary						
	$2.30	$0.10	$2.40	$2.50	$2.61	$2.72
Tier One	$2.30	$0.10	$2.40	$2.50	$2.61	$2.72
	$2.30	$0.10	$2.40	$2.50	$2.61	$2.72
Projected Consumption Rates - Outside Boundary						
	$2.90	$0.12	$3.02	$3.15	$3.29	$3.43
Tier One	$2.90	$0.12	$3.02	$3.15	$3.29	$3.43
	$2.90	$0.12	$3.02	$3.15	$3.29	$3.43

Multi-Tier Rate Format:

Using the meter multiplier to set the base rates, the Board of Directors had elected to stay with a single-tier consumption charge per unit. The analysis shows with the SFR base rate at $31.00 per month, the meter multiplier applied to the larger service meters, a consumption rate for inside the district would be $2.30 per unit, with the rate for outside district at $2.90 per unit. This rate is designed to have a single charge per unit regardless of the amount of water consumed.

The Board of Directors has requested to include the multi-tier unit charge structure as part of the water rate study as a guide for potential changes in the future. The following chart provides the monthly cost associated with a specified amount of water consumed for each size of meter. The highlighted rows are the set points for each of a three-tier format. The following chart will display a monthly cost per user when a multi-tier consumption rate is utilized in the water rate structure.

Oregon Water Resources Department has a rule that states, “a rate structure under which customers' bills are based, at least in part, on the quantity of water metered at the service connections”. Currently, the Fairview Water District has a formatted structure that is deemed a “flat rate,” stating one price per unit regardless of the quantities of water consumed. This format meets the intent of the rule.

Any multi-tier style of consumption rates requires applying a judgment and utility policy regarding the number of blocks, the point at which one block ends and the next block begin, and the relative price levels of the blocks.

Conservative in nature, the focus towards water rates creates an incentive to save water. Understand that normal water consumption, if reduced by this approach, should later return to levels prior to the rate change. One facet regarding this method of setting water rates is the fact that the total revenues are calculated from the average consumption figures and not on the expectations of greater water sales. Even though a water utility is in the water business, the perception of many consumers is not aware of the fact that water sales sustain the utility.

The chart displays the anticipated monthly charge per size of meter applying the per unit rates shown below with indications (yellow) when the tier unit rate increases.

Chart 2: Multi-Tier Unit Charge

Existing Water Consumption - Monthly Rate Comparison									
Base Rate Water Allowance		0	0	0	0	0	0	0	0
Base Rate		$31.00	$37.20	$52.08	$66.96	$107.88	$409.21	$520.81	$1,078.83
Consumer Class									
Residential		747	0	0	0	0	0	0	0
Commercial		0	18	16	8	3	2	2	1
Outside			56	0	0	0	0	0	0
Monthly Usage and Hypothetical Cost at Various Consumption Levels									
Tier Rates	Inside T1	$2.00		T2	$3.00		T3	$4.00	
Consumption Levels	Outside T1	$2.50		T2	$3.75		T3	$5.00	
	Units	3/4" in	3/4" out	1"	1.5"	2"	3"	4"	8"
4.0	4000	$ 39.00	$ 47.20	$ 60.08	$ 74.96	$ 115.88	$ 417.21	$ 528.81	$ 1,086.83
5.0		$ 41.00	$ 49.70	$ 62.08	$ 76.96	$ 117.88	$ 419.21	$ 530.81	$ 1,088.83
6.0		$ 43.00	$ 52.20	$ 64.08	$ 78.96	$ 119.88	$ 421.21	$ 532.81	$ 1,090.83
7.0		$ 45.00	$ 54.70	$ 66.08	$ 80.96	$ 121.88	$ 423.21	$ 534.81	$ 1,092.83
9.0		$ 49.00	$ 59.70	$ 70.08	$ 84.96	$ 125.88	$ 427.21	$ 538.81	$ 1,096.83
10.0	10000	$ 51.00	$ 62.20	$ 72.08	$ 86.96	$ 127.88	$ 429.21	$ 540.81	$ 1,098.83
11.0		$ 54.00	$ 65.95	$ 75.08	$ 89.96	$ 129.88	$ 431.21	$ 542.81	$ 1,100.83
12.0		$ 57.00	$ 69.70	$ 78.08	$ 92.96	$ 131.88	$ 433.21	$ 544.81	$ 1,102.83
13.0		$ 60.00	$ 73.45	$ 81.08	$ 95.96	$ 133.88	$ 435.21	$ 546.81	$ 1,104.83
14.0		$ 63.00	$ 77.20	$ 84.08	$ 98.96	$ 135.88	$ 437.21	$ 548.81	$ 1,106.83
15.0	15000	$ 66.00	$ 80.95	$ 87.08	$ 101.96	$ 137.88	$ 439.21	$ 550.81	$ 1,108.83
20.0		$ 81.00	$ 99.70	$ 102.08	$ 116.96	$ 147.88	$ 449.21	$ 560.81	$ 1,118.83
25.0	25000	$ 96.00	$ 118.45	$ 117.08	$ 131.96	$ 162.88	$ 464.21	$ 575.81	$ 1,133.83
28.0		$ 108.00	$ 127.08	$ 129.08	$ 143.96	$ 171.88	$ 473.21	$ 584.81	$ 1,142.83
30.0		$ 116.00	$ 132.83	$ 137.08	$ 151.96	$ 177.88	$ 479.21	$ 590.81	$ 1,148.83
32.0		$ 124.00	$ 138.58	$ 145.08	$ 159.96	$ 183.88	$ 485.21	$ 596.81	$ 1,154.83
36.0		$ 140.00	$ 150.08	$ 161.08	$ 175.96	$ 195.88	$ 497.21	$ 608.81	$ 1,166.83
40.0		$ 156.00	$ 161.58	$ 177.08	$ 191.96	$ 207.88	$ 509.21	$ 620.81	$ 1,178.83
45.0		$ 176.00	$ 175.95	$ 197.08	$ 211.96	$ 222.88	$ 524.21	$ 635.81	$ 1,193.83
48.0		$ 188.00	$ 184.58	$ 209.08	$ 223.96	$ 231.88	$ 533.21	$ 644.81	$ 1,202.83
50.0	50000	$ 196.00	$ 190.33	$ 217.08	$ 231.96	$ 237.88	$ 539.21	$ 650.81	$ 1,208.83
56.0		$ 220.00	$ 207.58	$ 241.08	$ 255.96	$ 261.88	$ 563.21	$ 674.81	$ 1,232.83
57.0		$ 224.00	$ 210.45	$ 245.08	$ 259.96	$ 265.88	$ 567.21	$ 678.81	$ 1,236.83
60.0		$ 236.00	$ 219.08	$ 257.08	$ 271.96	$ 277.88	$ 579.21	$ 690.81	$ 1,248.83
65.0		$ 256.00	$ 233.45	$ 277.08	$ 291.96	$ 297.88	$ 599.21	$ 710.81	$ 1,268.83
70.0		$ 276.00	$ 247.83	$ 297.08	$ 311.96	$ 317.88	$ 619.21	$ 730.81	$ 1,288.83
75.0		$ 296.00	$ 262.20	$ 317.08	$ 331.96	$ 337.88	$ 639.21	$ 750.81	$ 1,308.83
80.0		$ 316.00	$ 276.58	$ 337.08	$ 351.96	$ 357.88	$ 659.21	$ 770.81	$ 1,328.83
85.0		$ 336.00	$ 290.95	$ 357.08	$ 371.96	$ 377.88	$ 679.21	$ 790.81	$ 1,348.83
95.0		$ 376.00	$ 319.70	$ 397.08	$ 411.96	$ 417.88	$ 719.21	$ 830.81	$ 1,388.83
100.0	100,000	$ 396.00	$ 334.08	$ 417.08	$ 431.96	$ 437.88	$ 739.21	$ 850.81	$ 1,408.83

	Inside District	Outside District
• Zero – 10,000 gallons -	$2.00 per	$2.50 per
• 10,001 – 25,000 gallons -	$3.00 per	$3.75 per
• 25,001 + gallons -	$4.00 per	$5.00 per

Larger service connection tiers and rates per 1,000 gallons:

• Zero – 20,000 gallons	$2.00 per	$2.50 per
• 20,001 – 50,000 gallons	$3.00 per	$3.75 per
• 50,001 + gallons	$4.00 per	$5.00 per

The multi-tier approach supports a slight decrease in the unit charge from tier one to the single tier rate, as the analysis predicts additional revenues as water is sold at a higher rate for the higher consumption of water. Often this approach also supports a conservation method when water sources are declining during the year when water demand is the highest.

Table 12: Projected Annual Rate Increases display information offering routine rate adjustment based on the consumer price index

This annual adjustment, if applied each year, equates to a current monthly water base rate increase of ≈$1.32 for SFR users in 2027, factored using the new base rate of $31.00 implemented in 2026.

www.in2013dollars.com/Water-and-sewerage-maintenance/price-inflation/2010-to-2020?amount=20

The figures in Table 12 utilized to determine 2027 SFR base rates are generated from the U.S. Bureau of Labor Statistics for inflation related to water and sewer maintenance. This data can be viewed during the District's budget process and remove any guesswork in determining if an increase or what size of increase should be applied. These figures are provided to guide future decision makers in developing routine annual adjustments. Figures should be reviewed and compared against other factors that may change the annual budget, i.e., CIP increase.

Increases to the annual budget are factored from three primary reasons:

- Inflationary Index.
- Short-term CIP.
    - Specific amount of dollars set aside for CIP, replenished annually.
    - Low-cost projects are funded through water rates.
        - Example – updating the SCADA telemetry system.
- Unexpected requirement to increase the budgets, (large project funding).
    - Long-term debt funded over time, creating an annual service payment.
        - Example – replace, add a second reservoir.

See Tables 11 and 12

Table 11: Projected Annual Rate Increases

Monthly Water Rates	Existing [1]	Proposed [2]	Allowance [3]	CPI [4]	2027 [5]	2028	2029	2030
						Five-Year Average CPI		4.26%
Meter Size						Projected Base Rates		
3/4" in	$ 20.00	$ 31.00	0	$1.32	$ 32.32	$ 33.70	$ 35.13	$ 36.63
3/4" out	$ 22.00	$ 37.20	0	$1.58	$ 38.79	$ 40.44	$ 42.16	$ 43.96
1"	$ 23.25	$ 52.08	0	$2.22	$ 54.30	$ 56.61	$ 59.03	$ 61.54
1 1/2"	$ 31.05	$ 66.96	0	$2.85	$ 69.81	$ 72.79	$ 75.89	$ 79.12
2"	$ 38.75	$ 107.88	0	$4.60	$ 112.48	$ 117.27	$ 122.27	$ 127.47
3"	$ 51.85	$ 409.21	0	$17.43	$ 426.64	$ 444.82	$ 463.77	$ 483.52
4"	$ 68.75	$ 520.81	0	$22.19	$ 543.00	$ 566.13	$ 590.25	$ 615.40
6"	NA	$ 781.22	0	$33.28	$ 814.50	$ 849.20	$ 885.38	$ 923.09
8"	$ 100.00	$ 1,078.83	0	$45.96	$ 1,124.79	$ 1,172.70	$ 1,222.66	$ 1,274.75
Multi-Tier Rate Increase					2027	2028	2029	2030
Projected Consumption Rates - Inside Boundary								
Tier One			$2.00	$0.09	$2.09	$2.17	$2.27	$2.36
Tier Two			$3.00	$0.13	$3.13	$3.26	$3.40	$3.54
Tier Three			$4.00	$0.17	$4.17	$4.35	$4.53	$4.73
Projected Consumption Rates - Outside Boundary								
Tier One			$2.50	$0.11	$2.61	$2.72	$2.83	$2.95
Tier Two			$3.75	$0.16	$3.91	$4.08	$4.25	$4.43
Tier Three			$5.00	$0.21	$5.21	$5.44	$5.67	$5.91

1 - Existing rates considerd flat base rate with all sized service connections and an adjustment for larger sized connections

2 - Proposed rates use a meter multiplier based on size of service connection, replacement cost of infrastructure, AWWA standard - 2026

2 - Proposed figures apply SFR inside district user and commercial users. Larger residential meter base rates MM Cost Spreadsheet -page 28

2 - Outside commercial base rates mirror above rates for larger meters

3 - No allowance is offered with the rate format, continuing the current format

4 - Base rate annual adjustment established on Consumer Price Index, basket of services for water/wastewater maintenance

4 - CPI is a five-year average from 2020-2025 at 4.26 percent, speculating the same for years 2027 through 2030

5 - The suggested base rates begin 2027, the year following implementation of the new water rate format

Table 12: Multi-Tier Usage Levels

Table 12: Multi-Tier Usage Levels								
Tier Rates per Unit - Inside District								
Meter Size	Proposed [1]	Tier One [2]	Tier Two [2]	Tier Three [2]	Tier 1	Tier 2	Tier 3	
3/4" in	$ 31.00	0 - 10K	0 - 10K	25.1 K +	$2.00	$3.00	$4.00	
3/4" out	NA							
1"	$ 52.08							
1 1/2"	$ 66.96							
2"	$ 107.88	0 - 20K	20.1 - 50K	50K +	$2.00	$3.00	$4.00	
3"	$ 409.21							
4"	$ 520.81							
6"	$ 781.22							
8"	$ 1,078.83							
Tier Rates per Unit - Outside District								
3/4" in	NA	0 - 10K	0 - 10K	25.1 K +	$2.50	$3.75	$5.00	
3/4" out	$ 37.20							
1"	$ 52.08							
1 1/2"	$ 66.96							
2"	$ 107.88	0 - 20K	20.1 - 50K	50K +	$2.50	$3.75	$5.00	
3"	$ 409.21							
4"	$ 520.81							
6"	$ 781.22							
8"	$ 1,078.83							

1 - Proposed rates use a meter multiplier based on size of service connection, replacement cost of infrastructure - AWWA
2- Start - stop set points based on size of service meter

Capital Improvement Planning:

Capital Improvement Planning (CIP) and the costs associated with utility projects are gaining interest as it relates to fixed revenues being dedicated to maintaining the utility. Regulations, replacement and expansion of the utility drive expenditures separate from routine costs. This proposed revenue is gauged by and from the list of future projects, usually found in the Water Master Plan. It is this list that is evaluated by both administrative and field staff to determine a set annual expenditure, thus adjusting water rates to meet the new required revenues.

The single budgeted line for CIP was estimated at $250,000.00 annually. If applied to base rates, would increase the monthly base rate ≈$25.00. This step is too drastic, but it defines the required revenues necessary in sustaining the mechanical integrity of the water system. Another method to apply additional required revenues is using the per unit charge. This method is reasonable as it matches revenues with consumption, those consumers that use more water will pay an equal percentage to those who use less water.

To demonstrate the correlation between the CIP and the unit charge, figures below are presented to use as a tool for future water rates adjustments. Capital improvement dollars will vary each year and a slight adjustment to the unit charge is an effective method of supporting these changes.

- $250,000.00 / 169,000 units of water = $1.48 per unit.
- Rounding up to $1.50 creates capital revenues of $253,500.00.

The delivery cost for FWD is $3.19 per unit, of which $1.50 per unit is related to the CIP, based on the available units to be sold. The FWD can interpret and conclude for every $250,000.00 added to the budget the additional unit charge would increase $1.50. This cost and other charges related to unit pricing are lowered if the base rates account for a higher percentage of the overall budget.

To simplify the accountability in the decision-making process, if a utility can establish a routine, three-year commitment in CIP funding as part of the fixed expenditures, the revenues can be disbursed solely for the smaller CIP tasks. Often the CIP is outlined in a Water Master Plan and prioritized by time frames. Another approach to the CIP resolve is applying a 'needs assessment' to the list of improvement projects, thus shuffling the repair list from the smaller costs to the larger costs, and evaluating the total annual expenses required and applied to the water rates.

Long Term Debt:

Capital Improvement Planning (CIP) can be implemented from two methods, a) short-term CIP, applied to smaller projects which look at keeping the water system maintained and upgraded, b) long-term capital debt, larger projects, i.e., new water reservoir, as a financial expense usually paid for over thirty (30) years, but various time options can be applied. The short-term example has been discussed above.

For informational purposes the figures below look at a loan for $1M dollars and the impact it has on future water rates. Based on terms and conditions set in Table 11: Long-Term Debt, the Fairview Water District would increase the budget by ≈ $48,000.00.

This secondary expense identifies one of two approaches to cover the long-term debt. Methods of implementation are:

- Base rates increase for all 853 customers = $4.60 per month.
    - Anticipated revenues = $47,085.60.
- Per unit increase on all units of water sold = $0.0027 or $0.27 per unit.
    - Anticipated revenues = $46,199.34.
    - These examples are set for a 30-year term.

Table 13: Long Term Debt:

Table 13: Long Term Debt						
Loan Amount	Interest Rate	Terms (Yr.)	Annual Payment		Connections	
$ 1,000,000.00	2.25%	30	$	46,199.34	853	
Base Rate	Per Monthly Charge				$	4.51
Unit Rate	Per 1,000 gal. Charge				$	0.27
Units of Water	Allowance					
5.00	0		Additional Mo. Fee		$	1.36
16.58					$	4.47
25.00					$	6.81
50.00					$	13.61
100.00					$	27.23
Units of water associated with various levels of consumption						

Figures given with this consideration are found on averages of total units sold, originating on the ≈ 169,000 annual units applied during this water ate study.

Applying a debt service for the District's annual payment and joining the debt to a monthly base rate should be applied as an itemized line on the bill. The additional charge encompasses all users, without utilizing the meter ratios, which if used, creates an unwarranted burden on the larger sized service connections. For this approach, a monthly increase of $4.51 for each customer would suffice in covering the annual payment. Applying the additional debt service to the units consumed creates a fairer practice and equal charge on all water usage.

Future Considerations:

The Fairview Water District's approach to water rate adjustments historically focused on the impact of the people the water system serves. Routine rate modifications are atypical for water suppliers, which also holds true for wastewater utilities. Using the consumer price index (CPI) for water service is an accurate measure of the impact inflation has on the district and will offer an answer to upcoming adjustments.

This annual adjustment, if applied each year, equates to a current monthly water base rate increase of ≈$1.32 for SFR users in 2027, factored in the new base rate of $31.00. The link below is the webpage used to set the adjustments

www.in2013dollars.com/Water-and-sewerage-maintenance/price-inflation/2010-to-2020?amount=20

The figures in Table 11 (page 21) utilized to determine 2027 SFR base rates are generated from the U.S. Bureau of Labor Statistics for inflation related to water and sewer maintenance. This data can be viewed during the District's budget process and remove any guesswork in determining if an increase or what size of increase should be applied. These figures are provided to guide future decision makers in developing a routine of annual adjustments. Figures should be reviewed and compared against other factors that may change the annual budget, i.e., CIP increase.

Increases to the annual budget are factored from three primary reasons:

- Inflationary Index.
- Short-term CIP.
    - Specific amount of dollars set aside for CIP, replenished annually.
    - Low-cost projects are funded through water rates.
    - Example – updating the SCADA telemetry system.
- Unexpected requirement to increase the budgets, (large project funding).
    - Long-term debt funded over time, creating an annual service payment.
    - Example – replacement or adding a second reservoir.

Summary:

There are various arrangements that can be used to reach an acceptable water rate that meets budgetary requirements. The uniqueness of communities creates challenges that may or may not work from community to community. Whatever the cost associated with providing water from the source to the consumer's tap, usually varies from one water system to another. Water systems, though very similar in operational duties, differ more financially due to the diverse circumstances. The variables associated with other water systems sometimes will or will not apply to the Fairview Water District. A new water system completed without any debt owed is rarely seen. The age of a water system plays a bigger role in determining future costs as rebuilding is often more expensive than new development.

The FWD delivers a gallon of water to the tap at ≈ $0.000319 or $3.19 per unit of water which is 1,000 gallons. How the district recoups the expenses for water delivery is best managed through a balanced approach, looking at both fixed and variable expenses.

The largest single user group is the single-family residential consumers, accounting for greater than 90 percent of service connections, and it is this group who is most impacted by sudden rate increases. It is also this group that creates additional seasonal demand.

The FWD has done well will routine adjustments in the water rates, and this study presents ideas associated with industry standards to align the future adjustments to best balance the budget to meet the $3.19 delivery rate. Obtaining fixed expenses from the base rates and relying on the water sold to meet those variable expenses, will balance the cost associated with operations in a fair approach for all users.

The importance of looking at the future regarding system growth and repair, or replacement of aging components, and determining an evaluation of costs can be difficult at times. Proposed costs are usually lower than actual costs due to unforeseen changes. It is important for public relations and communications to play a role in preserving consumer confidence in both water quality system operations and management.

Tables 11 and 13 provide answers for future rate adjustments as it relates to annual base rates and consumption rates increase, thus eliminating the guesswork in the decision-making process. OAWU offers a water tracking chart as a tool to manage water production, water sold and revenues expenditures. An e-file will be sent to the member upon completion of the water rate study.

Chart: Water Tracking – Revenue and Water Loss

WATER TRACKING CHART - REVENUE AND WATER LOSS									
2026-27	H2O Produced	H2O Operations	H2O Sold	Total H2O Difference	Unaccounted for H2O	Water Dept Revenue	Water Dept Expenses	Monthly $ Difference	$ per gallon
	Annual Budget				Monthly Revenue Goal		2026-27	$ -	
Units of measure are either 1,000 gallons or 100 cubic feet (748-gallons)									
Jul-25									
Aug-25									
Sep-25									
Oct-25									
Nov-25									
Dec-25									
Jan-26									
Feb-26									
Mar-26									
Apr-26									
May-26									
Jun-26									
Totals	-	-	-	-	#DIV/0!	$ -	$ -	$ -	#DIV/0!
Mo Average	-	-	-	-					
$ per Unit	#DIV/0!						$ per Unit		#DIV/0!
$ per gallon	#DIV/0!						$ per gallon		#DIV/0!

As collected evidence presents itself during the subsequent year, the Oregon Association of Water Utilities will return, if called upon, to review and confirm the effectiveness of the water rate structure. With numerous considerations and decisions being calculated with this rate study, it is the objective of Oregon Association of Water Utilities to assist the Fairview Water District in water rates that meet the needs of the water system, provide fair and equitable rates for all consumers, and to ensure the water system is poised for future growth.