ENGINEERING REPORT

Corbett Water District
Phase 1
Water Rate Study

May 2021

Corbett Water District

36120 Historic Columbia River Highway
Corbett, Oregon 97019

PACE
An Engineering Services Company

CORBETT WATER DISTRICT

PHASE 1 WATER RATE STUDY

May 2021

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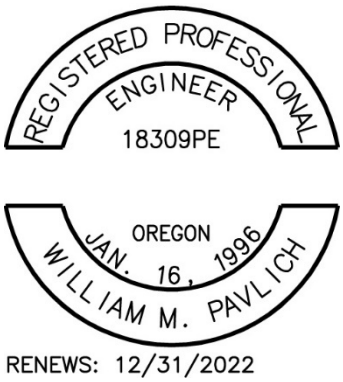
PROJECT CERTIFICATION

The technical material and data contained in this report was prepared by PACE Engineers, Inc., under the supervision of the below listed individuals. Those responsible staff members who are registered professional engineers are licensed in the State of Oregon.



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SECTION 1 | INTRODUCTION

1.1 Goals

Water rates are established to provide the District with sufficient and reliable revenue to cover water utility costs that may include operations, maintenance, administration, and debt service. Revenue needs are based on the cost of providing water service and should be understood as having both long-term and near-term components and including an allowance for contingencies to cover unplanned-for costs such as emergency repairs or a revenue shortfall. Most of the budget is associated with costs that do not vary much with actual customer water usage, so it is important to have a reliable revenue stream. This is typically accomplished by having fixed costs covered by a base rate which is paid regardless of actual water usage, plus an overage charge on usage over and beyond an allowance, if any, associated with the base rate. In theory, the usage or overage cost reflects the additional cost (such as electrical, treatment, and related costs) associated with producing the additional quantity of water. In practice, base and overage rates incorporate these considerations but are also balanced according to customer characteristics and local perceptions of equity.

The rate structure should provide an equitable allocation and distribution of costs to customers according to an objective and consistent basis. This is typically achieved by identifying customer classes with similar user characteristics (residential, commercial, etc.), and taking into account not just the water consumption, but also the system capacity that has been allocated to the customer. The capacity allocation is indicated by the water service meter size. Larger meters allow a higher flowrate which can place a larger claim on the water system's capacity. System capacity affects the sizing of key water system components (supply, mains, pump stations, and reservoirs); the system must be large enough to meet peak demand days regardless of how infrequently such demands occur. An equitable allocation and distribution of costs may take into account customer characteristics, water usage (volume), and potential flowrates (meter capacity).

The rate structure should exhibit simplicity and be easy for customers to understand, relatively easy to implement, and require minimal staff time to obtain and maintain the data used to categorize customers and allocate costs.

The goals of equitable cost allocation and simplicity are often at odds. A balance is needed and usually takes the form of reducing or limiting the number of cost categories and exceptions considered in establishing the cost allocation.

1.2 Methodology

The study begins with a review of current and recent District budgets, projected needs, and budgets for the upcoming 2-year period, and a review of customer characteristics. This information is reviewed and evaluated from the standpoints of customer equity and revenue sufficiency. The Rate Study has been labeled "Phase 1" to indicate the limited extent of its scope. The District has concerns about the current status of the District's budget and the near-term adequacy of its current rates to meet its financial needs. A more detailed rate study will be undertaken after a new water master plan is completed (anticipated at some point in 2022). The more detailed rate study will project budgets farther into the future, evaluate rate structure alternatives, and develop recommendations based on an analysis of the alternatives and the District's plan for implementing recommended capital improvements.

The intent is to develop a workable plan that is appropriate for the Corbett Water District. There have been no complaints or concerns voiced regarding the City's current rate structure or perceived equity among customer categories; consequently, the plan focuses on possible improvements within the current structure rather than wholesale replacement.

A key focus is the development of realistic rate increases to generate a sufficient and reliable revenue stream to meet anticipated budget requirements. The rate recommendations are just that — recommendations only. The District has gone through the budget process for fiscal year 2021-2022 and will go through the budget process for the following year based on actual needs as determined at that time. These will likely vary somewhat from those included in this study. The study does provide some guidance for District staff to adjust the rate increase for fiscal year 2022-2023 to match the budgeted revenue requirements.

1.3 Data

Budget information was obtained from budgets and materials provided by the District. Customer data, meter size, customer categories, usage, and charges were obtained from the District for the period June 26, 2019, to June 24, 2020. Billings and totals were then computed in a spreadsheet.

Customer meters are read and recorded every two months.

SECTION 2 | BUDGET AND REVENUE REQUIREMENTS

2.1 Description

Water utility budgets provide the basis for determining revenue needs. Evaluation of budget components and changes in reserves also indicate whether additional monies should be budgeted and in which categories. In many cases, particularly when rates have not been increased in many years, budgets may have been adjusted to fit revenues. Such adjustments can result in underfunding key elements and functions of the utility such as maintaining adequate staff or timely replacement or maintenance of utility infrastructure.

The District has a single water fund, the General Fund.

2.2 Recent and Current Budgets

2.2.1 General Fund

The District's General Fund is funded primarily through water user fees (water base and usage rates). Recent budgets for the fund are shown in Table 2-1. Budget numbers for fiscal year (FY) 2015-2016 to FY 2019-2020 are based on reported actual numbers for preceding years.

Table 2-1 General Fund Budget

Description	Fiscal Year						
	Actual	Actual	Actual	Actual	Actual	Current	Approved
	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Resources							
Net Working Capital	$552,288	$799,092	$909,867	$1,136,596	$901,800	$997,529[1]	$327,899[1]
Taxes Collected or Projected	$164,017	$165,635	$167,575	$163,493	$170,368	$171,653	$180,000
Previously Levied Taxes	$4,697	$4,594	$4,296	$4,350	$4,200	$4,500	$4,300
Water Sales	$419,466	$403,129	$430,883	$461,372	$413,763	$405,000	$419,000
Base Rate	$170,295	$170,609	$164,584	$165,465	$129,985	$160,000	$162,000
Transfers							
Grants	$10,000					$293,300	$178,300
Loans							$150,000
Other Resources	$83,994	$106,093	$73,113	$52,242	$59,149	$20,000	$8,600
Proposed Rate Increase							$100,000
Total Resources	**$1,404,757**	**$1,649,152**	**$1,750,318**	**$1,983,518**	**$1,679,265**	**$2,051,982**	**$1,530,099**
Expenditures							
Personnel Services	$208,682	$346,161	$289,165	$302,505	$270,663	$518,725	$539,200
Materials and Services	$145,662	$158,936	$160,897	$217,249	$175,506	$246,365	$267,151
Capital Outlay	$112,864	$95,730	$25,204	$423,506	$97,109	$874,000	$468,300
Debt Service	$138,457	$138,458	$138,456	$138,456	$138,458	$138,458	$138,458
Operating Contingency						$80,000	$100,000
Total Expenditures	**$605,665**	**$739,285**	**$613,722**	**$1,081,716**	**$681,736**	**$1,857,548**	**$1,513,109**
Unappropriated Ending Fund Balance	$799,092	$909,867	$1,136,596	$901,800	$997,529	$194,434[1]	$16,991

1. See discussion in Section 2.3.1

2.3 Comments On Recent Budgets

Comments and observations related to the District's General Fund budgets are summarized in subsections that follow.

2.3.1 General Fund

Comments on the Water Operating Fund are listed below.

- Net working capital should be the same as the unappropriated ending fund balance from the previous years. Net working capital of $997,529 was added to the current (FY 2020-2021) budget since it provides a better indication of the budget's overall balance. The figure was not available at the time the budget was finalized. The unappropriated ending fund balance of $194,434 is the result of adding the $997,529 figure. Other components of the current budget have not been adjusted, so the $194,434 is a product of the math and not a true representation of the ending budget. Note that the budget cycle does not end until June 30, 2021. The FY 2021-2022 budget uses a net working capital figure of $327,899. This is an estimate based on the anticipated ending fund balance for FY 2020-2021. Note that the original (budgeted) ending fund balance for FY 2020-2021 was $16,305 so the $327,899 figure represents a considerable reduction in anticipated expenditures.
- Taxes have increased at a modest 0.763 percent average annual growth rate (AAGR) over the first five years in Table 2-1.
- User fee revenue varies according to growth and actual usage. Growth has been nominal over the period shown, so variation in revenue is due primarily to usage.
- Personnel services have varied over the years shown in Table 2-1, with no clear pattern suggesting inflationary increases. There is a marked increase in the 2020-2021 budget that reflects an increase in staff of one full-time employee and additional employee benefits. Overall, personnel services increased approximately $200,000 over the prior five year average.
- Materials and services have varied over the years shown in Table 2-1 and do not trend evenly. The marked increase in the current budget is related to one-time purchases of an excavator and dump truck plus additional contracted services. Materials and services include operations and maintenance costs but excludes staff costs associated with the personnel services budget.
- Capital outlay has increased significantly in recent years as the District moves forward with needed projects.
- Debt service is a steady $138,458+/- and is associated with a 20-year, $2.1 million loan from the Oregon Economic and Community Development Department that matures in December 2025. The District is currently exploring additional grant/loan funding for anticipated projects. Future debt service has not been determined at this time.
- The 2021-2022 budget includes an anticipated rate increase of $100,000. This allows the 2021-2022 budget to end with a positive ending balance.

2.3.2 General Fund – Selected Resources and Expenditures

Table 2-2 includes selected resources and expenditures from Table 2-1. Table 2-2 excludes carryover funds and grants and loans from resources available, and it excludes contingency funds from expenditures. The intent is to view the budget in terms of annual income and expenditures. Selected revenue minus selected expenditures is trending over the years shown from positive

($349,668) to negative (-$170,909). The proposed $100,000 rate increase will proportionately reduce the shortfall. Assuming carryover of the contingency allowance, the budget ends with a positive balance as noted in Section 2.3.1 above; nevertheless, it does signal that an additional rate increase may be needed for fiscal year 2022-2023. It is likely that the more detailed rate study associated with completion of the water master plan will include additional rate increases to meet the basic budget needs and to adequately rebuild reserves.

Table 2-2: Selected Resources and Expenditures

Description	Fiscal Year						
	Actual	Actual	Actual	Actual	Actual	Current	Approved
	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-20221
Selected Resources							
Taxes Collected or Projected	$164,017	$165,635	$167,575	$163,493	$170,368	$171,653	$180,000
Previously Levied Taxes	$4,697	$4,594	$4,296	$4,350	$4,200	$4,500	$4,300
Water Sales	$419,466	$403,129	$430,883	$461,372	$413,763	$405,000	$419,000
Base Rate	$170,295	$170,609	$164,584	$165,465	$129,985	$160,000	$162,000
Other Resources	$83,994	$106,093	$73,113	$52,242	$59,149	$20,000	$8,600
Total Selected Resources	**$842,469**	**$850,060**	**$840,451**	**$846,922**	**$777,465**	**$761,153**	**$773,900**
Selected Expenditures							
Personnel Services	$208,682	$346,161	$289,165	$302,505	$270,663	$518,725	$539,200
Materials and Services	$145,662	$158,936	$160,897	$217,249	$175,506	$246,365	$267,151
Debt Service	$138,457	$138,458	$138,456	$138,456	$138,458	$138,458	$138,458
Total Selected Expenditures	**$492,801**	**$643,555**	**$588,518**	**$658,210**	**$584,627**	**$903,548**	**$944,809**
Difference	$349,668	$206,505	$251,933	$188,712	$192,838	-$142,395	-$170,909

SECTION 3 | EXISTING CUSTOMERS AND WATER USAGE

3.1 Existing Customers and Water Usage

Table 3-1 summarizes customer classes and metered water usage. The period shown corresponds approximately to fiscal year 2019-2020. Single family residential customers, as represented by ¾" residential meters, are the most numerous (1,018 connections out of 1,078 total connections for the District) and use the most water on an annual basis (79.45%). Actual residential use is higher (84.41%) after inclusion of the 26 larger meters. There is notable seasonality to usage across all categories. In general, July-August usage is approximately twice that of bimonthly periods between November and June. All customers are metered and meters are read every two months.

Average annual water usage per ¾" meter residential account is 239.8 gallons per day (gpd). On a monthly basis, the average single-family customer uses approximately 7,290 gallons. In general, overall water usage is moderate and within the range of typical usage.

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Table 3-1: Recent Customer Water Usage

Customer Category	Meter Size	Number of Accounts	Customer Usage (Gallons in 1,000's)						Total Gallons (in1,000's)	Percent of Total Usage
			06/26/2019-08/25/2019	08/26/2019-10/24/2019	10/25/2019-12/25/2019	12/26/2019-02/25/2020	02/26/2020-04/26/2020	04/27/2020-06/24/2020		
Residential										
	3/4"	1018	22,457	18,514	12,712	12,475	10,305	12,628	89,091	79.45
	1"	21	591	657	404	373	266	283	2,573	2.29
	1.5"	4	369	978	857	548	93	111	2,955	2.64
	2"	1	0	0	0	6	10	19	35	0.03
Subtotal		1,044	23,417	20,149	13,973	13,401	10,674	13,041	94,654	84.41
Commercial										
	3/4"	11	414	485	378	334	301	238	2,150	1.92
	1"	2	45	56	22	12	10	22	168	0.15
	2"	2	185	595	248	89	116	1,510	2,743	2.45
	4"	1	386	277	158	34	55	4	914	0.82
	6"	1	213	118	56	84	93	86	650	0.58
Subtotal		17	1,242	1,531	862	553	575	1,861	6,625	5.91
Parks										
	1.5"	1	125	109	76	12	19	16	356	0.32
	2"	2	247	316	84	55	73	64	839	0.75
Subtotal		3	372	425	159	67	92	80	1,195	1.07
Irrigation										
	1.5"	1	0	2	0	0	0	0	2	0.00
	2"	2	254	294	89	8	0	2	647	0.58
Subtotal		3	254	296	89	8	0	2	649	0.58

Customer Category	Meter Size	Number of Accounts	Customer Usage (Gallons in 1,000's)						Total Gallons (in1,000's)	Percent of Total Usage
			06/26/2019-08/25/2019	08/26/2019-10/24/2019	10/25/2019-12/25/2019	12/26/2019-02/25/2020	02/26/2020-04/26/2020	04/27/2020-06/24/2020		
Other Public Authority										
	3/4"	2	2	4	8	533	514	393	1,455	1.30
	1.5"	2	43	46	49	13	16	3	171	0.15
	2"	5	1,287	1,232	412	292	304	146	3,673	3.28
	6"	1	708	713	683	642	644	305	3,695	3.30
Subtotal		10	2,040	1,995	1,153	1,481	1,478	847	8,994	8.02
Private Fire										
	2"	1	15	0	0	0	0	0	15	0.01
Subtotal		1	15	0	0	0	0	0	15	0.01
Total		1,078	27,339	24,396	16,236	15,510	12,819	15,831	112,132	100.00

SECTION 4 | EXISTING RATES AND RATE STRUCTURE

4.1 Rate Structure and Rates

Corbett Water District's current water rates have been in effect since September 1, 2012. Rates are based on a bimonthly service charge associated with meter size. Charges include two components: a base charge, and a usage charge based on $3.95 per 1,000 gallons (for meters that read in gallons) or $2.95 per 100 cubic feet(also known as one unit). Most of the District meters read in cubic feet. There is no usage allowance associated with the base charge.

The rate structure is summarized in Table 4-1. Rate ordinances and a more detailed rate sheet are included in Appendix A.

Table 4-1: Corbett Water Rate Summary

Meter Size (in.)	Bimonthly Base Rate	Effective Meter Capacity Rating factor	Usage Rate	
			(Per 100 cubic feet)	(Per 1,000 gallons)
3/4"	$25.00	1	$2.95	$3.95
1"	$42.00	1.68	$2.95	$3.95
1.5"	$63.00	2.52	$2.95	$3.95
2"	$84.00	3.36	$2.95	$3.95
4"	$174.00	6.96	$2.95	$3.95
6"	$254.00	10.16	$2.95	$3.95
8"	$344.00	13.76	$2.95	$3.95

The base rate reflects meter costs, which vary according to the size of the meter, and the flow capacity of the meter. This is a common method of allocating base costs to customers and is reflected in the effective meter capacity rating factor in Table 4-1.

4.2 Recent Rate Revenue

Rate revenue is shown in Table 4-2 for fiscal year 2019-2020. The figures are based on Corbett Water District Usage Reports provided by the District. The reports include data on usage and associated charges.

Table 4-2: Recent Customer Rate Revenue

Customer Category	Meter Size	Number of Accounts[2]	Customer Rate Revenue[1]						Total Revenue	Percent of Total Revenue
			06/26/2019-08/25/2019	08/26/2019-10/24/2019	10/25/2019-12/25/2019	12/26/2019-02/25/2020	02/26/2020-04/26/2020	04/27/2020-06/24/2020		
Residential										
Usage	3/4"	1018	$88,568	$73,016	$50,133	$49,200	$40,641	$49,802	$351,360	56.93
Usage	1"	21	$2,331	$2,590	$1,593	$1,469	$1,050	$1,115	$10,148	1.64
Usage	1.5"	4	$1,454	$3,859	$3,381	$2,159	$366	$437	$11,655	1.89
Usage	2"	1	$0	$0	$0	$24	$39	$77	$139	0.02
Usage Subtotal		1,044	$92,353	$79,464	$55,106	$52,852	$42,096	$51,431	$373,302	60.48
Base (All Meters)[3]			$26,856	$26,634	$26,657	$26,767	$26,821	$26,871	$160,606	26.02
Subtotal Base plus Usage			*$119,209*	*$106,098*	*$81,763*	*$79,619*	*$68,917*	*$78,302*	*$533,908*	*86.50*
Commercial										
Usage	3/4"	11	$1,631	$1,912	$1,493	$1,316	$1,189	$938	$8,478	1.37
Usage	1"	2	$177	$221	$86	$47	$41	$89	$661	0.11
Usage	2"	2	$728	$2,348	$979	$351	$457	$5,956	$10,820	1.75
Usage	4"	1	$1,522	$1,092	$622	$136	$215	$18	$3,605	0.58
Usage	6"	1	$841	$466	$221	$330	$366	$339	$2,564	0.42
Subtotal		17	$4,900	$6,039	$3,401	$2,180	$2,269	$7,340	$26,128	4.23
Base (All Meters)[3]			$1,148	$1,208	$979	$1,245	$1,121	$1,090	$6,790	1.10
Subtotal Base plus Usage			$6,047	$7,246	$4,380	$3,425	$3,390	$8,430	$32,918	5.33
Parks										
Usage	1.5"	1	$493	$431	$298	$47	$74	$62	$1,404	0.23
Usage	2"	2	$974	$1,245	$330	$218	$289	$254	$3,310	0.54
Subtotal		3	$1,466	$1,676	$628	$266	$363	$316	$4,714	0.76
Base (All Meters)[3]			$231	$231	$231	$231	$231	$231	$1,386	0.22
Subtotal Base plus Usage			$1,697	$1,907	$859	$497	$594	$547	$6,100	0.99

Customer Category	Meter Size	Number of Accounts[2]	Customer Rate Revenue[1]						Total Revenue	Percent of Total Revenue
			06/26/2019-08/25/2019	08/26/2019-10/24/2019	10/25/2019-12/25/2019	12/26/2019-02/25/2020	02/26/2020-04/26/2020	04/27/2020-06/24/2020		
Irrigation										
Usage	1.5"	0	$0	$9	$0	$0	$0	$0	$9	0.00
Usage	2"	3	$1,000	$1,159	$351	$32	$0	$9	$2,552	0.41
Subtotal		3	$1,000	$1,168	$351	$32	$0	$9	$2,561	0.41
Base (All Meters)[3]			$293	$336	$252	$252	$168	$175	$1,476	0.24
Subtotal Base plus Usage			*$1,293*	*$1,504*	*$603*	*$284*	*$168*	*$184*	*$4,037*	*0.65*
Other Public Authority										
Usage	3/4"	2	$9	$15	$32	$2,103	$2,027	$1,552	$5,738	0.93
Usage	1.5"	2	$168	$183	$195	$53	$62	$12	$673	0.11
Usage	2"	5	$5,077	$4,859	$1,625	$1,151	$1,201	$575	$14,487	2.35
Usage	6"	1	$2,797	$2,816	$2,698	$2,536	$2,544	$1,205	$14,595	2.36
Subtotal		10	$8,051	$7,873	$4,550	$5,843	$5,833	$3,344	$35,493	5.75
Base (All Meters)[3]			$687	$684	$686	$687	$686	$728	$4,158	0.67
Subtotal Base plus Usage			*$8,737*	*$8,557*	*$5,237*	*$6,530*	*$6,519*	*$4,072*	*$39,651*	*6.42*
Private Fire										
Usage	2"	1	$58	$0	$0	$0	$0	$0	$58	0.01
Subtotal		1	$58	$0	$0	$0	$0	$0	$58	0.01
Base (All Meters)[3]			$113	$84	$84	$84	$84	$84	$533	0.09
Subtotal Base plus Usage			*$172*	*$84*	*$84*	*$84*	*$84*	*$84*	*$592*	*0.10*
Subtotal Usage			$107,828	$96,220	$64,037	$61,173	$50,560	$62,438	$442,256	71.65
Subtotal Base			$29,328	$29,176	$28,889	$29,267	$29,110	$29,180	$174,949	28.35
Total		**1,078**	**$137,155**	**$125,396**	**$92,926**	**$90,439**	**$79,671**	**$91,618**	**$617,205**	**100.00**

1. Entries are rounded to nearest dollar.
2. Total accounts in June 2020.
3. Base includes "variable base " rate associated with out-of-District customers.

4.3 EVALUATION

Table 4-3 incorporates information from Table 3-1 and Table 4-2, and shows recent usage and revenue in terms of percentages for each customer class. In general, revenue for each class is approximately proportional to water usage in terms of percent revenue and percent water usage.

Table 4-3: Revenue versus Usage

Customer Category	Percent of Total Usage	Percent of Total Revenue
Residential	84.41	86.50
Commercial	5.91	5.33
Parks	1.07	0.99
Irrigation	0.58	0.65
Other Public Authority	8.02	6.42
Private Fire	0.01	0.10

Base fees account for 28.35 percent of total rate revenue; usage fees account for the remaining 71.65 percent of rate revenue. The high percentage of costs associated with usage contributes to the relative balance between customer categories in terms of usage and revenue. Such a balance suggests an equitable sharing of system costs; however, it also carries significant risk regarding the reliability of anticipated revenues. Most of the District's budget requirements are fixed and do not vary according to water usage. Recessions and other social impacts, or new rate increases, can result in people cutting back on usage to reduce their water bills. While this may sound like a positive advantage for anyone suffering economic setback, it can result in shortfalls in District revenues. With sufficient contingency funds, such setbacks may not be overly onerous provided the shortfall period is relatively short in duration; however, it may be necessary to raise rates to generate sufficient income to meet the budget needs. A more typical cost allocation is approximately 70 percent on base rates and 30 percent on usage. Such an allocation would likely require the District to consider different rate structures to maintain an equitable distribution of costs; such considerations are outside of the scope of this rate study.

The large reliance on the usage rate component also means the District's rate revenue can also be adversely impacted by conservation programs.

SECTION 5 | BUDGET PROJECTION AND ANTICIPATED FUTURE REVENUE REQUIREMENTS

5.1 Budget Projection Overview

Rate increases are implemented to meet the revenue requirements established in the General Fund budget. Discussions with District staff anticipate that the fiscal year 2022-2023 General Fund budget will be like the 2021-2022 budget but with a lower materials and services budget (assuming purchases and contracted services discussed in Section 2.3.1 are completed). The District is currently applying for funding of several projects. Funding typically includes a loan component; consequently, the associated debt service will need to be addressed in future budgets. This may or may not be an issue for the 2022-2023 budget since some programs allow for payments to commence after project completion. Unless there is greater than anticipated ending fund balance, plus unutilized contingency, it is possible that an additional rate increase will be needed for fiscal year 2022-2023. This can be determined during the budget process and the increase allocated to either base rates, usage rates, or a combination in a manner similar to that noted in this rate study.

5.2 Key Considerations

The following budget considerations primarily pertain to the District's General Fund budget.

Growth: Community growth has been relatively nominal. From the standpoint of this rate study, we are conservatively estimating no growth over the next few years. To the extent that growth occurs, the additional rate revenue can be used to build up the cash reserves or reduce the size of the next rate increase.

Inflation: Costs typically increase each year regardless of actual community growth. Communities with active system growth can sometimes generate sufficient revenue from the new connections to meet budget requirements. More typically, this is not the case.

Budget Goals: The primary budget goal is to provide adequate funds for utility needs including capital improvements and contingencies. Revenue needs are primarily met with rate revenue. This should increase annually to meet budget needs. The increase in revenue receipts can best be accomplished by small annual rate increases, the magnitude of which can be estimated concurrently with the District's budget development process (which occurs in winter/spring), and implemented for the upcoming fiscal year. Future budgets will need to include sufficient monies for the completion of the Capital Improvement Plan that will be included in the upcoming Water Master Plan.

5.3 Reserve (Contingency) Recommendations

Reserve or contingency funds represent the difference between resources and expenditures. At the end of the fiscal year, this becomes the "beginning balance" (net working capital) in the General Fund in the new fiscal year's budget. Having this cash available allows the District to meet its financial obligations despite variations or shortfalls in the revenue stream. It can also be used for unexpected expenses such as emergency repairs that are larger and exceed the cost of budgeted operations and maintenance monies.

The reserve funds can also be used to defer a rate increase because of real or perceived economic hardship. This is ultimately an unsustainable practice and places the District in a vulnerable position with respect to meeting its financial obligations; consequently, future rate increases should be large enough to build back reserves.

SECTION 6 | PROPOSED RATE STRUCTURES AND RATES FOR CONSIDERATION

6.1 Alternatives Considered

There are no issues or concerns with the District's current rate structure and cost allocation to the various customer classes. The rates appear equitable and there have not been complaints to the contrary. Alternatives are limited to percent allocation of the desired increase to base rates and the usage rate. The District has identified a need for a $100,000 rate increase to meet budget needs in the near-term. Based on the District's budget, this is adequate, but based on the figures in Table 2-2, a higher rate increase could be justified. The budgeted $100,000 is retained here with the understanding that consideration will be given to additional increases for FY 2022-2023 if needed.

6.2 Rate Increase Alternatives

These alternatives retain the current rate structure that has a per-unit usage charge in addition to a fixed base rate. Each alternative includes a calculation for the budgeted $100,000 plus an additional calculation for a five percent additional contingency to provide an allowance for some customers cutting back on usage to offset costs of the rate increase. Alternatives include:

Alternative 1: allocates 60 percent of the increase to the base rate and 40 percent to usage rates.

Alternative 2: allocates 50 percent of the increase to the base rate and 50 percent to usage rates.

Alternative 3: allocates 100 percent of the increase to the base rate and 0 percent to usage rates.

Alternative 4: allocates 0 percent of the increase to the base rate and 100 percent to usage rates.

The rate increase alternatives are shown in Table 6-1.

Table 6-1 Proposed FY 2021-2022 Rate Increase - Alternative 1

	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	As budgeted	Plus 5%	As budgeted	Plus 5%	As budgeted	Plus 5%	As budgeted	Plus 5%
Revenue goal:	$100,000	$105,000	$100,000	$105,000	$100,000	$105,000	$100,000	$105,000
Allocation to base rate (percent):	60	60	50	50	100	100	0	0
Allocation to usage rate (percent):	40	40	50	50	0	0	100	100
FY 2021-2022 budget:								
Base rate revenue:	$162,000	$162,000	$162,000	$162,000	$162,000	$162,000	$162,000	$162,000
Usage rate revenue:	$419,000	$419,000	$419,000	$419,000	$419,000	$419,000	$419,000	$419,000
Additional rate revenue:								
Base rate revenue:	$60,000	$63,000	$50,000	$52,500	$100,000	$105,000	$0	$0
Usage rate revenue:	$40,000	$42,000	$50,000	$52,500	$0	$0	$100,000	$105,000
Revenue with rate increase:								
Base rate revenue:	$222,000	$225,000	$212,000	$214,500	$262,000	$267,000	$162,000	$162,000
Usage rate revenue:	$459,000	$461,000	$469,000	$471,500	$419,000	$419,000	$519,000	$524,000
Net increase (percent):								
Base rate:	37.04	38.89	30.86	32.41	61.73	64.81	0.00	0.00
Usage rate:	9.55	10.02	11.93	12.53	0.00	0.00	23.87	25.06
Base rate:								
Current 3/4" meter:	$25.00	$25.00	$25.00	$25.00	$25.00	$25.00	$25.00	$25.00
Proposed 3/4" meter:	**$34.26**	**$34.72**	**$32.72**	**$33.10**	**$40.43**	**$41.20**	**$25.00**	**$25.00**
Increase 3/4" meter:	*$9.26*	*$9.72*	*$7.72*	*$8.10*	*$15.43*	*$16.20*	*$0.00*	*$0.00*
Current 1" meter:	$42.00	$42.00	$42.00	$42.00	$42.00	$42.00	$42.00	$42.00
Proposed 1" meter:	**$57.56**	**$58.33**	**$54.96**	**$55.61**	**$67.93**	**$69.22**	**$42.00**	**$42.00**
Increase 1" meter:	*$15.56*	*$16.33*	*$12.96*	*$13.61*	*$25.93*	*$27.22*	*$0.00*	*$0.00*
Current 1.5" meter:	$63.00	$63.00	$63.00	$63.00	$63.00	$63.00	$63.00	$63.00
Proposed 1.5" meter:	**$86.33**	**$87.50**	**$82.44**	**$83.42**	**$101.89**	**$103.83**	**$63.00**	**$63.00**
Increase 1.5" meter:	As budgeted	Plus 5%	As budgeted	Plus 5%	As budgeted	Plus 5%	As budgeted	Plus 5%

	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	As budgeted	Plus 5%	As budgeted	Plus 5%	As budgeted	Plus 5%	As budgeted	Plus 5%
Current 2" meter:	$84.00	$84.00	$84.00	$84.00	$84.00	$84.00	$84.00	$84.00
Proposed 2" meter:	**$115.11**	**$116.67**	**$109.93**	**$111.22**	**$135.85**	**$138.44**	**$84.00**	**$84.00**
Increase 2" meter:	$31.11	$32.67	$25.93	$27.22	$51.85	$54.44	$0.00	$0.00
Current 4" meter:	$174.00	$174.00	$174.00	$174.00	$174.00	$174.00	$174.00	$174.00
Proposed 4" meter:	**$238.44**	**$241.67**	**$227.70**	**$230.39**	**$281.41**	**$286.78**	**$174.00**	**$174.00**
Increase 4" meter:	$64.44	$67.67	$53.70	$56.39	$107.41	$112.78	$0.00	$0.00
Current 6" meter:	$254.00	$254.00	$254.00	$254.00	$254.00	$254.00	$254.00	$254.00
Proposed 6" meter:	**$348.07**	**$352.78**	**$332.40**	**$336.31**	**$410.79**	**$418.63**	**$254.00**	**$254.00**
Increase 6" meter:	$94.07	$98.78	$78.40	$82.31	$156.79	$164.63	$0.00	$0.00
Current 8" meter:	$344.00	$344.00	$344.00	$344.00	$344.00	$344.00	$344.00	$344.00
Proposed 8" meter:	**$471.41**	**$477.78**	**$450.17**	**$455.48**	**$556.35**	**$566.96**	**$344.00**	**$344.00**
Increase 8" meter:	$127.41	$133.78	$106.17	$111.48	$212.35	$222.96	$0.00	$0.00
Usage rate:								
Current (per 100 CF):	$2.95	$2.95	$2.95	$2.95	$2.95	$2.95	$2.95	$2.95
Proposed (per 100 CF):	**$3.23**	**$3.25**	**$3.30**	**$3.32**	**$2.95**	**$2.95**	**$3.65**	**$3.69**
Increase (per 100 CF):	*$0.28*	*$0.30*	*$0.35*	*$0.37*	*$0.00*	*$0.00*	*$0.70*	*$0.74*
Current (per 1,000 gal):	$3.95	$3.95	$3.95	$3.95	$3.95	$3.95	$3.95	$3.95
Proposed (per 1000 gal):	**$4.33**	**$4.35**	**$4.42**	**$4.44**	**$3.95**	**$3.95**	**$4.89**	**$4.94**
Increase (per 1,000 gal):	*$0.38*	*$0.40*	*$0.47*	*$0.49*	*$0.00*	*$0.00*	*$0.94*	*$0.99*
Example 3/4" meter bimonthly billing:								
For 100 CF:	$37.49	$37.97	$36.02	$36.42	$43.38	$44.15	$28.65	$28.69
For 200 CF:	$40.72	$41.21	$39.32	$39.74	$46.33	$47.10	$32.31	$32.38
For 400 CF:	$47.19	$47.71	$45.92	$46.38	$52.23	$53.00	$39.62	$39.76
For 800 CF:	$60.11	$60.69	$59.13	$59.66	$64.03	$64.80	$54.23	$54.51
For 1,000 CF:	$66.58	$67.18	$65.74	$66.30	$69.93	$70.70	$61.54	$61.89
For 1,200 CF:	$73.04	$73.67	$72.34	$72.94	$75.83	$76.60	$68.85	$69.27
For 1,500 CF:	$82.73	$83.41	$82.25	$82.90	$84.68	$85.45	$79.81	$80.34
For 2,000 CF:	$98.89	$99.64	$98.76	$99.49	$99.43	$100.20	$98.08	$98.79

6.3 RATE INCREASE ALTERNATIVES - DISCUSSION

Alternatives 1 and 2 are similar in terms of overall impact (see bimonthly billing examples at the bottom of Table 6-1). Alternative 2 is $1.47 lower than Alternative 1 for 100 cubic feet (CF) usage and this advantage gradually diminishes to $0.13 for 2,000 CF usage. Alternatives 3 and 4 have been included primarily to show the impacts of placing all of the rate increase on either the base rate or the usage rate. Alternative 3 results in the highest rates for low water users. Alternative 4 results in the lowest rates for low water users. At bimonthly usage of 2,000 CF, all of the alternatives appear approximately comparable; however, other customers, such as commercial, with higher usage would see progressively higher billings under Alternative 4. Alternatives 3 and 4 would result in benefits to some customers at the expense of others and could raise equity issues. Analysis of these issues and recommendations to address them are outside of the scope of this study.

SECTION 7 | RATE RECOMMENDATIONS

7.1 Rate Structure and Rates

Rate Alternatives 1 or 2 are recommended for District consideration. These alternatives continue the District's existing rate structure and are easily implemented. Alternative 1, by placing more weight on the base rate, provides a more dependable revenue stream than Alternative 2. Alternative 2 (50% base/ 50% usage allocation) provides a modest reduction in cost to low water users. The increase is reasonably equitable and easy to implement and understand. Alternatives 3 and 4 may be disruptive to implement since customers would be more disproportionately affected.

7.2 Comparison with Other Communities

A comparison of residential water rates for several communities is provided in Table 7-1.

The table also includes Corbett rate Alternatives 1 and 2. Note that Table 7-1 is based on *monthly* costs. For Corbett this is calculated as one-half the bimonthly base rate, plus usage.

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Table 7-1: Comparison of Corbett (Existing and Proposed) Residential Water Rates with Nearby Communities

Community	Monthly Base Rate[1] ($)	Property Tax ($/$1000)[2]	Usage Cost per 100 cubic feet ($)	Rate Adopted (Year)[3]	Single-Family Residential Monthly Bill For Indicated Usage			
					(400 cu. ft.) ($)	(600 cu. ft.) ($)	(800 cu. ft.) ($)	(1,000 cu. ft.) ($)
Boring Water District	$33.83	$0.00	$1.90	2020	$41.43	$45.23	$49.03	$52.83
Corbett Water District	$12.50	$0.58	$2.95	2012	$24.30	$30.20	$36.10	$42.00
Corbett Water District (Alt. 1)	$17.13	$0.58	$3.23	2021	$30.05	$36.51	$42.97	$49.43
Corbett Water District (Alt. 2)	$16.36	$0.58	$3.30	2021	$29.56	$36.16	$42.76	$49.36
Crystal Springs Water District	$56.35	$0.00	$4.30	2017	$73.55	$82.15	$90.75	$99.35
Oak Lodge Water Services	$17.87	$0.00	$1.18	2020	$22.59	$24.95	$27.31	$29.67
Pleasant Home Water	$0.00	$0.00	$2.91	2017[5]	$11.64	$17.46	$23.28	$29.10
Sunrise Water Authority	$18.00	$0.00	$1.75	NA[6]	$25.00	NA	NA	NA
Sunrise Water Authority	$18.00	$0.00	$2.50	NA[6]	NA	$30.00	$35.00	$40.00

1. Single-Family Rate for inside city/district boundaries and adjusted if necessary to reflect cost per month. Communities shown do not have a usage (volume) allowance associated with the base rate.
2. Dollars per $1,000 of taxable assessed value.
3. Proposed date for adoption if selected for implementation.
4. Does not include property tax component.
5. Planning to increase rates next year.
6. Discussion with staff indicated that service charges were increased 3-4 years ago; currently anticipating a rate increase.

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Corbett Water District
Phase 1 Water Rate Study
Corbett, Oregon

Appendix A
Corbett Water District Rates

PACE
An Engineering Services Company

Corbett
Water District

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Corbett Water District

Rates as of March 2018

Base Rate	$25.00	133.69 cubic feet = 1,000 gallons
Per 1,000 gallons	$ 3.95	1,000 gallons = 1 unit
Per 100 cubic feet	$ 2.95	100 cubic feet = 1 unit

Quick Price Chart for 3/4 inch Meter

Gallon Units	Amount	Gallon Units	Amount	Cubic Feet Units	Amount	Cubic Feet Units	Amount
1	$ 3.95	26	$ 102.70	1	$ 2.95	26	$ 76.70
2	$ 7.90	27	$ 106.65	2	$ 5.90	27	$ 79.65
3	$ 11.85	28	$ 110.60	3	$ 8.85	28	$ 82.60
4	$ 15.80	29	$ 114.55	4	$ 11.80	29	$ 85.55
5	$ 19.75	30	$ 118.50	5	$ 14.75	30	$ 88.50
6	$ 23.70	31	$ 122.45	6	$ 17.70	31	$ 91.45
7	$ 27.65	32	$ 126.40	7	$ 20.65	32	$ 94.40
8	$ 31.60	33	$ 130.35	8	$ 23.60	33	$ 97.35
9	$ 35.55	34	$ 134.30	9	$ 26.55	34	$ 100.30
10	$ 39.50	35	$ 138.25	10	$ 29.50	35	$ 103.25
11	$ 43.45	36	$ 142.20	11	$ 32.45	36	$ 106.20
12	$ 47.40	37	$ 146.15	12	$ 35.40	37	$ 109.15
13	$ 51.35	38	$ 150.10	13	$ 38.35	38	$ 112.10
14	$ 55.30	39	$ 154.05	14	$ 41.30	39	$ 115.05
15	$ 59.25	40	$ 158.00	15	$ 44.25	40	$ 118.00
16	$ 63.20	41	$ 161.95	16	$ 47.20	41	$ 120.95
17	$ 67.15	42	$ 165.90	17	$ 50.15	42	$ 123.90
18	$ 71.10	43	$ 169.85	18	$ 53.10	43	$ 126.85
19	$ 75.05	44	$ 173.80	19	$ 56.05	44	$ 129.80
20	$ 79.00	45	$ 177.75	20	$ 59.00	45	$ 132.75
21	$ 82.95	46	$ 181.70	21	$ 61.95	46	$ 135.70
22	$ 86.90	47	$ 185.65	22	$ 64.90	47	$ 138.65
23	$ 90.85	48	$ 189.60	23	$ 67.85	48	$ 141.60
24	$ 94.80	49	$ 193.55	24	$ 70.80	49	$ 144.55
25	$ 98.75	50	$ 197.50	25	$ 73.75	50	$ 147.50

Meter Size	3/4"	1"	1.5"	2"	4"	6"	8"
Hookup Fee	$5,000.00	$5,200.00	$5,900.00	$6,900.00	Cost	Cost	Cost

Meter Size	3/4"	1"	1.5"	2"	4"	6"	8"
Bi-Monthly Base Rate	$25.00	$42.00	$63.00	$84.00	$174.00	$254.00	$344.00

The bi-monthly charge for an active meter in the 3/4" size, is a base charge for bi-monthly service and ***does not*** include any water.
Usage is charged @ $3.95 per 1,000 gallons or $2.95 per 100 cubic ft

3/4" meter		*1" meter*		*1.5" meter*		*2" meter*	
Base Rate	$ 25.00	Base Rate	$ 42.00	Base Rate	$ 63.00	Base Rate	$ 84.00
1,000 gallons	$ 28.95	1,000 gallons	$ 45.95	1,000 gallons	$ 66.95	1,000 gallons	$ 87.95
5,000 gallons	$ 44.75	5,000 gallons	$ 61.75	5,000 gallons	$ 82.75	5,000 gallons	$ 98.75
100 cubic ft	$ 27.95	100 cubic ft	$ 44.95	100 cubic ft	$ 65.95	100 cubic ft	$ 86.95
500 cubic ft	$ 39.75	500 cubic ft	$ 56.75	500 cubic ft	$ 77.75	500 cubic ft	$ 98.75

ORDINANCE 2012.05.01 OF THE CORBETT WATER DISTRICT

ADJUSTING BI-MONTHLY BASE RATES

The Board of Commissioners of the Corbett Water District has found and determined as follows:

Whereas, the Corbett Water District does not produce enough revenue for the payment on the Oregon Economic & Community Development Department loan with the current reservoir rate surcharge, and

Whereas, the District needs to adjust the base meter charge in order to generate enough revenue for the repayment of the loan,

NOW, THEREFORE it is hereby resolved that the Corbett Water District adjust the following Bi-Monthly Base Rate for particular meter sizes:

.75" - $25.00, **1"** $42.00, **1.5"** - $63.00, **2"** - $84.00, **4"** $174.00, **6"** - $254.00, **8"** - $344.00

These base rates become effective September 1, 2012 and will appear on the bills mailed approximately November 1, 2012.

Jeff Hargens, Chairman

Robert Gaughan, Vice Chairman

Sonny Boyd, Secretary/Treasurer

Kevin Wilhelm, Commissioner

Robert Churnside, Commissioner

JMJ
7/9/12

MULTNOMAH COUNTY OREGON

Division of Assessment & Taxation
501 SE Hawthorne #158
Portland OR 97214
Recording Section (503) 988-3034

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ORDINANCE 2012.05.02 OF THE CORBETT WATER DISTRICT

ADJUSTING BI-MONTHLY WATER USE RATES

The Board of Commissioners of the Corbett Water District has found and determined as follows:

Whereas, the Corbett Water District Board of Commissioners has recognized the need for a water rate increase due to economy inflation and the need for capital projects, and

Whereas, the District needs to adjust the water rate per unit in order to generate enough revenue for the operation of the General Fund.

NOW, THEREFORE it is hereby resolved that the Corbett Water District adjust the following water use rate:

100 cubic feet (unit) = $2.95 or 1,000 gallons (unit) = $3.95

These rates become effective September 1, 2012 and will appear on the bills mailed approximately November 1, 2012.

Jeff Hargens, Chairman

Robert Gaughan, Vice Chairman

Sonny Boyd, Secretary/Treasurer

Kevin Wilhelm, Commissioner

Robert Churnside, Commissioner

JMJ
7/9/12

MULTNOMAH COUNTY OREGON

Division of Assessment & Taxation
501 SE Hawthorne #158
Portland OR 97214
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