



TUALATIN VALLEY
WATER DISTRICT

2022-23
Financial Plan



Approved by Resolution 07-22
on May 18, 2022

1850 SW 170th Ave., Beaverton, OR 97003
Phone: (503) 848-3000
www.TVWD.org

For 2-sided printing, this page intentionally left blank.

Table of Contents

Table of Contents	1
List of Tables.....	2
List of Figures.....	3
1 Introduction	5
1.1 The Forecast Model	6
1.2 Notable Changes from Prior Financial Plan	6
1.3 Financial Plan Section Descriptions and Highlights.....	8
1.4 Conclusion.....	12
2 Financial Management Objectives and Policies.....	13
2.1 Financial Management Objectives.....	13
2.2 Key Financial Policies and Assumptions.....	14
2.3 District Credit Ratings	18
3 Water Sales Projections	21
3.1 Water Sources.....	21
3.2 Water Demand Forecast	23
4 Capital Improvement Plan	27
5 Capital Financing Plan	29
5.1 Borrowing Options	29
5.2 Optimizing the Capital Financing Mix	31
5.3 Significant Debt Program Assumptions	33
5.4 Schedule of Future Debt Issuance	34
6 Financial Forecast.....	37
6.1 District Rates and Charges	37
6.2 Projected Rates and Charges	37
6.3 Projected Sources of Funds.....	38
6.4 Projected Uses of Funds.....	41
6.5 Detailed Financial Projections.....	44
7 Funds and Reserves	45
7.1 Description of District Funds.....	45
7.2 Projected Reserve Balances	47
7.3 Conclusion.....	49

Appendices	51
A. Proposed Financial Plan Assumptions for the Financial Management Policies.....	53
B. Ordinance 01-19 – Authorizing the Issuance of Debt.....	55
C. Master Revenue Bond Declaration.....	59
D. First Supplement to Master Revenue Bond Declaration	93
E. Parity Certificate and Transcript Documents.....	99
F. PERS Valuation Report	111
G. Forecast Model Summary Results	133
H. Map – Tualatin Valley Water District (Washington County, Oregon).....	197

List of Tables

Table 1-1: Updated Assumptions in the District’s Forecast and Financial Plan.....	7
Table 2-1: Rating Scales by Agency.....	19
Table 4-1: Forecast CIP Expenditures by Category and Fiscal Year (\$ Millions)	27
Table 5-1: WIFIA Capitalized Interest and Total Financing (\$ Millions).....	33
Table 5-2: Projected WIFIA Funding and Revenue Bond Issuances (\$ Millions).....	34
Table 6-1: Revenues and Other Funding Sources by Fiscal Year (\$ Millions)	39
Table 6-2: Annual Expenditures and Increases in Reserves by Fiscal Year (\$ Millions).....	42
Table 6-3: Source Water Rates and Total Costs (FY2023–FY2027).....	43

List of Figures

Figure 1-1: Water Sales and Meters Forecast by Fiscal Year	8
Figure 1-2: Projected CIP Expenditures	8
Figure 1-3: Five-Year Financing Mix (Cash v. Debt, FY2023-FY2027).....	9
Figure 1-4: Projected Debt Repayments (Total Debt Service on WIFIA and Revenue Bonds)	9
Figure 1-5: Rate Adjustments and Typical Bill Impacts by Fiscal Year	10
Figure 1-6: Projected Debt Service Coverage Ratio	10
Figure 1-7: Projected Net Leverage Ratio	11
Figure 1-8: Projected Year-End Cash Balances by Fiscal Year	11
Figure 2-1: Spread Between ‘AA’ versus ‘A’ Rated Debt* – The Benefit of Staying ‘AA’ or Better	19
Figure 3-1: Comparison of Existing Supplies and Related Costs	22
Figure 3-2: Current v. Future Source Water Capacity.....	23
Figure 3-3: Balancing Water Supplies and Demand by Fiscal Year	25
Figure 4-1: Projected Annual CIP Expenditures by Fiscal Year	28
Figure 5-1: CIP Funding Sources by Fiscal Year	32
Figure 5-2: Five-Year CIP Funding Ratios by Source (Cash and Debt, FY2023-FY2027)	32
Figure 5-3: Projected Annual Debt Service by Fiscal Year	35
Figure 5-4: Projected Debt Service Coverage	35
Figure 5-5: Projected Net Leverage Ratio	36
Figure 6-1: Projected Rate Adjustments and Typical Bills by Fiscal Year.....	38
Figure 6-2: Projected Sources of Funds by Fiscal Year.....	38
Figure 6-3: Projected Uses of Funds by Fiscal Year.....	41
Figure 7-1: Projected Year-End Cash Balances by Fiscal Year	48
Figure 7-2: Cash and Investments Year-end Balances and Annual Targets by Fiscal Year	49
Figure 7-3: Debt Service Reserve Balance Requirements by Fiscal Year	49

For 2-sided printing, this page intentionally left blank.

1 Introduction

Tualatin Valley Water District (TVWD or *District*) serves about 60,000 accounts in parts of Washington County, Oregon. The District's service area is about 41 square miles, home to approximately 218,000 people in portions of the cities of Beaverton, Hillsboro, Tigard, and unincorporated Washington County. In the fiscal year ended June 30, 2021 (FY2021), the District supplied an average of 22.2 million gallons of water per day (MGD) to its customers. The daily amounts ranged from a minimum of approximately 14.2 million gallons (MG) to a peak day of 39.1 MG.

To provide this service to its customers, the District currently relies on three water sources: the City of Portland Water Bureau (Portland), the Joint Water Commission (JWC)¹, and Grabhorn Aquifer Storage and Recovery (ASR). The District's capacity from Portland includes 42.3 MGD in the Washington County Supply Line (WCSL).² The District also has 14.5 MGD available from the JWC. The total of these amounts is well above the average and peak daily flow requirements of the District's customers.

To deliver water to its customers, the District maintains approximately 758 miles of pipe, ranging in size from 2 to 60 inches. Thirteen pumping stations move water throughout the District. There are 23 finished water reservoirs with a combined storage capacity of 67 MG. The major pumping stations and the reservoirs have full telemetry control systems. The District's water system is monitored 24 hours a day, seven days a week. In addition to monitoring water flows and pressure, the District's state-of-the-art Supervisory Control and Data Acquisition (SCADA) system monitors several water quality parameters and security alarms. If the system identifies anything out of the ordinary, alarms alert an operator to the possible problem and staff are dispatched as needed.

Maintaining a reliable and efficient water system is a major focus at TVWD. Infrastructure projects are planned and constructed year-round to meet current and future water needs. At any given time, the District will be engaged in a variety of these projects including pipe replacement, reservoir construction, and building improvements. Additionally, the District is engaged in a major infrastructure project to develop a new water source for the Tualatin Valley. The source development project is commonly referred to as the Willamette Water Supply Program (WWSP) and includes capital improvements that are part of two new regional water entities. The District serves as the Managing Agency for each entity:

1. Willamette Intake Facilities (WIF) Commission – The WIF is a joint venture of the District and the cities of Beaverton, Hillsboro, Sherwood, Tigard, and Wilsonville to jointly own and operate a raw water intake facility located at the current Willamette River Water Treatment Plant in Wilsonville, Oregon.
2. Willamette Water Supply System (WWSS) Commission – The WWSS is a joint venture of the District and the cities of Beaverton and Hillsboro to construct and operate supply facilities that convey raw water from the WIF, treat the raw water to potable standards, and convey the potable water to each partner's distribution systems.³

¹ The District is a partner in the JWC along with the cities of Beaverton, Forest Grove, and Hillsboro.

² The WCSL is a 60-inch gravity supply conduit that flows approximately 14 miles from Portland's Powell Butte Reservoirs to the District's eastern boundary.

³ The WWSP website (<http://www.ourreliablewater.org/>) provides additional information including activities-to-date, maps, and other related information for all WIF and WWSS projects.

The WWSP began in FY2014 and will be complete in FY2026. Its total program cost (including inflation) is substantial at approximately \$1.6 billion. Until 2018, the District had assumed that it would fund its projected share (approximately \$729 million at the time) with cash and revenue bond proceeds.⁴ In 2019, the District and its WWSS partner, the City of Hillsboro (Hillsboro), applied for loans through the Water Infrastructure Finance and Innovation Act (WIFIA) program, a federal loan and guarantee program administered by the U.S. Environmental Protection Agency (EPA). The District closed its original WIFIA loan agreement on August 2, 2019 and Hillsboro closed its agreement shortly thereafter. Section 5.1.1 provides additional details on the District’s original WIFIA loan, amendments made in the spring of 2020, and the District’s re-executed loan which closed on September 15, 2020.

To forecast its financial resource requirements, including future revenues from rates and charges, the District maintains a financial forecast model (Forecast) that is used to analyze revenue requirements⁵ scenarios under alternative capital improvements plans and cost assumptions.

1.1 The Forecast Model

This Financial Plan summarizes the Forecast results, which are based on the District’s latest data and assumptions. These data and assumptions include capital improvement plan (CIP) costs, operations and maintenance (O&M) costs, rate and non-rate revenues, system development charge (SDC) collections, reserve funds, and various assumptions around interest rates and cost escalation factors.

The model examines the impacts of funding capital improvements with a mix of rate revenue, reserves, system development charges, and proceeds from future borrowings. The scenario presented in this Financial Plan is based on the District’s latest CIP projections, budget numbers, and collective estimates of interest rates and escalation factors as of May 2022. The scenario is projected to generate enough revenue to meet the District’s future revenue requirements, maintain prudent reserve fund balances, exceed target minimum debt service coverage ratios, and mitigate the impacts of the new Capital Financing Plan on the District’s projected net leverage ratio.

The Forecast that this Financial Plan is based on uses the 30-year planning period of FY2022 through FY2051. However, in most instances, this Financial Plan provides summary data from the first 10 years of the forecast period (i.e., FY2023-FY2032). Throughout this document, this period may be referred to as the “10-year presentation period” or simply the “presentation period”.

1.2 Notable Changes from Prior Financial Plan

1.2.1 COVID-19

Although the COVID-19 pandemic is not new this year, the economic pressures it kickstarted are still having impacts on the District’s financial performance. To measure these impacts, the District continues to monitor key indicators including the average age of account receivable (AR Aging) and days of sales outstanding (DSO). Both metrics are helpful measures of potential impacts on future collections. Additional measures of account receivable (AR) balances are used to compare the total balance of unpaid bills over time. The next page provides specific comparisons of this metric since March 2020.

⁴ WWSP partner costs will be funded individually by the District’s partners, with payments made through the District as Managing Agency of the WWSP.

⁵ Revenue requirements include cash-funded capital improvements, debt service, and operational expenditures.

During the COVID-19 pandemic, the District’s implemented a policy to discontinue shutting off water service for nonpayment. That policy ended the week of July 12, 2021 and resulted in many customers, formerly in shutoff status, to either pay their bills or contact the District to make payment arrangements. Though this policy reversal brought many customers into good standing with the District, there are still many other customers that have outstanding account receivable (AR) balances that are beyond 60 days. A monthly comparison of account receivable (AR) balances aged at 60, 90, and 120+ days shows a significant increase in older AR balances since the COVID-19 pandemic began:

- March 2020 – At the beginning of the COVID-19 crisis, the totals of water AR balances that were 60, 90, and 120+ days were \$91, \$51, and \$42 thousand, respectively, totaling \$184 thousand.
- March 2021 – One year later, total AR balances at 60, 90, and 120+ days were \$190, \$120, and \$475 thousand, respectively, totaling \$785 thousand.
- March 2022 – Total AR balances at 60, 90, and 120+ days were \$175, \$150, and \$556 thousand, respectively, totaling \$881 thousand. This represents an \$697 thousand (379%) increase since the COVID-19 pandemic crisis began, and an increase of \$96 thousand (11%) in the 12 months between March 2021 and March 2022.

As the effects of the COVID-19 pandemic are still felt in 2022, the District continues to monitor its revenues, expenses, and collections to anticipate potential impacts on the District’s financial performance. The District increased its allowance for doubtful accounts to account for the increased aging of its AR and DSO. Moving into the second half of the current biennium and looking ahead to the next, the District’s ability to plan for these and other market-driven impacts will become a central focus. The next three years will be the peak spending period for the WWSP, with planned costs pushed significantly higher over the last six months due to increases in the final bids for major elements of the program including the water treatment plant and raw water facility.

1.2.2 Inflationary Pressure on Capital and Operating Expenditures

Like other water utilities, the current inflationary environment is putting increasing pressure on the District’s capital and operating expenditures. In fact, recent bids for WWSS infrastructure increased the total cost of the program from \$1.3 billion to approximately \$1.6 billion. The District’s share of this increase is approximately \$200 million. The District is also seeing bids come in higher than estimates for its non-WWSS projects and expects inflationary pressures to impact its operating costs over the next several years. In an effort to prepare the District for these potential realities, this Financial Plan incorporates revised assumptions, presented in Table 1-1, for the effects of inflation and interest.

Table 1-1: Updated Assumptions in the District’s Forecast and Financial Plan

	Annual Escalation Rates		
	Prior	Next 3 years	Future
CIP - Pipelines	3.5%	4.0%	3.5%
CIP - Other	3.5%	8.0%	3.5%
O&M	4.5%	8.0%	4.5%

	Interest Rate Assumption	
	Prior Assumption	New Assumption
Rev. Bond Financing	3.5%	5.5%

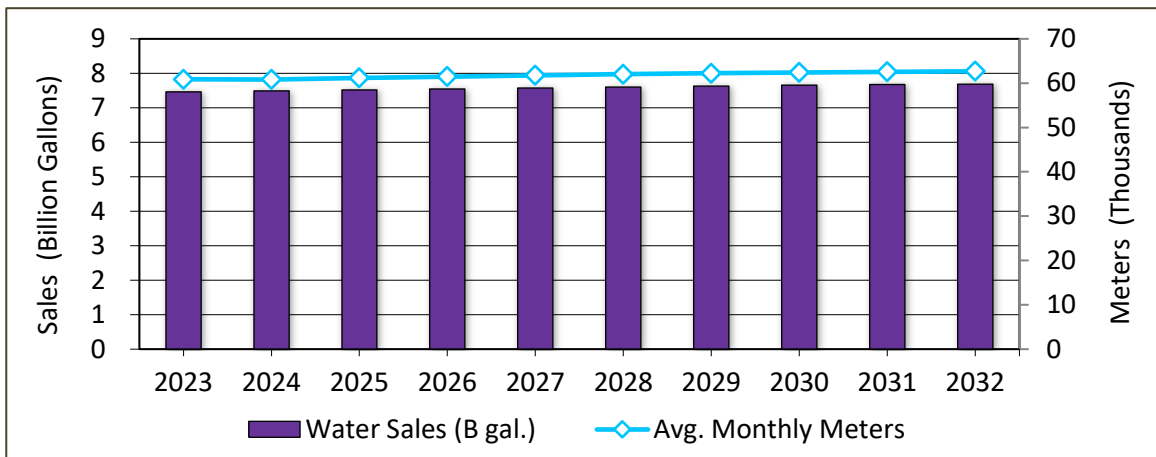
1.3 Financial Plan Section Descriptions and Highlights

This Financial Plan guides the financial management of the District, and it will be updated periodically to reflect future assumptions and outcomes. In addition to regular updates, the District anticipates that its Financial Plan will evolve to provide additional information intended to help the Board and management in the execution of their responsibilities. Therefore, content or sections may change over time. The next four pages present brief overviews for each section of this Financial Plan.

SECTION 2 – FINANCIAL MANAGEMENT OBJECTIVES AND POLICIES. This section describes the objectives that form the basis of the District’s financial management activities, and the key financial planning assumptions and policies used in the Forecast model.

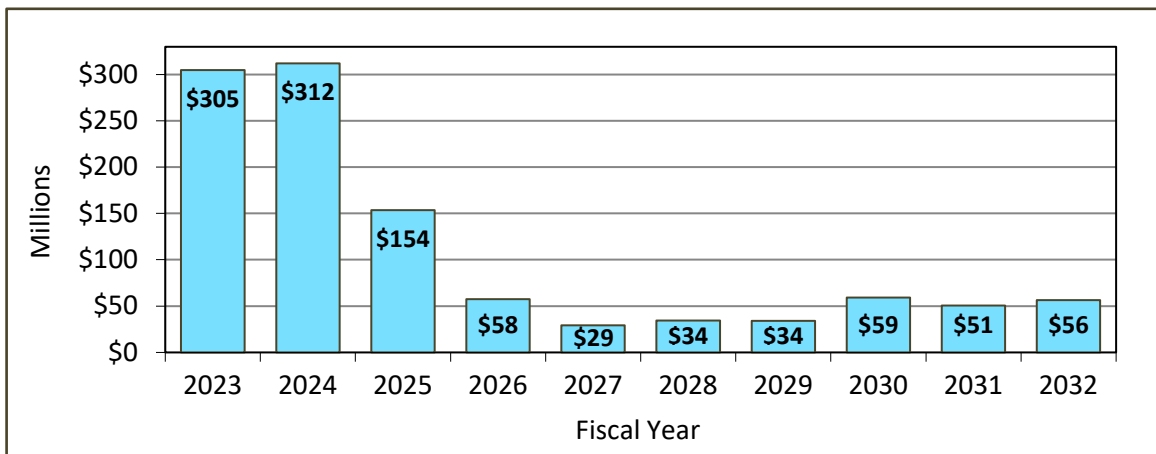
SECTION 3 – WATER SALES PROJECTIONS. This section describes the District’s water sales forecast and the data used in the preparation of this Financial Plan. Figure 1-1 presents projected annual water sales and average meters served.

Figure 1-1: Water Sales and Meters Forecast by Fiscal Year



SECTION 4 – CAPITAL IMPROVEMENT PLAN. This section describes various elements of the District’s CIP, including projected costs by category. Figure 1-2 provides a summary of projected CIP expenditures over the 10-year presentation period. Total expenditures over this period are approximately \$1.09 billion.

Figure 1-2: Projected CIP Expenditures



SECTION 5 – CAPITAL FINANCING PLAN. This section provides a detailed overview of the types and anticipated timing of debt required to finance the CIP and the methodology used to optimize the District’s capital financing mix (Figure 1-3). Section 5 also describes the debt assumptions used in the Forecast model and projections of future debt repayments (Figure 1-4).

Figure 1-3: Five-Year Financing Mix (Cash v. Debt, FY2023-FY2027)

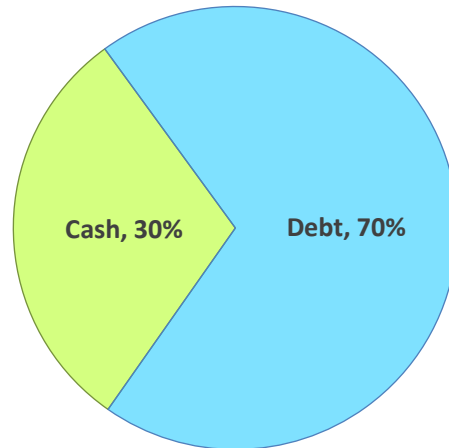
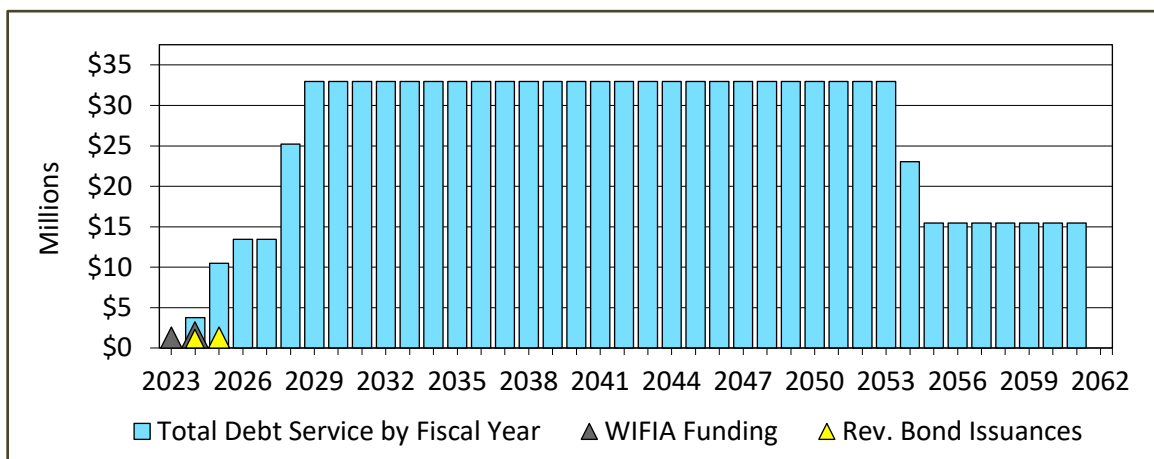


Figure 1-4: Projected Debt Repayments (Total Debt Service on WIFIA and Revenue Bonds)



SECTION 6 – FINANCIAL FORECAST. This section demonstrates the overall feasibility of the District’s capital financing plan. It provides descriptions of the District’s current and projected rates and charges, and descriptions of the projected sources and uses of funds during the presentation period.

Figure 1-5 (next page) presents the Forecast customer impacts over the presentation period, including typical monthly bills and projected rate revenue adjustments. For the first three years (FY2023-FY2025) of the presentation period, the graph presents two rate adjustments per year based on recent direction from the Board. Additional details on the Board’s direction and Forecast rate adjustments are provided in Section 6.2 – *Projected Rates and Charges*.

Figure 1-5: Rate Adjustments and Typical Bill Impacts by Fiscal Year

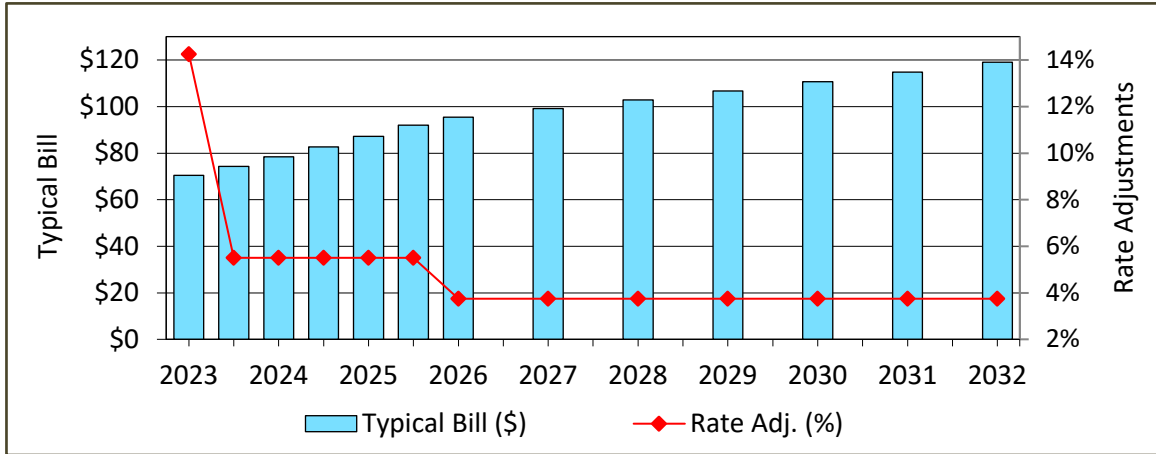


Figure 1-6 below shows that projected debt service coverage (DSC)⁶ will exceed the District’s target minimum of 2.0x for the foreseeable future. Note that Figure 1-6 presents ten years of results beginning with FY2025 instead of FY2023. This is to show projected DSC for a period after which the bulk of the District’s near-term debt service requirements will be in place.

Figure 1-6: Projected Debt Service Coverage Ratio

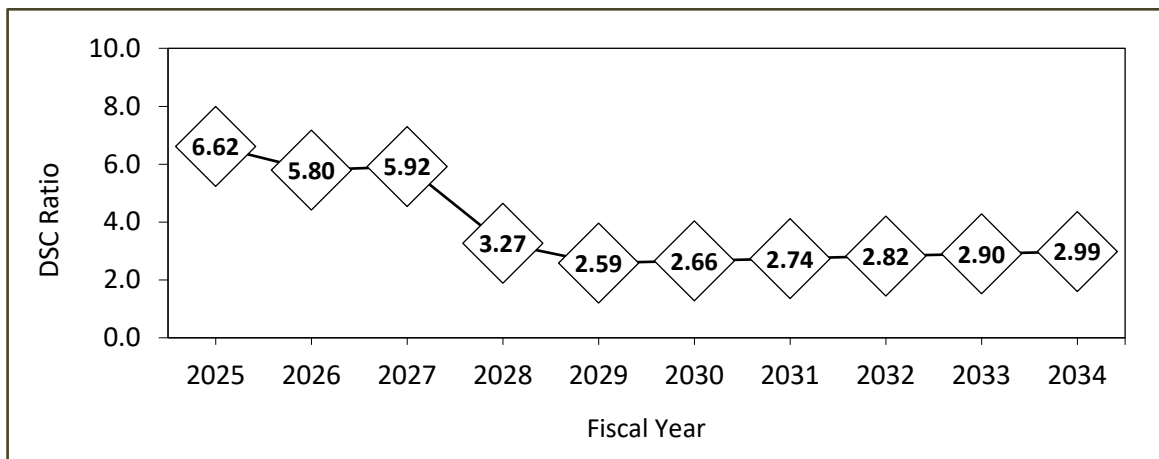
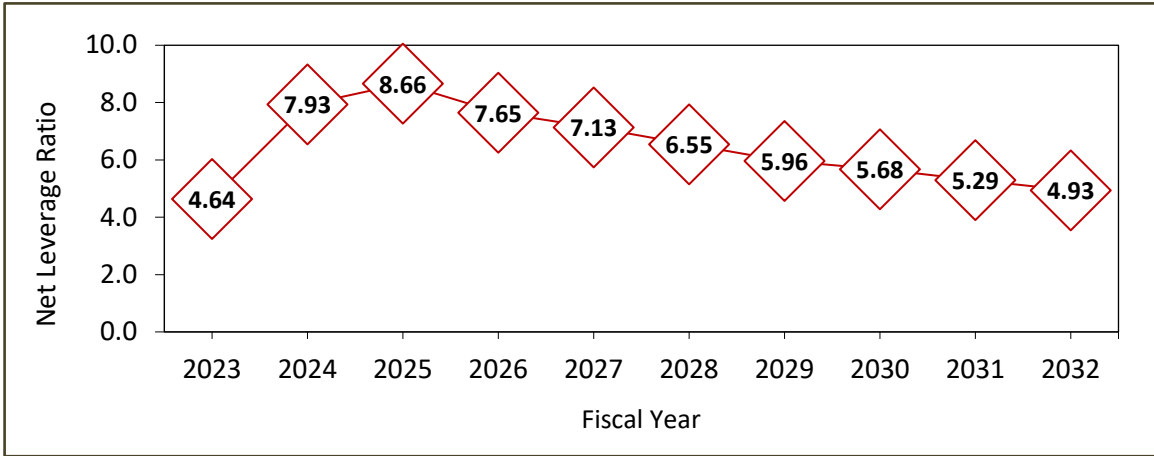


Figure 1-7 shows that the District’s estimated net leverage ratio will peak at 8.66x in FY2025 (when the District concludes its planned debt financing for the WWSS) and then decline annually in future years.⁷

⁶ A DSC ratio measures the availability of current financial resources to pay for debt service. It is the ratio of annual revenues (net of operating expenses) to total annual debt service.

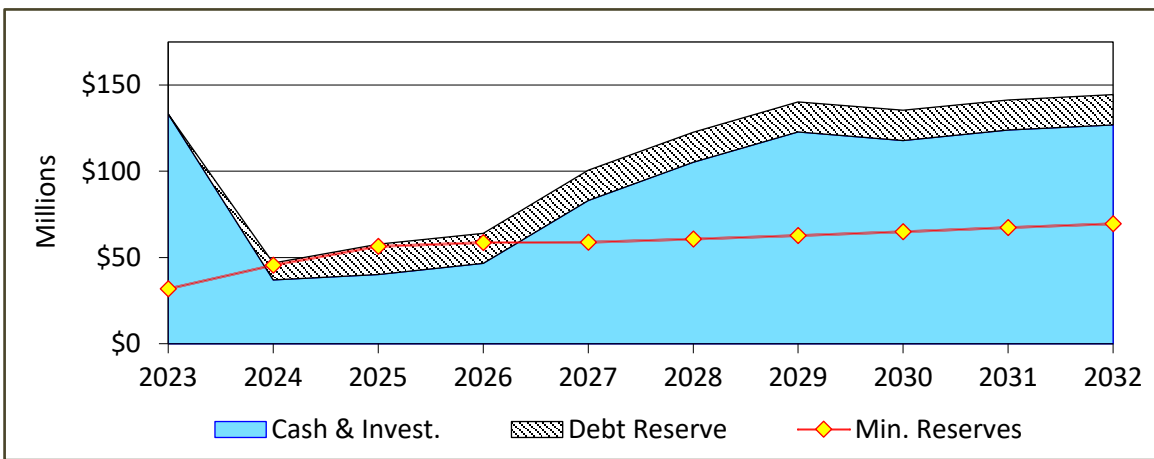
⁷ For background information on the Net Leverage ratio, see Section 2.2.1.1 in this report.

Figure 1-7: Projected Net Leverage Ratio



SECTION 7 – FUNDS AND RESERVES. This section describes the summary funds used in the Forecast model. The projections in this section, summarized in Figure 1-8, demonstrate that the District will have enough liquidity to meet both its operating and capital investment commitments.

Figure 1-8: Projected Year-End Cash Balances by Fiscal Year



APPENDICES. Along with a service area map inside the back cover, the Appendices include the following:

- Appendix A – Proposed Financial Plan Assumptions for the Financial Management Policies
- Appendix B – Ordinance 01-19 – Authorizing the Issuance of Debt
- Appendix C – Master Revenue Bond Declaration
- Appendix D – First Supplement to Master Revenue Bond Declaration
- Appendix E – Parity Certificate and Transcript Documents
- Appendix F – PERS Valuation Report
- Appendix G – Forecast Model Summary Results
- Appendix H – Map – Tualatin Valley Water District (Washington County, Oregon)

1.4 Conclusion

It must be noted that many assumptions were employed in the financial planning analysis underlying this document. For this reason, the results presented herein are not concrete in nature and should be considered as planning estimates.

In the future, the actual rate adjustments required to fund revenue requirements may vary from the estimates presented in Section 6 – *Financial Forecast*. As time passes and projections become reality, future capital requirements, O&M costs, customer demands, and other assumptions will influence the accuracy of these estimates. Therefore, the District will continue to take great care to mitigate risk by following prudent management practices, including reviewing rates and revenues annually (at a minimum) to see if additional adjustments are necessary.

2 Financial Management Objectives and Policies

This Financial Plan incorporates the Board’s financial policies and objectives into an actionable plan that guides the District’s financial activities. To develop the District’s Financial Plan, the Board considers alternative financial outcomes at public meetings and workshops periodically throughout the year. The Forecast is used to inform the Board on the impact that various policy decisions have on the District’s financial outcomes. This includes, for example, changes in water rates, use of long-term debt, etc.

Most of the District’s financial policies are included in its *Financial Management Policies* document.⁸ In addition to the *Financial Management Policies*, the Board separately adopts the District’s *Investment Policy* annually as required by Oregon law.⁹

The aim of this section is threefold:

- Provide context for understanding the policies in terms of financial management objectives.
- Describe key District financial policies, including recent enhancements.
- Present background information on credit ratings.

2.1 Financial Management Objectives

This section provides a context for understanding the District’s financial policies in terms of certain financial management objectives –

- Promoting Stability and Continuity
- Providing Best Value to the Community
- Providing a Definitive Policy Framework for District Staff
- Managing Risks to Financial Condition
- Following Established Public Management Best Practices

PROMOTING STABILITY AND CONTINUITY. The long-term, strategic intent articulated by many financial policies necessarily demands a long-term perspective from the organization. These policies promote stability and continuity by institutionalizing good financial management practices. They also prevent the need to re-invent responses to recurring issues.

PROVIDING BEST VALUE TO THE COMMUNITY. By clarifying and crystallizing strategic intent for financial management, financial policies define a shared understanding of how the organization will develop its financial practices and manage its resources to provide the best value to the community.

PROVIDING A DEFINITIVE POLICY FRAMEWORK FOR DISTRICT STAFF. Financial policies define limits on the actions staff may take. The policy framework provides the boundaries within which staff can innovate to further the organization's strategic intent.

⁸ The District’s current *Financial Management Policies* were adopted by the Board of Commissioners on March 20, 2019 by Resolution 08-19. The document is available on the District’s website, under “Supporting Documents” on the Finance Department page (<https://www.tvwd.org/finance>).

⁹ The District’s current *Investment Policy* was adopted by the Board of Commissioners on January 19, 2022 by Resolution 01-22.

MANAGING RISKS TO FINANCIAL CONDITION. A key component of governance accountability is not to incur excessive risk in the pursuit of public goals. Financial policies identify important risks to financial condition.

FOLLOWING ESTABLISHED PUBLIC MANAGEMENT BEST PRACTICES. The Government Finance Officers Association (GFOA), through its officially adopted Best Practices endorsement of National Advisory Council on State and Local Budgeting (NACSLB) budget practices and the GFOA Distinguished Budget Presentation Award Program, has recognized financial policies as an essential part of public financial management.

2.2 Key Financial Policies and Assumptions

The District’s financial policies cover a range of diverse activities. However, for long-range financial planning, policies related to capital financing and reserve levels are of particular importance. The following subsection describes each of these key policies in greater detail.

Financial Planning Assumptions¹⁰

- Debt Service Coverage Ratio
- Net Leverage Ratio
- Additional Bonds Test
- Debt Structure Considerations

Reserve Policies

- Working Capital
- Capital Reserves
- Debt Service Reserves

2.2.1 Financial Planning Assumptions

The financial planning assumptions provide guidance for future debt issuance, structure, and management. The assumptions are incorporated into policies that establish certain limits which recognize the District’s capital requirements, its ability to repay financial obligations, and the existing legal, economic, financial, and debt market conditions. Specifically, the policies are intended to assist the District in the following:

1. Evaluating available debt issuance options;
2. Maintaining appropriate capital assets for present and future needs;
3. Promoting sound financial management through accurate and timely information on financial conditions;
4. Protecting and enhancing the District’s credit rating(s); and
5. Safeguarding the legal use of the District’s financing authority through an effective system of internal controls.

The District’s debt financing assumptions and debt structure considerations are discussed in the following two subsections. For more detail and additional information on the District’s policies on *Debt Financing*, please see the District’s *Financial Management Policies* document.

¹⁰ Assumptions used in the Forecast are from the District’s *Financial Management Policies*, except for the additional WIFIA-related assumptions described in *Section 5.3.1 – WIFIA Debt Assumptions*.

2.2.1.1 Forecast Model Assumptions for Debt Financing

DEBT SERVICE COVERAGE (DSC) RATIO. A DSC ratio measures the availability of current financial resources to pay for debt service. It is the ratio of annual revenues (net of operating expenses) to total annual debt service. For example, a DSC ratio of 1.0x means that after paying all operating expenses¹¹, an issuer only has exactly enough funds to pay debt service obligations. Similarly, a DSC ratio of 1.5x means that after paying all operating expenses, an issuer has 50% more than the amount needed to pay debt service obligations. This additional capacity allows the issuer to fund other capital expenditures with cash (thereby resulting in lower debt leverage) and providing a buffer should revenue be unexpectedly lower (e.g., due to weather or other unforeseen events), or operating expenses being unexpectedly higher.

DSC is one of the primary metrics used by credit ratings agencies and investors to assess the credit worthiness of an issuer. In this way, it is like a ratio of monthly income to mortgage payment used in qualifying for a home mortgage. All other things being equal, an issuer with a higher DSC ratio may indicate less borrowing, better credit ratings, and a lower cost of debt. Conversely, a similar utility with a lower DSC ratio may indicate more debt outstanding, lower credit ratings, and more expensive debt.

The District's master revenue bond declaration (Master Declaration) is the document that governs debt issuance. In this document, the District commits to set rates at levels to meet rate covenants and additional bonds tests imposed by then-existing financing covenants. In addition to the legal and/or contractual requirements associated with future revenue bonds, the District will strive to maintain a minimum annual debt service coverage ratio of 2.0 times average annual debt service.¹²

NET LEVERAGE RATIO. A net leverage ratio measures an entity's total outstanding debt to its financial resources. It is similar to the DSC ratio described above, but different in its measurement and perspective:

- The DSC ratio is a measurement of annual net revenues to total annual debt payments. Target DSC ratios are set as a *minimum* bar to clear.
- Conversely, net leverage measures cumulative debt outstanding to revenue (and other resources), and the target is set as a *maximum* "not-to-exceed" ratio.

Historically the District assumed a cap on its use of long-term debt as a measure of its maximum leverage. However, in its 2021-2023 Financial Plan,¹³ the District began using the net leverage ratio calculation as another guide in planning future debt financings. The *Proposed Financial Plan Assumptions for the Financial Management Policies* in Appendix A include targets for net leverage, where the projected net leverage ratio in the Financial Plan:

- Shall not exceed 8.0x for two or more consecutive years, and
- Shall not exceed a net leverage ratio of 7.0x for more than four consecutive years.

¹¹ Excluding depreciation. Although depreciation is an operating expense, it is a non-cash expense and is therefore excluded from the calculation of the DSC ratio.

¹² The District sets its minimum DSC ratio target higher than the expected required minimum of 1.25 times debt service. This is a matter of prudent financial policy, in which the District strives to achieve a higher standard than the requirements typically set forth in bond covenants.

¹³ The 2021-2023 Financial Plan (Issued May 2021) is available on the District's website, under "Supporting Documents" on the Financial Plan page (<https://www.tvwd.org/finance/page/financial-plan>).

The addition of the net leverage ratio to the District's financial planning is due, in part, in response to credit rating criteria used by ratings agencies. It is also replacing the assumed debt issuance cap previously used.

The District's Board of Commissioners has demonstrated a strong commitment to the financial health of the District. This commitment is demonstrated by a history of implementing changes in water rates that are necessary to meet the needs of the water system and customers. Therefore, DSC is not typically considered a constraint at the District. However, given the substantial amounts of debt funding that will be required for its CIP, the District's net leverage ratio may become a constraining factor at some point. This is especially true when considering the perspectives of the credit market and ratings agencies.

2.2.1.2 Debt Structure Considerations

MATURITY OF DEBT. The final maturity of the debt shall not exceed, and preferably be less than, the remaining useful life of the assets being financed, and to comply with Federal tax regulations, the average life of a financing shall not exceed 120% of the average life of the assets being financed.

DEBT SERVICE STRUCTURE. Debt service payments for any new money debt issue will generally be structured to create more level debt service payments over the life of the debt. Exceptions are permitted for refunding debt that will have varying principal repayments structured to fill in the gaps created by refunding specific principal maturities. The Chief Financial Officer (CFO) may also structure the amortization of principal to wrap around existing obligations or to achieve other financial planning goals. Deferring the repayment of principal should be avoided except in select instances where it will take time before project revenues are sufficient to pay debt service.

LIEN STRUCTURE. Senior and subordinate liens may be used to maximize the most critical constraint, either cost or capacity, thus allowing for the most beneficial leverage of revenues.

CAPITALIZED INTEREST. The District may elect to fund capitalized interest in connection with the construction of certain projects if revenue from such projects is not initially available to pay debt service on related debt. Additionally, the District may consider funding capitalized interest if it would minimize the financial impact of such borrowing on District customers.

RESERVE FUNDS. A reserve fund for a debt issuance may be required for credit rating or marketing reasons. If required, such reserve funds can be funded with:

- The proceeds of a debt issue,
- The reserves of the District, or
- A surety policy.

A cash reserve fund will be invested pursuant to the investment restrictions associated with the respective financing documents and the District's separate investment policy. For each debt issue, the CFO will evaluate whether a reserve fund is beneficial for credit rating or marketing purposes and the prudence of funding or maintaining the reserve requirement with cash or a surety policy, in addition to determining the benefits of borrowing the necessary funds or using cash reserves.

REDEMPTION PROVISIONS. In general, the District will have the right to optionally redeem debt at par no later than 10 1/2 years after issuance. Redemption provisions will be established on a case-by-case basis, taking into consideration market conditions and the results of a call option analysis prior to the

time of sale. Because the issuance of non-callable debt may restrict future financial flexibility, cost will not be the sole determinant in the decision to issue non-callable debt.

CREDIT ENHANCEMENT. Credit enhancement (e.g., bond insurance or letters of credit) on District financings will only be used when net debt service is reduced by more than the cost of the enhancement. The District will evaluate the availability and cost/benefit of credit enhanced debt versus unenhanced debt prior to issuing any debt.

2.2.2 Reserve Policies

Maintaining fund balances is an important function for the District to operate efficiently over the long run. The District's reserve policies guide the development of minimum cash balances that directly affect this District's Financial Plan, rates and charges, and budget. The accumulation or use of fund balances and reserves is a practice that may allow financial decisions in one year to affect future years. Because of the nature of these effects, these policies provide guidance to:

- District management in developing the various plans proposed to the Board, and
- The Board in making its financial decisions.

The decision to retain financial resources in fund balance or reserves directly affects:

- Financial risks from unexpected disruptions to revenue or unplanned expenditures.
- Water rates required in the current and future years.
- The District's credit rating(s).
- Other related financial matters.

The District's reserves requirements are highlighted in the following three subsections. For more detail and additional information on the District's policies on *Minimum Fund Balances and Reserves*, please see the District's *Financial Management Policies* document.¹⁴

2.2.2.1 Working Capital

The District separately measures its current and non-current assets and liabilities. The District can use this distinction to calculate working capital (i.e., current assets less current liabilities). The measure of working capital indicates the relatively liquid portion of the District's assets, which constitutes a margin or buffer for meeting obligations. Additionally, credit ratings agencies consider the availability of working capital in their evaluations of the District's creditworthiness. Therefore, working capital is a crucial consideration in this Financial Plan.

The District's *Financial Management Policies* state that working capital shall be maintained at a level considered adequate to mitigate current and future risks (e.g., revenue shortfalls and unanticipated expenses) and to provide stable services and fees. The policies state that this level will be at least equal to two months of annual operations and maintenance expense (i.e., 60 days cash on hand).

¹⁴ Available on the Finance page of the District's website (<https://www.tvwd.org/finance>).

2.2.2.2 Capital Reserves

The District's rate setting goals include a preference to avoid sudden and/or unexpected rate increases for customers. Capital reserves are one mechanism the District can use to lower the overall costs of acquiring capital assets by saving money early in the planning process. Capital reserve levels are determined through the financial planning process and identified in this Financial Plan.

In the Forecast model, the District targets 250 days of annual O&M for financial planning purposes. This reserve balance is intended to meet the requirements of the working capital and capital reserves targets.

2.2.2.3 Debt Service Reserves

A reserve fund for a debt issuance may be required for credit rating or marketing reasons. The District fully redeemed its last outstanding revenue bonds in June of 2015 and its Debt Service Fund has not been used since that time. For planning purposes, the District assumes that any debt reserves required for future revenue bonds will be funded from the proceeds of each bond issuance.

This cash reserve fund will be invested pursuant to the investment restrictions associated with the respective financing documents and the District's separate investment policy. For each debt issue, the CFO will evaluate whether a reserve fund is required for credit rating or marketing purposes and the benefits of funding or maintaining the reserve requirement with cash or a surety policy, in addition to determining the benefits of borrowing the necessary funds or using cash reserves.

2.3 District Credit Ratings

The primary goal of the District's Financial Plan is to provide the financial foundation on which to build and operate its expanding system infrastructure. As described earlier, financial policies represent a tradeoff among various objectives. Prudent financial management means striking a balance among these objectives in a manner that provides for a sustainable enterprise with the ability to face the risks and capitalize on the opportunities before it.

Though high underlying credit ratings are not an end in-and-of themselves, they are one of the best measures of success in creating a financially sustainable enterprise. For several years, the District has worked with its professional advisers to develop a targeted credit rating for its long-term debt. Based on the District's alignment with the rating criteria of the various rating agencies and considering the effect on the District's cost of capital, the District targeted financial performance that would result in a credit rating of at least AA+/Aa1. The District believes its financial performance may support a rating of AAA.

As part of the application process for the WIFIA loan program, the District was required to get credit ratings from two national rating agencies. The District selected Standard & Poor's and Fitch Ratings for its ratings and achieved its minimum targeted rating from each agency.

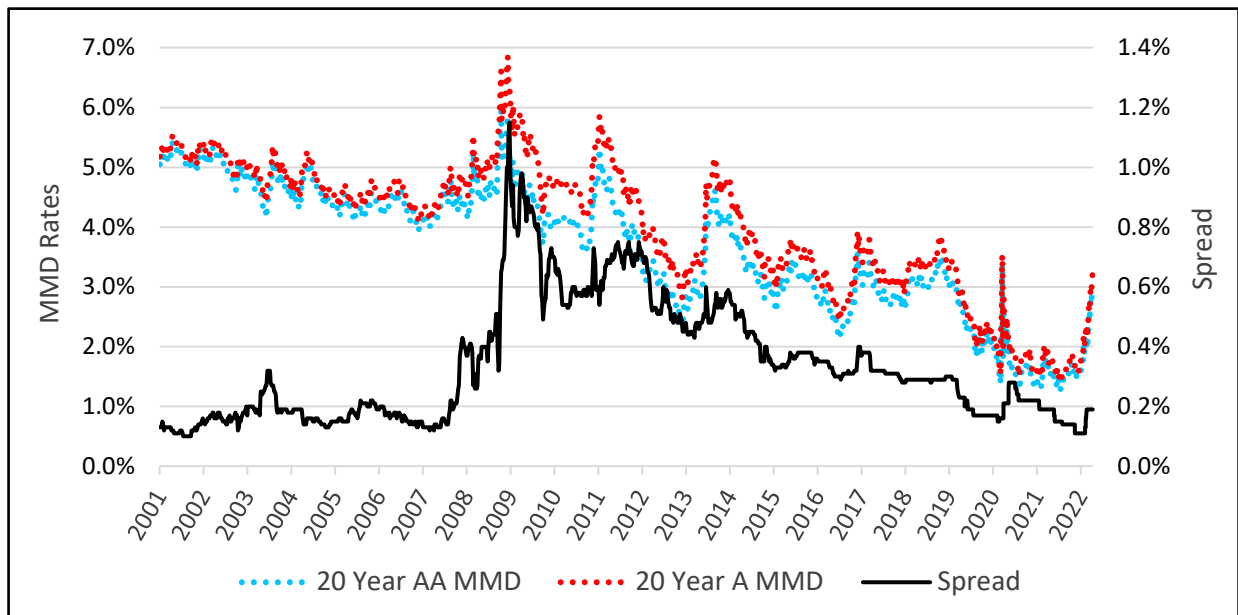
Table 2-1 (next page) provides a scale comparison for investment grade securities for three national rating agencies. The District's ratings are shaded.

Table 2-1: Rating Scales by Agency

Standard & Poor's	Fitch Ratings	Moody's Investor's Service
AAA	AAA	Aaa
AA+	AA+	Aa1
AA	AA	Aa2
AA-	AA-	Aa3
A+	A+	A1
A	A	A2
A-	A-	A3
BBB+	BBB+	Baa1
BBB	BBB	Baa2
BBB-	BBB-	Baa3

The direct financial value of a strong credit rating is a function of investor perceptions of risk. In terms of basis points savings on long-term debt, the graph below shows the value of 'AA'-rated credit vs. 'A'-rated credit since 2001.

Figure 2-1: Spread Between 'AA' versus 'A' Rated Debt* – The Benefit of Staying 'AA' or Better



* 20-year AA vs. A MMD Historical Rate Comparison (1/5/2001-4/14/2022); from PFM Financial Advisors LLC.

The graph makes clear that the value of a strong credit rating varies over time. Over the period presented, the value (i.e., “spread”) ranged from a low of 10 basis points to a high of 115 basis points, while averaging 28 basis points. To put this in perspective, an additional 28 basis points results in an additional \$5.5 million in interest on every \$100 million in outstanding debt (i.e., over 30 years).

For 2-sided printing, this page intentionally left blank.

3 Water Sales Projections

3.1 Water Sources

One of the District's primary responsibilities is to meet the water demands of existing and future customers. No single water source is sufficiently robust to meet this challenge, and the District's Board has long recognized the need to balance water supplies among multiple sources. Currently, the District purchases most of its water through a wholesale contract with the City of Portland. The remainder of the water needed by the District's customers comes from the Joint Water Commission (JWC) and the District's aquifer storage and recovery (ASR) facilities.

3.1.1 City of Portland Water Bureau

TVWD purchases water from Portland under an existing regional water sales agreement. TVWD has no equity share in the Portland supply and, under the terms of the agreement, is required to pay for a minimum average of 13.16 MGD even if the District uses less. Under the agreement, this 13.16 MGD is referred to as the guaranteed purchase quantity (GPQ). If the District requires more water than the GPQ, the District will pay Portland for the additional costs. Water is billed at a pre-determined rate which includes a return on investment for Portland, with significant rate increases tied to high usage during summer months. The District's connections with Portland can provide up to 42.3 MGD through the WCSL,¹⁵ however, there are significant incentives to manage the existing supply system to limit the financial impacts of the existing Portland water sales agreement.

3.1.2 Joint Water Commission

The JWC is a partnership of the District and the cities of Beaverton, Forest Grove, and Hillsboro. The JWC operates a treatment plant and related storage and transmission facilities. As a member of the JWC, the District owns capacity rights in the JWC's facilities. TVWD's capacity share of the JWC water treatment plant is 14.5 MGD, and the District owns rights to approximately 7,000 acre-feet of storage¹⁶ at Barney Reservoir, one of the two primary impoundments that provide stored raw surface water supply to the JWC (the other is Hagg Lake). JWC members share actual operating and maintenance costs in proportion to their water usage and ownership shares.

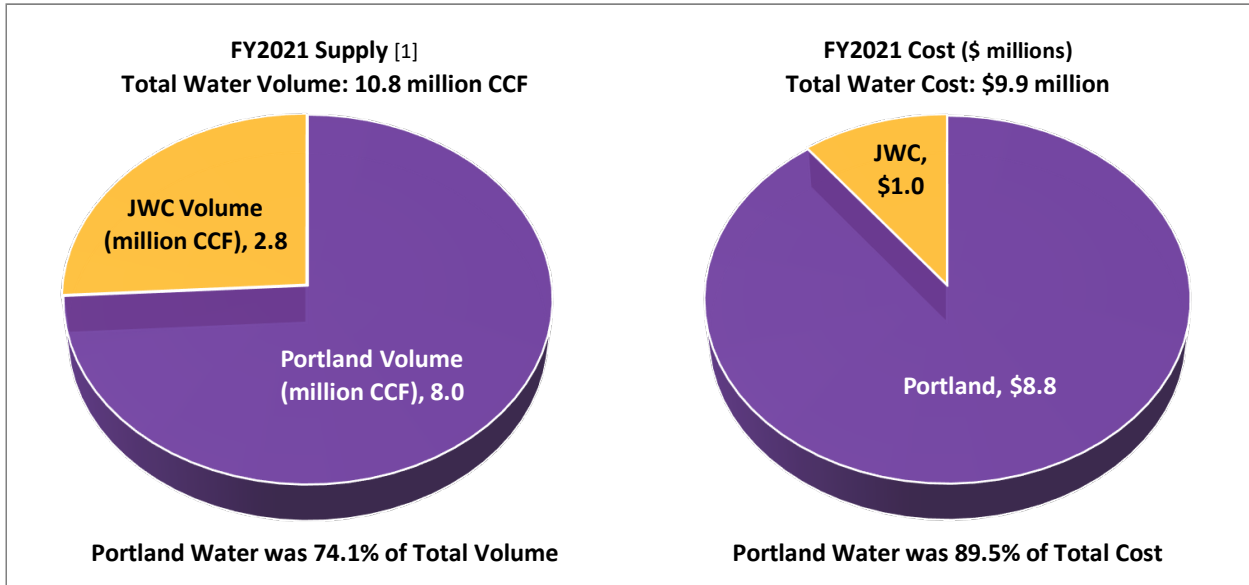
JWC water is billed to the District at actual water production cost with no return on investment since TVWD provided the capital. In the summer months, purchased water costs from the JWC are significantly lower than the cost of Portland water. Therefore, the District maximizes its purchases from the JWC source while concurrently making the contractually required minimum purchases from Portland during the peak season.

Figure 3-1 (next page) illustrates the comparative volume and costs of the District's supplies from Portland and the JWC.

¹⁵ The Washington County Supply Line, or *WCSL*, is a 60-inch gravity supply conduit that flows approximately 14 miles from Portland's Powell Butte Reservoirs to the District's eastern boundary.

¹⁶ 7,000 acre-feet is equivalent to approximately 12.5 MGD over a 180-day peak-season period.

Figure 3-1: Comparison of Existing Supplies and Related Costs



[1] CCF = one hundred cubic feet or 748 gallons.

3.1.3 Grabhorn Aquifer Storage and Recovery

The District also uses its existing Grabhorn ASR well to supplement supply during peak-summer periods. The Grabhorn ASR facility can store up to 300 million gallons of water and was designed to deliver up to 3 MGD of supply over a 100-day period.

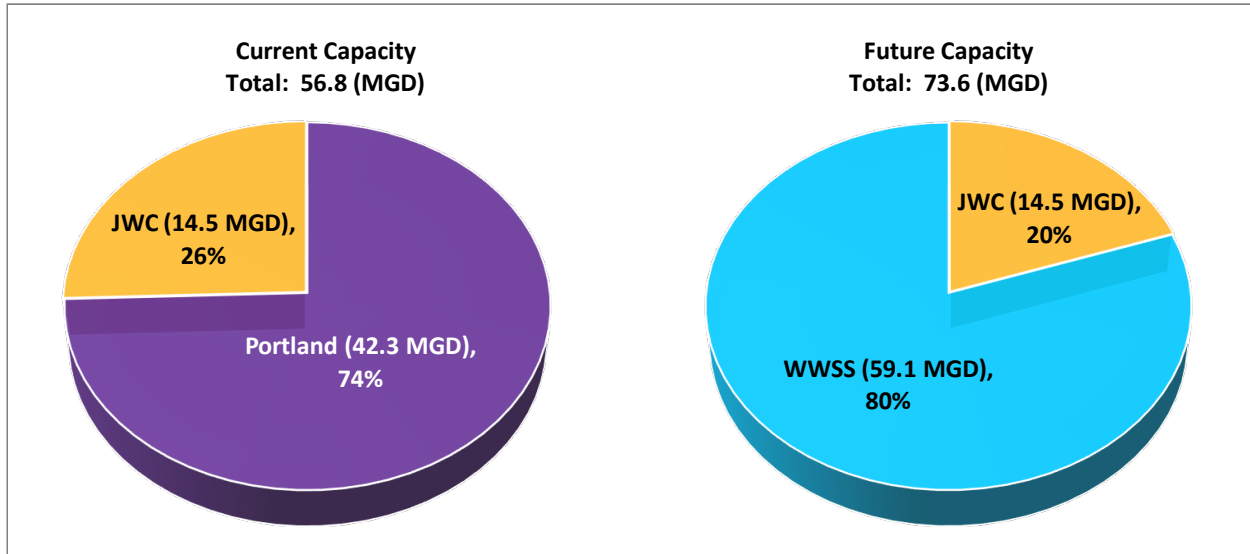
To reduce the higher costs of purchasing water for peak-summer use, the District forecasts its projected demand on a regular basis. This short-term demand forecasting helps the District meet the minimum purchase requirement of the Portland agreement while efficiently using the JWC and ASR sources to help meet higher demands during summer months.

3.1.4 Willamette Water Supply System

In 2013, the District's Board decided to expand the District's portfolio of water sources and develop a new water supply on the mid-Willamette River near Wilsonville. With the development of the Willamette Water Supply System (WWSS), the District plans to replace its Portland purchased water with this new source. The WWSS is scheduled to be available by July 1, 2026.

Figure 3-2 (next page) summarizes the District's current source water capacities and its planned capacities beginning in FY2027.

Figure 3-2: Current v. Future Source Water Capacity



Developing the new water supply is considered an integral element of the District’s core mission. The planning, design, and construction of the WWSS is being done by the Willamette Water Supply Program (WWSP). Once complete, the WWSS will be a seismically hardened water supply system to meet the long-term needs of its residential, commercial, and industrial customers.

The WWSS is a regional effort which will result in long-term regional benefits. It is being implemented as a regional partnership, with TVWD serving as the Managing Agency for two new regional water entities with ownership interest in different parts of the total program:

1. Willamette Intake Facilities (WIF) Commission – The WIF is a joint venture of the District and the cities of Beaverton, Hillsboro, Sherwood, Tigard, and Wilsonville to jointly own and operate a raw water intake facility located at the current Willamette River Water Treatment Plant in Wilsonville, Oregon.
2. Willamette Water Supply System (WWSS) Commission – The WWSS is a joint venture of the District and the cities of Beaverton and Hillsboro to construct and operate supply facilities that convey raw water from the WIF, treat the raw water to potable standards, and convey the potable water to each partner’s distribution systems.¹⁷

3.2 Water Demand Forecast

In February 2018, the District and the City of Beaverton (Beaverton) entered into a service area agreement (Beaverton Service Area Agreement). This service area agreement provided a framework for the District and Beaverton to plan for serving customers within Beaverton’s corporate jurisdiction in places where it overlaps with the District’s boundaries. The agreement provided Beaverton an opportunity to withdraw a limited number of customers from the District, thereby making them Beaverton customers.

¹⁷ The WWSP website (<http://www.ourreliablewater.org/>) provides additional information including activities-to-date, maps, and other related information for all WIF and WWSS projects.

The water demand forecast underlying this Financial Plan incorporates anticipated withdrawals of customers by Beaverton. Related reductions in the District's service accounts and associated water consumption are embedded in the projected source water purchases and rate revenue (fixed charges and water sales) included in the Forecast model.

At this time, the District is aware of limited additional areas from which Beaverton could withdraw customers in the future.¹⁸ Regardless of the ultimate number of services that Beaverton withdraws, the probability is low that future withdrawal(s) would occur all at once. Rather, a series of withdrawals with subsequent transfer activities over multiple years may impact the District's finances in a gradual way.

Given the staggered timing of customer transfers to wheeling status and then separated status (i.e., served directly by Beaverton), the impact to the District's finances has been gradual. Should Beaverton pursue additional transfers in the future as the implementation of the agreement proceeds, the District will refine the projected revenue impacts in the Forecast.

Before factoring in assumed withdrawals by Beaverton, the assumed annual customer growth rate begins at 0.60% in FY2024 and then declines by 0.05% annually until it reaches zero in FY2036. These reductions in growth recognize the anticipation of slowing of development as the District approaches its build-out capacity. Expansions of the region's urban growth boundary on the northern edge of the District's current service area may increase these assumed growth rates for future years.

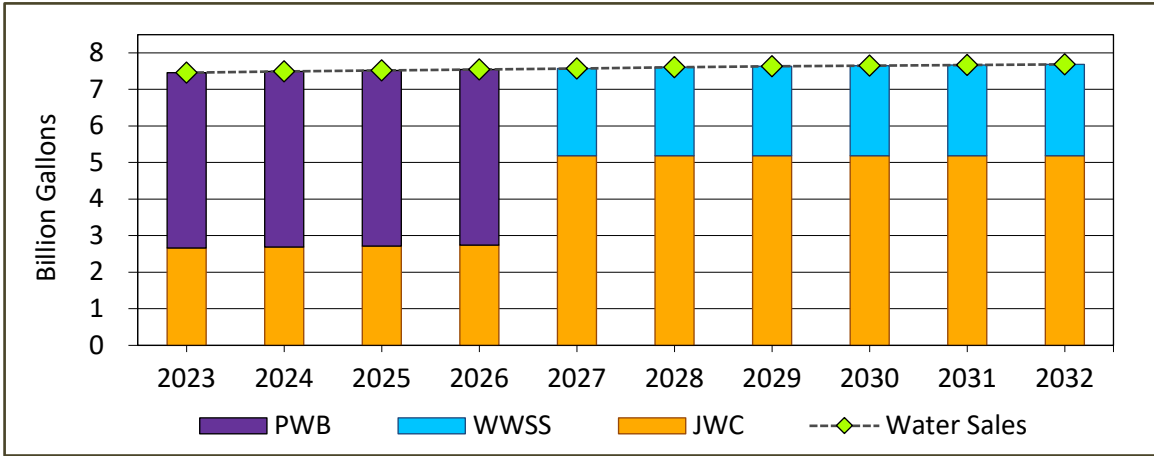
Prior to its last Financial Plan (May 2021), the District had seen fluctuations in its water demand. In the summer of 2019, consumption per capita declined 8% but then stabilized until the COVID-19 pandemic hit in 2020. The District saw further declines in the summer of 2020, likely due to the economic impacts of the pandemic. Since November 2020, it appears that water usage per customer has rebounded, especially in the District's single-family residential, irrigation, and production customer classes.

In its Forecast modeling, the District assumes that these past conservation savings and declines in system demands are permanent and forecasts sales growth at a lower rate than that of customer growth. This assumption is related to a combination of factors including the potential for mild weather, a successful conservation program that has depressed summer water demands, and the District's similar experience to the nation-wide trends towards higher density developments, smaller family sizes, and widespread assimilation of water-efficient appliances. The Forecast assumes an annual sales growth rate of approximately 0.4% through FY2028. After FY2028, the District assumes that sales growth will align with customer growth, ultimately becoming zero by FY2036.

On the following page, Figure 3-3 summarizes projected water demand and the assumed mix of supply sources used as the basis for purchased water costs in the Forecast model. Note that the impacts of the Beaverton withdrawals are already included in the FY2022 numbers. Additional future withdrawals by Beaverton would impact the projections shown below, and the District would necessarily adjust its assumptions and Financial Plan.

¹⁸ Section 3.7 of the Beaverton Service Area Agreement defines the obligations of Beaverton to assume a proportionate share of the District's the outstanding debt for all withdrawals effective after July 2, 2020.

Figure 3-3: Balancing Water Supplies and Demand by Fiscal Year



For 2-sided printing, this page intentionally left blank.

4 Capital Improvement Plan

Each biennium the District updates its capital improvement plan, which includes expenditures for the Willamette Water Supply Program, Joint Water Commission, and in-District projects.

- The WWSP was established to develop and deliver the Willamette Intake Facilities (WIF), Willamette Water Supply System (WWSS), and Metzger Pipeline East (MPE) to the District and its partners by July 2026.
- As discussed in Section 3.1.2, the District is a partner in the JWC along with the cities of Beaverton, Forest Grove, and Hillsboro. As a member of the JWC, the District also participates in the development of its capital budget.
- For in-District projects, status updates on current projects and new project requests are prepared by the Engineering & Operations Department.

Table 4-1 presents the forecast CIP expenditures through FY2032. The District's share of projected WWSP (including WIF & WWSS projects) and JWC capital costs are summarized in the top two rows of the table. The categories listed below JWC are all in-District capital expenditures.

Table 4-1: Forecast CIP Expenditures by Category and Fiscal Year (\$ Millions)

Category	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Totals
WWSP/WWSS	\$209.2	\$245.5	\$120.3	\$36.3	\$3.8	\$2.2	\$1.7	\$15.8	\$15.6	\$1.1	\$651.5
JWC	0.1	0.3	0.7	0.6	1.0	1.0	1.1	1.1	1.1	1.4	8.5
TVWD Source	5.5	0.5	0.2	1.5	0.0	0.0	0.0	0.0	0.0	0.0	7.7
Storage	6.2	8.0	0.5	0.0	1.6	2.6	0.1	0.1	0.1	3.4	22.6
Pumping	1.9	5.3	5.6	0.2	1.6	2.4	0.2	0.2	0.2	1.2	18.9
Pipelines*	75.4	46.9	21.3	11.3	12.7	13.9	19.7	21.3	17.7	32.6	272.9
PRVs/Vaults	1.9	0.7	0.3	0.4	0.5	0.4	0.6	0.4	0.4	0.4	6.0
Facilities/Fleet/IT	1.7	0.7	0.8	0.8	1.2	2.9	1.3	1.3	1.4	1.4	13.4
Meters/Svcs	1.9	1.9	2.0	2.1	2.1	2.2	2.3	2.4	2.5	2.6	21.9
Other	0.9	2.4	2.0	4.3	4.5	6.9	7.2	16.5	11.7	12.1	68.5
Totals	\$304.8	\$312.2	\$153.7	\$57.6	\$29.1	\$34.5	\$34.2	\$59.1	\$50.7	\$56.3	\$1092.0

Summary

WWSP/WWSS	\$209.2	\$245.5	\$120.3	\$36.3	\$3.8	\$2.2	\$1.7	\$15.8	\$15.6	\$1.1	\$651.5
JWC	0.1	0.3	0.7	0.6	1.0	1.0	1.1	1.1	1.1	1.4	8.5
In-District*	95.5	66.5	32.7	20.6	24.3	31.3	31.4	42.1	34.0	53.8	432.0

*Includes MPE (prelim. estimates: \$108.1 million in FY2023-27, \$157.5 million total), being delivered by the WWSP.

- The largest element of the District's ten-year CIP is the WWSP/WWSS at approximately \$651.5 million. This number represents the District's share of all remaining WWSP project expenditures, including the costs of the raw water facilities, water treatment plant, finished water pipelines, and terminal reservoirs. The District and its partners plan to end the WWSP in FY2026, with several million in program close-out costs projected for FY2027. There are, however, additional WWSS-related project costs in future years.

The timing of these future projects costs is based on efforts by the District and its partners to lessen the near-term financial pressure on customers by pushing some elements of WWSP

projects into future years. These elements include a planned expansion of the water treatment plant, a second 15 MG storage tank at the terminal reservoir site, the northernmost finished water pipeline, and an optional element of the WWSS control system.

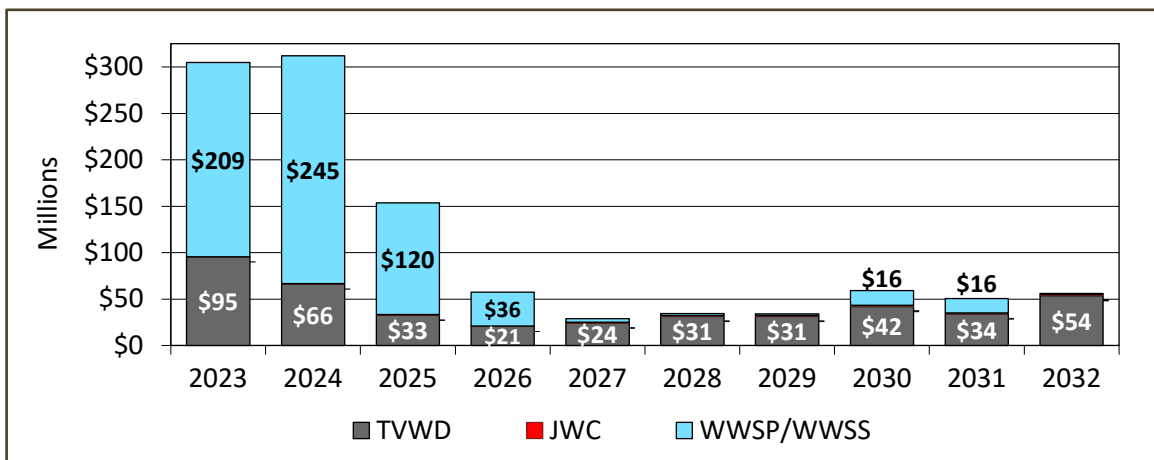
- Pipelines will be the next costliest category of ten-year and future CIP expenditures. Included in the \$272.9 million shown above is the District’s Mains Replacement Program (\$95.6 million) and Metzger Pipeline East (\$108.1 million, preliminary estimate), which will deliver WWSS water to both the District’s Metzger and Wolf Creek service areas.
- A reservoir replacement and several other reservoir improvements are included in the \$22.6 million for Storage.
- Similarly, at nearly \$18.9 million for Pumping, the District is planning several major expansions and improvements to existing pump stations over the next ten years.

Figure 4-1 below presents a graphical summary of the projected annual CIP expenditures for the next ten years. As shown in Table 4-1 above, the costs underlying the graph total nearly \$1.1 billion over the 10-year presentation period. This total represents the costs of the in-District CIP and the District’s cost shares of JWC and WWSP/WWSS capital expenditures. These projected expenditures form the capital funding needs of the District during the Financial Plan period.

Funding needs will decline after completion of the WWSP. However, in FY2027 and beyond, the District is projecting additional WWSS-related projects, increased spending in its Mains Replacement Program, and in additional future improvements and replacements of storage and pump station facilities.

In Figure 4-1, note that only the in-District and WWSP costs are labeled. The JWC amounts are not labeled because they are relatively small, and the labels would crowd the larger in-District and WWSP amounts shown.

Figure 4-1: Projected Annual CIP Expenditures by Fiscal Year



5 Capital Financing Plan

The capital financing plan for the District's projected capital expenditures is one of the primary drivers for this Financial Plan. The capital financing plan considers the District's financial objectives and the mix of current and future funds available for capital investment to determine the optimal funding sources for the projected CIP expenditures. The optimal funding mix will be achieved by balancing the use of cash funding and debt proceeds to fund the CIP while minimizing increases to customers' rates.

This section provides an overview of the debt instruments the District anticipates using to finance its projected CIP, the methodology used to optimize the CIP financing mix, and the fundamental assumptions underlying the projected debt service schedules for new debt.

5.1 Borrowing Options

Certain rules and regulations make clear the types and limits of debt financing available to the District. Some rules exist on the national level, while others are specified by Oregon law. The District complies with the debt limitations imposed by the Oregon Constitution, Oregon Revised Statutes (ORS), and Oregon Administrative Rules (OAR). The District will further comply with Security and Exchange Commission (SEC) and Municipal Securities Rulemaking Board (MSRB) rules regarding debt issuance, and with IRS regulations for tax-exempt or tax-advantaged debt.

The following describes the specific debt instruments that the District has selected for its capital financing plan.

5.1.1 Types and Use of Long-Term Debt

REVENUE BONDS. Revenue bonds are obligations payable from the net revenues of the District's operations. As users of the District facilities will benefit from long-term capital investments in future years, it is appropriate that future revenues pay a share of the costs and more closely match the term of repayment to the expected economic useful life of the project being financed.

Long-term revenue bonds issued by the District will only be used to finance new and refurbished capital facilities, projects, and certain equipment where it is determined to be cost effective and fiscally prudent. Revenue bonds will be structured to achieve the lowest possible net cost to the District considering market conditions, terms that are advantageous to the District, risks, the Financial Plan, and the nature and type of security to be provided.

Although revenue bonds are not subject to constitutional or statutory debt limits, the District's debt will not exceed legal or contractual limitations, such as rate covenants or additional bonds tests imposed by then-existing financing covenants. Prior to the issuance of any new revenue bonds, the CFO will cause the impact of future debt service payments on total annual fixed costs to be analyzed.

WIFIA. The Water Infrastructure Finance and Innovation Act (WIFIA) program is a federal loan and guarantee program, administered by the U.S. EPA, that aims to accelerate investment in the nation's water infrastructure by providing credit assistance for regionally and nationally significant projects. The District closed its original WIFIA loan agreement on August 2, 2019. The original loan, which would fund up to 49% of the District's share of WIFIA-eligible project costs, included an interest rate of 2.39% that would free up the District's financial resources for other purposes and lower the overall levels of annual

revenues required from rates and charges. The District and the EPA estimated that the initial WIFIA loan would save the District's customers approximately \$138.4 million.

After the District closed its original WIFIA loan agreement in August 2019, the District made two significant requests of the EPA:

1. In the spring of 2020, the District requested the EPA amend the District's draw schedule under its existing WIFIA loan. This requested amendment better aligned the District's WIFIA draws with its new projected cash flow requirements. The EPA approved the revised draw schedule, allowing the District to make more of its total WIFIA funding (i.e., \$387.75 million) available earlier in the WWSP's life cycle.
2. Following the close of the District's original WIFIA loan agreement in August 2019, market conditions changed and interest rates declined. To achieve interest rate savings, the District requested that its WIFIA loan be re-executed. The EPA allowed this re-execution, and the District closed its re-executed WIFIA loan on September 15, 2020 at a lower interest rate of 1.35%.

Under its new WIFIA loan terms (i.e., revised draw schedule and lower interest rate), the District and the EPA estimated additional savings of approximately \$122 million for the District's customers.

The District's WIFIA loan is technically considered a revenue bond under Oregon Law and the District's Master Declaration. The District has not yet drawn on its WIFIA loan. However, the District plans to draw \$100 million of its WIFIA funding in June 2022 to reimburse itself for WWSP project costs to date. The District also plans to use this cash to expand its investment portfolio and take advantage of favorable short-term yields in the current market. The interest earnings from these investments may then be used to offset part of the higher cost revenue bonds that will be needed to complete the WWSS.

WIFIA is a highly valuable addition to the District's portfolio of future debt because it locked in a low interest rate for the length of the program, provides favorable loan terms, and allows for customized disbursement and repayment schedules.

FEDERAL, STATE, OR OTHER LOAN PROGRAMS. To the extent it benefits the District, the District may participate in federal, state, or other loan programs. The CFO routinely evaluates the requirements of these programs to determine if the District is well served by employing them. For planning purposes and in the event the District employs a federal, state, or other loan program, the District will treat and report these obligations in a manner consistent with other similar debt instruments. To the extent required by the loans or other outstanding debt agreements, the District will include the financial requirements of these obligations when determining additional bonds test, coverage requirements, etc.

5.1.2 Authority to Issue Debt

The District has authority under state law to enter into financial obligations for the borrowing options described above. Below are descriptions of the actions the District has taken to obtain the authority to issue debt.

ORDINANCE. At its April 17, 2019 regular meeting, the Board of Commissioners adopted Ordinance 01-19 (Ordinance) authorizing the issuance of debt. The Ordinance authorizes \$600 million in net bond proceeds to fund capital expenditures, identifies an additional \$80 million to fund debt service reserves and issuance costs, authorizes the District's participation in the WIFIA loan program as well as additional revenue bond issuances, and identifies the types of capital expenditures that may be funded by the

borrowings.¹⁹ The Ordinance also delegates to the District’s CFO, Chief Executive Officer (CEO), or other designated employees of the District to issue the revenue bonds authorized by the Ordinance.²⁰

MASTER DECLARATION. On August 2, 2019, the District executed its master revenue bond declaration (Master Declaration). The Master Declaration establishes the terms under which the District’s long-term borrowings are incurred and the terms under which future obligations may be issued on a parity. On September 15, 2020, the Master Declaration was supplemented as part of the WIFIA loan re-execution. Under certain future circumstances, the Master Declaration may be supplemented or amended further by Supplemental Declaration.^{21,22}

5.1.3 Other Debt Considerations

DEBT REFINANCING. Refunding obligations may be issued to retire all or a portion of an outstanding debt issue. Economic refundings may refinance high-coupon debt at lower interest rates to realize debt service savings. Alternatively, the District may conduct a refunding for reasons other than cost savings, such as to restructure debt service payments, to change the type of debt instruments, to release restricted revenues, to ease administrative requirements, or to remove undesirable covenants.

REIMBURSEMENT DECLARATION. The District’s Board of Commissioners authorized the District’s Chief Executive Officer to declare official intent on behalf of the District to reimburse the District’s cash reserves for capital expenditures with the proceeds from tax-advantaged obligations. This authorization was approved by Resolution No. 08-13, adopted on June 19, 2013. In addition to this reimbursement declaration, the District’s Board further declared its intent as part of the Ordinance.

5.2 Optimizing the Capital Financing Mix

The District’s CIP funding sources include accumulated reserves (fund balances), future revenues allocated towards capital expenditures (cash financing, also known as “pay-as-you-go”), and debt financing which will lead to debt service repayments (sometimes referred to as “pay-as-you-use” financing). All of these funding sources must be integrated into the capital financing plan.

Optimizing the capital financing plan is a complex and iterative process that involves several key steps. These steps are:

1. Determine the CIP funding mix of cash and debt financing for each Forecast year.
2. Determine the types and estimate the amounts of debt financing that will be used.
3. Calculate amortization schedules for the forecasted debt issuances.

The steps and process are discussed in greater detail in the following subsections.

¹⁹ The authorized capital expenditures include all system improvements of the District, including investments in the District’s joint ventures such as the Willamette Water Supply System.

²⁰ A signed copy of the Ordinance is included as *Appendix B – Ordinance 01-19 – Authorizing the Issuance of Debt*.

²¹ The District’s Master Declaration and First Supplement are included as *Appendix C – Master Revenue Bond Declaration* and *Appendix D – First Supplement to Master Revenue Bond Declaration*, respectively.

²² The District’s signed Parity Certificate and related transcript documents are included as *Appendix E – Parity Certificate and Transcript Documents*.

5.2.1 Target Cash and Debt Financing Profile

Like any business, the District must determine the best mix of resources (cash and debt financing) to fund both its operations and its capital program. The cash/debt profile aims to maintain some cash investment into both existing facilities (renewal and replacement) and new system assets, while minimizing impacts on customers and achieving intergenerational equity among customers.

Figure 5-1 illustrates the mix of cash and debt planned to finance the CIP over the 10-year presentation period. Note that the ratio of cash-to-debt is projected to vary each year. Ultimately, the mix will vary from the projections shown, depending on actual water sales revenue, future market conditions and input from the District’s financial consultants.

Figure 5-1: CIP Funding Sources by Fiscal Year

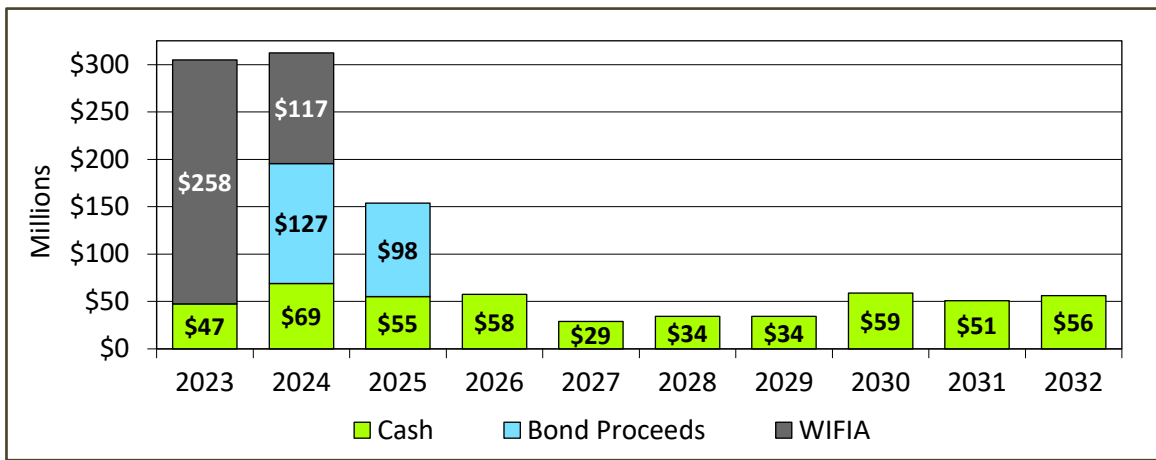
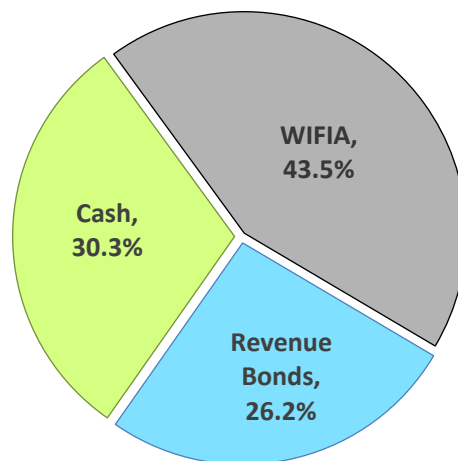


Figure 5-2 illustrates the proportional amounts of CIP funding through the end of FY2027.

Figure 5-2: Five-Year CIP Funding Ratios by Source (Cash and Debt, FY2023-FY2027)



5.2.2 Debt Structure and Principal Amortization

Ultimately, the structuring of the District’s future debt obligations and repayments will depend on market factors and input from professional advisers (municipal advisers, underwriters, etc.) at the time of each issuance. For the purposes of the Forecast model and this Financial Plan, the District used what it considers to be standard, and slightly conservative, assumptions to calculate future debt service requirements. These assumptions are outlined in Section 5.3 below.

5.3 Significant Debt Program Assumptions

As mentioned in the *Introduction* (Section 1), the District will fund a significant portion of its WWSS expenditures with financing from the Water Infrastructure Finance and Innovation Act (WIFIA), with traditional revenue bonds augmenting the remaining WWSS costs and providing outside funding at times when future debt financing will be required.

5.3.1 WIFIA Debt Assumptions

TERM. The total WIFIA loan amount will be repaid in 34 years, beginning after “substantial completion” of the project (i.e., the WWSS). As specified in the re-executed loan agreement, WIFIA repayments will begin in FY2028 and end in FY2061.

INTEREST RATE. The re-executed loan agreement allowed the District to reset its WIFIA interest rate from 2.39% to 1.35%. This new, lower rate is incorporated into related WIFIA financing and capitalized interest calculations in the Forecast.

CAPITALIZED INTEREST. Using the 1.35% WIFIA interest rate and guidance from the WIFIA program, the District calculates compounding interest on each of its projected WIFIA draws from the year each draw is taken to FY2028 (when the total WIFIA loan is sized), at which point the total accumulated amounts would be rolled into the total WIFIA debt outstanding. Table 5-1 presents a summary of the capitalized interest calculation and resulting WIFIA loan amount to be amortized.

Table 5-1: WIFIA Capitalized Interest and Total Financing (\$ Millions)

	WIFIA Proceeds	Total Cap-i	Total Financed
FY2022 [1]	\$100.0	\$7.8	\$107.8
FY2023	257.5	18.5	276.0
FY2024	30.2	1.9	32.1
Totals	\$387.7	\$28.2	\$416.0

[1] Initial draw on WIFIA funds planned for June 2022.

PRINCIPAL AMORTIZATION. Per the repayment schedule included in the WIFIA loan agreement, the principal amount of approximately \$416 million was amortized over 34 years using levelized annual debt service.

DEBT SERVICE RESERVE. The WIFIA loan agreement does not include a debt reserve requirement.

ISSUANCE COSTS. The issuance costs for the District’s WIFIA loan were incurred in prior years.

5.3.2 Revenue Bond Debt Assumptions

TERM. The District assumes all revenue bonds will be issued with a 30-year term.

INTEREST RATE. The assumed interest rate is 5.5% for revenue bonds issuances.

ISSUANCE COSTS. Revenue bond issuance costs are estimated at 0.75% of the par amount for each issuance through FY2025. For revenue bonds needed in future years, the Forecast assumes that issuance costs would increase to 1.50% of the par amount for each issuance, with the costs included in the total issuance amount. Issuance costs as a percentage of the par amounts are assumed to increase for future borrowings in recognition of the smaller sizes of future issues.

PRINCIPAL AMORTIZATION. For planning purposes, revenue bonds were amortized over 30 years using levelized annual debt service. For projected revenue bond issuances in FY2024 and FY2025, the District assumed that amortization would be structured with provision for interest-only payments until FY2028. This assumption was incorporated into the 2021-23 Financial Plan (May 2021) with input from the District’s municipal adviser.

DEBT SERVICE RESERVE. Revenue bond reserve requirements were calculated based on the maximum annual debt service (MADS) of each issuance.

5.4 Schedule of Future Debt Issuance

Projected debt issuances are presented in Table 5-2 below. For WIFIA and each revenue bond issuance, Table 5-2 includes the proceeds available for capital expenditures, estimated issuance costs, capitalized interest (WIFIA loan only), reserve requirements (revenue bonds only), and total issue amounts during the 10-year and 30-year projection periods.

Table 5-2: Projected WIFIA Funding and Revenue Bond Issuances (\$ Millions)

	Proceeds for CIP	Issuance Costs [1]	Reserve Req. [2]	Capitalized Interest	Total Financed
Projected Debt Issuances					
WIFIA	\$387.7	\$0.0	\$0.0	\$28.2	\$416.0
FY2024 Revenue Bonds	126.6	1.0	9.9	0.0	137.5
FY2025 Revenue Bonds	98.4	0.8	7.6	0.0	106.8
Totals	\$612.7	\$1.8	\$17.5	\$28.2	\$660.3

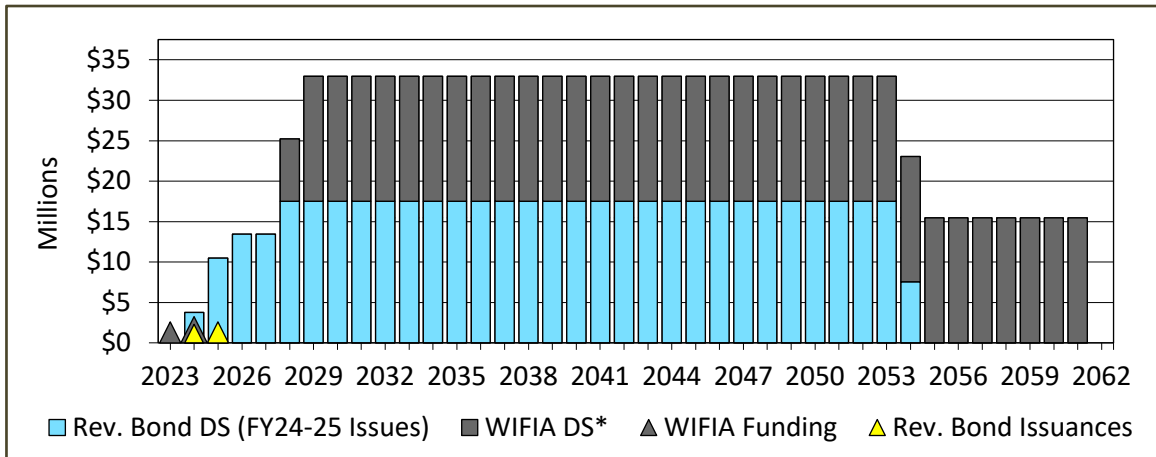
[1] Revenue bond issuance costs assumed at 0.75% of the total amounts financed per year.

[2] Revenue bond reserve requirement assumed at maximum annual debt service (MADS) per issuance.

It should be noted that Table 5-2 is not intended as an outline or planned schedule for future revenue bond issuances, as the District will not likely issue revenue bonds annually over 2- and 3-year periods. Rather, the schedule above is meant to demonstrate the approximate size and timing of needed debt financing. In future years when debt funding is needed, the District may execute a single bond issuance to fund capital needs for multiple successive years. Conversely, short-term debt instruments may be employed to cover interim capital costs in one or more periods, with revenue bonds then issued to close-out the interim financing and provide additional funding for then-current and/or future capital expenditures.

Figure 5-3 shows the resulting debt service based on the projected borrowings in Table 5-2 above and the debt service assumptions described in Section 5.3.

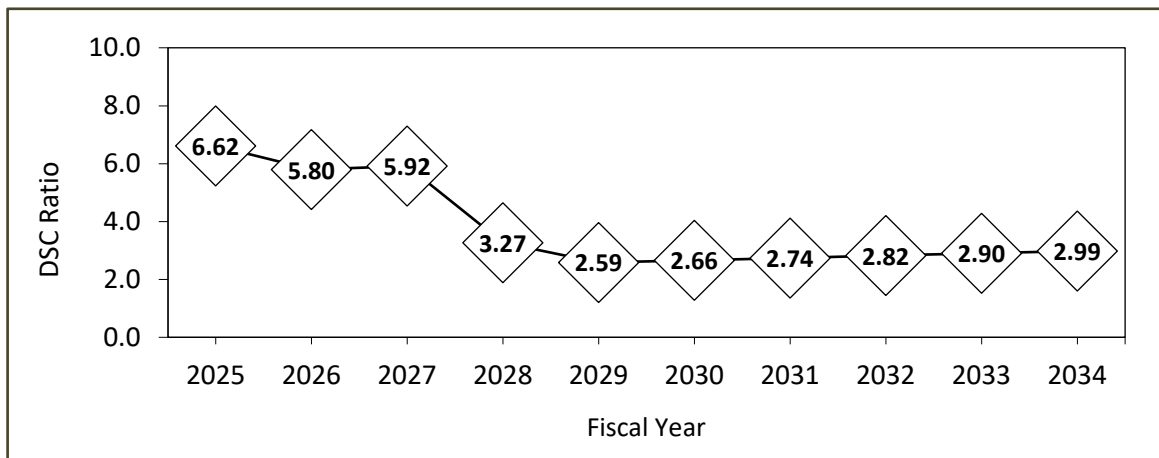
Figure 5-3: Projected Annual Debt Service by Fiscal Year



* WIFIA debt repayments based on program funding plus capitalized interest in FY2023 through FY2027.

As presented in Figure 5-4, the District expects to meet or exceed its target minimum debt service coverage ratio of 2.0 times total annual debt service (WIFIA and revenue bonds).

Figure 5-4: Projected Debt Service Coverage

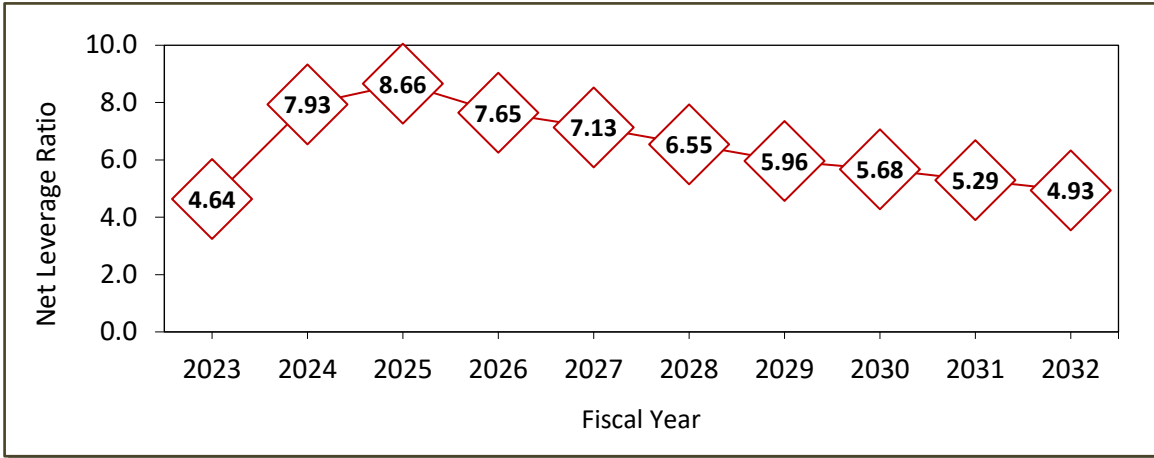


Note that Figure 5-4 presents ten years of results beginning with FY2025 instead of FY2023. This is to show projected DSC for a period after which the bulk of the District’s near-term debt service requirements will be in place.

As shown in Figure 5-5 (next page), the District estimates that its net leverage ratio will peak above its target maximum of 8.0x in FY2025. This coincides with the conclusion of the District’s planned debt financing for the WWSS. Beginning in FY2026, the District’s net leverage ratio will fall to less than the target maximum and continue to decline annually in future years.²³

²³ For background information on the Net Leverage ratio, see Section 2.2.1.1 in this report.

Figure 5-5: Projected Net Leverage Ratio



6 Financial Forecast

This section provides a brief description of the District's rates and charges, forecast financial projections, and a summary of the District's projected sources and uses of funds over the presentation period. The forecast represents the District's current projections, which are based on current data and assumptions. It is important to note that these projections are subject to change and should be viewed as estimates.

6.1 District Rates and Charges

The District collects revenues from a variety of sources. Some sources are fixed (i.e., not dependent on water sales or the economy), while others are variable being based on the amount of water sold or the local/regional economy (e.g., system development charges). Brief descriptions for each of the District's rates and charges categories are provided below.

FIXED CHARGE. Water rates include two types of charges: fixed and volumetric. The *fixed charge* is assessed to customers monthly or bimonthly and varies by meter size.

VOLUMETRIC WATER RATE. The *volumetric rate* is based on the amount of water consumed. TVWD assesses this rate to each unit of water sold (i.e., \$/CCF).

OTHER RATES AND CHARGES (NON-RATE REVENUE). For planning purposes, *non-rate revenue* includes meter and service revenue, dispatch fees, backflow program reimbursements, contract reimbursements, miscellaneous income, and some other small dollar items.

SYSTEM DEVELOPMENT CHARGES. Sometimes referred to as improvement fees, impact fees, capacity reserve charges, or infrastructure investment fees, SDCs are contributions of capital that reimburse existing customers for the available capacity in the existing system and help finance growth-related capacity improvements.

6.2 Projected Rates and Charges

The District developed its financial projections based on its financial objectives and policies (presented in Section 2), water sales projections (Section 3), and projections of future revenue requirements which are based on the following:

- CIP (Section 4)
- Capital financing plans (Section 5)
- Operating cost forecast – discussed later in this section (Section 6)

Using all these inputs and assumptions, District staff uses its Forecast model to determine the level of rate revenue needed to meet the District's requirements in each year of the model's forecast period.

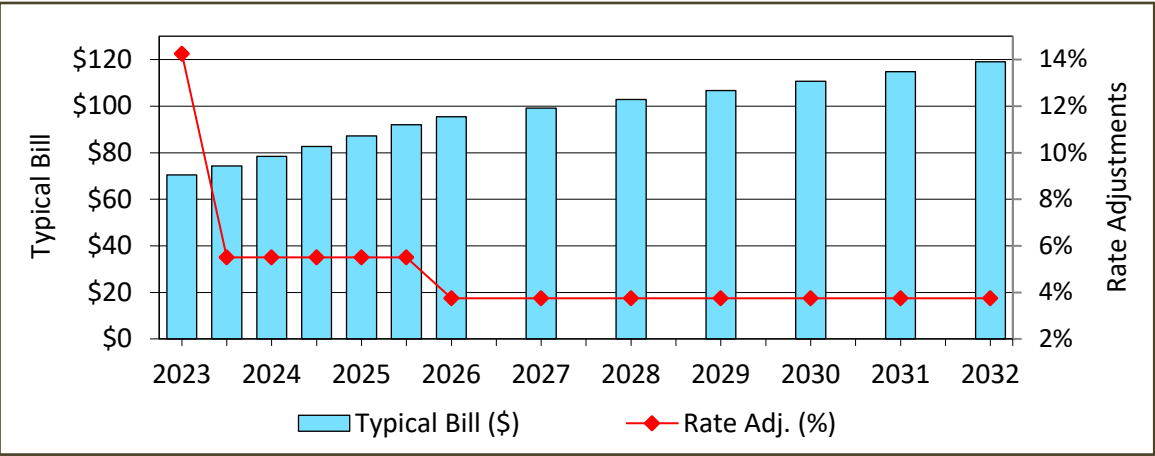
Historically, the District adopted new water rates annually after conducting a public rate process each summer. Beginning with the 2017-2019 biennial budget period, the District began adopting rates for two years at a time following a public rate process conducted in the first few months of each biennial budget period. This shift to *multi-year* rate adoption was based on recommendations received from the District's Rate Advisory Committee in 2016-17.

Based on recent considerations by the Board and direction given to staff at its April 20, 2022 regular monthly meeting, this Financial Plan presents a new strategy for meeting the District’s revenue requirements over the next several years. This strategy includes adjusting the previously adopted rates that were scheduled to become effective on November 1, 2022 and then adopting new rates every six months until shifting back to annual rate adjustments beginning in November 2025 (FY2026).

Figure 6-1 presents the Forecast customer impacts over the presentation period, including typical monthly bills and projected rate revenue adjustments. For the first three years (FY2023-FY2025) of the presentation period, the graph presents two rate adjustments per year:

- 14.25% in November 2022 (FY2023)
- 5.50% every 6 months from May 2023 (FY2023) to May 2025 (FY2025)
- 3.75% annually thereafter, beginning in November 2025 (FY2026)

Figure 6-1: Projected Rate Adjustments and Typical Bills by Fiscal Year



6.3 Projected Sources of Funds

Figure 6-2 presents a summary of the District’s projected sources of funds over the presentation period. On the next page, Table 6-1 presents the same information in tabular format.

Figure 6-2: Projected Sources of Funds by Fiscal Year

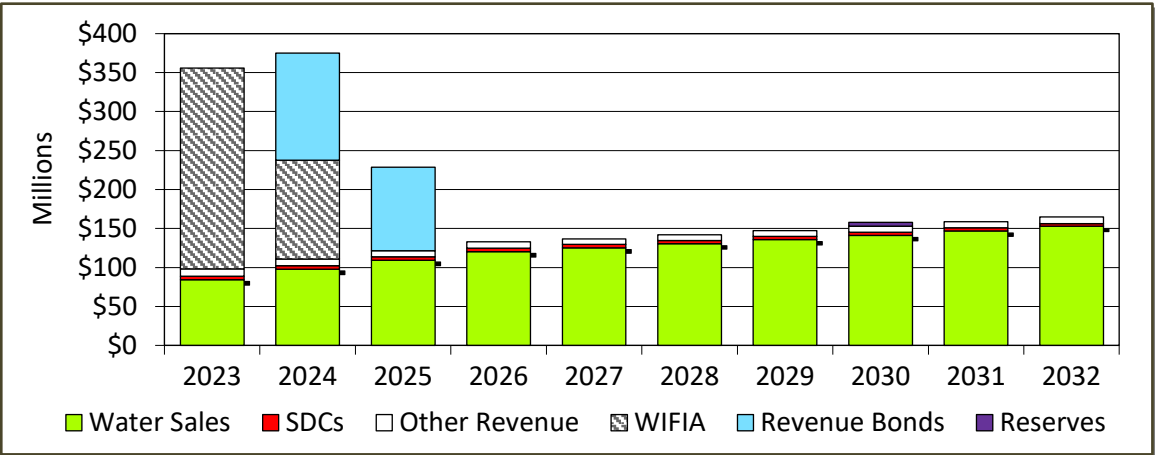


Table 6-1: Revenues and Other Funding Sources by Fiscal Year (\$ Millions)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Totals
Water Sales	\$84.5	\$97.8	\$109.2	\$120.3	\$125.3	\$130.5	\$135.8	\$141.4	\$147.0	\$152.8	\$1244.6
SDCs	4.6	4.6	4.6	4.6	4.4	4.3	4.1	3.9	3.8	3.6	42.3
Other Revenue	9.3	8.6	7.9	8.1	6.8	7.1	7.5	7.8	8.0	8.3	79.4
WIFIA [1]	257.5	126.5	-	-	-	-	-	-	-	-	384.0
Revenue Bonds	-	137.5	106.8	-	-	-	-	-	-	-	244.3
Reserves	-	-	-	-	-	-	-	4.9	-	-	4.9
Totals	\$355.8	\$375.0	\$228.4	\$132.9	\$136.5	\$141.9	\$147.5	\$158.0	\$158.8	\$164.7	\$1999.5

[1] Approximately 75% of the WIFIA funding shown in FY2024 is from the District’s initial draw of \$100 million (planned for June 2022). The District intends to invest those funds until FY2024 (when needed for capital expenditures) and earn interest at today’s relatively higher rates. The additional interest earnings will be used to offset higher-cost revenue bond financing in the next biennium.

Each category listed above in Table 6-1 is described below. Note that some categories are described in multiple parts. For example, Other Revenue in Table 6-1 includes the following five items, each described separately below: *Non-Rate Revenue*, *Payments from Partners – Capitalized Overhead*, *Payments from Partners – Joint Venture Operations*, *Wheeling Revenue*, and *Interest Income*.

RATE REVENUE (WATER SALES). Water rate revenue projections include revenue from both fixed and volumetric charges, as discussed in *Section 6.1 – District Rates and Charges*. Over the presentation period, increasing rate revenue is due to the projected rate revenue adjustments shown in Figure 6-1 and minor annual increases in customers and water sales following recent net losses due to withdrawals by the City of Beaverton, which were discussed in *Section 3.2 – Water Demand Forecast*.

SYSTEM DEVELOPMENT CHARGES (SDCs). In FY2023, the District projects that it will receive approximately \$4.6 million from water SDCs. For the first 4 years of the forecast, the District assumed that SDC collections will remain steady at approximately \$4.6 million annually, then decline slowly over time in the future. These assumptions are important as the overreliance on growth-related fees for rate setting purposes may result in the need for additional rate adjustments to fund capital improvements should growth not occur at the projected levels.

NON-RATE REVENUE (OTHER REVENUE). As mentioned in Section 6.1 above, non-rate revenue includes meter and service revenue, dispatch fees, backflow program reimbursements, contract reimbursements, miscellaneous income, and some other small dollar items. Based on the District’s FY2023 budget for these items plus actual data from FY2021 and FY2022, the Forecast includes a projection of approximately \$2.6 million in FY2023. From FY2024 forward, non-rate revenue line items were projected to increase at a rate of 3.0% annually.

PAYMENTS FROM PARTNERS – CAPITALIZED OVERHEAD (OTHER REVENUE). For capital budgeting purposes, District personnel costs directly associated with the development of capital projects are included in the CIP cost projections and ultimately capitalized with the projects. For the WWSP and other partner projects, the District receives payments from its partners for their share of project costs (including District overhead).

Although the Forecast model includes only the District’s share of partner project costs like the WWSP, it recognizes the partners’ share of capitalized overhead as a resource (non-rate revenue) since that portion of the District’s operational costs is included in its budget and Forecast O&M expenses but will

be paid by partners. In other words, the Forecast includes the District's total operational expenses, but offsets a portion of those expenses with the amounts the District will receive from its partners for capitalized overhead.

From FY2023 to FY2026, the Forecast includes between \$1.4 and \$1.6 million per year from partner reimbursements for capitalized overhead related to WWSP projects. This resource is eliminated after FY2026 as the WWSP will be complete, resulting in the FY2027 decline in *Other Revenue* in Table 6-1.

PAYMENTS FROM PARTNERS – JOINT VENTURE OPERATIONS (OTHER REVENUE). Similar to the reimbursements for capitalized overhead related to the WWSP, the District will begin charging its partners for the costs of joint venture operations (JV Ops) as the WWSP winds down and the District transitions into its role as managing agency of the WWSS. These JV Ops costs will include both personnel costs and the costs of WWSS-related materials and services (M&S).

Partner payments for JV Ops are projected to increase from \$81 thousand in FY2023 to \$755 thousand in FY2027 when the WWSS is in full operation. Going forward, these payments are projected to escalate at 4.5% annually, consistent with the operating costs that the District will incur for JV Ops.

WHEELING REVENUE (OTHER REVENUE). As discussed in *Section 3.2 – Water Demand Forecast*, the service area agreement with Beaverton affected a portion of the District's service area subject to withdrawal. Although withdrawn from the District, the District continued to serve these customers until Beaverton executed certain "transfer activities" governed by the agreement. Beaverton then transferred customers to a wheeling status in which Beaverton provides water for the District to convey to Beaverton's customers. The agreement provides a basis for compensation to the District for providing wheeling services to Beaverton.

Beaverton can also serve withdrawn customers directly with its own infrastructure and has done so with select portions of the withdrawal areas. As Beaverton moves its customers from the "wheeling" status to the "separated" status, the District ceases to provide wheeling services to Beaverton. The District assumes that Beaverton will continue to fully separate the withdrawn customers in the coming years and estimates annual wheeling revenue declining from approximately \$922 thousand in FY2023 to approximately \$211 thousand in FY2027. The District also assumes that a small portion of withdrawn customers will receive wheeled water on a permanent basis and increased projected wheeling revenue in FY2028 and beyond at a rate of 3.0% annually.

INTEREST INCOME (OTHER REVENUE). Interest earnings on the District's reserve funds were calculated based on assumed interest rates of 0.88% in FY2023, 2.0% in FY2024 and FY2025, and annual rates that decline by approximately 0.25% per year until reaching 1.0% in FY2028. The Forecast then uses 1.0% annually for each year thereafter.

Given the substantial level of reserves currently held by the District plus the addition of approximately \$100 million from WIFIA (i.e., planned for June 2022), the Forecast includes interest earnings totaling approximately \$2.6 million in FY2023 and \$1.8 million in FY2024. As the District uses cash reserves for capital expenditures over the next several years, interest earnings are projected to decline to approximately \$915 thousand in FY2025 and FY2026. In FY2027 and beyond, interest earnings are projected to rebound as the District's annual capital expenditures will be much lower and its reserve fund balances grow in preparation for future expansions of the WWSS.

WIFIA. The WIFIA program is described in detail in Section 5 of this Financial Plan.

REVENUE BONDS. Along with the WIFIA program, revenue bond issuances are described in detail as part of Section 5 – Capital Financing Plan.

RESERVES (NET FUND WITHDRAWALS). Cash fund withdrawals provide an important source of funds for the District as the WWSP has moved into full swing. For the last 5-10 years, the District proactively planned for these capital investments and has funded expenditures-to-date entirely with current revenues and reserves. Through the remainder of the WWSP, the District will need to shift away from cash reserves as a source of funding and instead rely on current revenue plus debt-financing for its portion of the WWSP and other expenditures. After the WWSP is complete and the District begins to accumulate reserves that exceed its target minimum balances, future reserve balances will again play an important role in keeping future rate revenue adjustments steady and low.

6.4 Projected Uses of Funds

The following graph and table show the projected uses of funds over the presentation period. The major categories of uses include:

- Operations and Maintenance (O&M) Costs (including debt issuance costs)
- Purchased Water Program (including pumping power costs)
- Capital Expenditures
- Net Increases in Reserves
- Debt Service

As shown in Figure 6-3, the largest variability in the projected uses of funds is driven by the District’s planned capital expenditures. Table 6-2 (next page) presents the tabular detail of the projected uses of funds, with descriptions below and on following pages.

Figure 6-3: Projected Uses of Funds by Fiscal Year

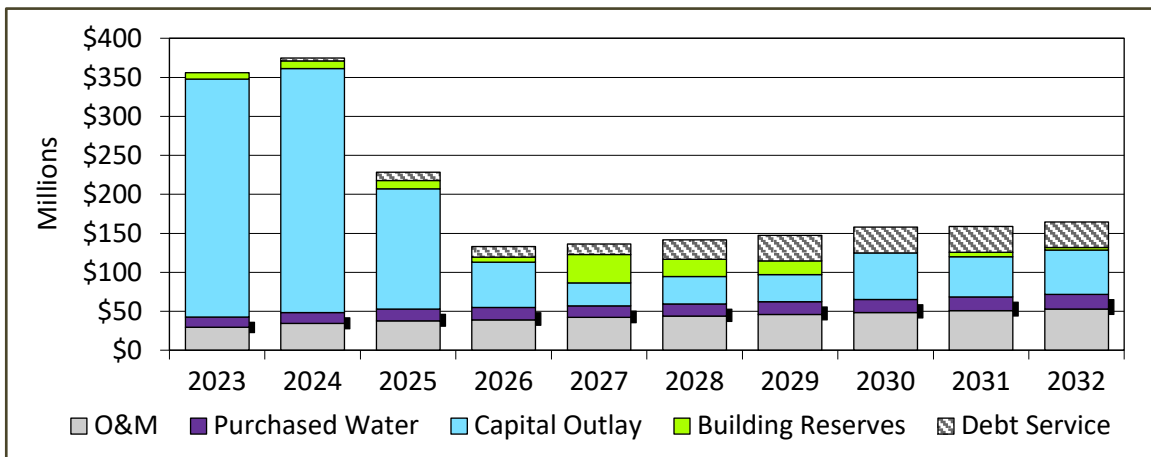


Table 6-2: Annual Expenditures and Increases in Reserves by Fiscal Year (\$ Millions)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Totals
O&M Costs [1]	\$29.6	\$34.5	\$37.7	\$39.1	\$42.3	\$44.1	\$46.1	\$48.4	\$50.8	\$53.1	\$425.7
Purchased Water [2]	13.1	14.1	15.2	15.9	14.6	15.3	16.1	16.9	17.7	18.6	157.5
Capital Outlay	305.0	312.7	154.2	58.1	29.7	35.1	34.8	59.7	51.4	57.0	1097.7
Building Reserves	8.0	9.9	10.8	6.4	36.5	22.1	17.5	-	6.0	3.1	120.3
Debt Service	-	3.8	10.5	13.4	13.4	25.2	33.0	33.0	33.0	33.0	198.3
Totals	\$355.8	\$375.0	\$228.4	\$132.9	\$136.5	\$141.9	\$147.5	\$158.0	\$158.8	\$164.7	\$1999.5

[1] O&M costs shown include debt issuance costs.

[2] Consistent with past reporting, Purchased Water includes pumping power costs.

O&M COSTS. Operations and maintenance costs account for most of the day-to-day expenditures for operating a water utility. O&M costs include labor, benefits, and M&S (i.e., materials and services), among other items. The District’s 2021-2023 budget served as a starting point for the O&M forecast included in this Financial Plan. Most O&M costs were projected to escalate from FY2023 data at 8.0% annually through FY2025, 4.5% annually thereafter. Also included in the *O&M Costs* row in Table 6-2 are debt issuance costs which were discussed in *Section 5.3 – Significant Debt Program Assumptions*.

PERS PENSION COSTS (O&M COSTS). Employees of the District are provided pensions through the Oregon Public Employees Retirement System (Oregon PERS or simply “PERS”).²⁴ Oregon PERS provides a variety of pension plans for public employees based on when an employee first enters public service. These pension plans are commonly referred to as PERS Tier 1 and Tier 2, and Oregon Public Service Retirement Plan (OPSRP). These plans vary in benefits but include both a defined benefits component and a defined contribution component.

Like many pension plans, the Oregon PERS plans currently have an unfunded actuarial liability (UAL). The PERS UAL is allocated to employers of the plan. Based on its latest valuation report, the District estimates its current share of PERS UAL is approximately \$14.7 million. The District’s share of the PERS UAL is the result of many factors including changes in actuarial assumptions, earnings on the PERS investments, and other PERS policies (e.g., rate collaring). The District’s share of PERS UAL is a liability of the District and is reported in the District’s financial statements consistent with the requirements of the various Government Accounting Standards Board (GASB) statements on pension reporting.

In the 2019-21 biennium, the District’s management requested \$20 million to fund a PERS side account with two deposits of \$10 million each. The deposits were to be separated in time to mitigate market risks since the PERS investments of side accounts has greater market risk than the District’s investment portfolio. Ultimately, only the first \$10 million deposit was made which almost cut the District’s UAL in half to approximately \$10.5 million. Since then, the Oregon PERS discount rate was lowered, and the District’s UAL increased accordingly to the current level of \$14.7 million.²⁵ Nonetheless, funding the side account resulted in lower PERS rates and payments by the District, and allows the District’s assets to be invested in a manner more consistent with long-term retirement needs.²⁶

²⁴ Oregon PERS is commonly known by and referred to using only the acronym “PERS”. This abbreviated version is even used on the Oregon PERS website and by Milliman, Inc. in its actuarial valuation report for Oregon PERS.

²⁵ For details on the District’s PERS valuation and a system-wide analysis of OPERS, see *Appendix F – PERS Valuation Report*.

²⁶ The District’s investment policies restrict investments to have a maturity of no more than five years whereas OPERS-funded side accounts are invested consistent with long-term retirement funds.

PURCHASED WATER (INCLUDES FUTURE WWSS SUPPLY). Based on the District’s 2021-2023 budget and subsequent Portland rate information, supply costs are projected to escalate from FY2023 to FY2026:

Table 6-3: Source Water Rates and Total Costs (FY2023–FY2027)

	2023	2024	2025	2026	2027
Portland					
Purchase (MGD) [1]	13.16	13.16	13.16	13.16	0.00
Rate (\$/CCF) [2]	\$1.461	\$1.642	\$1.769	\$1.843	\$2.250
Annual Cost (\$ million)	\$9.4	\$10.5	\$11.4	\$11.8	\$0.0
JWC					
Purchase (MGD) [3]	7.28	7.36	7.44	7.51	14.20
Rate (\$/CCF) [4]	\$0.764	\$0.825	\$0.891	\$0.931	\$0.973
Annual Cost (\$ million)	\$2.7	\$3.0	\$3.2	\$3.4	\$6.7
WWSS					
WWSS Supply (MGD) [5]					6.55
Unit Cost (\$/CCF) [6]					\$1.992
Annual Cost (\$ million)					\$6.4
Total Annual Cost	\$12.1	\$13.5	\$14.6	\$15.2	\$13.1
<i>% Change</i>		11.7%	8.0%	4.5%	(14.0%)

[1] Contract minimum (as annual avg.); min. purchase assumed for financial planning.

[2] Portland rate forecast provided by Portland thru FY2026.

[3] Annual avg. required to meet Forecast water demands after Portland purchases.

[4] JWC rates escalated by 8.0% annually through 2025, 4.5% per year thereafter.

[5] Annual avg. required to meet water demands in FY2027 (i.e., after JWC purchases).

[6] Preliminary unit cost estimate for WWSS water supply.

In FY2027, the melded cost of the District’s water will drop due to the change in source water supplies. As presented in Figure 3-3, Table 6-3 summarizes the Forecast’s assumptions regarding future water supplies and related costs. These projections assume that the District will purchase more JWC water after switching its other source from Portland to the WWSS. In doing so, overall source water costs decline by approximately \$2.1 million (14%) in FY2027.

PUMPING POWER COSTS (PURCHASED WATER). As noted previously, pumping power costs are also included in the Purchased Water category in Table 6-2. Currently, the District incurs these costs for moving water from its 385, 426, and 435 pressure zones to higher elevations in its service area. Consistent with most other O&M projections, pumping power costs are projected to escalate from the FY2023 budget at an annual rate of 8.0% through FY2025, then 4.5% in FY2026. However, when the District switches its gravity-fed water supply (Portland) to a pumped source (WWSS), pumping power costs will increase by approximately \$770 thousand in FY2027, from \$592 thousand in FY2026 to \$1.36 million.

When the WWSS pumping costs are added to in-District pumping and combined with the FY2027 reduction in source water costs, the net decrease in *Purchased Water* shown in Table 6-2 is approximately \$1.36 million, or 8.6% lower than the FY2026 total. After FY2027, *Purchased Water* costs are projected to escalate at approximately 5.1% in FY2028, then slow gradually to 4.5% annual increases in FY2036 and beyond.

CAPITAL EXPENDITURES (CAPITAL OUTLAY). The District's CIP is described in Section 4 of this Financial Plan. Capital outlays from O&M are also included as *Capital Outlay* in Table 6-2. These outlays are minor in comparison to the CIP, with approximately \$210 thousand in the District's FY2023 budget and \$500 thousand in FY2024, escalating at 4.5% annually thereafter.

NET INCREASES IN RESERVES (BUILDING RESERVES). In years when the District will use WIFIA and revenue bond funding for portions of its capital expenditures, revenue from rates and other sources may be available to increase reserve balances, thereby making it available for use in future years. Reserve fund balances will also increase in the years following the completion of the WWSS, when the District's rates will have increased to meet the financial targets and metrics associated with its debt financings and future debt repayments.

DEBT SERVICE. Projected debt service is driven by the capital financing mix discussed in Section 5.2.1 – *Target Cash and Debt Financing Profile* and the debt program assumptions detailed in Section 5.3.

6.5 Detailed Financial Projections

Appendix G – Forecast Model Summary Results includes a copy of detailed projections from the summary version of the District's Forecast model.

7 Funds and Reserves

Reserves are critical to the prudent financial management of any utility. Adequate reserve levels can provide the necessary funding in low sales years or offset emergency capital projects, both minimizing the impacts to rates in the short-term. This section presents the summary reserves that the District uses in the Forecast model. The projections in this section demonstrate that the District will have sufficient liquidity to meet both its operating and capital investment commitments.

Before presenting the summary reserves and results from the Forecast model, however, it may help to understand the District's budgetary fund structure and how the District combines some funds (and ignores others) for financial planning purposes. The District's budget and accounting systems are structured around the following funds (fund titles italicized):

- On a day-to-day basis, all administration, operations, and maintenance activities are accounted for in the *General Fund*.
- Construction and capital improvement activities are accounted for in the *Capital Improvement Fund*.
- The *Capital Reserve Fund* is used to hold resources available for current and future capital investments for the District.
- Historically, the *Revenue Bond Debt Service Fund* accounted for the District's debt service obligations.
- The District is a member of, and provides management services for, the *Willamette River Water Coalition (WRWC)*, and accounts for these activities in a separate fund.
- The *Customer Emergency Assistance (CEA) Fund* accounts for the resources and requirements used to provide limited emergency assistance to qualified District customers.
- The *Willamette Intake Facilities Fund* accounts for the activities of the WIF Commission; an intergovernmental agreement among TVWD and five neighboring cities.
- The *Willamette Water Supply System Fund* accounts for the activities of the WWSS Commission; an intergovernmental agreement among TVWD and the cities of Beaverton and Hillsboro.

Each of these funds is described below.

7.1 Description of District Funds

GENERAL FUND (FUND 01). All six of the District's operating departments and District staff are accounted for in the General Fund. Additionally, the Purchased Water budget and payments of right-of-way fees are included in the General Fund as a non-departmental expenditure. Purchased Water represents the District's single largest materials and services (M&S) expenditure.

CAPITAL IMPROVEMENT FUND (FUND 11). The Capital Improvement Fund accounts for the resources and expenditures used for acquisition and/or construction of major capital facilities. It does not maintain a fund balance. All reserves for capital investments are held in the Capital Reserve Fund and transferred to the Capital Improvement Fund as needed to fund capital outlays. The sole resource for the Capital Improvement Fund is transfers from the Capital Reserve Fund.

CAPITAL RESERVE FUND (FUND 18). The Capital Reserve Fund is used to hold resources available for current and future capital investments for the District. The use of the Capital Reserve Fund allows the flow of funds for current and future uses to be managed in a transparent manner consistent with

budgeting best practices. In anticipation of the significant costs associated with WWSP, the District has increased its reserves deliberately. These reserves are easily monitored in a single fund.

DEBT PROCEEDS FUND (FUND 22). The Debt Proceeds Fund is used to hold resources from debt issuances that are available to fund capital expenditures of the District. The use of the Debt Proceeds Fund allows the flow of funds for current and future uses to be managed in a transparent manner consistent with budgeting best practices.

REVENUE BOND DEBT SERVICE FUND (FUND 31). The Revenue Bond Debt Service Fund accounts for the District's obligations for principal and interest payments on its outstanding revenue bonds. The District fully redeemed its last outstanding revenue bonds in June of 2015; however, the fund is maintained for future use.

WILLAMETTE RIVER WATER COALITION (FUND 41). This joint venture fund is used to account for the Willamette River Water Coalition (WRWC), a coalition of four local governments of which the District is a member. The WRWC's purpose is to preserve access to the Willamette River as a municipal and industrial water source. The budget is set by the WRWC governing body and administered by the District. Resources for the WRWC Fund come from member agency dues based on a formula agreed to in an intergovernmental agreement.

CUSTOMER EMERGENCY ASSISTANCE FUND (FUND 43). The purpose of the Customer Emergency Assistance (CEA) Fund is to account for the resources and requirements used to provide limited emergency assistance to qualified District customers. The resources for the CEA Fund are transferred in from the General Fund or come from voluntary contributions from customers, District staff, and members of the Board. A third-party administrator reviews and qualifies requests from customers facing temporary financial hardships. Any unspent funds remaining at the end of each budgetary period remain in the CEA Fund to meet future customer assistance needs.

WILLAMETTE INTAKE FACILITIES (FUND 44). The WIF Fund accounts for the activities of the WIF Commission; an intergovernmental agreement whose members include TVWD and the cities of Beaverton, Hillsboro, Sherwood, Tigard, and Wilsonville. The WIF owns, operates, and maintains the intake facilities at the Willamette River Water Treatment Plant in Wilsonville for the benefit of its members. As the Managing Agency, TVWD incorporates the budget adopted by the WIF Board of Commissioners into the District's biennial budget. Resources for the fund include payments by members for operating expenses and contributions for capital outlay. The WIF is audited separately, and the fund is not included as part of TVWD's audited financial statements.

WILLAMETTE WATER SUPPLY SYSTEM (FUND 45). The WWSS Fund accounts for the activities of the WWSS Commission; an intergovernmental agreement among TVWD and the cities of Beaverton and Hillsboro. The WWSS Commission was established to design and construct the Willamette Water Supply System by 2026, and will own, operate, and maintain the assets that make up the system for the benefit of the partners. As the Managing Agency, TVWD incorporates the budget adopted by the WWSS Board of Commissioners into the District's biennial budget. Resources for the fund include payments by members for operating expenses and contributions for capital outlay. The WWSS is audited separately. Following governmental accounting standards, the WWSS is considered a component unit of TVWD.

7.2 Projected Reserve Balances

The Forecast is a cash flow model designed for financial planning around the District's future cash requirements. As such, the District uses it to forecast *reserves* rather than *funds*. In doing so, some of the *Funds* described in Section 7.1 above are either combined into a *cash reserve*, while most are excluded from the Forecast altogether.

For example, some of the *Funds* listed above were established only to manage the joint ventures that the District serves as the Managing Agency on behalf of its partners. Funds 41, 44, and 45 exist to account for the activities of various partnerships, where the costs and partner contributions are tracked for budgeting, accounting, and reporting purposes.

In contrast, the Forecast is only concerned with the *District's* revenue requirements and how those requirements will be met with available cash (including liquid investments) and future debt. Therefore, partner costs shares are not included, and the District's costs are tracked as uses of cash reserves and debt proceeds (from debt issued to the District only). For this reason, it is unnecessary to forecast the District's *Funds*. Rather, the following *Reserves* are tracked for financial planning purposes:

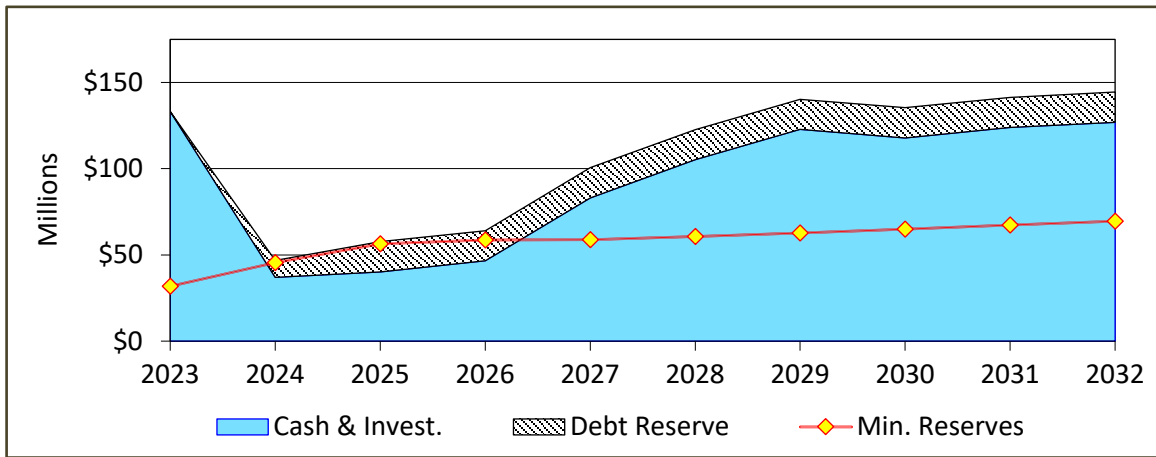
- **Cash & Investments**
 - Includes the estimated combined balance of the General Fund (Fund 01) and Capital Reserves Fund (Fund 18).
 - Sources of Funds include all *Rate Revenue* and *Other Revenue* described in Section 6.3.
 - Uses of Funds include:
 - All *O&M Costs* and *Purchased Water* described in Section 6.4.
 - *Capital Outlays from O&M Budget* which is mentioned under *Capital Expenditures (Capital Outlay)* in Section 6.4.
 - Transfers to other Reserves for capital expenditures and debt service.
- **Bond Proceeds Reserve**
 - Sources of Funds are future revenue bond issuances, as outlined in Section 5 – *Capital Financing Plan*.
 - Uses of Funds include splitting each revenue bond issuance into:
 - Issuance costs,
 - Debt reserve requirement, and
 - Proceeds for capital expenditures.
 - The Forecast assumes that 100% of each revenue bond issuance will be spent or transferred to another Reserve for one of these purposes in the year it is issued. Therefore, this Reserve does not carry a balance.
- **Revenue Bond Debt Service Reserve**
 - Sources of Funds include transfers for debt service and bond reserve requirements.
 - Interest earnings on reserve balances also accumulate in this Reserve.
 - Revenue bond debt service is the only Use of Funds from this Reserve.
- **Reimbursement Fee SDC Account**
 - The reimbursement fee portion of SDC receipts is tracked as the Source of Funds in this Reserve.
 - In each Forecast year, all SDC receipts are used to fund a portion of capital expenditures.
 - This Reserve carries no balance.

- **Improvement Fee SDC Account**
 - The improvement fee portion of SDC receipts is tracked as the Source of Funds in this Reserve.
 - In each Forecast year, all SDC receipts are used to fund a portion of capital expenditures.
 - This Reserve carries no balance.

- **WIFIA Reserve**
 - Sources of Funds include:
 - WIFIA proceeds, as outlined in Section 5 – *Capital Financing Plan*, and
 - Transfers for WIFIA loan repayments.
 - Uses of Funds include:
 - Issuance costs,
 - Proceeds for capital expenditures (i.e., eligible project costs as defined in the District’s WIFIA Loan Agreement), and
 - WIFIA loan repayments.
 - The Forecast assumes that 100% of each WIFIA draw will be spent or transferred to another Reserve for one of these purposes in the year issued²⁷, and future WIFIA loan repayments will be transferred in annually from Cash & Investments. Therefore, this Reserve does not carry a balance.

Figure 7-1 presents the District’s projected cash reserve balances over the 10-year presentation period.

Figure 7-1: Projected Year-End Cash Balances by Fiscal Year



As shown in Figure 7-2 and Figure 7-3 on the next page, the District is projecting that its Cash & Investments Reserves and Debt Service Reserve will meet their balance targets (250 days of O&M and MADS, respectively) throughout the presentation period.

²⁷ WIFIA funds may be used to reimburse the District for prior WIFIA-eligible expenditures.

Figure 7-2: Cash and Investments Year-end Balances and Annual Targets by Fiscal Year

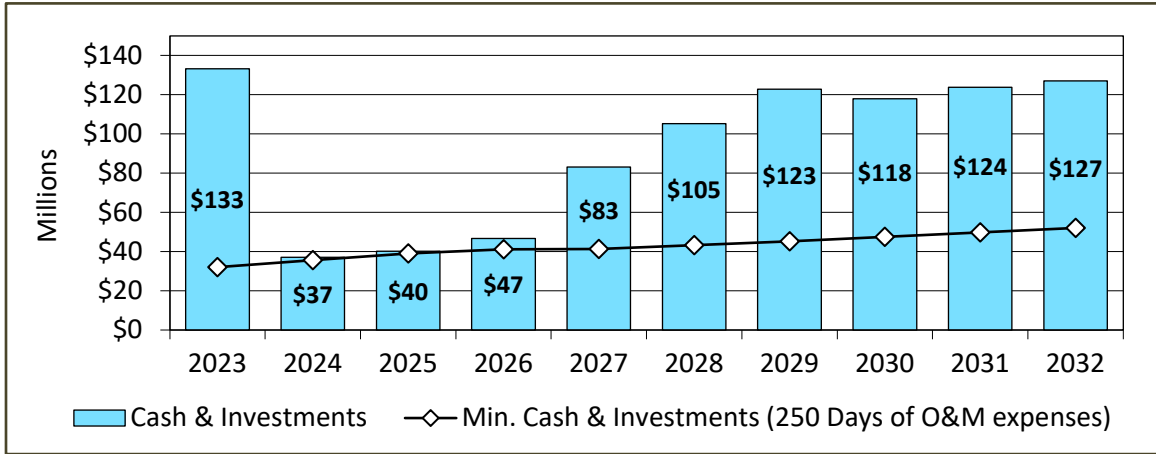
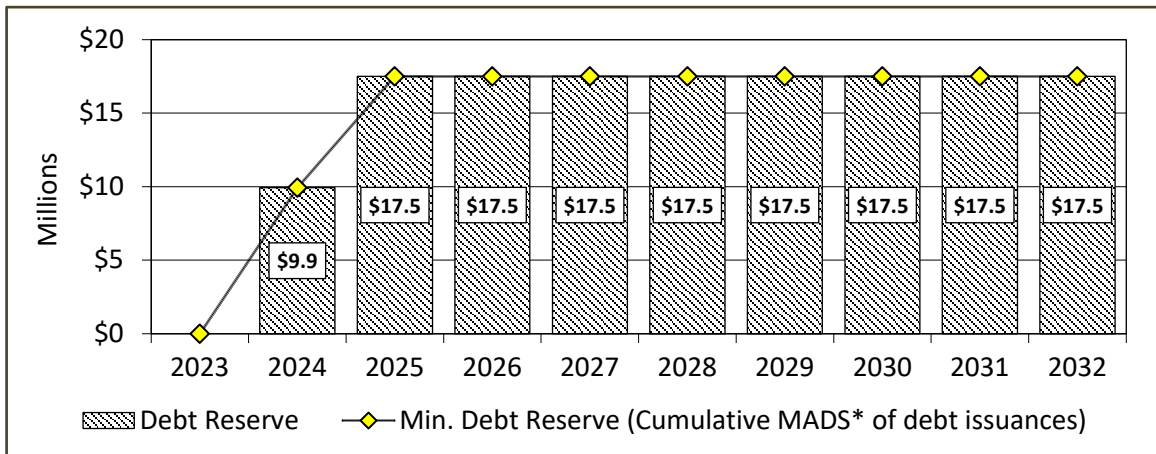


Figure 7-3: Debt Service Reserve Balance Requirements by Fiscal Year



* Maximum annual debt service.

7.3 Conclusion

As stated in Section 1.4, many assumptions were employed in the financial planning analysis underlying this document. For this reason, the projected results presented are not concrete in nature and should be considered as planning estimates.

In the future, the actual rate adjustments required to fund the District’s revenue requirements may vary from the estimates presented in Section 6, and the resulting reserve balances will vary from the projections shown above. As time passes and projections become reality, future capital requirements, O&M costs, customer demands, and other assumptions will influence the accuracy of these estimates. Therefore, the District will continue to take great care to mitigate risk by following prudent management practices, including reviewing rates and revenues annually (at a minimum) to see if additional adjustments are necessary.

For 2-sided printing, this page intentionally left blank.

Appendices

The following subsections contain supporting documents and other related materials including:

A – Proposed Financial Plan Assumptions for the Financial Management Policies

B – Ordinance 01-19 – Authorizing the Issuance of Debt

C – Master Revenue Bond Declaration

D – First Supplement to Master Revenue Bond Declaration

E – Parity Certificate and Transcript Documents

F – PERS Valuation Report

G – Forecast Model Summary Results

H – Map – Tualatin Valley Water District (Washington County, Oregon)

For 2-sided printing, this page intentionally left blank.

A. Proposed Financial Plan Assumptions for the Financial Management Policies

Tualatin Valley Water District Financial Management Policies

APPENDIX A

Proposed Financial Plan Assumptions

DEBT CAPACITY

The 2022-23 Financial Plan includes the assumption that the District will issue approximately \$660.3 million in total debt by FY2025, with \$612.7 million in net debt proceeds available for funding the District's capital expenditures. The planned total debt issuances are greater than the \$600 million limit established by District Ordinance 01-19 and may require further Board action.

ISSUANCE COSTS

Issuance costs for revenue bonds shall be estimated for each issuance based on the following:

- 0.75% of the par amount for each issuance through FY2025, and
- 1.50% of the par amount of all issuances thereafter.

TERM

The term assumed for future revenue bond issues shall be 30 years. The term for federal or state loan programs shall be the maximum allowed within the program unless a shorter duration is in the financial interest of the District.

INTEREST RATES

Presented below are the assumed interest rates to be included in the financial plan:

Fiscal Year	Revenue Bond Issues	Interest Earnings (on Reserve Funds)
2023	5.00%	2.00%
2024	5.50%	2.00%
2025	5.50%	1.75%
2026	5.50%	1.50%
2027	5.50%	1.25%
2028	5.50%	1.00%
2029	5.50%	1.00%
2030	5.50%	1.00%
2031	5.50%	1.00%
2032	5.50%	1.00%

Tualatin Valley Water District Financial Management Policies

DEBT SERVICE RESERVE FUND

Depending on market conditions, a debt service reserve may not be required. However, the Financial Plan shall assume a debt service reserve as the minimum of:

1. The maximum annual debt service for a future revenue bond
2. 125% of the average annual debt service for a future revenue bond issue
3. 10% of the par amount of a future revenue bond issue.

DEBT SERVICE COVERAGE RATIOS

The target minimum for the debt service coverage ratios used in the Financial Plan shall be:

1. 2.0x by including SDCs in gross revenues.
2. 1.5x by excluding SDCs from gross revenues.

ADDITIONAL BONDS TEST

The Financial Plan shall exceed the following additional bonds test ratios:

1. 1.3x by including SDCs in gross revenues.
2. 1.15x by excluding SDCs from gross revenues.

NET LEVERAGE RATIO

The projected net leverage ratio in the Financial Plan shall not exceed 8.0x for two or more consecutive years and shall not exceed a net leverage ratio of 7.0x for more than four consecutive years.

MINIMUM CASH BALANCES

The Financial Plan shall include 250 days of forecast annual operations and maintenance expense as the minimum cash balance. This minimum is in addition to any balances required in a debt service reserve account.

B. Ordinance 01-19 – Authorizing the Issuance of Debt



ORDINANCE NO. 01-19

AN ORDINANCE OF THE TUALATIN VALLEY WATER DISTRICT, OREGON, AUTHORIZING THE ISSUANCE OF WATER REVENUE BONDS.

WHEREAS, the District is authorized to issue revenue bonds for a public purpose under ORS 287A.150 and related statutes (the "Act"). Revenue bonds issued under the Act may be payable from all or any portion of the water system revenues of the District; and

WHEREAS, the District may authorize revenue bonds under the Act by nonemergency ordinance. The District may not sell the revenue bonds under the Act until the period for referral of the nonemergency ordinance authorizing the revenue bonds has expired. If a nonemergency ordinance authorizing the revenue bonds is referred, the District may not sell the revenue bonds unless the voters approve the revenue bonds; and

WHEREAS, the District now finds it financially feasible and in the best interests of the District to authorize the issuance of revenue bonds under the Act in order to finance capital assets of the water system, including but not limited to the District's portion of the Willamette Water Supply System including pumps, pipelines, the water treatment plant and the reservoir (collectively, the "System Improvements"); and

WHEREAS, it may be desirable to issue revenue bonds to finance the System Improvements under one or more financing structures, including as water revenue bonds with a senior lien on net revenues of the District's water system, as water revenue bonds with a subordinate lien on net revenues of the District's water system, as short term water revenue bonds or refunding bonds; and

WHEREAS, prior to the issuance of the water revenue bonds, the District desires to incur certain capital expenditures with respect to the System Improvements from available moneys of the District and wishes to declare its official intent to reimburse itself for any such expenditures from the proceeds of borrowings authorized by this ordinance.

NOW THEREFORE, IT IS HEREBY ORDAINED BY THE BOARD OF COMMISSIONERS OF THE TUALATIN VALLEY WATER DISTRICT:

Section 1. Issuance of Bonds for System Improvements.

- a. The District hereby authorizes the issuance of revenue bonds pursuant to ORS 287A.150 in an amount that is sufficient to provide net proceeds of up to \$600 million to pay for costs of System Improvements, plus additional amounts that are required to pay capitalized interest, fund bond reserves for bonds authorized by Section 1.a and Section 2 of this ordinance and to pay costs related to the financings. The District estimates that the total principal amount of revenue bonds required for this purpose will not exceed \$680 million. The bonds shall be issued and sold in accordance with the Act.

- b. The bonds authorized by this ordinance shall be special obligations of the District that are payable solely from water system revenues and related amounts that the District pledges to pay the bonds. The District may issue the bonds authorized by this ordinance with a first lien on net revenues of the water system or with a subordinate lien on the net revenues of the water system.
- c. No bonds authorized by Section 1.a of this ordinance may be sold and no purchase agreement for any of those bonds may be executed until the period for referral of this nonemergency ordinance has expired. If this ordinance is referred, the District may not sell the bonds authorized by Section 1.a of this ordinance unless the voters approve those bonds.

Section 2. Issuance of Refunding Bonds. The District hereby authorizes the issuance of refunding bonds pursuant to applicable Oregon statutes to refinance any water revenue bonds that are issued pursuant to Section 1.a of this ordinance to provide interim financing. The refunding bonds authorized by this Section 2 may be issued in an aggregate principal amount sufficient to refund any water revenue bonds selected by the District Official pursuant to Section 3.k of this ordinance, plus amounts required to pay costs related to the refunding bonds.

Section 3. Delegation. When and if this ordinance takes effect, the Chief Financial Officer, the Chief Executive Officer or the employees of the District designated by the District's Chief Executive Officer or Board of Commissioners to act on behalf of the District under this ordinance (each of whom is referred to herein as a "District Official") are each hereby authorized, on behalf of the District and without further action by the Board of Commissioners, to:

- a. Issue the revenue bonds authorized by this ordinance (the "Water Bonds") in one or more series, which may be sold at different times, and issue any series of Water Bonds as First Lien Bonds, as defined below, or with a subordinate lien on water system revenues.
- b. Issue the Water Bonds as short or intermediate term bonds to provide interim financing for System Improvements and enter into lines of credit or similar documents which permit the District to draw Water Bond proceeds over time.
- c. Participate in the preparation of, authorize the distribution of and deem final the preliminary and final official statements and any other disclosure documents for each series of the Water Bonds, as applicable.
- d. Subject to the limits of this ordinance, establish the final principal amounts, lien status, maturity schedules, interest rates, redemption terms and other terms for each series of Water Bonds.
- e. Either publish a notice of sale, receive bids and award the sale of that series to the bidder complying with the notice and offering the most favorable terms to the District or select one or more underwriters or lenders and negotiate the sale of that series with those underwriters or lenders and execute and deliver a bond purchase agreement or other document in connection with such sale.
- f. Prepare, execute and deliver one or more documents that will specify the terms under which the Water Bonds are issued and the administrative provisions that apply to the Water Bonds.
- g. Enter into covenants with owners or credit enhancement providers that are designed to obtain more favorable terms for the District, including covenants required by the Water Infrastructure Finance and Innovation Act, if the District borrows under that program, or by the State, if the District borrows under State lending programs.

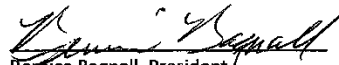
- h. Prepare and finalize the terms of a master water system declaration which pledges the revenues of the District's water system to the Water Bonds issued with a first lien on the water system revenues ("First Lien Bonds"), contains covenants regarding the levels of fees and charges that the District must impose and describes the terms under which the District may issue obligations in the future that are secured by the revenues of the District's water system.
- i. If all or any portion of the Water Bonds is secured by a subordinate lien on water system revenues, establish a master second lien water revenue bond declaration or similar document to memorialize the terms under which that series and future series of subordinate lien bonds may be issued.
- j. Make contributions to bond reserve accounts that the District Official determines are desirable and determine the reserve requirement, if any, for each series of the Water Bonds.
- k. Select water revenue bonds to be refunded, refund any Water Bonds that are issued to provide interim financing with other short, intermediate or long-term term bonds.
- l. Undertake to provide continuing disclosure for any series of Water Bonds in accordance with Rule 15c2-12 of the United States Securities and Exchange Commission or lender requirements, as applicable.
- m. Apply for and purchase municipal bond insurance, reserve sureties or other forms of credit enhancements for any series of Water Bonds and enter into related agreements.
- n. Appoint and enter into agreements with paying agents and other professionals and service providers for the Water Bonds.
- o. Issue any qualifying series of Water Bonds as "tax-exempt bonds" bearing interest that is excludable from gross income under the Internal Revenue Code of 1986, as amended, (the "Code") and enter into covenants for the benefit of the owners of those series to maintain the excludability of interest on those series from gross income under the Code.
- p. If the federal government approves subsidy payments or tax credits for municipal bonds and those subsidies or tax credits are estimated to reduce the net debt service payments for the Water Bonds, issue any series of Water Bonds as eligible for those federal subsidies or tax credits, and enter into related covenants to maintain the eligibility of such series of Water Bonds for those subsidies or tax credits.
- q. Issue any series of Water Bonds as "taxable bonds" bearing interest that is includable in gross income under the Code.
- r. Designate any series of Water Bonds as "green bonds" if applicable.
- s. Execute any documents and take any other action in connection with the Water Bonds which the District Official finds will be advantageous to the District.


Section 4. Unless referred, this ordinance shall take effect on the 30th day after it is enacted.

Section 5. Declaration of Intent to Reimburse. The District hereby declares its official intent to reimburse itself with the proceeds of the Water Bonds for any expenditures on the System Improvements paid prior to the Issuance of the Water Bonds. This declaration is adopted as an official action of the District in order to comply with United States Treasury Regulation 1.150-2.

Section 6. Pursuant to Oregon Revised Statute Chapter 198, the ordinance was read at two regular meetings of the District Board of Commissioners on two different days, at least six days apart, prior to the adoption thereof, to wit: the 20th day of March 2019, and the 17th day of April 2019.

Section 7. This ordinance was adopted following a second reading by the affirmative vote of at least a majority of the members of the District Board of Commissioners at its regular meeting on the 17th day of April 2019, and was signed by the presiding officer and attested to by the secretary.


Bernice Bagnall, President


Todd Sanders, Secretary

**MASTER WATER SYSTEM REVENUE
BOND DECLARATION**

Tualatin Valley Water District, Oregon

Water Revenue Bond

Series 2019

Executed by the District Official of the Tualatin Valley Water District, Oregon

As of the 2nd day of August, 2019

3193363.11 041297 RSIND

TABLE OF CONTENTS

Section 1. Findings.....1

Section 2. Definitions.....1

Section 3. Rules of Construction.8

Section 4. Deposit, Pledge and Use of Gross Revenues.8

Section 5. Bond Funds and Accounts.9

Section 6. Rate Covenant; Calculations Relating to Balloon Payments
and Interest Subsidy Bonds.11

Section 7. Parity Bonds.13

Section 8. Subordinate Obligations.....16

Section 9. Separate Utility System.....17

Section 10. General Covenants.17

Section 11. Events of Default and Remedies.19

Section 12. Amendment of Master Declaration.22

Section 13. Defeasance.25

Section 14. BEO System.....25

Section 15. Redemption of Bonds.....27

Section 16. Authentication, Registration and Transfer.28

Section 17. The Series 2019 Bond.30

3193363.11 041297 RSIND

MASTER WATER SYSTEM REVENUE BOND DECLARATION

THIS MASTER WATER SYSTEM REVENUE BOND DECLARATION is executed as of August 2, 2019, by an authorized District Official of the Tualatin Valley Water District, Oregon pursuant to the authority granted to the District Official by the Ordinance to establish the terms under which the District's Water Revenue Bond, Series 2019 and future Parity Bonds may be issued.

Section 1. Findings.

The District finds that it enacted the Ordinance pursuant to Oregon Revised Statutes ("ORS") Section 287A.150 and related provisions of ORS Chapter 287A. The Ordinance authorizes the District to issue water revenue bonds in an amount that is sufficient to provide net proceeds of up to \$600 million to pay for projects described in the Ordinance, plus additional amounts that are required to pay capitalized interest, fund bond reserves, if any, and pay costs related to the financing, and to enter into this Master Declaration. This Master Declaration establishes the terms under which the District's Water Revenue Bond, Series 2019 is issued and the terms under which future obligations may be issued on a parity with the Series 2019 Bond.

Section 2. Definitions.

Unless the context clearly requires otherwise, capitalized terms that are used in this Master Declaration shall have the meanings defined for those terms in this Section 2.

"Adjusted Coverage Revenues" means the Coverage Revenues, adjusted for purposes of Section 7.1.C(ii) as provided in Section 7.3.

"Adjusted Net Revenues" means the Net Revenues, adjusted for purposes of Section 7.1.C(ii) as provided in Section 7.3.

"Annual Bond Debt Service" means in any Fiscal Year the amount of principal and interest required to be paid in that Fiscal Year on all Outstanding Bonds, adjusted as follows:

- (a) Interest which is to be paid from Bond Proceeds shall be subtracted;
- (b) Bonds which are subject to scheduled, noncontingent redemption/prepayment or tender shall be deemed to mature on the dates and in the amounts which are subject to mandatory redemption/prepayment or tender, and only the amount scheduled to be Outstanding on the final maturity date shall be treated as maturing on that date;
- (c) Interest subsidies shall be subtracted from the interest due on Interest Subsidy Bonds as provided in Section 6.5;
- (d) Bonds which are subject to contingent redemption/prepayment or tender shall be treated as maturing on their stated maturity dates; and,
- (e) Each Balloon Payment shall be assumed to be paid according to its Balloon Debt Service Requirement.

“Auditor” means a person authorized by the State Board of Accountancy to conduct municipal audits pursuant to ORS 297.670.

“Balloon Debt Service Requirement” means the Committed Debt Service Requirement for a Balloon Payment or, if the District has not entered into a firm commitment to sell Bonds or other obligations to refund that Balloon Payment, the Estimated Debt Service Requirement for that Balloon Payment.

“Balloon Payment” means any principal payment for a Series of Bonds which comprises more than twenty-five percent of the original principal amount of that Series, but only if that principal payment is designated as a Balloon Payment in the closing documents for the Series.

“Base Period” means the alternative selected by the District from the following two options: (a) any twelve consecutive months selected by the District or Qualified Consultant out of the most recent eighteen months preceding the delivery of a Series of Parity Bonds; or (b) the most recently completed fiscal year for which audited financial statements are available.

“BEO” means “book-entry-only” and refers to a system for clearance and settlement of securities transactions through electronic book-entry changes, which eliminates the need for physical movement of securities.

“Bond” or “Bonds” means the Series 2019 Bond and any Parity Bonds.

“Bond Counsel” means a law firm selected by the District and having knowledge and expertise in the field of municipal law and whose opinions are generally accepted by purchasers of municipal bonds.

“Bond Reserve Account” means the Bond Reserve Account in the Water Fund described in Section 5.3 of this Master Declaration.

“Business Day” means any day except a Saturday, a Sunday, a legal holiday, a day on which the offices of banks in Oregon or New York are authorized or required by law or executive order to remain closed, or a day on which the New York Stock Exchange is closed.

“Closing” means the date on which a Series of Bonds is delivered in exchange for payment.

“Code” means the Internal Revenue Code of 1986, as amended, including the rules and regulations promulgated thereunder.

“Committed Debt Service Requirement” means the schedule of principal and interest payments for a Series of Bonds or other obligations which refund a Balloon Payment, as shown in the documents evidencing the District’s firm commitment to sell that Series. A “firm commitment to sell” means a bond purchase agreement or similar document which obligates the District to sell, and obligates a purchaser to purchase, the Series of refunding Bonds or other obligations, subject only to the conditions which customarily are included in such documents.

“Coverage Revenues” means the Net Revenues less System Development Charges.

Page 2 – Master Water System Revenue Bond Declaration

3193363.11 041297 RSIND

“Credit Facility” means a letter of credit, a municipal bond insurance policy, standby bond purchase agreement or other credit enhancement device which is obtained by the District to secure payment in full of Bonds, and which is issued or provided by a Credit Provider.

“Credit Provider” means the person or entity that is: (i) obligated to make or guarantee payments under a Credit Facility or Reserve Credit Facility; and (ii) whose long-term debt obligations or claims-paying ability (as appropriate) are rated, at the time the Credit Facility or Reserve Credit Facility is issued, in one of the two highest rating categories by a Rating Agency that has issued a rating on Outstanding Bonds. Under rating systems in effect on the date of this Master Declaration, a rating in one of the two highest rating categories by a Rating Agency would be a rating of “AA-/Aa3” or better.

“Debt Service Account” means the Debt Service Account described in Section 5.2 of this Master Declaration.

“District” means the Tualatin Valley Water District in Washington County, Oregon, a municipal corporation of the State of Oregon.

“District Board” means the Board of Commissioners of the District.

“District Official” means the Chief Financial Official of the District, or then-comparable position at the District, or the employees of the District designated by the District’s Executive Officer or Board of Directors to act on behalf of the District under this Master Declaration.

“DTC” means The Depository Trust Company or any other qualified securities depository designated by the District as its successor.

“Estimated Debt Service Requirement” means the schedule of principal and interest payments for a hypothetical Series of Bonds that refunds a Balloon Payment, that is prepared by the District Official and that meets the requirements of Section 6.4.

“Event of Default” means any event specified in 11.2 of this Master Declaration.

“Fiscal Year” means the period beginning on July 1 of each year and ending on the next succeeding June 30, or as otherwise defined by State law.

“Fitch” means Fitch Investors Service, Inc., its successors and assigns.

“Fund” or “Account” refers to any fund, account, or other accounting concept that permits the District to account accurately for amounts that are credited to it under this Master Declaration. A “Fund” in this Master Declaration does not need to appear as a “fund” in the District’s budget and an “Account” in this Master Declaration does not need to appear as an “account” in the District’s budget.

“Government Obligations” means (a) direct, noncallable obligations of the United States of America (including obligations issued or held in book-entry form on the books of the Department of the Treasury and principal-only and interest-only strips that are issued by the U.S. Treasury);

Page 3 – Master Water System Revenue Bond Declaration

3193363.11 041297 RSIND

or (b) noncallable obligations the principal of and interest on which are secured by the full faith and credit of the United States of America or are unconditionally guaranteed by the United States of America.

“Gross Revenues” means all fees and charges and other revenues that are properly accrued under generally accepted accounting principles as revenues of the Water System, including System Development Charges, revenues from product sales, wholesale water delivery, and fees for other services provided, and interest earnings on Gross Revenues in the Water Fund. Gross Revenues shall be increased by any withdrawals from the Rate Stabilization Account as provided in Section 5.5.B, and shall be reduced by any deposits to the Rate Stabilization Account as provided in Section 5.5.A. However, the term “Gross Revenues” shall not include:

- (a) The interest income or other earnings derived from the investment of any escrow fund established for the defeasance or refunding of outstanding indebtedness of the District;
- (b) Any gifts, grants, donations or other amounts received by the District from any State or Federal Agency or other person if such amounts are restricted by law or the grantor to uses inconsistent with the payment of Bonds;
- (c) The proceeds of any borrowing;
- (d) The proceeds of any liability or other insurance (excluding business interruption insurance or other insurance of like nature insuring against the loss of revenues);
- (e) The proceeds of any casualty insurance which the District intends to utilize for repair or replacement of the Water System;
- (f) The proceeds derived from the sales of assets pursuant to Section 10.9 of this Master Declaration;
- (g) Any ad valorem or other taxes imposed by the District (except charges or payments for Water System services which become “taxes” within the meaning of Article XI, Section 11b of the Oregon Constitution only because they are imposed on property or property owners);
- (h) Any income, fees, charges, receipts, profits or other amounts derived by the District from its ownership or operation of any Separate Utility System;
- (i) Installment payments of District line and branch charges, connection fees, or local improvement district assessments that have been pledged as security for a borrowing other than a Bond;
- (j) The proceeds of any fees or charges the District collects on behalf of a third party, including the fees currently collected by the District on behalf of the cities of Beaverton, Tigard and Hillsboro; or
- (k) Any federal interest subsidies the District receives for Interest Subsidy Bonds.

“Interest Payment Date” means any date on which Bond interest is scheduled to be paid, and any date on which Bonds are called for redemption/prepayment.

“Interest Subsidy Bonds” means Bonds for which the District is eligible to receive federal interest rate subsidies that are similar to the interest subsidies that were available for Build America Bonds.

“Master Declaration” means this Master Water System Revenue Bond Declaration, including any amendments made pursuant to Section 12.

Page 4 – Master Water System Revenue Bond Declaration

3193363.11 041297 RSIND

“Maximum Annual Bond Debt Service” means the greatest amount of Annual Bond Debt Service that is due in any Fiscal Year, beginning with the Fiscal Year for which the calculation is made, and ending with the last Fiscal Year in which Outstanding Bonds are scheduled to be paid.

“Moody’s” means Moody’s Investors Service, a corporation organized and existing under the laws of the State of Delaware, its successors and their assigns.

“Net Revenues” means the Gross Revenues less the Operating Expenses.

“Operating Expenses” means all costs which are properly treated as expenses of operating and maintaining the Water System under generally accepted accounting principles. However, Operating Expenses do not include:

- (a) Any rebates or penalties paid from Gross Revenues under Section 148 of the Code;
- (b) Payments of judgments against the District and payments for the settlement of litigation;
- (c) Depreciation and amortization of property values or losses, and other non-cash expenses, including non-cash expenses related to pensions and postemployment benefits,;
- (d) All amounts eligible to be treated for accounting purposes as payments for capital expenditures;
- (e) Interest and other debt service payments, paying agent fees, broker-dealer fees and similar charges for the maintenance of borrowings;
- (f) The expenses of owning, operating or maintaining any Separate Utility System;
- (g) Expenditures made from any liability insurance proceeds;
- (h) Expenditures made from any casualty insurance proceeds used to pay for costs of repairing or replacing portions of the Water System;
- (i) Expenditures made from grant funds, regardless of whether such grant funds are dedicated to a specific purpose or available for the general operation, maintenance and repair or replacement of the Water System;
- (j) Extraordinary, non-recurring expenses of the Water System;
- (k) Payments to third parties from the proceeds of any fees or charges the District collects on behalf of such third parties, including the fees currently collected by the District on behalf of the cities of Beaverton, Tigard and Hillsboro; or
- (l) Expenditures allocable to any other funding source which does not constitute Gross Revenues of the Water System.

“Ordinance” means Ordinance No. 01-19 enacted by the District Board on April 17, 2019.

“ORS” means the Oregon Revised Statutes.

“Outstanding” refers to all Bonds except Bonds that have been defeased pursuant to Section 13 of this Master Declaration, paid in full in cash or canceled, and Bonds which have matured and not been presented for payment (provided that sufficient funds to pay those Bonds have been transferred to the Paying Agent).

“Owner” means a registered owner of a Bond.

Page 5 – Master Water System Revenue Bond Declaration

3193363.11 041297 RSIND

“Parity Bond” means the Series 2019 Bond and any obligation that is secured by the Net Revenues on an equal basis with the Bonds and is issued in accordance with Section 7.

“Paying Agent” means the paying agent for the Bonds. The Paying Agent will be appointed when the District enters into publicly offered Bonds.

“Payment Date” means a Principal Payment Date or an Interest Payment Date.

“Permitted Investments” means any investments which the District is permitted to make under the laws of the State.

“Principal Payment Date” means any date on which any Bonds are scheduled to be retired, whether by virtue of their maturity or by mandatory sinking fund redemption/prepayment prior to maturity, and the redemption/prepayment date of any Bonds which have been called for redemption/prepayment.

“Qualified Consultant” means an independent engineer, an independent auditor, an independent financial advisor, or similar independent professional consultant of recognized standing and having experience and expertise in the area for which such person or firm is retained by the District for purposes of performing activities specified in this Master Declaration or any Supplemental Declaration.

“Rate Stabilization Account” means the Rate Stabilization Account established in the Water Fund pursuant to Section 5.5.

“Rating Agency” means Fitch, Moody’s, S&P, or any other nationally recognized financial rating Agency which has rated Outstanding Bonds or a Credit Facility at the request of the District.

“Record Date” means for a series of publicly offered Bonds the date that is established in the proceedings related to that series.

“Reserve Credit Facility” means any arrangement in which the District pays a fee in exchange for an agreement of a Credit Provider to advance money to the District in the future that the District will use in lieu of using cash or Permitted Investments credited to a subaccount in the Bond Reserve Account. “Reserve Credit Facility” does not include guaranteed investment contracts, master repurchase agreements and similar Permitted Investments.

“Reserve Credit Facility Rating” means a long-term debt, financial strength or claims-paying ability rating assigned by a Rating Agency to: (a) a provider of a Reserve Credit Facility, or (b) to any reinsurer of the obligations of a provider of a Reserve Credit Facility.

“Reserve Requirement” means a set of rules for funding a subaccount in the Bond Reserve Account. Each Reserve Requirement shall indicate the amount that is required to be credited to the subaccount, the dates by which that amount must be credited to the subaccount, and the requirements for restoring amounts to the subaccount if amounts are withdrawn to pay Bonds that are secured by the subaccount. The Series 2019 Bond is not secured by the Bond Reserve Account or any subaccount therein.

Page 6 – Master Water System Revenue Bond Declaration

3193363.11 041297 RSIND

“S&P” means S&P Global Ratings, a corporation organized and existing under the laws of the State of New York, its successors and their assigns.

“Separate Utility System” means any utility property which is declared by the District to constitute a system which is distinct from the Water System in accordance with Section 9.

“Series” refers to all Bonds authorized by a single ordinance or declaration and delivered in exchange for payment on the same date, regardless of variations in maturity, interest rate or other provisions, unless the closing documents for the Series provide otherwise.

“Series 2019 Bond” means the District’s Water Revenue Bond, Series 2019 issued pursuant to Section 17 of this Master Declaration.

“State” means the State of Oregon.

“Subordinate Obligations” means obligations having a lien on the Net Revenues which is subordinate to the lien of the Bonds. Restrictions on Subordinate Obligations are described in Section 8. On the date of this Master Declaration, the District has no borrowings outstanding with a subordinate lien on the Net Revenues.

“Subordinate Obligations Account” means the Subordinate Obligations Account of the Water Fund which is described in Section 5.4.

“Supplemental Declaration” means any declaration, resolution or other document which supplements or amends this Master Declaration, entered into by the District in compliance with Section 12.

“System Development Charges” means the fees on development imposed by the District pursuant to ORS Chapter 223 or subsequent statutes and which are legally permitted to be used to pay the Bonds.

“Tax Maximum” means, for any Series of Bonds, the least of: the greatest amount of principal, interest and premium, if any, required to be paid in any Fiscal Year on such Series; 125% of average amount of principal, interest and premium, if any, required to be paid on such Series during all Fiscal Years in which such Series will be Outstanding, calculated as of the date of issuance of such Series; or, ten percent of the proceeds of such Series, as “proceeds” is defined for purposes of Section 148(d) of the Code.

“Valuation Date” means the date or dates on which a subaccount of the Bond Reserve Account shall be valued as prescribed in the Supplemental Declaration authorizing the establishment of such subaccount.

“Water Fund” means the collection of funds and accounts used by the District to hold the Gross Revenues and the proceeds of Bonds.

“Water System” means all utility property now or hereafter used by the District to supply water within or without the corporate limits of the District, except property described in the following

Page 7 – Master Water System Revenue Bond Declaration

3193363.11 041297 RSIND

sentence. The Water System does not include any Separate Utility System or the Willamette Water Supply System, the Willamette Intake Facilities Commission, the Willamette River Water Coalition and other joint ventures which the District may enter into after the date of this Master Declaration unless the District Official declares in writing in a publicly available document that such joint venture is included in the definition of the Water System.

Section 3. Rules of Construction.

In determining the meaning of the provisions of this Master Declaration, the following rules shall apply unless the context clearly requires application of a different meaning:

- A. References to section numbers shall be construed as references to sections of this Master Declaration.
- B. References to one gender shall include all genders.
- C. References to the singular include the plural, and references to the plural include the singular.

Section 4. Deposit, Pledge and Use of Gross Revenues.

- 4.1. All Gross Revenues shall be deposited to and maintained in the Water Fund, and shall be used only as described in this Section as long as any Bonds remain Outstanding. The District shall apply Gross Revenues in the Water Fund on or before the following dates for the following purposes in the following order of priority:
 - A. At any time to pay Operating Expenses which are then due;
 - B. At least one Business Day prior to each Payment Date, to transfer Net Revenues to the Debt Service Account in an amount sufficient (with amounts available in the Debt Service Account) to pay in full all Bond principal, interest and premium, if any, which is due to be paid on that Payment Date;
 - C. On the Closing date for a Series of Bonds and on the first day of the month following a Valuation Date for any subaccount in the Bond Reserve Account, if the balance in any subaccount of the Bond Reserve Account is determined to be less than the applicable Reserve Requirement, to transfer Net Revenues to the Bond Reserve Account in the amounts required by the provisions creating the subaccounts in the Bond Reserve Account until the balances in all subaccounts of the Bond Reserve Account are equal to their Reserve Requirement;
 - D. On the day on which any rebates or penalties for Bonds are due to be paid to the United States pursuant to Section 148 of the Code, an amount of Net Revenues that is sufficient, with other available funds, to pay the amounts due to the United States;

- E. On the dates specified in any proceedings authorizing Subordinate Obligations, the District shall transfer to the Subordinate Obligations Account the Net Revenues required by those proceedings; and,
 - F. On any date, the District may transfer Gross Revenues to the Rate Stabilization Account or spend Net Revenues for any other lawful purpose relating to the Water System or to providing water, but only if all deposits and payments that are required to be made on or before that date and that have a higher priority under this Section have been made.
- 4.2. The District hereby pledges the Net Revenues and federal interest subsidies the District receives for Interest Subsidy Bonds to the payment of principal of, premium, if any, and interest on all Bonds. Pursuant to ORS 287A.310, these pledges made by the District shall be valid and binding from the Closing of the Series 2019 Bond. The Net Revenues and federal interest subsidies so pledged and hereafter received by the District shall immediately be subject to the lien of such pledges without any physical delivery or further act. The lien of these pledges shall be superior to all other claims and liens except liens and claims for the payment of Operating Expenses. The District covenants and agrees to take such action as is necessary from time to time to perfect or otherwise preserve the priority of the pledges.
- 4.3. If a Reserve Credit Facility is permitted to fund a subaccount in the Bond Reserve Account, the District may pledge the Net Revenues available for transfer to that subaccount of the Bond Reserve Account to pay amounts due under any Reserve Credit Facility securing that subaccount.

Section 5. Bond Funds and Accounts.

- 5.1. So long as Bonds are Outstanding, the District shall maintain the Debt Service Account as a discrete account in the Water Fund.
- 5.2. **Debt Service Account.** The District shall hold the Debt Service Account. Until all Bonds are paid or defeased, amounts in the Debt Service Account shall be used only to pay Bonds.
 - A. After the transfer described in Section 4.1.B, if the balance in the Debt Service Account is less than the amount of Bond principal, premium, if any, and interest that is due on that Payment Date, the District shall credit to the Debt Service Account an amount equal to the deficiency from any Net Revenues in the Subordinate Obligations Account.
 - B. If, after the credit described in Section 5.2.A, the amounts available to pay Debt Service Account is not sufficient to pay all amounts due on the Payment Date, the District shall allocate the available amounts:
 - (i) First, to pay Bond interest, and pro rata based on the amount due on Bonds if the available amount is not sufficient to pay all Bond interest that is due on that Payment Date; and,

(ii) Second, to pay Bond principal and premium that is due on that Payment Date, and pro rata based on the amount of principal and premium due on each Bond if the available amount is not sufficient to pay all Bond principal and premium that is due on that Payment Date.

- C. If, after the allocation described in Section 5.2.B, there is not enough to pay all principal, interest and premium allocated to pay Bonds that are secured by a subaccount in the Bond Reserve Account, the District shall apply any amounts available in the subaccounts in the Bond Reserve Account, but only to pay the principal, interest and premium on the Bonds that are secured by those subaccounts.
- D. The District shall transfer sufficient amounts from the Debt Service Account in time to permit payment of all Bond principal, interest and premium, if any, when due in accordance with the Bonds.
- E. Amounts in the Debt Service Account shall be invested only in Permitted Investments. Earnings on the Debt Service Account shall be credited to the Water Fund.

5.3. Bond Reserve Account.

- A. If the District determines to secure Bonds with the Bond Reserve Account and so long as those Bonds are Outstanding, the District shall maintain the Bond Reserve Account as a discrete account in the Water Fund held by the District. The District may create one or more subaccounts in the Bond Reserve Account to secure Series of Bonds and covenant to make deposits into any subaccounts it creates; however, the District is not obligated to create any subaccounts in the Bond Reserve Account, and is not obligated to secure any Series of Bonds with a subaccount in the Bond Reserve Account.
- B. When a subaccount in the Bond Reserve Account is created, the District shall determine whether the subaccount will secure one or more Series of Bonds. If the District creates a subaccount in the Bond Reserve Account, the District shall, when it issues the first Series of Bonds that is secured by that subaccount: a) establish the Reserve Requirement for that subaccount; b) pledge amounts credited to that subaccount to pay the Bonds that are secured by that subaccount; and c) determine if the Reserve Requirement for that subaccount may be funded with Reserve Credit Facilities and the requirements for those Reserve Credit Facilities, and the valuation and replenishment provisions that apply to that subaccount.
- C. The District shall not create any subaccounts in the Bond Reserve Account for any purpose except securing Bonds in accordance with this Master Declaration.
- D. The Series 2019 Bond is not secured by the Bond Reserve Account or any subaccount therein.

- 5.4. **Subordinate Obligations Account.** The District shall create and maintain the Subordinate Obligations Account in the Water Fund as long as Subordinate Obligations are Outstanding. The Subordinate Obligations Account may be divided into subaccounts,

and the District may establish priorities for funding the subaccounts in the Subordinate Obligations Subaccount. Net Revenues shall be deposited into the Subordinate Obligations Account only as permitted by Section 4.1.E. Earnings on the Subordinate Obligations Account shall be credited as provided in the proceedings authorizing the Subordinate Obligations.

- 5.5. **Rate Stabilization Account.** The District may create a Rate Stabilization Account in the Water Fund and if created will maintain that account as long as Bonds are Outstanding. Net Revenues may be transferred to the Rate Stabilization Account at the option of the District as permitted by Section 4.1.F. Money in the Rate Stabilization Account may be withdrawn at any time and used for any purpose for which the Gross Revenues may be used.
- A. Deposits to the Rate Stabilization Account decrease Gross Revenues in the Fiscal Year for which the deposit is made.
 - B. Withdrawals from the Rate Stabilization Account increase Gross Revenues in the Fiscal Year for which the withdrawal is made.
 - C. The District may adjust deposits to and withdrawals from the Rate Stabilization Account for a Fiscal Year up until 180 days after the end of that Fiscal Year.
 - D. Earnings on the Rate Stabilization Account shall be credited to the Water Fund.

Section 6. Rate Covenant; Calculations Relating to Balloon Payments and Interest Subsidy Bonds.

- 6.1. The District covenants for the benefit of the Owners that it will establish and maintain rates and charges in connection with the operation of the Water System which are sufficient to permit the District to pay all Operating Expenses and all lawful charges against the Net Revenues, and to make all transfers required by this Master Declaration to the Debt Service Account, the Bond Reserve Account and the Subordinate Obligations Account.
- 6.2. The District covenants for the benefit of the Owners of all Bonds that it shall charge rates and fees in connection with the operation of the Water System which, when combined with other Gross Revenues are adequate to generate:
 - A. Coverage Revenues each Fiscal Year at least equal to one hundred fifteen percent (115%) of Annual Bond Debt Service due in that Fiscal Year; and,
 - B. Net Revenues each Fiscal Year at least equal to one hundred twenty-five percent (125%) of Annual Bond Debt Service due in that Fiscal Year.
- 6.3. Not later than six months after the end of each Fiscal Year, the District shall prepare a report that demonstrates whether the District has complied with Section 6.2 during that Fiscal Year and shall file that report in the District records. If the report demonstrates

that the District has not complied with Section 6.2 during that Fiscal Year, it shall not constitute a default under this Master Declaration if, within thirty (30) days after the report is filed, the District files a certificate of a District Official that specifies the actions that the District has taken and will take within the next ninety (90) days to permit the District to comply with Section 6.2 for the remainder of the Fiscal Year in which the report is filed, and for the succeeding Fiscal Year, and the District takes the actions specified by the District Official, or actions having a comparable effect.

- 6.4. The Estimated Debt Service Requirement for Balloon Payments shall be calculated in accordance with this Section 6.4.
- A. For the Rate Covenants: For each Balloon Payment that is Outstanding on May 1 of any Fiscal Year, the District Official shall prepare a schedule of principal and interest payments for a hypothetical Series of Bonds that refunds that Balloon Payment in accordance with Section 6.4.D. The District Official shall prepare that schedule as of that first day of May, and that schedule shall be used to determine compliance with the rate covenant in Section 6.2 for the following Fiscal Year.
- B. For Parity Bonds: Whenever a Balloon Payment will be Outstanding on the date a Series of Parity Bonds is issued, the District Official shall prepare a schedule of principal and interest payments for a hypothetical Series of Bonds that refunds each Outstanding Balloon Payment in accordance with Section 6.4.D. The District Official shall prepare that schedule as of the date the Parity Bonds are sold, and that schedule shall be used to determine compliance with the tests for Parity Bonds in Section 7.1.
- C. For the Reserve Requirement: Whenever a Series of Bonds that contains a Balloon Payment is issued, the District Official shall prepare a schedule of principal and interest payments for a hypothetical Series of Bonds that refunds each Balloon Payment in that Series in accordance with Section 6.4.D. The District Official shall prepare that schedule as of the date the Series is sold, and that schedule shall be combined with the schedule for payment of any debt service on Bonds that are secured by the same subaccount, and that combined schedule shall be used to determine the Reserve Requirement as long as that Series is Outstanding.
- D. Each hypothetical Series of refunding Bonds shall be assumed to be paid in equal annual installments of principal and interest that are sufficient to amortize the principal amount of the Balloon Payment over the term selected by the District Official; however, the District Official shall not select a term that exceeds the lesser of: 30 years from the date the Balloon Payment is originally scheduled to be paid; or, the District's estimate of the remaining weighted average useful life (expressed in years and rounded to the next highest integer) of the assets which are financed with the Balloon Payment. The annual installments shall be assumed to be due on the anniversaries of the date the Balloon Payment is originally scheduled to be paid, with the first installment due on the first anniversary of the date the Balloon Payment is scheduled to be paid. Each installment shall be assumed to bear interest at a rate that is estimated by the District from the Bond Buyer Revenue Bond Index (or if the Bond Buyer Revenue Bond Index is not available, a

reasonably comparable index selected by the District) for a revenue bond with a term that is equal to the term of the installment. When the District prepares a schedule described in Section 6.4.A, Section 6.4.B or Section 6.4.C, the District shall use the index that is available to the District on the date the District is required to prepare that schedule.

- 6.5. Interest Subsidy Bonds. The amounts assumed to be paid on Interest Subsidy Bonds shall be calculated as follows:
- A. When calculating Annual Bond Debt Service for the rate covenant in Section 6.2, the District shall subtract from interest to be paid on Interest Subsidy Bonds the federal interest subsidies on Interest Subsidy Bonds that the District reasonably expects, at the beginning of the Fiscal Year, to receive during that Fiscal Year.
 - B. When calculating Annual Bond Debt Service and Maximum Annual Bond Debt Service for the tests for issuing Parity Bonds in Section 7, the District shall subtract from the scheduled payments of interest on Interest Subsidy Bonds the amount of federal interest subsidies that the District reasonably expects, at the time the Parity Bonds are issued, to receive.
 - C. When calculating the greatest amount of principal, interest and premium, if any, required to be paid in any Fiscal Year on a Series of Interest Subsidy Bonds to determine the Tax Maximum for Interest Subsidy Bonds that are secured by a subaccount in the Bond Reserve Account, the District shall subtract from the scheduled payments of interest on Interest Subsidy Bonds the federal interest subsidies that the District reasonably expects, at the time the Series of Interest Subsidy Bonds is issued, to be paid to the District for the Series of Interest Subsidy Bonds. The District shall not be required to increase the amount the District is required to hold in a subaccount in the Bond Reserve Account if federal interest subsidies are not paid when or in the amounts expected. However, if the District reduces the amount it holds in a subaccount of the Bond Reserve Account because Bonds secured by that subaccount have been paid, the District must take into account its reasonable expectations of the amount of federal interest subsidies it expects to receive at the time of reduction in determining the amount that the District must retain in a subaccount of the Bond Reserve Account.

Section 7. Parity Bonds.

- 7.1. The District may issue Parity Bonds to provide funds for any purpose relating to the Water System or to providing water, but only if:
- A. No Event of Default under this Master Declaration or any Supplemental Declaration has occurred and is continuing;
 - B. At the time of the issuance of the Parity Bonds there is no deficiency in the Debt Service Account and all required deposits to all subaccounts in the Bond Reserve Account have been made;
 - C. There shall have been filed with the District either:

Page 13 – Master Water System Revenue Bond Declaration

3193363.11 041297 RSIND

- (i) A certificate of the District Official stating that both:
 - (a) Coverage Revenues (adjusted as provided in Section 7.2) for the Base Period were not less than one hundred fifteen percent (115%) of Maximum Annual Bond Debt Service on all then Outstanding Bonds, calculated as of the date the Parity Bonds are issued and with the proposed Parity Bonds treated as Outstanding; and
 - (b) Net Revenues (adjusted as provided in Section 7.2) for the Base Period were not less than one hundred twenty five percent (125%) of Maximum Annual Bond Debt Service on all then Outstanding Bonds, calculated as of the date the Parity Bonds are issued and with the proposed Parity Bonds treated as Outstanding; or
- (ii) A certificate or opinion of a Qualified Consultant:
 - (a) Stating the amount of the Adjusted Coverage Revenues and the Adjusted Net Revenues for each of the five Fiscal Years after the last Fiscal Year for which interest on the Parity Bonds is, or is expected to be, capitalized, or, if interest will not be capitalized, for each of the five Fiscal Years after the proposed Parity Bonds are issued; and
 - (b) Concluding that the respective amounts of Adjusted Coverage Revenues in each of the first four Fiscal Years described in Section 7.1.C(ii)(a) are at least equal to one hundred fifteen percent (115%) of the Annual Bond Debt Service for each of those respective Fiscal Years on all Outstanding Bonds, with the proposed Parity Bonds treated as Outstanding; and,
 - (c) Concluding that the respective amounts of Adjusted Net Revenues in each of the first four Fiscal Years described in Section 7.1.C(ii)(a) are at least equal to one hundred twenty-five percent(125%) of the Annual Bond Debt Service for each of those respective Fiscal Years on all Outstanding Bonds, with the proposed Parity Bonds treated as Outstanding; and,
 - (d) Concluding that the amount of Adjusted Coverage Revenues in the fifth Fiscal Year described in Section 7.1.C(ii)(a) is at least equal to one hundred fifteen percent (115%) of the Maximum Annual Bond Debt Service, calculated for the period beginning with that fifth Fiscal Year on all then Outstanding Bonds, with the proposed Parity Bonds treated as Outstanding; and,
 - (e) Concluding that the amount of Adjusted Net Revenues in the fifth Fiscal Year described in Section 7.1.C(ii)(a) is at least equal to one hundred twenty-five percent (125%) of the Maximum Annual Bond Debt Service, calculated for the period beginning with that fifth Fiscal Year on all then

Outstanding Bonds, with the proposed Parity Bonds treated as Outstanding.

- 7.2. The District may adjust Coverage Revenues and Net Revenues for purposes of Section 7.1.C(i) by adding any Coverage Revenues or Net Revenues the District Official calculates the District would have had during the Base Period because of increases in Water System rates, fees and charges which have been adopted by the District and are in effect on or before the date the Parity Bonds are issued. The District shall adjust Coverage Revenues and Net Revenues for the Base Period by eliminating the effect of any withdrawals from or deposits to the Rate Stabilization Account.
- 7.3. The Qualified Consultant shall calculate Adjusted Net Revenues and Adjusted Coverage Revenues for purposes of Section 7.1.C(ii) as provided in this Section 7.3:
- A. The District shall provide the Qualified Consultant with the following information:
- (i) The Base Period, the Coverage Revenues and Net Revenues for the Base Period and the amounts of any withdrawals from or deposits to the Rate Stabilization Account for Fiscal Years that are included in the Base Period;
 - (ii) Information regarding any Water System utility properties that are being acquired with Parity Bonds and that have an earnings record;
 - (iii) Any changes in rates and charges which have been adopted by the District since the beginning of the Base Period and the dates on which they are scheduled to take effect;
 - (iv) Any changes in customers since the beginning of the Base Period; and,
 - (v) A description of any extensions or additions to the Water System that were in the process of construction at the beginning of the Base Period or commenced construction after the beginning of the Base Period, the expected date of completion of those extensions or additions, the estimated operating and capital costs of those extensions or additions, and any other changes to the Gross Revenues or Operating Expenses that the District reasonably expects to result from the completion and operation of those extensions or additions.
- B. Using the information provided by the District pursuant to Section 7.3.A and any additional information the Qualified Consultant determines is necessary, the Qualified Consultant shall adjust the Coverage Revenues and Net Revenues for the Base Period to eliminate the effect of any withdrawals from or deposits to the Rate Stabilization Account in the manner described in Section 7.2 and may adjust the Coverage Revenues and Net Revenues for the Base Period:
- (i) To reflect any changes that the Qualified Consultant projects will result from the acquisition of Water System utility properties that are being financed with the Parity Bonds and that have an earnings record;

- (ii) To reflect any changes in rates and charges which have been adopted by the District and which are scheduled to take effect during the period described in Section 7.1.C(ii)(a), or which increase rates and charges for inflation at a level which the Qualified Consultant determines is reasonable;
- (iii) To reflect any changes in customers of the Water System that occurred after the beginning of the Base Period and prior to the date of the Qualified Consultant's certificate; and
- (iv) To reflect any changes to Coverage Revenues or Net Revenues not included in the preceding paragraphs that are projected to result from the completion and operation of additions and extensions to the Water System that were under construction at the beginning of the Base Period, or commenced construction after the beginning of the Base Period.

7.4. The District may issue Parity Bonds to refund Outstanding Bonds without complying with Section 7.1 if the refunded Bonds are legally or economically defeased on the date of delivery of the refunding Parity Bonds and if the Annual Bond Debt Service on the refunding Parity Bonds does not exceed the Annual Bond Debt Service on the refunded Bonds in any Fiscal Year by more than \$5,000.

7.5. Bonds shall be treated as “legally defeased” for purposes of Section 7.4 if they are defeased as provided in Section 13. Bonds shall be treated as “economically defeased” for purposes of Section 7.4 if they have been irrevocably called for redemption/prepayment within one year after the date on which the refunding Bonds are issued, and the District has irrevocably deposited money or Government Obligations with the paying agent or Owner for the refunded Bonds, as applicable, or in escrow with an independent trustee or escrow agent, and the money and any amounts to be received from the Government Obligations have been calculated to be sufficient, without reinvestment, to pay the Bonds that are economically defeased.

7.6. All Parity Bonds issued in accordance with this Section 7 shall have a lien on the Net Revenues which is equal to the lien of all other Outstanding Bonds.

Section 8. Subordinate Obligations.

The District may issue Subordinate Obligations only if:

- 8.1. The Subordinate Obligations are payable solely from amounts permitted to be deposited in the Subordinate Obligations Account pursuant to Section 4.1.E;
- 8.2. The Subordinate Obligations state clearly that they are secured by a lien on or pledge of the Net Revenues which is subordinate to the lien on, and pledge of, the Net Revenues for the Bonds.

Section 9. Separate Utility System.

The District may declare property which the District owns and is part of the Water System (but has a value of less than five percent of the Water System at the time of the declaration), and property which the District has not yet acquired but would otherwise become part of the Water System, to be part of a Separate Utility System. The District may pay costs of acquiring, operating and maintaining Separate Utility Systems from Net Revenues, but only if there is no deficit in the Debt Service Account or the Bond Reserve Account. The District may issue obligations which are secured by the revenues produced by the Separate Utility System, and may pledge the Separate Utility System revenues to pay those obligations. In addition, the District may issue Subordinate Obligations to pay for costs of a Separate Utility System, and may pledge the revenues of the Separate Utility System to pay the Subordinate Obligations.

Section 10. General Covenants.

The District hereby covenants and agrees with the Owners of all Outstanding Bonds as follows:

- 10.1. The District shall promptly cause the principal, premium, if any, and interest on the Bonds to be paid as they become due in accordance with the provisions of this Master Declaration and any Supplemental Declaration.
- 10.2. The District shall maintain complete books and records relating to the operation of the Water System and all District funds and accounts in accordance with generally accepted accounting principles, shall cause such books and records to be audited annually at the end of each Fiscal Year, and shall have an audit report prepared by the Auditor and made available for the inspection of Owners.
- 10.3. The District shall not issue obligations which have a lien on the Net Revenues that is superior to the lien of the Bonds except for obligations to pay Operating Expenses.
- 10.4. The District shall promptly deposit the Gross Revenues and other amounts described in this Master Declaration into the funds and accounts specified in this Master Declaration.
- 10.5. The District shall work in good faith to cause the Water System to be operated at all times in a safe, sound, efficient and economic manner in compliance with all health, safety and environmental laws, regulatory body rules, regulatory body orders and court orders applicable to the District's operation and ownership of the Water System.
- 10.6. The District shall maintain the Water System in good repair, working order and condition.
- 10.7. The District shall not enter into any new agreements or arrangements or make any new offers to provide Water System products or services at a discount from published rate schedules or provide free Water System products or services except: a) for District-owned facilities, b) in case of emergencies, c) where the District exchanges services with other water systems, or d) where in the reasonable judgment of the District such action does not materially reduce the Gross Revenues received by the District.

- 10.8. The District shall at all times maintain with responsible insurers all such insurance on the Water System as is customarily maintained with respect to works and properties of like character against accident to, loss of or damage to such works or properties.
- A. The net proceeds of insurance against material accident to or material destruction of the Water System shall be used to repair or rebuild the damaged or destroyed Water System, and to the extent not so applied, will be applied to the payment or redemption/prepayment of the Bonds.
- B. The insurance described in Section 10.8 shall be in the form of policies or contracts for insurance with insurers of good standing and shall be payable to the District, or in the form of self-insurance by the District. The District shall establish such fund or funds or reserves which it deems are necessary to provide for its share of any such self-insurance.
- 10.9. The District shall not voluntarily, nor shall it permit others to, sell, mortgage or otherwise permanently dispose of all or any portion of the Water System except:
- A. The District may dispose of all or substantially all of the Water System, only if the District pays all Bonds or defeases them pursuant to Section 13.
- B. Except as provided in Section 10.9.C or 10.9.D, the District will not voluntarily dispose of any part of the Water System in excess of 10% of the value of the Water System in service unless prior to such disposition either:
- (i) There has been filed with the District a certificate of a Qualified Consultant or District Official stating that such disposition will not impair the ability of the District to comply with the rate covenants contained in Sections 6.1 and 6.2 of this Master Declaration; or
- (ii) Provision is made for the payment, redemption/prepayment or other defeasance of a principal amount of Bonds equal to the greater of the following amounts:
- (a) An amount which will be in the same proportion to the net principal amount of Bonds then Outstanding (defined as the total principal amount of Bonds then Outstanding less the amount of cash and investments in the Debt Service Account, the Bond Reserve Account, and the Subordinate Obligations Account) that the Gross Revenues attributable to the part of the Water System sold or disposed of for the 12 preceding months bears to the total Gross Revenues for such period; or
- (b) An amount which will be in the same proportion to the net principal amount of Bonds then Outstanding that the book value of the part of the Water System sold or disposed of bears to the book value of the Water System immediately prior to such sale or disposition.

- C. The District may dispose of any portion of the Water System that has become unserviceable, inadequate, obsolete, or unfit to be used or no longer necessary for use in the operation of the Water System.
- D. If the ownership of all or part of the Water System is transferred from the District through the operation of law, the District shall to the extent authorized by law, reconstruct or replace such transferred portion using any proceeds of the transfer unless the District reasonably determines that such reconstruction or replacement is not in the best interest of the District and the Owners, in which case any proceeds shall be used for the payment, redemption/prepayment or defeasance of the Bonds.

Section 11. Events of Default and Remedies.

- 11.1. **Continuous Operation Essential.** District Official hereby finds and determines that the continuous operation of the Water System and the collection, deposit and disbursement of the Net Revenues in the manner provided in this Master Declaration and in any Supplemental Declaration are essential to the payment and security of the Bonds, and the failure or refusal of the District to perform the covenants and obligations contained in this Master Declaration or any such Supplemental Declaration will endanger the necessary continuous operation of the Water System and the application of the Net Revenues to the operation of the Water System and the payment of the Bonds.
- 11.2. **Events of Default.** The following shall constitute “Events of Default” so long as they are occurring and have not been cured in accordance with the terms of this Master Declaration:
 - A. If the District shall fail to pay any Bond principal or interest when due.
 - B. Except as provided in Section 11.3, if the District shall default in the observance and performance of any other of its covenants, conditions and agreements in this Master Declaration and the default continues for ninety (90) days after the District receives a written notice, specifying the Event of Default and demanding the cure of such default, from a Credit Provider or from the Owners of not less than 25% in aggregate principal amount of the Bonds Outstanding.
 - C. If the District shall sell, mortgage or otherwise permanently dispose of all or any portion of the Water System in violation of Section 10.9.
 - D. If an order, judgment or decree shall be entered by any court of competent jurisdiction:
 - (i) Appointing a receiver, trustee or liquidator for the District or the whole or any part of the Water System;
 - (ii) Approving a petition filed against the District seeking the bankruptcy, arrangement or reorganization of the District under any applicable law of the United States or the State; or

- (iii) Assuming custody or control of the District or of the whole or any part of the Water System under the provisions of any other law for the relief or aid of debtors and such order, judgment or decree shall not be vacated or set aside or stayed (or, in case custody or control is assumed by said order, such custody or control shall not be otherwise terminated) within sixty (60) days from the date of the entry of such order, judgment or decree.

E. If the District shall:

- (i) Admit in writing its inability to pay its debts generally as they become due;
- (ii) File a petition in bankruptcy or seeking a composition of indebtedness under any state or federal bankruptcy or insolvency law;
- (iii) Consent to the appointment of a receiver of the whole or any part of the Water System; or
- (iv) Consent to the assumption by any court of competent jurisdiction under the provisions of any other law for the relief or aid of debtors of custody or control of the District or of the whole or any part of the Water System.

11.3. **Exception.** It shall not constitute an Event of Default under 11.2.B if the default cannot practicably be remedied within ninety (90) days after the District receives notice of the default, so long as the District promptly commences reasonable action to remedy the default after the notice is received, and continues reasonable action to remedy the default until the default is remedied.

11.4. **Remedies.** If an Event of Default occurs, any Owner may exercise any remedy available at law or in equity including mandamus where applicable. However, the Bonds shall not be subject to acceleration.

A. Books of District Open to Inspection.

- (i) The District covenants that if an Event of Default shall have happened and shall not have been remedied, the books of record and account of the District and all other records relating to the Water System shall at all reasonable times be subject to the inspection and use of any persons holding at least twenty percent (20%) of the principal amount of Outstanding Bonds and their respective agents and attorneys.
- (ii) The District covenants that if the Event of Default shall happen and shall not have been remedied, the District will continue to account, as a trustee of an express trust, for all Net Revenues and other amounts, securities and funds pledged under this Master Declaration.

B. Appointment of Trustee. Whenever any Event of Default exists, Owners representing 51 percent or more of the Outstanding Bonds may appoint a commercial bank or other

financial institution with a reported capital and surplus in excess of \$50 million as trustee (the “Trustee”) to represent the interests of the Owners.

11.5. Trustee Duties Upon Default.

- A. Upon the occurrence of an Event of Default the Trustee may pursue any other available remedy at law or in equity to enforce the payment of the principal of, premium, if any, and interest on the outstanding Bonds, and to enforce any rights of the Trustee under or with respect to the Master Declaration.
- B. In addition, upon the occurrence of an Event of Default, and upon the filing of a suit or other commencement of judicial proceedings to enforce the rights of the Trustee and of the Owners under the Master Declaration, the Trustee will be entitled, as a matter of right to the fullest extent permitted by Oregon law, to the appointment of a receiver or receivers of the Net Revenues and other amounts pledged under the Master Declaration, pending such proceedings, with such powers as the court making such appointment may confer.
- C. If an Event of Default has occurred and is continuing and if requested so to do by the Owners of at least 25% in aggregate principal amount of Outstanding Bonds and indemnified as provided in the Master Declaration, the Trustee will be obligated to exercise any of the rights and powers conferred by this Master Declaration, as the Trustee, being advised by counsel, deems most expedient in the interest of the Owners.
- D. If a Trustee has been appointed pursuant to 11.4.B, no Owner of any Bond shall have the right to institute any suit, action or proceeding at law or in equity, for any remedy under the Master Declaration, unless:
 - (i) such Owner has previously given to the Trustee written notice of the occurrence of an Event of Default;
 - (ii) the Owners of a majority in aggregate principal amount of all the Bonds then Outstanding have requested the Trustee in writing to exercise its powers under the Master Declaration;
 - (iii) said Owners have tendered to the Trustee indemnity reasonably acceptable to the Trustee against the costs, expenses and liabilities to be incurred in compliance with such request; and
 - (iv) the Trustee has refused or failed to comply with such request for a period of 60 days after such written request has been received by the Trustee and said tender of indemnity is made to the Trustee.
- E. If the Trustee takes any judicial or other action in an Event of Default the Trustee has full power in its direction with respect to any continuance, discontinuance, withdrawal, compromise, settlement or other disposition of such action, unless opposed by the written request of the Owners of a majority in aggregate principal amount of the Outstanding

Bonds. The Trustee is appointed attorney-in-fact of the Owners for the purpose of bringing any suit action or proceedings in an Event of Default.

F. Waivers of Event of Default.

- (i) No delay or omission of any Owner or of the Trustee to exercise any right or power arising upon the happening of an Event of Default shall impair any right or power or shall be construed to be a waiver of any such Event of Default or to be an acquiescence therein; and every power and remedy given by this Section 11 to the Owners and to the Trustee may be exercised from time to time and as often as may be deemed expedient by the Owners and/or the Trustee as applicable.
- (ii) The owners of not less than fifty percent (50%) in principal amount of the affected Bonds that are at the time Outstanding, or their attorneys-in-fact duly authorized, or the Trustee may, on behalf of the Owners of all of affected Bonds, waive any past default under this Master Declaration with respect to such Bonds and its consequences, except a default in the payment of the principal of, premium, if any, or interest on any of the Bonds. No such waiver shall extend to any subsequent or other default or impair any right consequent thereon.
- (iii) If a default occurs under Section 6 and that default has not become an Event of Default, that default shall be deemed waived at the end of the first Fiscal Year following that default in which the District has complied with Section 6.

11.6. Remedies Granted in Master Declaration Not Exclusive.

No remedy by the terms of this Master Declaration conferred upon or reserved to the Owners is intended to be exclusive of any other remedy, but each and every such remedy shall be cumulative and shall be in addition to every other remedy given under this Master Declaration or existing at law or in equity or by statute on or after the date of adoption of this Master Declaration. However, the Bonds shall not be subject to acceleration.

Section 12. Amendment of Master Declaration.

- 12.1. This Master Declaration may be amended by Supplemental Declaration without the consent of any Owners for any one or more of the following purposes:
 - A. To cure any ambiguity or formal defect or omission in this Master Declaration;
 - B. To add to the covenants and agreements of the District in this Master Declaration, other covenants and agreements to be observed by the District which are not contrary to or inconsistent with this Master Declaration as theretofore in effect;
 - C. To authorize issuance of Bonds or Subordinate Obligations as permitted by this Master Declaration;

- D. To modify, amend or supplement this Master Declaration or any Supplemental Declaration to qualify this Master Declaration under the Trust Indenture Act of 1939, as amended, or any similar federal statute hereafter in effect or to permit the qualification of any Bonds for sale under the securities laws of any of the states of the United States of America;
 - E. To confirm, as further assurance, any security interest or pledge created under this Master Declaration or any Supplemental Declaration;
 - F. To make any change which, in the reasonable judgment of the District, does not materially and adversely affect the rights of the owners of any Outstanding Bonds;
 - G. So long as a Credit Facility (other than a Reserve Credit Facility) is in full force and effect with respect to the Bonds affected by such Supplemental Declaration, to make any other change which is consented to in writing by the issuer of such Credit Facility other than any change which:
 - (i) Would result in a downgrading or withdrawal of the rating then assigned to the affected Bonds by the Rating Agencies;
 - (ii) Changes the maturity (except as permitted herein), the Interest Payment Dates, interest rates, redemption/prepayment and purchase provisions, and provisions regarding notices of redemption/prepayment and purchase applicable to the affected Bonds or diminishes the security afforded by such Credit Facility;
 - (iii) Materially and adversely affects the rights and security afforded to the Owners of any Outstanding Bonds not secured by such Credit Facility; or
 - H. To modify any of the provisions of this Master Declaration or any Supplemental Declaration in any other respect whatever, as long as the modification shall take effect only after all affected Outstanding Bonds cease to be Outstanding.
- 12.2. This Master Declaration may be amended for any other purpose only upon consent of Owners of not less than fifty-one percent (51%) in aggregate principal amount of the Bonds Outstanding; provided, however, that no amendment shall be valid without the consent of Owners of 100 percent (100%) of the aggregate principal amount of the Bonds Outstanding which:
- A. Extends the maturity of any Bond, reduces the rate of interest upon any Bond, extends the time of payment of interest on any Bond, reduces the amount of principal payable on any Bond, or reduces any premium payable on any Bond, without the consent of the affected Owner; or
 - B. Reduces the percent of Owners required to approve Supplemental Declarations.

- 12.3. For purposes of Section 12.2, and subject to Section 12.4, the initial purchaser of a series of Bonds may be treated as the Owner of that Series at the time that series of Bonds is delivered in exchange for payment.
- 12.4. Except as otherwise expressly provided in Section 12.5, Section 12.6 or a Supplemental Declaration, as long as a Credit Facility securing all or a portion of any Outstanding Bonds is in effect, the issuer of such Credit Facility shall be deemed to be the Owner of the Bonds secured by such Credit Facility for the purpose of the execution and delivery of a Supplemental Declaration of any amendment, change or modification of this Master Declaration or the initiation by Owners of any action which under this Master Declaration requires the written approval or consent of or can be initiated by the Owners of at least a majority in principal amount of the affected Bonds at the time Outstanding, or following an Event of Default for all other purposes.
- 12.5. The issuer of a Credit Facility shall not be deemed to be an Owner for purposes of any amendment, change or modification of this Master Declaration which:
- A. Would result in a downgrading or withdrawal of the rating then assigned to the affected Bonds by the Rating Agencies; or
 - B. Changes the maturity (except as expressly permitted herein), the Interest Payment Dates, interest rates, redemption/prepayment and purchase provisions, and provisions regarding notices of redemption/prepayment and purchase applicable to the affected Bonds or diminishes the security afforded by such Credit Facility; or
 - C. Reduces the percentage or otherwise affects the classes of affected Bonds, the consent of the Owners of which is required to effect any such modification or amendment.
- 12.6. No issuer of a Credit Facility shall be entitled to act as an Owner during any period in which:
- A. The issuer's Credit Facility is not in full force and effect;
 - B. The issuer of a Credit Facility shall have filed a petition or otherwise sought relief under any federal or state bankruptcy or similar law;
 - C. The issuer of the Credit Facility shall, for any reason, have failed or refused to honor a proper demand for payment under such Credit Facility; or
 - D. An order or decree shall have been entered, with the consent or acquiescence of the issuer of a Credit Facility, appointing a receiver or receivers or the assets of the issuer of a Credit Facility, or if such order or decree having been entered without the consent or acquiescence of the issuer of a Credit Facility, shall not have been vacated or discharged or stayed within ninety (90) days after the entry thereof.
- 12.7. For purposes of determining the percentage of Owners consenting to, waiving or otherwise acting with respect to any matter that may arise under this Master Declaration,

the Owners of Bonds which pay interest only at maturity, and mature more than one year after they are issued shall be treated as Owners of Bonds in an aggregate principal amount equal to the accreted value of such Bonds as of the date the notice is sent requesting consent, waiver or other action as provided herein.

Section 13. Defeasance.

- 13.1. The District shall be obligated to pay Bonds which are defeased pursuant to this Section solely from the money and Government Obligations deposited with the escrow agent or trustee, and the District shall have no further obligation to pay the defeased Bonds from any source except the amounts deposited in the escrow. Bonds shall be deemed defeased if the District:
- A. Irrevocably deposits money or Government Obligations in escrow with an independent trustee or escrow agent which are calculated to be sufficient without reinvestment for the payment of Bonds which are to be defeased;
 - B. Files with the escrow agent or trustee a certificate from an independent, certified public accountant to the effect that the money and the principal and interest to be received from the Government Obligations are calculated to be sufficient, without further reinvestment, to pay the defeased Bonds when due; and
 - C. Files with the escrow agent or trustee an opinion of nationally recognized bond counsel that the proposed defeasance will not cause interest on the defeased Bonds to be includable in gross income under the Code.

Section 14. BEO System.

- 14.1. Unless otherwise provided by a Supplemental Declaration, all Bonds shall be subject to the BEO System pursuant to the provisions of this Section 14.1.
- 14.2. The Bonds shall be initially issued as a BEO security issue with no Bonds being made available to the Owners upon the execution and delivery of the letter of representations among the Paying Agent, DTC and the District. Ownership of the Bonds shall be recorded through entries on the books of banks and broker-dealer participants and correspondents that are related to entries on the DTC BEO system. The Bonds shall be initially issued in the form of separate single fully registered typewritten Bonds for each maturity of the Bonds (the "Global Bonds"). Each Global Bond shall be registered in the name of CEDE & CO. as nominee (the "Nominee") of DTC (DTC and any other qualified securities depository designated by the District as a successor to DTC, collectively the "Depository") as the "Registered Owner", and such Global Bonds shall be lodged with the Depository until early redemption or maturity of the Bond issue. The Paying Agent shall remit payment for the maturing principal and interest on the Bonds to the Owner for distribution by the Nominee for the benefit of the owners (the "Beneficial Owner" or "Record Owner") by recorded entry on the books of the Depository

participants and correspondents. While the Bonds are in BEO form, the Bonds will be available in denominations of \$5,000 or any integral multiple thereof within a maturity.

- 14.3. In the event the Depository determines not to continue to act as securities depository for the Bonds, or the District determines that the Depository shall no longer so act, then the District will discontinue the BEO system with the Depository. If the District fails to designate another qualified securities depository to replace the Depository or elects to discontinue use of a BEO system, the Bonds shall no longer be a BEO issue but shall be registered in the registration books maintained by the Paying Agent in the name of the Owner as appearing on the Bond register and thereafter in the name or names of the Owners of the Bonds transferring or exchanging Bonds.
- 14.4. While the Bonds are in BEO form, the District and the Paying Agent shall have no responsibility or obligation to any participant or correspondent of the Depository or to any Registered Owner on behalf of which such participants or correspondents act as agent for the Owner with respect to:
 - A. The accuracy of the records of the Depository, the Nominee or any participant or correspondent with respect to any ownership interest in the Bonds;
 - B. The delivery to any participant or correspondent or any other person, other than an Owner as shown in the registration books maintained by the Paying Agent, of any notice with respect to the Bonds, including any notice of redemption/prepayment;
 - C. The selection by the Depository of the beneficial interest in Bonds to be redeemed prior to maturity; or
 - D. The payment to any participant, correspondent, or any other person other than the owner of the Bonds as shown in the registration books maintained by the Paying Agent, of any amount with respect to principal of or interest on the Bonds.
- 14.5. Notwithstanding the BEO system, the District may treat and consider the Owner in whose name each Bond is registered in the registration books maintained by the Paying Agent as the Owner and absolute owner of such Bond for the purpose of payment of principal and interest with respect to such Bond, or for the purpose of giving notices of redemption and other matters with respect to such Bond, or for the purpose of registering transfers with respect to such Bond, or for all other purposes whatsoever. The District shall pay or cause to be paid all principal and interest on the Bonds only to or upon the order of the Registered Owner, as shown in the registration books maintained by the Paying Agent, or their respective attorneys duly authorized in writing, and all such payments shall be valid and effective to fully satisfy and discharge the District's obligation with respect to payment thereof to the extent of the sum or sums so paid.
- 14.6. Upon delivery by the Depository to the District and to the Owner of written notice to the effect that the Depository has determined to substitute a new nominee in place of the Nominee, then the word "Nominee" in this Master Declaration shall refer to such new

nominee of the Depository, and upon receipt of such notice, the District shall promptly deliver a copy thereof to the Paying Agent. The Depository shall tender the Bonds it holds to the Paying Agent for re-registration.

Section 15. Redemption of Bonds.

- 15.1. Unless otherwise provided by a Supplemental Declaration, all Bonds shall be subject to the redemption terms of this Section 15.
- 15.2. The District reserves the right to purchase Bonds in the open market.
- 15.3. If Bonds are subject to mandatory redemption the Paying Agent shall, without further action by the District, select the particular Bonds to be redeemed in accordance with the mandatory redemption schedule, by lot within each maturity, call the selected Bonds, and give notice of their redemption in accordance with this Section 15.
- 15.4. If certain maturities of Bonds are subject to both optional and mandatory redemption, the District may elect to apply the Bonds which it has previously optionally redeemed to any mandatory redemption maturity. In addition, if the District purchases Bonds which are subject to mandatory redemption, the District may elect to apply against the mandatory redemption requirement any such Bonds which it has previously purchased. If the District makes such an election, it shall notify the Paying Agent not less than sixty days prior to the mandatory redemption date to which the election applies.
- 15.5. So long as the BEO System remains in effect with respect to the Bonds, and unless DTC consents to a shorter period, the Paying Agent shall provide not less than 20 days nor more than 60 days' notice of redemption, and shall provide such information in connection therewith as required by the letter of representations submitted to DTC in connection with the issuance of the Bonds.
- 15.6. During any period in which the BEO System is not in effect with respect to the Bonds, unless waived by any Owner of the Bonds to be redeemed, official notice of any redemption of Bonds shall be given by the Paying Agent on behalf of the District by mailing a copy of an official redemption notice by first class mail postage prepaid at least 20 days and not more than 60 days prior to the date fixed for redemption to the Owner of the Bonds to be redeemed, at the address shown on the Bond Register or at such other address as is furnished in writing by such owner to the Paying Agent. All such official notices of redemption shall be dated and shall state:
 - A. The redemption date;
 - B. The redemption price;
 - C. If less than all Outstanding Bonds are to be redeemed, the identification (and, in the case of partial redemption, the respective principal amounts) of the Bonds to be redeemed;

- D. That on the redemption date the redemption price will become due and payable upon each such Bond or portion thereof called for redemption, and that interest thereon shall cease to accrue from and after said date; and
- E. The place where such Bonds are to be surrendered for payment of the redemption price, which place of payment shall be the principal office of the Paying Agent.
- 15.7. The District shall deposit with the Paying Agent, on or before the redemption date, an amount of money sufficient to pay the redemption price of all the Bonds or portions of Bonds which are to be redeemed on that date.
- 15.8. Official notice of redemption having been given as aforesaid, the Bonds or portions of Bonds to be redeemed shall, on the redemption date, become due and payable at the Redemption Price therein specified, and from and after such date (unless the District shall default in the payment of the redemption price or unless the notice was conditional as described in Section 15.9) such Bonds or portions of Bonds shall cease to bear interest. Upon surrender of such Bonds for redemption in accordance with said notice, such Bonds shall be paid by the Paying Agent at the Redemption Price. Installments of interest due on or prior to the redemption date shall be payable as herein provided for payment of interest. Upon surrender for any partial redemption of any Bond, there shall be prepared for the registered owner a new Bond of the same maturity in the amount of the unpaid principal. All Bonds which have been redeemed shall be canceled and destroyed by the Paying Agent and shall not be reissued. Notwithstanding that any Bonds called for redemption shall not have been surrendered, no further interest shall accrue on any such Bonds. From and after such notice having been given and such deposit having been made, the Bonds to be redeemed shall not be deemed to be Outstanding hereunder, and the District shall be under no further liability in respect thereof.
- 15.9. Any notice of optional redemption given for the Bonds pursuant to this Section 15 may state that the optional redemption is conditional upon receipt by the Paying Agent of amounts sufficient to pay the redemption price of such Bonds or upon the satisfaction of any other condition, and/or that such notice may be rescinded upon the occurrence of any other event, and any conditional notice so given may be rescinded at any time before payment of such redemption price if any such condition so specified is not satisfied or if any such other event occurs. Notice of such rescission or of the failure of any such condition shall be given by the Paying Agent to affected owners of the Bonds as promptly as practicable.

Section 16. Authentication, Registration and Transfer.

- 16.1. The provisions of this Section 16 apply only if the Bonds cease to be a BEO issue, and unless otherwise specified in a Supplemental Declaration or Section 17 herein.
- 16.2. No Bond shall be entitled to any right or benefit under this Master Declaration unless it shall have been authenticated by an authorized officer of the Paying Agent. The Paying Agent shall authenticate all Bonds to be delivered at Closing, and shall additionally

authenticate all Bonds properly surrendered for exchange or transfer pursuant to this Master Declaration.


- 16.3. All Bonds shall be in registered form. The Paying Agent will be appointed when the District issues publicly offered Bonds. A successor Paying Agent may be appointed for the Bonds by ordinance or resolution of the District. The Paying Agent shall provide notice to Owners of any change in the Paying Agent not later than the Bond payment date following the change in Paying Agent.
- 16.4. The ownership of all Bonds shall be entered in the Bond register maintained by the Paying Agent and the District and Paying Agent may treat the person listed as owner in the Bond register as the owner of the Bond for all purposes.
- 16.5. The Paying Agent shall mail each interest payment on the Interest Payment Date (or the next Business Day if the Interest Payment Date is not a Business Day) to the name and address of the Owner, as that name and address appear on the Bond register as of the Record Date. If payment is so mailed, neither the District nor the Paying Agent shall have any further liability to any party for such payment.
- 16.6. Bonds may be exchanged for an equal principal amount of Bonds of the same Series and maturity which are in different authorized denominations, and Bonds may be transferred to other owners if the Owner submits the following to the Paying Agent:
 - A. Written instructions for exchange or transfer satisfactory to the Paying Agent, signed by the Owner or his attorney in fact and guaranteed or witnessed in a manner satisfactory to the Paying Agent; and
 - B. The Bonds to be exchanged or transferred.
- 16.7. The Paying Agent shall not be required to exchange or transfer any Bonds submitted to it during any period beginning with a Record Date and ending on the next following payment date; however, such Bonds shall be exchanged or transferred promptly following the payment date.
- 16.8. The Paying Agent shall not be required to exchange or transfer any Bonds which have been designated for redemption if such Bonds are submitted to it during the fifteen-day period preceding the designated redemption date.
- 16.9. For purposes of this Section, Bonds shall be considered submitted to the Paying Agent on the date the Paying Agent actually receives the materials described in Section 16.6.
- 16.10. The District may alter these provisions regarding registration and transfer by mailing notification of the altered provisions to all Owners. The altered provisions shall take effect on the date stated in the notice, which shall not be earlier than 45 days after notice is mailed.

Section 17. The Series 2019 Bond.

- 17.1. Pursuant to the authority of the Ordinance and this Master Declaration, the District has entered into its Series 2019 Bond, a draw-down borrowing, under the WIFIA Loan Agreement for the Willamette Water Project (WIFIA – N18167OR) with the United States Environmental Protection Agency in a maximum principal amount up to \$387,748,990.00, dated as of August 2, 2019 (the “WIFIA Loan Agreement”). The amounts disbursed under the Series 2019 Bond shall be a “Bond” and “Parity Bond” as defined in this Master Declaration. The Series 2019 Bond shall bear interest, shall mature and shall have such other terms as outlined in the WIFIA Loan Agreement.
- 17.2. The amounts disbursed under the Series 2019 Bond shall be special obligations of the District, and shall be payable solely from the Net Revenues and amounts required to be deposited in the Debt Service Account as required and as provided by this Master Declaration. The amounts disbursed under the Series 2019 Bond are not general obligations of the District and are payable solely from the amounts described in the previous sentence. The Series 2019 Bond is not secured by the Bond Reserve Account or any subaccount therein.
- 17.3. The Series 2019 Bond shall be in substantially the form attached to the WIFIA Loan Agreement and shall be signed with the facsimile or manual signature of an authorized District Official.
- 17.4. The Series 2019 Bond proceeds shall be used to finance the projects described in the Ordinance and to pay costs incurred in connection with the issuance of the Series 2019 Bond.
- 17.5. The Series 2019 Bond is placed directly with the United States Environmental Protection Agency and not publicly issued. Because of this, the provisions related to book entry bonds in this Master Declaration do not apply to the Series 2019 Bond.

EXECUTED ON BEHALF OF THE TUALATIN VALLEY WATER DISTRICT BY AN
AUTHORIZED DISTRICT OFFICIAL AS OF THE 2ND DAY OF AUGUST, 2019.

Tualatin Valley Water District, Oregon

By: 
Paul L. Matthews, Chief Financial Officer

Signature Page – Master Water System Revenue Bond Declaration

For 2-sided printing, this page intentionally left blank.

**FIRST SUPPLEMENT TO MASTER WATER
SYSTEM REVENUE BOND DECLARATION**

Tualatin Valley Water District, Oregon

**\$387,748,990 (Maximum)
WIFIA Loan Agreement
and related Water Revenue Bond, Series 2020
(Re-execution of Series 2019 Bond)**

Executed on behalf of the Tualatin Valley Water District, Oregon

As of September 15, 2020

3507809.3 044488 RSIND

TABLE OF CONTENTS

SECTION 1. CANCELLATION OF THE SERIES 2019 BOND..... 1

SECTION 2. THE SERIES 2020 BOND..... 1

3507809.3 044488 RSIND

**FIRST SUPPLEMENT TO MASTER WATER SYSTEM
REVENUE BOND DECLARATION**

THIS FIRST SUPPLEMENT TO MASTER WATER SYSTEM REVENUE BOND DECLARATION (“First Supplement”) is executed as of September 15, 2020, by the District Official of the Tualatin Valley Water District, Oregon (the “District”) pursuant to the authority granted to the District Official by the Ordinance. This First Supplement supplements the Master Water System Revenue Bond Declaration of the Borrower dated as of August 2, 2019 (as supplemented and amended from time to time in accordance with the terms thereof, the “Master Declaration”), and provides the terms under which the District’s Water Revenue Bond, Series 2020 (the “Series 2020 Bond”) is issued.

Unless the context clearly requires otherwise, capitalized terms that are used in this First Supplement but are not defined shall have the meanings defined for those terms in the Master Declaration.

Section 1. Cancellation of the Series 2019 Bond.

- 1.1. The District issued the Series 2019 Bond and entered into the related WIFIA Loan Agreement with the United States Environmental Protection Agency, acting by and through the Administrator of the Environmental Protection Agency (the “WIFIA Lender”) on August 2, 2019 (the “2019 Loan Agreement”).
- 1.2. The District and the WIFIA Lender have agreed to administrative revisions to the 2019 Loan Agreement and to re-execute the 2019 Loan Agreement as of the date hereof. The Series 2020 Bond, described in Section 2 below, and the WIFIA Loan Agreement (defined in Section 2.1 below) will replace the Series 2019 Bond and 2019 Loan Agreement.
- 1.3. As of the date hereof, the Series 2019 Bond and 2019 Loan Agreement are terminated and cancelled in full and no longer in full force and effect, all as described in Section 40 of the WIFIA Loan Agreement.

Section 2. The Series 2020 Bond.

- 2.1. Pursuant to the authority of the Ordinance and the Master Declaration, the District has entered into its Series 2020 Bond, a draw-down borrowing, under the WIFIA Loan Agreement for the Willamette Water Project (WIFIA – N18167OR) with the WIFIA Lender in a maximum principal amount up to \$387,748,990.00, dated as of September 15, 2020 (the “WIFIA Loan Agreement”). The amounts disbursed under the Series 2020 Bond shall be a “Bond” and “Parity Bond” as defined in the Master Declaration. The Series 2020 Bond shall bear interest, shall mature and shall have such other terms as outlined in the WIFIA Loan Agreement.

- 2.2. The amounts disbursed under the Series 2020 Bond shall be special obligations of the District, and shall be payable solely from the Net Revenues and amounts required to be deposited in the Debt Service Account as required and as provided by the Master Declaration. The amounts disbursed under the Series 2020 Bond are not general obligations of the District and are payable solely from the amounts described in the previous sentence. The Series 2020 Bond is not secured by the Bond Reserve Account or any subaccount therein.
- 2.3. The Series 2020 Bond shall be in substantially the form attached to the WIFIA Loan Agreement and shall be signed with the facsimile or manual signature of an authorized District Official.
- 2.4. The Series 2020 Bond proceeds shall be used to finance the projects described in the Ordinance and to pay costs incurred in connection with the issuance of the Series 2020 Bond.
- 2.5. The Series 2020 Bond is placed directly with the United States Environmental Protection Agency and not publicly issued. Because of this, the provisions related to book entry bonds in the Master Declaration do not apply to the Series 2020 Bond.

[remainder of page intentionally blank]

EXECUTED ON BEHALF OF THE TUALATIN VALLEY WATER DISTRICT BY AN
AUTHORIZED DISTRICT OFFICIAL AS OF THE 15th DAY OF SEPTEMBER 2020.

Tualatin Valley Water District, Oregon

By: 
Paul L. Matthews, Chief Financial Officer

Signature Page - First Supplement to Master Water System Revenue Bond Declaration
3507809.3 044488 RSIND

For 2-sided printing, this page intentionally left blank.

E. Parity Certificate and Transcript Documents

LEGAL CLOSING MEMORANDUM AND INDEX

Tualatin Valley Water District, Oregon
Up to \$250,000,000 of Disbursements between October 1, 2020 and September 30, 2023
under the WIFIA Loan Agreement and related Water Revenue Bond, Series 2019
dated August 2, 2019

Listed below are the documents related to the above-captioned disbursements.

Basic Documents

1. Transcript Certification.

Issuer's Documents

2. General Certificate.
3. Parity Certificate, with attached calculations.

Miscellaneous

4. Opinion of Bond Counsel, with attached reliance letter.

3450577.1 041297 CLD

TRANSCRIPT CERTIFICATE

**Tualatin Valley Water District, Oregon
Up to \$250,000,000 of Disbursements between October 1, 2020 and September 30, 2023
under the WIFIA Loan Agreement and related Water Revenue Bond, Series 2019
dated August 2, 2019**

On behalf of Tualatin Valley Water District, Oregon (the “District”), I hereby certify that the attached documents are true copies or duplicate originals of the District’s documents that were assembled related to the above-captioned disbursement of up to \$250,000,000 between October 1, 2020 and September 30, 2023 under the WIFIA Loan Agreement and the related Water Revenue Bond, Series 2019, through the offices of Hawkins Delafield & Wood LLP, in Portland, Oregon.

3450578.1 041297 CLD

Dated as of the 15th day of May, 2020.

Tualatin Valley Water District, Oregon

By: 
Paul L. Matthews, Chief Financial Officer

[Transcript Certificate]

3450578.1 041297 CLD

GENERAL CERTIFICATE

**Tualatin Valley Water District, Oregon
Up to \$250,000,000 of Disbursements between October 1, 2020 and September 30, 2023
Under the WIFIA Loan Agreement and related Water Revenue Bond, Series 2019
dated as of August 2, 2019**

On behalf of Tualatin Valley Water District, Oregon (the "District"), I hereby certify as follows regarding the disbursement of up to \$250,000,000 between October 1, 2020 and September 30, 2023 under the above-captioned WIFIA Loan Agreement (the "WIFIA Loan") between the District and the United States of America Environmental Protection Agency (the "Agency") and the related Water Revenue Bond, Series 2019 (the "Bond") each of which is dated as of August 2, 2019.

1. I, Paul L. Matthews, certify that I am the Chief Financial Officer of the District, and that I am the duly chosen and qualified officer authorized to execute all documents on behalf of the District pertaining to the WIFIA Loan and the Bond pursuant to Ordinance No. 01-19 (the "2019 Ordinance") enacted by the District Board of Commissioners (the "Board") on April 17, 2019, and Resolution No. 16-19 (the "2019 Resolution," and together with the 2019 Ordinance, the "Ordinance") adopted by the Board on May 15, 2019.

2. The 2019 Ordinance was duly enacted, remains in full force and effect, and has not been rescinded or modified.

3. The 2019 Resolution was duly enacted, remains in full force and effect, and has not been rescinded or modified.

4. The Bond is authorized by a Master Water System Revenue Bond Declaration dated as of August 2, 2019 (the "Declaration"), the WIFIA Loan, and the Ordinance. As of the date hereof and prior to the above-reference disbursements, no bonds have been issued under the Ordinance.

5. The proceeds from disbursements made under the WIFIA Loan and Bond will be used solely as provided in the Ordinance.


6. The proceeds from disbursements made under the WIFIA Loan and Bond will be used in a manner that is consistent with the District's acknowledged land use regulations and the statewide goals of the Land Conservation and Development Commission of the State of Oregon.

7. The District has complied and will comply with the applicable provisions of any budget law which are applicable to the disbursement of up to \$250,000,000 between October 1, 2020 and September 30, 2023 under the WIFIA Loan and the Bond.

3450578.1 041297 CLD

Dated as of the 15th day of May, 2020.

Tualatin Valley Water District, Oregon

By: 
Paul L. Matthews, Chief Financial Officer

[General Certificate]

3450578.1 041297 CLD

PARITY CERTIFICATE

**Tualatin Valley Water District, Oregon
Up to \$250 Million of Disbursements between June 1, 2020 and September 30, 2023
Under the WIFIA Loan Agreement
and related Water Revenue Bond, Series 2019
Dated as of August 2, 2019**

On behalf of Tualatin Valley Water District, Oregon (the “District”), I hereby certify as follows in connection with the above-captioned disbursement of up to \$250,000,000 between June 1, 2020 and September 30, 2023 under the WIFIA Loan Agreement (the “WIFIA Loan Agreement”) and the related Water Revenue Bond, Series 2019 (the “Bond”):

1. The District expects to request disbursements under the WIFIA Loan Agreement in an amount of \$250,000,000 over the course of June 1, 2020 through September 30, 2023. The capitalized interest on those disbursement will not exceed \$36,796,126.40, for a total borrowing amount of \$286,796,126.40. That total borrowing amount, to the extent of principal and regularly scheduled interest payments due on it, is referred to as “Disbursement No. 1” in this certificate.

2. The Bond, to the extent represented by Disbursement No. 1, is being issued as a Bond and a Parity Bond under the Master Water System Revenue Bond Declaration dated August 2, 2019 (the “Declaration”). Capitalized terms used but not defined in this certificate have the meanings defined for those terms in the Declaration.

3. No Event of Default under the Declaration has occurred and is continuing.

4. As of this date, there is no deficiency in the Debt Service Account and all required deposits to all subaccounts in the Bond Reserve Account have been made.

5. The Coverage Revenues (adjusted as provided in Section 7.2 of the Declaration) for the Base Period were not less than one hundred fifteen percent (115%) of Maximum Annual Bond Debt Service on all then Outstanding Bonds, calculated as of this date and with Disbursement No. 1 treated as Outstanding.


6. The Net Revenues (adjusted as provided in Section 7.2 of the Declaration) for the Base Period were not less than one hundred twenty five percent (125%) of Maximum Annual Bond Debt Service on all then Outstanding Bonds, calculated as of this date and with Disbursement No. 1 treated as Outstanding.

Supporting calculations are attached to this certificate.

3450578.1 041297 CLD

Dated as of the 15th day of May, 2020.

Tualatin Valley Water District, Oregon

By: 
Paul L. Matthews, Chief Financial Officer

[Parity Certificate]

3450578.1 041297 CLD

ATTACHMENT TO PARITY CERTIFICATE

Net Revenue Test	
Description	FY2019
Revenues	
Water Services	\$69,451,031
Administrative Services	3,633,228
Rental Income	81,979
System Development Charges	6,193,831
Interest Earnings	2,769,322
Gross Revenue	\$82,129,391
Operating Expenses	
Less Depreciation and Amortization	(6,896,192)
Less Capitalized Operating Items	(4,904,995)
Net Operating Expenses	\$33,013,524
Adjustment for Rate Increases ¹	\$2,500,237
Net Revenue	\$51,616,104
Maximum Annual Debt Service	\$12,489,237
Debt Service Coverage	4.13x

Coverage Revenue Test	
Description	FY2019
Revenues	
Water Services	\$69,451,031
Administrative Services	3,633,228
Rental Income	81,979
System Development Charges	6,193,831
Interest Earnings	2,769,322
Gross Revenue	\$82,129,391
Operating Expenses	
Less Depreciation and Amortization	(6,896,192)
Less Capitalized Operating Items	(4,904,995)
Net Operating Expenses	\$33,013,524
Adjustment for Rate Increases ¹	\$2,500,237
Net Revenue	\$51,616,104
Less System Development Charges	(6,193,831)
Coverage Revenue	\$45,422,273
Maximum Annual Debt Service	\$12,489,237
Debt Service Coverage	3.64x

¹Section of the Declaration allows adjustment of Net Revenue and Coverage Revenue for rate increases that have been adopted by the District and are in effect. On September 18, 2019, the District's Board of Commissioners adopted Resolution 24-19 increasing water rates by 3.6% effective November 1, 2019.

3450578.1 041297 CLD

Hawkins Delafield & Wood LLP

200 SW MARKET STREET, SUITE 350
PORTLAND, OR 97201
WWW.HAWKINS.COM

May 15, 2020

Tualatin Valley Water District
1850 SW 170th Avenue
Beaverton, Oregon 97003

Subject: Up to \$250,000,000 of Disbursements between October 1, 2020 and September 30, 2023
under the WIFIA Loan Agreement and Water Revenue Bond dated as of August 2, 2019

Ladies and Gentlemen:

We have acted as bond counsel in connection with the execution and delivery by the Tualatin Valley Water District, Oregon (the "District") of its WIFIA Loan Agreement dated as of August 2, 2019 (the "WIFIA Loan"), between the District and the United States Environmental Protection Agency, an agency of the United States of America, acting by and through the Administrator of the Environmental Protection Agency, and the related WIFIA Water Revenue Bond, Series 2019 (the "WIFIA Bond," and collectively with the WIFIA Loan, the "WIFIA Borrowing"). The WIFIA Borrowing is authorized by Oregon Revised Statutes Section 287A.150 and other relevant provisions of Oregon Revised Statutes Chapter 287A, Ordinance No. 01-19 enacted by the District Board on April 17, 2019 (the "Ordinance"), and the Master Water System Revenue Bond Declaration dated as of August 2, 2019 (the "Declaration"). Capitalized terms used but not defined in this opinion have the respective meanings assigned to such terms in the Declaration.

The District expects to request disbursements under the WIFIA Loan Agreement in an amount of \$250,000,000 between October 1, 2020 and September 23, 2023. The capitalized interest on those disbursements will not exceed \$37,317,928.45, for a total borrowing amount of \$287,317,928.45. That aggregate amount of all such disbursements, including the principal thereof and regularly scheduled interest payments due thereon, is referred to as "Disbursement No. 1" in this opinion.

We have examined the law, and such certified proceedings and other documents as we deem necessary to render this opinion.

We have not been engaged or undertaken to review the accuracy, completeness or sufficiency of any financial disclosure relating to the WIFIA Borrowing, and we express no opinion relating thereto.

Regarding questions of fact material to our opinion, we have relied on representations of the District in the Ordinance, the Declaration, and the WIFIA Borrowing and in the certified proceedings and on other certifications of public officials and others furnished to us without undertaking to verify the same by independent investigation.

Based on the foregoing, we are of the opinion that, under existing law:

1. The WIFIA Borrowing has been duly authorized, executed, and delivered by the District under and pursuant to the Constitution and Statutes of the State of Oregon, the Ordinance, and the Declaration. The WIFIA Borrowing, to the extent represented by Disbursement No. 1 or any portion thereof, constitutes a valid and legally binding special obligation of the District that is enforceable in accordance with its terms.
2. The WIFIA Bond, to the extent represented by Disbursement No. 1 or any portion thereof, is a "Bond" and a "Parity Bond" as defined in the Declaration.
3. Interest on Disbursement No. 1 is not excludable from gross income for federal income tax purposes pursuant to the Internal Revenue Code of 1986, as amended.
4. Interest on Disbursement No. 1 is exempt from Oregon personal income tax.

3450615.1 041297 OPN

Legal Opinion
May 15, 2020
Page 2

Except as stated in paragraphs 3 and 4 above, we express no opinion as to any other federal, state or local tax consequences arising with respect to the WIFIA Borrowing or Declaration or disbursements under the WIFIA Borrowing or the ownership or disposition thereof.

The WIFIA Borrowing provides for draw down borrowings. This opinion only covers Disbursement No. 1. The remaining amount of the WIFIA Borrowing may be disbursed in the future ("Subsequent Disbursements"). We express no opinion herein as to Subsequent Disbursements.

The portion of this opinion that is set forth in paragraph 1, above, is qualified only to the extent that enforceability of the WIFIA Borrowing may be limited by or rendered ineffective by (i) bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium and other laws affecting creditors' rights generally; (ii) the application of equitable principles and the exercise of judicial discretion in appropriate cases; (iii) common law and statutes affecting the enforceability of contractual obligations generally; and (iv) principles of public policy concerning, affecting or limiting the enforcement of rights or remedies against governmental entities such as the District.

This opinion is limited to matters of Oregon law and applicable federal law and we assume no responsibility as to the applicability of laws of other jurisdictions. This opinion is given as of the date hereof and is based on existing law, and we assume no obligation to update, revise, or supplement this opinion to reflect any action hereafter taken or not taken, or any facts or circumstances that may hereafter come to our attention or any changes in law or interpretations thereof that may hereafter arise or occur, or for any other reason.

This opinion is provided to you as a legal opinion only, and not as a guaranty or warranty of the matters discussed herein. No opinions may be inferred or implied beyond the matters expressly stated herein. No qualification, limitation or exception contained herein shall be construed in any way to limit the scope of the other qualifications, limitations and exceptions. For purposes of this opinion, the terms "law" and "laws" do not include unpublished judicial decisions, and we disclaim the effect of any such decision on this opinion.

We have served as bond counsel only to the District in connection with Disbursement No. 1 and have not represented and are not representing any other party in connection with the WIFIA Borrowing. This opinion is given solely for the benefit of the District in connection with Disbursement No. 1 and may not be relied on in any manner or for any purpose by any person or entity other than the District, and any person to whom we may send a formal reliance letter indicating that the recipient is entitled to rely on this opinion.

Very truly yours,



3450615.1 041297 OPN

Hawkins Delafield & Wood LLP

200 SW MARKET STREET, SUITE 350
PORTLAND, OR 97201
WWW.HAWKINS.COM

May 15, 2020

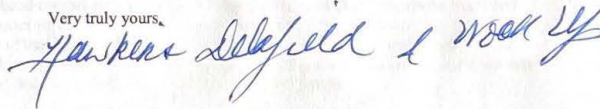
Environmental Protection Agency
WIFIA Director, WJC-W 6201A
1200 Pennsylvania Avenue NW
Washington, DC 20460

Subject: Up to \$250,000,000 of Disbursements between October 1, 2020 and September 30, 2023
under the WIFIA Loan Agreement and Water Revenue Bond dated as of August 2, 2019

Ladies and Gentlemen:

We have as of this date delivered our legal opinion, copy attached, with respect to the subject disbursements under the WIFIA Loan Agreement and Water Revenue Bond (collectively, the "WIFIA Borrowing"). You are entitled to rely upon such opinion as if it had been addressed to you originally. We have served only as bond counsel to the Tualatin Valley Water District, Oregon (the "District") in connection with the WIFIA Borrowing and have not and are not representing any other party in connection with the WIFIA Borrowing. Therefore, no attorney-client relationship shall arise by virtue of our addressing this opinion to persons other than the District.

Very truly yours,



3450616.1 041297 OPN

For 2-sided printing, this page intentionally left blank.

F. PERS Valuation Report



Milliman
1455 SW Broadway, Suite 1600
Portland, OR 97201-3412
503 227 0634

December 2021

Tualatin Valley Water District/2842
Oregon Public Employees Retirement System

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System ("PERS" or "the System") as of December 31, 2020. Information to assist you in preparing your required financial reporting disclosures under Statement 68 and Statement 75 of the Governmental Accounting Standards Board (GASB) will be provided separately by PERS and is not included in this report.

This valuation is advisory and does not affect employer contribution rates. Employer contribution rates effective July 1, 2023 through June 30, 2025 will be calculated in the December 31, 2021 actuarial valuation.

This report reflects the System's benefit provisions in effect as of December 31, 2020, including Senate Bill 111 and House Bill 2906 which were enacted in June 2021. The full development of the valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), Oregon Public Service Retirement Plan (OPSRP), Retiree Health Insurance Account (RHIA), and Retiree Health Insurance Premium Account (RHIPA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact actuarial.services@pers.oregon.gov.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Employer-specific weighted average Tier 1/Tier 2 normal cost rates,
- Transition liability or surplus balances and rate calculation,
- Side account balances, transactions, and rate relief,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/Financials/Actuarial-Financial-Information.aspx.

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.



December 2021
Tualatin Valley Water District/2842

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations) and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in October 2021.

The actuarial computations presented in this report are for purposes of estimating the contribution rates effective from July 2023 to June 2025 for System employers. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals, and with our understanding of the System benefit provisions described in the appendices of this report. Determinations for other purposes may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.



December 2021
Tualatin Valley Water District/2842

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board and the Code of Professional Conduct and Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States published by the American Academy of Actuaries. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. Assumptions related to the healthcare trend (cost inflation) rates for the RHIPA program discussed in this report were determined by Milliman actuaries qualified in such matters.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

Scott Preppemau, FSA, EA, MAAA
Principal and Consulting Actuary

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.



**ACTUARIAL VALUATION REPORT
DECEMBER 31, 2020**

**OREGON PUBLIC EMPLOYEES
RETIREMENT SYSTEM
STATE AND LOCAL GOVERNMENT RATE POOL**

Tualatin Valley Water District -- #2842

December 2021

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

CONTENTS

Executive Summary 1

Employer Contribution Rates 2

Accounting Information 4

Principal Valuation Results 5

 ▪ Employer 5

 ▪ SLGRP 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 8

Weighted Average Tier 1/Tier 2 Normal Cost 9

Transition Liability Information 10

Side Account Information 11

Brief Summary of Actuarial Methods and Assumptions 13

Brief Summary of Changes in Plan Provisions 15

Glossary 16

Milliman This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product. i

Executive Summary

Milliman has prepared this report for Tualatin Valley Water District to:

- Provide summary December 31, 2020 valuation results for the Tier 1/Tier 2 State and Local Government Rate Pool (SLGRP), Oregon Public Service Retirement Plan (OPSRP), and the Retiree Health Insurance programs (RHIA and RHIPA),
- Provide advisory information calculated as of December 31, 2020, on estimated employer-specific contribution rates effective July 1, 2023 through June 30, 2025, and
- Provide employer-specific information on side accounts and pre-SLGRP liabilities as of December 31, 2020.

This report summarizes the valuation results for the SLGRP, OPSRP, RHIA and RHIPA. The full development of these results can be found in the December 31, 2020 system-wide valuation report. This report develops advisory employer-specific side account and pre-SLGRP rates and applies the results from the system-wide valuation to Tualatin Valley Water District.

Milliman

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

1

Executive Summary

Employer Contribution Rates

SLGRP employers have the option to elect separate Tier 1/Tier 2 rates to be applied to general service and police and fire payroll or to have the default blended rate apply to all Tier 1/Tier 2 payroll.

The following table summarizes the employer contribution rates calculated as of December 31, 2020 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Advisory 2023 - 2025 Employer Rates Calculated as of December 31, 2020 for Tualatin Valley Water District

	Payroll				
	Tier 1/Tier 2			OPSRP	
	Default	Optional Separate Rates		General Service	Police & Fire
All T1/T2 Payroll	General Service	Police & Fire			
Pension					
Normal cost rate	14.80%	14.80%	22.14%	9.99%	14.74%
Tier 1/Tier 2 UAL rate ¹	13.84%	13.84%	13.84%	13.84%	13.84%
OPSRP UAL rate	2.09%	2.09%	2.09%	2.09%	2.09%
Pre-SLGRP pooled liability rate	0.00%	0.00%	0.00%	0.00%	0.00%
Transition liability/(surplus) rate ²	(2.60%)	(2.60%)	(2.60%)	(2.60%)	(2.60%)
Side account rate relief ²	(7.78%)	(7.78%)	(7.78%)	(7.78%)	(7.78%)
Member redirect offset ³	(2.40%)	(2.40%)	(2.40%)	(0.65%)	(0.65%)
Net employer pension contribution rate	17.95%	17.95%	25.29%	14.89%	19.64%
Retiree Healthcare					
Normal cost rate	0.05%	0.05%	0.05%	0.00%	0.00%
UAL rate	(0.05%)	(0.05%)	(0.05%)	0.00%	0.00%
Net retiree healthcare rate	0.00%	0.00%	0.00%	0.00%	0.00%
Total net employer contribution rate	17.95%	17.95%	25.29%	14.89%	19.64%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members, and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate and any impact of rate collar developed on page 42 of the system-wide actuarial valuation report.

² The transition liability/(surplus) rate and side account rate relief shown may be reduced such that the net pension contribution rate does not go below 0.00%.

³ Redirected member contributions under Senate Bill 1049 (2.50% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP) will offset employer contribution rates. Redirect does not apply to members with monthly pay below a threshold. The values shown in the table incorporate an estimate of the effect of this limitation.

Milliman This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product. 2

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 UAL Contribution Rates for the July 2023 to June 2025 Biennium

The rate collar limits changes in the UAL Rate for the rate pool, but does not limit changes in rates for individual employers related to pre-SLGRP liabilities or side accounts and does not limit the change in the normal cost rate. The table below shows the possible minimum and maximum UAL Rates for the SLGRP first effective as of July 1, 2023. The collar width, which in general is the amount the UAL Rate could increase or decrease from the current UAL Rate being paid, is 3% of pay. However, the UAL Rate is only allowed to decrease by the full collar width if the funded status (excluding side accounts) of the SLGRP is greater than or equal to 90%. The UAL Rate is not allowed to decrease at all if funded status is below 87%, and the allowable decrease is phased in for funded status levels from 87% to 90%.

For comparison, the Pool's funded status as of December 31, 2020 is 69%.

2021-2023 Biennium	2023-2025 Biennium	
	15.46%	<<<No higher than this
12.46%	12.46%	<<<No lower than this if December 31, 2021 funded status is 87% or lower
	9.46%	<<<No lower than this if December 31, 2021 funded status is 90% or higher

For individual employers in the SLGRP, these rates are adjusted to reflect the individual employer's pre-SLGRP pooled liability rate, transition liability rate, and side account rate offset.

Normal Cost Rates

As seen on the prior page, the other large rate components are the normal cost rates for the Tier 1/Tier 2 and OPSRP programs. The normal cost rate represents the projected cost of benefits earned by current year service.

The normal cost rate in any biennium is driven by the active member demographics of the experience pooling groups in which the employer's members participate. While the active member census as of December 31, 2021 will be used to calculate the adopted 2023 - 2025 biennium normal cost rate, the active member census used in this advisory valuation should be similar for the large experience pooling groups.

Each biennium's normal cost rate is also sensitive to the investment return assumption, or assumed rate, adopted by the PERS Board for the valuation. The lower the assumed rate, the higher the normal cost rate. The 2023 - 2025 biennium's normal cost rate will be based on a 6.90% assumed rate adopted by the PERS Board during 2021, which is a decrease from the 7.20% assumed rate used in calculating the 2021 - 2023 normal cost rate. To illustrate the sensitivity of the assumption, the decrease in the assumed rate increased system-average normal cost rates by approximately 1.15% of payroll for Tier 1/Tier 2 and 0.75% of payroll for OPSRP.

Milliman This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product. 3

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68 (GASB 68), which replaced Statement No. 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Retiree Healthcare

In June 2015, the GASB issued Statement 75 (GASB 75), which replaced Statement No. 45 and governs employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Milliman

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

4

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods, or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Tualatin Valley Water District

	Actuarial Valuation as of	
	December 31, 2020	December 31, 2019
Allocated pooled SLGRP T1/T2 UAL	\$25,889,364	\$22,810,796
Allocated pre-SLGRP pooled liability/(surplus)	0	0
Transition liability/(surplus)	(2,042,240)	(2,308,885)
Allocated pooled OPSRP UAL	2,607,915	1,992,704
Side account	11,736,618	11,993,777
Net unfunded pension actuarial accrued liability	14,718,421	10,500,838
Combined valuation payroll	12,740,341	12,121,404
Net pension UAL as a percentage of payroll	116%	87%
Pre-SLGRP pooled rate	0.00%	0.00%
Transition rate	(2.60%)	(2.77%)
Side account rate relief	(7.78%)	(8.10%)
Allocated pooled RHIA UAL	(\$292,626)	(\$252,491)
Allocated pooled RHIPA UAL	\$0	\$0

In the above exhibit, UAL amounts for the various pools (SLGRP Tier 1/Tier 2 Pension, OPSRP, RHIA, and RHIPA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to the combined valuation payroll of the applicable pool. This allocation differs from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

RHIPA liabilities are allocated to State Agencies and the State Judiciary, the only employers participating in the RHIPA program.

Milliman This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product. 5

Executive Summary

Principal Valuation Results (continued)

SLGRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2020	December 31, 2019
Normal cost	\$350.5	\$336.6
Tier 1/Tier 2 valuation payroll	2,089.0	2,183.5
Normal cost rate	16.78%	15.41%
Actuarial accrued liability	\$46,382.2	\$44,122.1
Actuarial asset value	31,884.9	31,384.1
Unfunded actuarial accrued liability	14,497.4	12,738.0
Funded status	69%	71%
Combined valuation payroll	\$7,134.3	\$6,768.8
UAL as a percentage of payroll	203%	188%
UAL rate ¹	13.84%	12.60%
State and Community College Pre-SLGRP Pooled Liability	\$362.9	\$408.7
LGRP Pooled Liability	(155.8)	(174.9)
Total Transition Liability	(499.7)	(553.5)
Tier 1/Tier 2 Active Members		
▪ Count	23,191	25,581
▪ Average Age	54.5	54.2
▪ Average Service	22.6	21.9
▪ Average Valuation Salary (in dollars)	\$90,076	\$85,356
Tier 1/Tier 2 Dormant Members		
▪ Count	14,901	15,710
▪ Average Age	57.6	57.3
▪ Average Monthly Benefit (in dollars)	\$1,472	\$1,428
Tier 1/Tier 2 Retirees and Beneficiaries		
▪ Count	90,963	89,575
▪ Average Age	72.4	72.0
▪ Average Monthly Benefit (in dollars)	\$2,449	\$2,381

¹ The December 31, 2020 UAL rate shown for the SLGRP includes 0.14% for Multnomah Fire District #10 (0.14% at December 31, 2019). The City of Portland pays an additional 0.95% and the cities of Fairview, Gresham, Troutdale, and Wood Village pay an additional 0.14% (0.97% and 0.14% respectively at December 31, 2019).

Milliman This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product. 6

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2020	December 31, 2019
General service normal cost	\$731.3	\$582.1
OPSRP general service valuation payroll	7,322.9	6,740.9
General service normal cost rate	9.99%	8.64%
Police and fire normal cost	\$152.2	\$119.5
OPSRP police and fire valuation payroll	1,032.6	919.0
Police and fire normal cost rate	14.74%	13.00%
Actuarial accrued liability	\$10,008.1	\$8,082.2
Actuarial asset value	7,548.8	6,190.4
Unfunded actuarial accrued liability	2,459.3	1,891.8
Funded status	75%	77%
Combined valuation payroll	\$12,042.7	\$11,533.7
UAL as a percentage of payroll	20%	16%
UAL rate	2.09%	1.69%

Milliman

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

7

Executive Summary

Principal Valuation Results (continued)

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2020	December 31, 2019
RHIA		
Normal cost	\$1.7	\$1.9
Tier 1 / Tier 2 valuation payroll	3,687.3	3,873.9
Normal cost rate	0.05%	0.05%
Actuarial accrued liability	\$383.6	\$403.9
Actuarial asset value	660.2	644.1
Unfunded actuarial accrued liability	(276.6)	(240.3)
Funded status	172%	159%
Combined valuation payroll	\$12,042.7	\$11,533.7
UAL as a percentage of payroll	(2%)	(2%)
UAL rate	0.00%	0.00%

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2020	December 31, 2019
RHIPA		
Normal cost	\$1.0	\$1.2
Tier 1 / Tier 2 valuation payroll	1,091.8	1,120.6
Normal cost rate	0.09%	0.11%
Actuarial accrued liability	\$48.0	\$59.3
Actuarial asset value	63.6	51.9
Unfunded actuarial accrued liability	(15.6)	7.4
Funded status	133%	87%
Combined valuation payroll	\$3,712.6	\$3,479.8
UAL as a percentage of payroll	0%	0%
UAL rate	(0.09%)	0.17%

RHIPA liabilities are allocated to State Agencies and the State Judiciary, the only employers participating in the RHIPA program.

Milliman This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product. 8

Weighted Average Tier 1/Tier 2 Normal Cost

Pension

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund the benefits.

Members of the State and Local Government Rate Pool pay a payroll-weighted average normal cost rate using the normal cost rates developed for the pool for each tier and member classification. The table below shows the calculation of the individual employer's Tier 1/Tier 2 normal cost rate by member classification and in aggregate. The employer can elect to pay the member classification rates or the aggregate rate. For purposes of this calculation, all Community Colleges are treated as a single employer.

Development of Total Weighted Average Tier 1/Tier 2 Normal Cost Rate

	December 31, 2020			December 31, 2019		
	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost	SLGRP Normal Cost Rate	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost
Tier 1 General Service	18.14%	\$959,711	\$174,092	16.64%	\$1,263,076	\$210,176
Tier 2 General Service	13.87%	3,425,010	475,049	12.67%	3,368,457	426,784
Total General Service		4,384,721	649,141		4,631,533	636,960
Tier 1 Police & Fire	23.86%	0	0	21.76%	0	0
Tier 2 Police & Fire	21.58%	0	0	19.69%	0	0
Total Police & Fire		0	0		0	0
Total		\$4,384,721	\$649,141		\$4,631,533	\$636,960
Total normal cost rate						
General Service			14.80%			13.75%
Police & Fire			22.14%			20.28%
Aggregate (Default)			14.80%			13.75%

An SLGRP employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost rate of the SLGRP as calculated in the system-wide actuarial valuation report.

Milliman

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

9

Transition Liability Information

Outstanding Balance of Transition Liability/(Surplus)

Upon joining the SLGRP, a transition liability or surplus was calculated to ensure that each employer entered the pool on a comparable basis. The transition liability is maintained separately from the SLGRP, and is reduced by contributions and increased for interest charges at the assumed interest rate. The table below shows the reconciliation of the transition liability or surplus from the last valuation to the current valuation.

	Transition Liability
1. Transition liability/(surplus) as of December 31, 2019	(\$2,308,885)
2. January 1, 2020 through June 30, 2020	
A. Transition liability/(surplus) rate	(3.19%)
B. Actual employer payroll	6,080,908
C. Payment to transition liability/(surplus)	(193,981)
3. July 1, 2020 through December 31, 2020	
A. Transition liability/(surplus) rate	(3.19%)
B. Actual employer payroll	6,577,721
C. Payment to transition liability/(surplus)	(209,829)
4. Supplemental payment to transition liability	0
5. Interest	(137,165)
6. Adjustment due to merged, spun-off, or allocated employers	0
7. Transition liability/(surplus) as of December 31, 2020	
(1. - 2C. - 3C. - 4. + 5. + 6.)	(\$2,042,240)

¹ Transition liability or surplus rates shown are those paid on Tier 1/Tier 2 payroll for the indicated periods. For some surplus employers, this rate may differ from the rate paid on OPSRP general service or OPSRP police and fire payroll. In those cases, the payment to transition (surplus) shown below is the payment reflecting the rates on different payroll.

Development of Transition Liability or Surplus Rate

The rate adjustment attributable to a transition liability or surplus is determined by amortizing the liability or surplus on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For employers joining the SLGRP prior to December 31, 2009, the fixed period ends December 31, 2027. For all others, the fixed period ends 18 years after the date the employer joined the pool.

	December 31, 2020	December 31, 2019
1. Total transition liability/(surplus)	(2,042,240)	(2,308,885)
2. Combined valuation payroll	12,740,341	12,121,404
3. Regular amortization factor	6.158	6.875
4. Total transition liability/(surplus) rate	(2.60%)	(2.77%)

Milliman This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product. 10

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2019	N/A	\$11,993,777	\$11,993,777
2. Deposits during 2020			
3. Administrative expenses		(1,000)	(1,000)
4. Amount transferred to employer reserves during 2020		(1,050,095)	(1,050,095)
5. Side account earnings during 2020		793,937	793,937
6. Side account as of December 31, 2020 (1. + 2. + 3. + 4. + 5.)		\$11,736,618	\$11,736,618

Milliman

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

11

Side Account Information

Side Account Balances

	December 31, 2020	December 31, 2019
Side Account 1	\$887,477	\$1,001,165
Side Account 2	10,849,141	10,992,612
Side Account 3	0	0
Side Account 4	0	0
Side Account 5	0	0
Total	\$11,736,618	\$11,993,777

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the default fixed period ends 18 years after the first rate-setting valuation following its creation, though employers can select a shorter period under certain specified circumstances. For employers with more than one side account, the total side account rate is determined by calculating the rate on each side account separately and adding the rates together.

	December 31, 2020			December 31, 2019		
	Combined valuation payroll		\$12,740,341	Combined valuation payroll		\$12,121,404
	Side account balance	Amortization factor	Side account rate	Side account balance	Amortization factor	Side account rate
1.	\$887,477	6.158	(1.13%)	\$1,001,165	6.875	(1.20%)
2.	10,849,141	12.802	(6.65%)	10,992,612	13.151	(6.90%)
3.	0		0.00%	0		0.00%
4.	0		0.00%	0		0.00%
5.	0		0.00%	0		0.00%
Total	\$11,736,618		(7.78%)	\$11,993,777		(8.10%)

Milliman This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product. 12

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2020 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10-year period. If a Retiree Healthcare program is over 100% funded the actuarial surplus is amortized over a rolling 20-year period over Tier 1/Tier 2 payroll.</p> <p>Senate Bill 1049 was signed into law in June 2019 and requires a one-time re-amortization of Tier 1/Tier 2 UAL over a closed 22 year period at the December 31, 2019 rate-setting actuarial valuation, which set actuarially determined contribution rates for the 2021-2023 biennium. Future Tier 1/Tier 2 gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>The contribution rate stabilization method, also referred to as the rate collar, is applied separately to OPSRP and to each Tier 1/Tier 2 experience sharing pool (State and Local Government Rate Pool, School Districts) and independent employer. The UAL Rate contribution rate component is confined to a collared range based on the prior biennium's collared UAL Rate and a defined collar width. The UAL Rate is not allowed to decrease if the funded status of the rate pool or employer is 87% or lower. The rate collar does not limit the change in the normal cost rate or changes for individual employers related to side accounts.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Investment return</i>	6.90% compounded annually on system assets.
<i>Interest crediting</i>	<p>6.90% compounded annually on members' regular account balances.</p> <p>6.90% compounded annually on members' variable account balances.</p>
<i>Inflation</i>	2.40% per year.
<i>Payroll Growth</i>	3.40% per year.
<i>Healthcare cost trend</i>	Ranging from 5.9% in 2021 to 3.9% in 2074.
<i>Administrative Expenses</i>	\$59 million per year is added to the total system normal cost and allocated between Tier 1/Tier 2 and OPSRP based on valuation payroll.

Milliman This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product. 13

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2019 actuarial valuation are described briefly below and are described in additional detail in the system-wide actuarial valuation report.

Changes in Actuarial Methods and Allocation Procedures

- The rate collar methodology was revised to only restrict changes in the UAL Rate component and to narrow the width of allowable changes.
- The UAL Rate amortization methodologies for the RHIA and RHIPA programs were changed to allow a limited rate offset when a program is in an actuarial surplus position (over 100% funded).
- The assumed system-average level of member redirect contributions to Tier 1/Tier 2 and OPSRP was updated to reflect the projected effects of House Bill 2906.

Changes in Economic Assumptions

- The long-term inflation assumption was lowered from 2.50% to 2.40% and the system payroll growth assumption was lowered from 3.50% to 3.40%.
- The assumed average annual long-term investment return was lowered from 7.20% to 6.90%.
- Interest crediting on regular and variable member accounts was also lowered to 6.90%.
- Assumed administrative expenses were updated and changed to a combined assumption for both Tier 1/Tier 2 and OPSRP.

Changes in Demographic Assumptions

- The base mortality assumption was changed for School District males and an updated future mortality improvement projection scale was adopted for all groups.
- Termination, disability and retirement rates were updated for some groups to more closely match observed and anticipated future experience.
- Assumptions for merit increases, unused sick leave, and vacation pay were updated.
- The assumed healthcare cost trend rates for the RHIPA program as well as the participation assumptions for both RHIA and RHIPA were updated.

A complete summary of all assumptions used as part of the December 31, 2020 actuarial valuation is contained in the system-wide actuarial valuation report.

Milliman

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

14

Brief Summary of Changes in Plan Provisions

A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report. The following changes made since the prior valuation were reflected in the December 31, 2020 actuarial valuation:

- Senate Bill 111, signed on June 1, 2021, increased the death benefit payable to a surviving spouse when a retirement-eligible member dies. Previously, the benefit was based on 50% of the actuarial equivalent value of the member's retirement benefit, but this was increased to 100% of the actuarial equivalent value.

Milliman

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

15

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement, rates of investment earnings, and other relevant items.

Actuarial Cost Method

Sometimes called "funding method," a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Milliman

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

16

Glossary

Pre-SLGRP Liability/(Surplus)

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability/(Surplus)

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called "actuarial present value," the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A contribution rate setting methodology that defines the maximum biennium-to-biennium change in the UAL contribution rate for a given experience-sharing pool.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer's accounting for pensions. The standard replaced GASB 27 for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer's accounting for post-employment benefits other than pensions. The standard replaced GASB Statement 45 for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rates.

Transition Liability/(Surplus)

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool. The initial balance of liability or surplus is calculated at the time an employer joins the pool. That balance is then amortized over time via employer contribution rate charges (for a liability) or rate offsets (for a surplus).

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.

Milliman This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

17

G. Forecast Model Summary Results

TVWD Forecast Model Summary

Table 1
 Tualatin Valley Water District
 2022-23 Financial Plan
45-year Categorical CIP Summary (Escalated)

Category	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
WWSP	\$52,281,222	\$209,164,655	\$245,467,340	\$120,323,342	\$36,330,785	\$3,842,131	\$2,150,775	\$1,731,997	\$15,789,026
JWC	553,480	145,880	259,740	706,190	649,930	1,027,420	984,730	1,095,020	1,133,310
TVWD Source	4,140,080	5,497,600	499,000	229,500	1,487,000	0	0	0	0
Storage	1,520,020	6,240,000	7,994,100	524,300	0	1,610,000	2,585,100	88,100	91,200
Pumping	1,305,600	1,928,100	5,314,000	5,627,500	173,500	1,614,500	2,416,000	192,500	199,000
Pipelines	37,670,915	75,439,031	46,941,486	21,252,786	11,332,734	12,718,114	13,917,530	19,740,000	21,251,050
PRVs/Vaults	721,000	1,910,500	673,000	295,000	399,000	500,500	381,500	592,500	409,000
Facilities	981,100	926,800	0	0	0	340,700	2,007,650	365,000	377,750
Fleet	459,000	815,000	724,500	782,500	809,500	838,000	867,500	897,500	929,000
IT	4,416,000	0	0	0	0	0	0	0	0
Meters/Svcs	1,787,000	1,850,500	1,914,500	1,983,500	2,053,500	2,123,000	2,239,000	2,316,000	2,398,500
Other/Undefined	0	890,850	2,398,400	1,965,900	4,321,200	4,508,850	6,924,900	7,167,250	16,484,950
Capital Outlays from O&M	495,600	210,350	500,000	522,500	546,013	570,583	596,259	623,091	651,130
Totals	\$106,331,017	\$305,019,266	\$312,686,066	\$154,213,019	\$58,103,162	\$29,693,797	\$35,070,944	\$34,808,958	\$59,713,916

TVWD Forecast Model Summary

Table 1
 Tualatin Valley Water District
 2022-23 Financial Plan
45-year Categorical CIP Summary (Escalated)

Category	FY2031	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039
WWSP	\$15,621,986	\$1,121,407	\$1,846,306	\$5,514,434	\$19,394,811	\$43,632,662	\$1,881,850	\$0	\$0
JWC	1,106,890	1,376,700	1,300,370	1,345,810	1,232,890	1,314,700	1,463,560	1,366,980	1,231,080
TVWD Source	0	0	0	0	0	0	0	0	0
Storage	94,400	3,417,700	3,536,000	104,500	108,500	3,827,000	3,961,000	4,609,500	6,543,500
Pumping	206,000	1,184,250	1,225,500	1,269,000	1,313,500	1,359,000	1,406,500	1,456,000	1,506,500
Pipelines	17,677,200	32,617,430	51,859,270	36,022,700	39,431,730	33,367,870	32,662,120	25,761,990	43,457,450
PRVs/Vaults	423,000	438,000	453,500	469,000	485,500	502,500	520,000	538,500	557,000
Facilities	391,000	404,650	418,850	433,500	448,650	464,350	480,600	497,450	514,850
Fleet	961,500	995,500	1,030,000	1,065,000	1,105,000	1,140,000	1,180,000	1,225,000	1,265,000
IT	0	0	0	0	0	0	0	0	0
Meters/Svcs	2,481,500	2,570,000	2,658,500	2,753,000	2,848,000	2,948,000	3,054,000	3,160,500	3,272,500
Other/Undefined	11,730,000	12,140,500	12,565,500	13,003,500	13,460,500	13,931,500	14,419,500	14,924,000	15,446,500
Capital Outlays from O&M	680,431	711,050	743,048	776,485	811,427	847,941	886,098	925,972	967,641
Totals	\$51,373,907	\$56,977,187	\$77,636,843	\$62,758,929	\$80,640,508	\$103,335,523	\$61,915,228	\$54,465,892	\$74,762,021

TVWD Forecast Model Summary

Table 1
 Tualatin Valley Water District
 2022-23 Financial Plan
45-year Categorical CIP Summary (Escalated)

Category	FY2040	FY2041	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048
WWSP	\$125,346	\$13,523,188	\$7,172	\$0	\$28,815	\$7,832,068	\$88,417,531	\$40,141,005	\$4,148,500
JWC	1,602,560	1,512,270	1,840,170	1,728,850	1,898,470	1,964,960	1,620,790	1,822,660	7,637,800
TVWD Source	0	0	0	0	0	0	0	0	0
Storage	4,391,500	4,545,500	5,641,000	10,414,000	7,549,500	25,166,500	5,398,500	6,977,500	11,913,500
Pumping	3,744,500	6,134,000	1,670,500	1,729,000	1,789,500	1,852,500	1,917,000	1,984,000	2,053,500
Pipelines	50,302,550	26,520,000	24,655,000	41,166,000	25,494,000	30,721,000	26,487,500	30,914,500	25,653,000
PRVs/Vaults	577,000	597,000	618,000	639,500	662,000	685,000	709,000	734,000	759,500
Facilities	532,850	551,500	570,800	590,800	611,500	632,900	655,050	677,950	701,700
Fleet	1,310,000	1,355,000	1,405,000	1,455,000	1,505,000	1,555,000	1,610,000	1,665,000	1,725,000
IT	0	0	0	0	0	0	0	0	0
Meters/Svcs	3,385,000	3,503,000	3,627,000	3,751,500	3,882,000	4,017,500	4,159,500	4,306,500	4,455,000
Other/Undefined	15,987,000	16,546,500	17,123,500	17,725,000	18,345,500	18,987,500	19,652,000	20,340,000	21,052,000
Capital Outlays from O&M	1,011,185	1,056,688	1,104,239	1,153,930	1,205,857	1,260,121	1,316,826	1,376,083	1,438,007
Totals	\$82,969,491	\$75,844,647	\$58,264,382	\$80,353,580	\$62,972,142	\$94,675,048	\$151,943,697	\$110,939,198	\$81,537,507

TVWD Forecast Model Summary

Table 1
 Tualatin Valley Water District
 2022-23 Financial Plan
45-year Categorical CIP Summary (Escalated)

Category	FY2049	FY2050	FY2051	FY2052	FY2053	FY2054	FY2055	FY2056	FY2057
WWSP	\$0	\$5,519,986	\$863,955	\$4,974,454	\$0	\$0	\$188,916	\$65,537,697	\$38,763,064
JWC	7,905,100	8,182,050	8,533,120	9,004,050	1,992,900	2,062,700	2,134,550	2,286,430	2,570,900
TVWD Source	0	0	0	0	0	0	0	0	0
Storage	13,255,000	52,018,500	6,224,000	6,442,000	6,667,500	6,900,500	7,142,000	7,392,000	7,651,000
Pumping	2,125,500	2,200,000	2,240,300	2,318,850	2,399,900	2,483,900	2,570,850	2,660,850	2,754,400
Pipelines	26,547,000	27,482,000	29,014,950	30,030,200	31,081,400	32,169,550	33,295,250	34,461,000	35,666,300
PRVs/Vaults	786,000	813,500	169,800	175,750	181,900	188,250	194,850	201,700	208,750
Facilities	726,250	751,650	777,950	805,200	833,400	862,550	892,750	924,000	956,300
Fleet	1,785,000	1,850,000	1,401,500	1,450,500	1,501,500	1,554,000	1,608,500	1,665,000	1,723,000
IT	0	0	0	0	0	0	0	0	0
Meters/Svcs	4,614,000	4,773,500	4,013,500	4,154,000	4,299,500	4,450,000	4,606,000	4,767,000	4,934,000
Other/Undefined	21,788,500	22,551,000	23,340,500	24,157,500	25,003,000	25,878,000	26,783,500	27,721,000	28,691,500
Capital Outlays from O&M	1,502,717	1,570,340	1,641,005	1,714,850	1,792,018	1,872,659	1,956,929	2,044,991	2,137,015
Totals	\$81,035,067	\$127,712,526	\$78,220,560	\$85,227,354	\$75,753,018	\$78,422,109	\$81,374,094	\$149,661,667	\$126,056,229

TVWD Forecast Model Summary

Table 1
 Tualatin Valley Water District
 2022-23 Financial Plan
45-year Categorical CIP Summary (Escalated)

Category	FY2058	FY2059	FY2060	FY2061	FY2062	FY2063	FY2064	FY2065	FY2066
WWSP	\$19,363,000	\$2,004,000	\$74,182	\$101,096	\$0	\$7,215,336	\$57,335	\$3,911,581	\$123,714,313
JWC	2,366,800	2,449,350	2,535,050	2,715,420	3,053,500	2,810,600	2,909,650	3,011,350	3,224,800
TVWD Source	0	0	0	0	0	0	0	0	0
Storage	7,918,500	8,196,000	8,482,500	8,779,500	9,087,000	9,405,000	9,734,000	10,075,000	10,427,500
Pumping	2,850,450	2,950,550	3,053,750	3,160,550	3,271,000	3,385,600	3,503,800	3,626,750	3,753,400
Pipelines	36,915,300	38,207,000	39,544,500	40,928,500	42,361,000	43,843,000	45,378,000	46,966,000	48,610,000
PRVs/Vaults	216,050	223,600	231,450	239,550	247,900	256,600	265,600	274,850	284,500
Facilities	989,800	1,024,500	1,060,500	1,097,500	1,136,000	1,175,500	1,216,500	1,259,500	1,303,500
Fleet	1,783,500	1,845,500	1,910,500	1,977,000	2,046,500	2,118,000	2,192,000	2,269,000	2,348,500
IT	0	0	0	0	0	0	0	0	0
Meters/Svcs	5,106,500	5,285,500	5,470,500	5,661,500	5,860,000	6,065,000	6,277,500	6,497,000	6,724,500
Other/Undefined	29,695,500	30,735,000	31,810,500	32,924,000	34,076,500	35,269,000	36,503,500	37,781,000	39,103,500
Capital Outlays from O&M	2,233,181	2,333,674	2,438,689	2,548,430	2,663,110	2,782,950	2,908,182	3,039,050	3,175,808
Totals	\$109,438,581	\$95,254,674	\$96,612,121	\$100,133,047	\$103,802,510	\$114,326,586	\$110,946,068	\$118,711,082	\$242,670,321

TVWD Forecast Model Summary

Table 2
 Tulalatin Valley Water District
 2022-23 Financial Plan
Funding Sources for Improvements

Description	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Funding Summary										
Capital Projects & Outlays from Cash/Reserves	\$101,547,241	\$42,966,257	\$151,319,994	\$51,238,856	\$53,544,964	\$25,276,904	\$30,802,830	\$30,697,342	\$55,766,764	\$47,599,443
Projects funded from Debt Proceeds (incl fund Int.)	0	257,500,000	156,809,627	98,415,965	0	0	0	0	0	0
SDC-Funded Capital Projects	4,783,776	4,553,009	4,556,445	4,558,198	4,558,198	4,416,893	4,268,114	4,111,616	3,947,152	3,774,464
Totals	\$106,331,017	\$305,019,266	\$312,686,066	\$154,213,019	\$58,103,162	\$29,693,797	\$35,070,944	\$34,808,958	\$59,713,916	\$51,373,907
Funding Split										
Capital Projects & Outlays from Cash/Reserves	95.5%	14.1%	48.4%	33.2%	92.2%	85.1%	87.8%	88.2%	93.4%	92.7%
Projects funded from Debt Proceeds (incl fund Int.)	0.0%	84.4%	50.1%	63.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SDC-Funded Capital Projects	4.5%	1.5%	1.5%	3.0%	7.8%	14.9%	12.2%	11.8%	6.6%	7.3%
Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Check	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 2
 Tuolumne Valley Water District
 2022-23 Financial Plan
Funding Sources for Improvements

Description	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
Funding Summary										
Capital Projects & Outlays from Cash/Reserves	\$53,383,897	\$74,233,485	\$59,554,536	\$77,644,400	\$100,557,314	\$59,364,832	\$52,153,534	\$72,698,241	\$81,163,157	\$74,310,963
Projects funded from Debt Proceeds (incl fund int.)	0	0	0	0	0	0	0	0	0	0
SDC-Funded Capital Projects	3,593,290	3,403,359	3,204,393	2,996,107	2,778,209	2,550,396	2,312,359	2,063,780	1,804,333	1,533,683
Totals	\$56,977,187	\$77,636,843	\$62,758,929	\$80,640,508	\$103,335,523	\$61,915,228	\$54,465,892	\$74,762,021	\$82,967,491	\$75,844,647
Funding Split										
Capital Projects & Outlays from Cash/Reserves	93.7%	95.6%	94.9%	96.3%	97.3%	95.9%	95.8%	97.2%	97.8%	98.0%
Projects funded from Debt Proceeds (incl fund int.)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SDC-Funded Capital Projects	6.3%	4.4%	5.1%	3.7%	2.7%	4.1%	4.2%	2.8%	2.2%	2.0%
Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Check	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TVWD Forecast Model Summary

Table 2
 Tuolumne Valley Water District
 2022-23 Financial Plan
Funding Sources for Improvements

Description	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Funding Summary										
Capital Projects & Outlays from Cash/Reserves	\$57,012,896	\$79,396,194	\$62,321,119	\$94,343,027	\$151,943,697	\$110,939,198	\$81,537,507	\$81,095,067	\$127,712,526	\$78,220,560
Projects funded from Debt Proceeds (incl fund int.)	0	0	0	0	0	0	0	0	0	0
SDC-Funded Capital Projects	1,251,486	957,387	651,023	332,022	0	0	0	0	0	0
Totals	\$58,264,382	\$80,353,580	\$62,972,142	\$94,675,048	\$151,943,697	\$110,939,198	\$81,537,507	\$81,095,067	\$127,712,526	\$78,220,560
Funding Split										
Capital Projects & Outlays from Cash/Reserves	97.9%	98.8%	99.0%	99.6%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Projects funded from Debt Proceeds (incl fund int.)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SDC-Funded Capital Projects	2.1%	1.2%	1.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Check	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TVWD Forecast Model Summary

Table 3
Tulatin Valley Water District
2022-23 Financial Plan
Projected LTD Sizing & Debt Service Assumptions

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
PROJECTED DEBT ISSUE SIZING										
Total Cost of Debt-Eligible Projects	\$105,835,417	\$304,808,916	\$312,186,066	\$155,690,519	\$7,557,149	\$29,123,214	\$34,474,685	\$34,185,867	\$59,062,786	\$50,695,476
Total Debt-Eligible Capital Project Costs (after other funding)	101,051,641	300,255,907	126,561,703	98,414,450	52,998,951	24,706,321	30,206,571	30,074,251	55,115,634	46,919,012
Issue Proceeds, Costs, & Reserves Estimates										
Bond Proceeds Requested	\$0	\$0	\$126,561,703	\$98,414,450	\$0	\$0	\$0	\$0	\$0	\$0
Issuance Costs	0.75%	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Reserve Req. Selected: Minimum of 3-Prong Test	0.00%	0.00%	7.21%	7.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Issue Sizing										
Rev. Bonds Issue Sizing Formulas	\$0	\$0	\$137,511,158	\$106,793,355	\$0	\$0	\$0	\$0	\$0	\$0
Rev. Bonds Issue Size used in model	\$0	\$0	\$137,510,000	\$106,795,000	\$0	\$0	\$0	\$0	\$0	\$0
Summary of Costs and Reserves by Issue										
Issuance Costs	\$0	\$0	\$1,031,325	\$800,963	\$0	\$0	\$0	\$0	\$0	\$0
Reserve Requirement	0	0	9,918,038	7,578,072	0	0	0	0	0	0
Proceeds Used in model forecast	\$0	\$0	\$126,560,637	\$98,415,965	\$0	\$0	\$0	\$0	\$0	\$0
LTD Proceeds Used in model forecast	\$0	\$0	\$126,560,637	\$98,415,965	\$0	\$0	\$0	\$0	\$0	\$0
Difference recouped from (or added to) Rates/Reserves	0	0	1,066	(1,516)	0	0	0	0	0	0
DEBT SERVICE FORECASTING										
Debt Service Requirements										
Term (Years)	30	30	30	30	30	30	30	30	30	30
Interest Rate	4.50%	5.00%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%
New Debt Service										
Annual Debt Service Costs	\$0	\$0	\$9,461,429	\$7,348,072	\$0	\$0	\$0	\$0	\$0	\$0
Accumulated Debt Service	0	0	3,781,525	10,499,913	13,436,775	13,436,775	17,496,110	17,496,110	17,496,110	17,496,110
Check Proceeds	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TVWD Forecast Model Summary

Table 3
 Tuolumne Valley Water District
 2022-23 Financial Plan
 Projected LTD Sizing & Debt Service Assumptions

	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
PROJECTED DEBT ISSUE SIZING										
Total Cost of Debt-Eligible Projects	\$56,266,137	\$76,893,796	\$61,982,444	\$79,829,081	\$102,487,582	\$61,029,130	\$53,539,920	\$73,794,380	\$81,958,306	\$73,643,958
Total Debt-Eligible Capital Project Costs (after other funding)	52,672,847	73,490,437	58,778,051	76,832,974	99,709,373	58,478,734	51,227,561	71,730,600	80,153,972	72,110,275
Issue Proceeds, Costs, & Reserves Estimates										
Bond Proceeds Requested	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Issuance Costs	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Reserve Req. Selected: Minimum of 3-Prong Test	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Issue Sizing										
Rev. Bonds Issue Sizing Formulas	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rev. Bonds Issue Size used in model	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Summary of Costs and Reserves by Issue										
Issuance Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reserve Requirement	0	0	0	0	0	0	0	0	0	0
Proceeds Used in model forecast	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
LTD Proceeds Used in model forecast	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Difference recouped from (or added to) Rates/Reserves	0	0	0	0	0	0	0	0	0	0
DEBT SERVICE FORECASTING										
Debt Service Requirements										
Term (Years)	30	30	30	30	30	30	30	30	30	30
Interest Rate	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%
New Debt Service										
Annual Debt Service Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Accumulated Debt Service	17,496,110	17,496,110	17,496,110	17,496,110	17,496,110	17,496,110	17,496,110	17,496,110	17,496,110	17,496,110
Check Proceeds	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TVWD Forecast Model Summary

Table 3
Tualatin Valley Water District
2022-23 Financial Plan
Projected LTD Sizing & Debt Service Assumptions

	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
PROJECTED DEBT ISSUE SIZING										
Total Cost of Debt-Eligible Projects	\$57,160,142	\$79,199,650	\$61,766,285	\$93,414,928	\$150,626,871	\$109,563,115	\$80,099,500	\$79,592,350	\$120,630,686	\$76,579,555
Total Debt-Eligible Capital Project Costs (after other funding)	55,908,657	78,242,263	61,115,262	93,082,906	150,626,871	109,563,115	80,099,500	79,592,350	120,630,686	76,579,555
Issue Proceeds, Costs, & Reserves Estimates										
Bond Proceeds Requested	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Issuance Costs	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Reserve Req. Selected: Minimum of 3-Prong Test	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Issue Sizing										
Rev. Bonds Issue Sizing Formulas	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rev. Bonds Issue Size used in model	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Summary of Costs and Reserves by Issue										
Issuance Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reserve Requirement	0	0	0	0	0	0	0	0	0	0
Proceeds Used in model forecast	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
LTD Proceeds Used in model forecast	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Difference recouped from (or added to) Rates/Reserves	0	0	0	0	0	0	0	0	0	0
DEBT SERVICE FORECASTING										
Debt Service Requirements										
Term (Years)	30	30	30	30	30	30	30	30	30	30
Interest Rate	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%
New Debt Service										
Annual Debt Service Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Accumulated Debt Service	17,496,110	17,496,110	17,496,110	17,496,110	17,496,110	17,496,110	17,496,110	17,496,110	17,496,110	17,496,110
Check Proceeds	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TVWD Forecast Model Summary

Table 4
 Tualatin Valley Water District
 2022-23 Financial Plan
WIFIA Loan Sizing & Debt Service Assumptions

	Totals	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028
WIFIA Proceeds and Ratio based on TVWD Cost Shares								
WWSP Project Costs	\$790,824,470							
EPA WIFIA Issuance Costs	500,000							
Total WWSP/WIFIA Costs	\$791,324,470							
Less: Ineligible Costs	0							
Total Eligible WWSP/WIFIA Costs	\$791,324,470							
WIFIA Proceeds Requests	\$387,748,990	\$100,000,000	\$257,500,000	\$30,248,990	\$0	\$0	\$0	NA
WIFIA %	49.00%							
WIFIA Loan Sizing								
WIFIA Proceeds (FY2027 DSR amt. based on MADS)	\$387,748,990	\$100,000,000	\$257,500,000	\$30,248,990	\$0	\$0	\$0	\$0
Capitalized Interest on Proceeds	28,228,424	7,801,878	18,538,514	1,888,032	0	0	0	NA
WIFIA Debt	\$415,977,414	\$107,801,878	\$276,038,514	\$32,137,022	\$0	\$0	\$0	\$0
Debt Service Requirements								
# of Level Payments	67							
Interest Rate	1.35%							
First Repayment Year	FY2028							
Summary of WIFIA Proceeds and Requirements								
Issuance Costs	NA	\$0	\$0	\$0	\$0	\$0	\$0	NA
Reserves	NA	\$100,000,000	\$0	\$0	\$0	\$0	\$0	NA
WIFIA Proceeds for WWSP Projects	\$387,748,990	\$0	\$257,500,000	\$30,248,990	\$0	\$0	\$0	\$0

TVWD Forecast Model Summary

Table 5
 Tualatin Valley Water District
 2022-23 Financial Plan
 Total Annual Debt Service and Balance Summary

Description	Subject to Req?	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Existing Debt Service											
None	TRUE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
BANS Interest (if applicable)	FALSE	0	0	0	0	0	0	0	0	0	0
Totals		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Amount Subject to Coverage		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Debt Service on Proposed Debt											
Future Revenue Bonds	TRUE	\$0	\$0	\$3,781,525	\$10,499,913	\$13,436,775	\$13,436,775	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
WIFIA Loan	TRUE	0	0	0	0	0	0	7,738,982	15,477,165	15,477,165	15,477,165
Total Debt Service Subject to Coverage		\$0	\$0	\$3,781,525	\$10,499,913	\$13,436,775	\$13,436,775	\$25,234,698	\$32,973,275	\$32,973,275	\$32,973,275
Total Interest Expense		\$0	\$0	\$3,781,525	\$10,499,913	\$13,436,775	\$13,436,775	\$16,188,807	\$18,667,137	\$18,289,964	\$17,897,457
Ending Debt Balances											
Future Revenue Bonds		\$0	\$0	\$137,510,000	\$244,305,000	\$244,305,000	\$244,305,000	\$240,189,849	\$235,845,252	\$231,258,417	\$226,415,837
WIFIA Loan		0	0	0	0	0	0	411,046,679	401,085,138	390,988,661	380,755,423
Total Debt Balance		\$0	\$0	\$137,510,000	\$244,305,000	\$244,305,000	\$244,305,000	\$651,236,528	\$636,930,390	\$622,247,078	\$607,171,260

TWWD Forecast Model Summary

Table 5
 Tuolumne Valley Water District
 2022-23 Financial Plan
Total Annual Debt Service and Balance Summary

Description	Subject to Req?	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
Existing Debt Service											
None	TRUE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
BANs Interest (if applicable)	FALSE	0	0	0	0	0	0	0	0	0	0
Totals		<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
Amount Subject to Coverage		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Debt Service on Proposed Debt											
Future Revenue Bonds	TRUE	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
WiFi Loan	TRUE	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165
Total Debt Service Subject to Coverage		<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>
Total Interest Expense		\$17,488,857	\$17,063,286	\$16,619,958	\$16,157,882	\$15,676,154	\$15,173,742	\$14,649,576	\$14,102,527	\$13,531,405	\$12,934,956
Ending Debt Balances											
Future Revenue Bonds		\$221,303,253	\$215,905,610	\$210,207,015	\$204,190,688	\$197,838,913	\$191,132,987	\$184,053,164	\$176,578,596	\$168,687,274	\$160,355,962
WiFi Loan		370,383,569	359,871,223	349,216,481	338,417,415	327,472,069	316,378,462	305,134,586	293,738,406	282,187,858	270,480,851
Total Debt Balance		<u>\$591,686,822</u>	<u>\$575,776,833</u>	<u>\$559,423,496</u>	<u>\$542,608,103</u>	<u>\$525,310,982</u>	<u>\$507,511,449</u>	<u>\$489,187,750</u>	<u>\$470,317,002</u>	<u>\$450,875,132</u>	<u>\$430,836,813</u>

TWWD Forecast Model Summary

Table 5
 Tuolumne Valley Water District
 2022-23 Financial Plan
Total Annual Debt Service and Balance Summary

Description	Subject to Req?	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Existing Debt Service											
None	TRUE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
BANs Interest (if applicable)	FALSE	0	0	0	0	0	0	0	0	0	0
Totals		<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
Amount Subject to Coverage		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Debt Service on Proposed Debt											
Future Revenue Bonds	TRUE	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
WiFi Loan	TRUE	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165
Total Debt Service Subject to Coverage		<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>	<u>\$32,973,275</u>
Total Interest Expense		\$12,311,855	\$11,660,707	\$10,980,037	\$10,268,291	\$9,523,831	\$8,744,926	\$7,929,732	\$7,076,383	\$6,182,789	\$5,246,825
Ending Debt Balances											
Future Revenue Bonds		\$151,560,127	\$142,273,870	\$132,469,845	\$122,119,185	\$111,191,411	\$99,654,345	\$87,474,015	\$74,614,556	\$61,038,102	\$46,704,676
WiFi Loan		258,615,266	246,588,955	234,399,741	222,045,418	209,523,748	196,832,464	183,969,271	170,951,838	157,717,806	144,324,782
Total Debt Balance		<u>\$410,175,393</u>	<u>\$388,862,825</u>	<u>\$366,869,586</u>	<u>\$344,164,602</u>	<u>\$320,715,158</u>	<u>\$296,486,809</u>	<u>\$271,443,286</u>	<u>\$245,546,394</u>	<u>\$218,755,908</u>	<u>\$191,029,458</u>

TWWD Forecast Model Summary

Table 6
Tualatin Valley Water District
2022-23 Financial Plan
Summary O&M Forecast

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032
Water Costs											
Portland	\$8,274,600	\$9,664,200	\$10,617,495	\$11,438,897	\$11,917,653	\$86,252	\$90,134	\$94,190	\$98,428	\$102,858	\$107,486
JWC	2,595,300	2,999,500	2,961,243	3,231,582	3,412,079	6,739,115	7,043,375	7,359,282	7,690,450	8,036,520	8,398,163
WWSS Water	0	0	0	0	0	6,368,824	6,734,481	7,114,931	7,504,673	7,903,148	8,309,717
Water Costs Subtotal	\$10,869,900	\$12,663,700	\$13,578,738	\$14,670,479	\$15,329,733	\$13,194,192	\$13,866,990	\$14,568,403	\$15,293,551	\$16,042,526	\$16,815,366
% Change		16.5%	7.2%	8.0%	4.5%	(13.9%)	5.1%	5.1%	5.0%	4.9%	4.8%
Pumping Power											
In-District Pumping	\$450,000	\$486,000	\$524,880	\$566,870	\$592,380	\$619,037	\$646,893	\$676,003	\$706,424	\$738,213	\$771,432
WWSS Pumping	0	0	0	0	0	745,160	787,943	832,456	878,056	924,678	972,247
Pumping Power Subtotal	\$450,000	\$486,000	\$524,880	\$566,870	\$592,380	\$1,364,197	\$1,434,836	\$1,508,459	\$1,584,480	\$1,662,891	\$1,743,680
% Change		8.0%	8.0%	8.0%	4.5%	180.3%	5.2%	5.1%	5.0%	4.9%	4.9%
WWSS (excluding treatment & pump power)											
WWSS O&M (non-WTP)	0	0	0	0	0	460,484	479,717	499,764	520,659	542,439	565,140
W/F-related	39,998	41,798	43,679	45,644	47,698	79,545	83,124	86,865	90,774	94,858	99,127
W/FIA Issuance and Servicing	13,500	14,108	14,742	15,406	16,099	16,823	17,581	18,372	19,198	20,062	20,965
WWSS Subtotal	\$53,498	\$55,905	\$58,421	\$61,050	\$63,797	\$556,852	\$580,422	\$605,000	\$630,631	\$657,359	\$685,233
% Change		4.5%	4.5%	4.5%	4.5%	772.8%	4.2%	4.2%	4.2%	4.2%	4.2%
Operational Expenses											
Administrative Services	\$4,007,770	\$3,955,615	\$4,157,482	\$4,344,569	\$4,540,075	\$4,340,540	\$4,421,513	\$4,622,021	\$4,831,606	\$5,050,679	\$5,279,667
Customer Service	5,447,553	5,859,558	6,199,306	6,471,537	6,755,849	7,052,783	7,362,903	7,686,796	8,025,078	8,378,392	8,747,411
Engineering/Operations	12,453,059	12,822,215	13,427,005	14,031,221	14,662,626	15,322,444	16,011,954	16,732,492	17,485,454	18,272,299	19,094,553
Other Operational Expenses	110,000	1,192,450	1,990,123	3,338,028	3,488,240	3,645,210	3,809,245	3,980,661	4,159,791	4,346,981	4,542,595
Finance	3,943,987	4,174,090	4,174,090	4,176,646	4,991,595	4,798,746	5,014,690	5,240,351	5,476,167	5,722,594	5,980,111
Water Supply Program	1,893,265	1,986,575	2,075,971	2,169,390	2,267,012	2,369,028	2,473,634	2,587,037	2,703,454	2,825,110	2,952,239
IT Services	2,796,112	3,112,337	3,331,544	3,482,463	3,638,129	3,801,845	3,972,928	4,151,710	4,338,537	4,533,771	4,737,791
Operational Expenses Subtotal	\$30,650,745	\$33,102,840	\$35,752,385	\$38,612,854	\$40,343,526	\$41,330,596	\$43,068,866	\$45,001,067	\$47,020,086	\$49,129,826	\$51,334,367
% Change		8.0%	8.0%	8.0%	4.5%	2.4%	4.2%	4.5%	4.5%	4.5%	4.5%
Other											
Expenses from Master Plan CIP	\$88,000	\$92,000	\$96,000	\$94,900	\$105,000	\$122,700	\$128,200	\$125,500	\$130,600	\$136,800	\$143,000
Capital Outlays	495,600	210,350	500,000	527,500	546,013	570,583	596,259	623,091	651,130	680,431	711,050
Initiatives – Personnel Svcs.	0	0	1,014,500	1,303,000	2,788,000	2,913,000	3,043,000	3,180,500	3,328,000	3,476,000	3,624,000
Initiatives – M&S	0	0	420,250	591,150	303,510	318,065	333,330	349,320	366,090	383,360	401,110
Other Subtotal	\$583,600	\$302,350	\$2,030,750	\$2,991,550	\$3,742,523	\$3,924,348	\$4,100,789	\$4,278,411	\$4,715,820	\$5,171,091	\$5,403,834
% Change		(48.2%)	571.7%	47.3%	25.1%	4.9%	4.5%	4.3%	10.2%	9.7%	4.5%
Grand Total O&M	\$42,607,743	\$46,610,795	\$51,945,174	\$56,902,803	\$60,071,958	\$60,370,185	\$63,051,903	\$65,961,341	\$69,244,568	\$72,663,693	\$75,982,479
% Change		9.4%	11.4%	9.5%	5.6%	0.5%	4.4%	4.6%	5.0%	4.9%	4.6%
Less Capitalized OH & Capital Outlays	\$3,909,751	\$3,846,253	\$4,378,381	\$4,721,738	\$5,094,190	\$3,482,184	\$3,638,416	\$3,802,345	\$3,973,632	\$4,153,230	\$4,340,125
Net O&M	\$38,697,992	\$42,764,542	\$47,566,793	\$52,181,065	\$54,977,768	\$56,888,001	\$59,413,487	\$62,158,996	\$65,270,936	\$68,510,463	\$71,642,354
% Change		10.5%	11.2%	9.2%	5.4%	3.5%	4.4%	4.6%	5.0%	4.6%	4.6%
Check	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TVWD Forecast Model Summary

Table 6
Tualatin Valley Water District
2022-23 Financial Plan
Summary O&M Forecast

	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041	FY2042	FY2043
Water Costs											
Portland	\$112,323	\$117,378	\$122,660	\$128,179	\$133,947	\$139,975	\$146,274	\$152,856	\$159,735	\$166,923	\$174,434
JWC	8,716,081	9,171,004	9,583,700	10,014,966	10,465,640	10,936,593	11,428,740	11,943,033	12,480,470	13,042,091	13,628,985
WWSS Water	8,723,648	9,144,116	9,570,195	10,000,854	10,450,893	10,921,183	11,413,636	11,926,205	12,462,884	13,023,714	13,609,781
Water Costs Subtotal	\$17,612,052	\$18,432,498	\$19,276,555	\$20,144,000	\$21,050,480	\$21,997,751	\$22,987,650	\$24,022,094	\$25,103,089	\$26,232,728	\$27,413,200
% Change	4.7%	4.7%	4.6%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Pumping Power											
In-District Pumping	\$806,147	\$842,423	\$880,332	\$919,947	\$961,345	\$1,004,606	\$1,049,813	\$1,097,054	\$1,146,422	\$1,198,011	\$1,251,921
WWSS Pumping	1,020,678	1,069,873	1,119,725	1,170,113	1,222,768	1,277,792	1,335,293	1,395,381	1,458,173	1,523,791	1,592,361
Pumping Power Subtotal	\$1,826,824	\$1,912,296	\$2,000,057	\$2,090,060	\$2,184,113	\$2,282,398	\$2,385,106	\$2,492,435	\$2,604,595	\$2,721,802	\$2,844,283
% Change	4.8%	4.7%	4.6%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
WWSS (excluding treatment & pump power)											
WWSS O&M (non-WTP)	616,392	642,300	669,310	697,469	726,577	756,803	788,134	820,608	854,347	889,379	925,715
W/F-related	103,588	108,249	113,120	118,211	123,530	129,089	134,898	140,969	147,312	153,941	160,869
WPIA Issuance and Servicing	211,909	22,894	23,525	26,126	27,302	28,511	29,764	31,064	32,414	33,814	35,263
WWSS Subtotal	\$741,888	\$773,444	\$806,355	\$840,681	\$879,407	\$915,403	\$953,836	\$994,541	\$1,037,533	\$1,083,038	\$1,131,847
% Change	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
Operational Expenses											
Administrative Services	\$5,491,432	\$5,740,376	\$6,000,587	\$6,272,573	\$6,558,117	\$6,858,557	\$7,173,412	\$7,503,281	\$7,847,883	\$8,206,947	\$8,581,141
Customer Service	9,132,834	9,535,397	9,955,865	10,395,038	10,853,752	11,332,883	11,833,342	12,356,083	12,902,105	13,477,406	14,081,198
Engineering/Operations	19,953,807	20,851,729	21,790,057	22,770,609	23,795,287	24,866,074	25,985,048	27,154,375	28,376,322	29,653,256	30,987,653
Other Operational Expenses	4,747,012	4,960,628	5,183,856	5,417,129	5,660,900	5,915,641	6,181,845	6,460,028	6,750,729	7,054,312	7,371,965
Finance	6,249,216	6,530,431	6,824,300	7,131,394	7,452,306	7,787,660	8,138,105	8,504,320	8,887,014	9,286,930	9,704,841
Water Supply Program	3,085,090	3,223,919	3,368,996	3,520,600	3,679,028	3,844,584	4,017,590	4,198,382	4,387,309	4,584,738	4,791,051
IT Services	4,950,991	5,173,786	5,406,606	5,649,904	5,904,149	6,169,836	6,447,479	6,737,615	7,040,808	7,357,644	7,688,738
Operational Expenses Subtotal	\$53,610,384	\$56,016,266	\$58,530,266	\$61,157,247	\$63,788,539	\$66,518,834	\$69,348,819	\$72,277,281	\$75,303,269	\$78,426,102	\$81,647,386
% Change	4.4%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Other											
Expenses from Master Plan CIP	\$149,300	\$155,500	\$749,200	\$169,900	\$177,200	\$185,400	\$193,700	\$202,000	\$211,200	\$220,500	\$230,800
Capital Outlays	743,048	776,485	811,427	847,941	886,098	925,972	967,641	1,011,185	1,056,688	1,104,239	1,153,930
Initiatives – Personnel Svcs.	4,073,799	4,257,120	4,448,691	4,648,882	4,858,081	5,076,695	5,305,146	5,543,878	5,793,352	6,054,053	6,326,486
Initiatives – M&S	680,725	711,357	743,368	776,820	811,777	848,307	886,481	926,372	968,059	1,011,622	1,057,145
Other Subtotal	\$5,646,872	\$5,900,462	\$6,752,686	\$6,443,542	\$6,733,156	\$7,036,374	\$7,352,968	\$7,683,435	\$8,029,300	\$8,390,414	\$8,768,360
% Change	4.5%	4.5%	4.4%	(4.6%)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Grand Total O&M	\$79,438,019	\$83,034,966	\$87,365,918	\$90,675,530	\$94,746,521	\$99,001,052	\$103,446,536	\$108,091,455	\$112,945,678	\$118,017,776	\$123,318,445
% Change	4.5%	4.5%	5.2%	3.8%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Less Capitalized OH & Capital Outlays	\$4,535,431	\$4,739,525	\$4,932,804	\$5,175,680	\$5,408,586	\$5,651,972	\$5,906,311	\$6,172,095	\$6,449,839	\$6,740,082	\$7,043,386
Net O&M	\$74,902,588	\$78,295,440	\$82,433,114	\$85,499,850	\$89,337,935	\$93,349,080	\$97,540,225	\$101,919,360	\$106,495,838	\$111,277,694	\$116,275,059
% Change	4.6%	4.5%	5.3%	3.2%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Check	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 6
Tualatin Valley Water District
2022-23 Financial Plan
Summary O&M Forecast

	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Water Costs								
Portland	\$182,284	\$190,487	\$199,059	\$208,016	\$217,377	\$227,159	\$237,381	\$248,063
JWC	14,242,290	14,883,193	15,552,936	16,252,818	16,984,195	17,748,484	18,547,166	19,381,788
WWSS Water	14,222,221	14,862,221	15,531,021	16,229,917	16,960,263	17,723,475	18,521,031	19,354,478
Water Costs Subtotal	\$28,646,794	\$29,935,900	\$31,283,016	\$32,690,751	\$34,161,835	\$35,699,118	\$37,305,578	\$38,984,329
% Change	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Pumping Power								
In-District Pumping	\$1,308,258	\$1,367,129	\$1,428,650	\$1,492,939	\$1,560,122	\$1,630,327	\$1,703,692	\$1,780,358
WWSS Pumping	1,664,018	1,738,899	1,817,149	1,898,921	1,984,372	2,073,669	2,166,984	2,264,498
Pumping Power Subtotal	\$2,972,275	\$3,106,028	\$3,245,799	\$3,391,860	\$3,544,494	\$3,703,996	\$3,870,676	\$4,044,856
% Change	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
WWSS (excluding treatment & pump power)								
WWSS O&M (non-WTP)	1,125,311	1,173,279	1,223,312	1,275,500	1,329,936	1,386,718	1,445,948	1,507,732
WJF related	168,108	175,673	183,578	191,839	200,472	209,493	218,920	228,771
WJFA Insurance and Servicing	35,554	37,154	38,826	40,573	42,399	44,307	46,301	48,384
WWSS Subtotal	\$1,328,973	\$1,386,106	\$1,445,716	\$1,507,912	\$1,572,807	\$1,640,518	\$1,711,169	\$1,784,888
% Change	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
Operational Expenses								
Administrative Services	\$8,786,789	\$9,184,866	\$9,600,950	\$10,035,854	\$10,490,429	\$10,965,563	\$11,462,186	\$11,981,268
Customer Service	14,690,495	15,340,526	16,019,532	16,728,811	17,469,718	18,243,668	19,052,141	19,896,683
Engineering/Operational Expenses	32,382,097	33,839,292	35,362,060	36,953,352	38,616,233	40,353,985	42,169,914	44,067,560
Other Operational Expenses	7,703,703	8,050,370	8,412,636	8,791,205	9,186,809	9,600,215	10,032,225	10,485,675
Finance	10,141,559	10,597,929	11,074,836	11,573,204	12,093,998	12,638,228	13,206,948	13,801,261
Water Supply Program	5,006,648	5,231,947	5,467,385	5,713,417	5,970,521	6,239,194	6,519,958	6,813,356
IT Services	8,034,731	8,396,294	8,774,127	9,168,963	9,581,566	10,012,737	10,463,310	10,934,159
Operational Expenses Subtotal	\$86,746,023	\$90,641,224	\$94,711,526	\$98,964,806	\$103,409,294	\$108,053,590	\$112,906,682	\$117,977,962
% Change	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Other								
Expenses from Master Plan CIP	\$241,100	\$1,078,500	\$262,800	\$274,100	\$286,500	\$298,800	\$298,800	\$298,800
Capital Outlays	1,205,857	1,260,121	1,316,826	1,376,083	1,438,007	1,502,717	1,570,340	1,641,005
Initiatives – Personnel Svcs.	6,611,178	6,908,681	7,219,571	7,544,452	7,883,952	8,238,473	8,609,473	8,996,899
Initiatives – M&S	1,104,716	1,154,428	1,206,378	1,260,665	1,317,395	1,376,677	1,438,628	1,503,366
Other Subtotal	\$9,162,851	\$10,401,729	\$10,005,575	\$10,455,300	\$10,925,854	\$11,416,925	\$11,917,240	\$12,440,070
% Change	4.5%	13.5%	(3.8%)	4.5%	4.5%	4.5%	4.4%	4.4%
Grand Total O&M	\$128,856,917	\$135,470,988	\$140,691,632	\$147,010,630	\$153,614,284	\$160,514,147	\$167,711,345	\$175,232,105
% Change	4.5%	5.1%	3.9%	4.5%	4.5%	4.5%	4.5%	4.5%
Less Capitalized OH & Capital Outlays	\$7,360,338	\$7,691,553	\$8,037,673	\$8,399,368	\$8,777,340	\$9,172,320	\$9,585,075	\$10,016,403
Net O&M	\$121,496,579	\$127,779,434	\$132,653,959	\$138,611,262	\$144,836,944	\$151,341,826	\$158,126,271	\$165,215,703
% Change	4.5%	5.2%	3.8%	4.5%	4.5%	4.5%	4.5%	4.5%
Check	OK	OK	OK	OK	OK	OK	OK	OK

5/10/2022

Page 18 of 64

TWWD Forecast Model Summary

Table 7
Tualatin Valley Water District
2022-23 Financial Plan
Revenue Forecast

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Rate Revenue Growth Assumptions										
Class Customer/System Growth Rate	0.70%	(0.80%)	(0.04%)	0.55%	0.50%	0.45%	0.40%	0.35%	0.30%	0.25%
Sales Growth / Conservation Adj.	0.37%	(0.80%)	0.37%	0.38%	0.38%	0.37%	0.38%	0.35%	0.30%	0.25%
<i>Ratio - Volumetric Revenue</i>	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%
Internal Revenue Growth	0.44%	(0.79%)	0.29%	0.41%	0.40%	0.39%	0.38%	0.35%	0.30%	0.25%
Rate Revenue Adjustments										
Nov. 1 Rate Adjustment	9.5%	14.25%	5.5%	5.5%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%
May 1 Rate Adjustment	0.0%	5.5%	5.5%	5.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Retail Rate Revenue										
Revenue Before Increase	\$72,442,859	\$78,693,132	\$94,884,574	\$105,893,255	\$118,166,944	\$123,077,803	\$128,179,128	\$133,451,567	\$138,871,576	\$144,439,608
Revenue from Increase(s)	3,284,265	5,774,572	2,955,640	3,303,264	2,114,789	2,202,571	2,293,863	2,388,218	2,485,213	2,584,857
Annual Totals - Rate Revenue	\$75,727,123	\$84,469,704	\$97,840,213	\$109,196,519	\$120,281,733	\$125,280,374	\$130,472,991	\$135,839,784	\$141,356,789	\$147,024,465
FY2022 Favorable Variance from Budget										
Favorable Variance from Budget (July '21 - Nov '21)	\$2,055,239									
Total in FY2022	\$77,782,363	\$84,469,704	\$97,840,213	\$109,196,519	\$120,281,733	\$125,280,374	\$130,472,991	\$135,839,784	\$141,356,789	\$147,024,465
Total User Charges										
Non-Rate Revenues*										
Meter & Svc Revenue	\$1,697,650	\$1,757,975	\$1,818,775	\$1,884,325	\$1,950,825	\$2,016,850	\$2,127,050	\$2,200,200	\$2,278,575	\$2,357,425
Special Service & Turn On Fees	1,950	2,009	2,069	2,131	2,195	2,261	2,328	2,398	2,470	2,544
Penalty Fees	12,075	12,437	12,810	13,195	13,591	13,998	14,418	14,851	15,296	15,755
Dispatch Fees	0	0	0	0	0	0	0	0	0	0
Miscellaneous Income	202,375	208,446	214,700	221,141	227,775	234,608	241,646	248,896	256,363	264,053
Plan Review	26,125	26,909	27,716	28,547	29,404	30,286	31,195	32,130	33,094	34,087
Contract Reimbursements	1,600,000	1,648,000	1,697,440	1,748,363	1,800,814	1,854,839	1,910,484	1,967,798	2,026,832	2,087,637
Inspection Fees	91,650	94,400	97,231	100,148	103,153	106,247	109,435	112,718	116,099	119,582
Backflow Program Reimbursement	403,625	415,734	428,206	441,052	454,283	467,912	481,949	496,408	511,300	526,639
Power Generation Station	25,075	25,827	26,602	27,400	28,222	29,076	29,954	30,856	31,782	32,733
Rental Property Income	65,125	67,079	69,091	71,164	73,299	75,498	77,763	80,096	82,498	84,973
Sales to Other Funds - Partner Share	1,423,109	1,538,764	1,667,769	1,853,704	2,058,345	2,255,716	2,450,370	2,625,043	2,825,043	3,001,706
COB Wheeling Revenue	1,082,935	932,129	762,684	591,383	407,606	210,704	217,025	223,536	230,242	237,149
Interest Earnings - Cash & Investments	903,197	2,583,865	1,702,274	675,504	650,700	810,133	941,193	1,139,541	1,202,878	1,208,352
Annual Totals - Non-Rate Revenues	\$7,534,890	\$9,303,574	\$8,527,367	\$7,658,058	\$7,800,211	\$6,579,052	\$6,943,856	\$7,343,615	\$7,617,956	\$7,839,905
Total Annual Revenues	\$85,317,253	\$93,773,278	\$106,367,581	\$116,854,576	\$128,081,945	\$131,859,426	\$137,416,847	\$143,183,399	\$148,974,745	\$154,864,370

* Note: Non-Rate Revenues are net of related expenses.

TWWD Forecast Model Summary

Table 7
 Tuolumne Valley Water District
 2022-23 Financial Plan
Revenue Forecast

	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
Rate Revenue Growth Assumptions										
Class Customer/System Growth Rate	0.20%	0.15%	0.10%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sales Growth / Conservation Adj.	0.20%	0.15%	0.10%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<i>Ratio - Volumetric Revenue</i>	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%
Internal Revenue Growth	0.20%	0.15%	0.10%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rate Revenue Adjustments										
Nov. 1 Rate Adjustment	3.75%	3.75%	3.75%	3.75%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
May 1 Rate Adjustment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Retail Rate Revenue										
Revenue Before Increase	\$150,155,905	\$156,020,490	\$162,033,157	\$168,193,462	\$174,500,717	\$180,608,242	\$186,929,530	\$193,472,064	\$200,243,586	\$207,252,112
Revenue from Increase(s)	2,687,154	2,792,106	2,899,707	3,009,950	2,914,635	3,016,647	3,122,230	3,231,508	3,344,611	3,461,672
Annual Totals - Rate Revenue	\$152,843,060	\$158,812,596	\$164,932,864	\$171,203,412	\$177,415,352	\$183,624,889	\$190,051,760	\$196,703,572	\$203,588,197	\$210,713,784
FY2022 Favorable Variance from Budget										
Favorable Variance from Budget (July '21 - Nov '21)										
Total in FY2022	\$152,843,060	\$158,812,596	\$164,932,864	\$171,203,412	\$177,415,352	\$183,624,889	\$190,051,760	\$196,703,572	\$203,588,197	\$210,713,784
Total User Charges										
Meter & Svc Revenue	\$2,441,500	\$2,525,575	\$2,615,350	\$2,705,600	\$2,800,600	\$2,901,300	\$3,002,475	\$3,108,875	\$3,215,750	\$3,327,850
Special Service & Turn On Fees	2,621	2,699	2,780	2,864	2,950	3,038	3,129	3,223	3,320	3,419
Penalty Fees	16,228	16,715	17,216	17,733	18,265	18,812	19,377	19,958	20,557	21,174
Dispatch Fees	0	0	0	0	0	0	0	0	0	0
Miscellaneous Income	271,975	280,134	288,538	297,195	306,110	315,294	324,752	334,495	344,530	354,866
Plan Review	35,110	36,163	37,248	38,365	39,516	40,702	41,923	43,181	44,476	45,810
Contract Reimbursements	2,150,266	2,214,774	2,281,217	2,349,654	2,420,144	2,492,748	2,567,530	2,644,556	2,723,893	2,805,610
Inspection Fees	123,170	126,865	130,671	134,591	138,629	142,788	147,071	151,483	156,028	160,709
Backflow Program Reimbursement	542,438	558,711	575,473	592,737	610,519	628,835	647,700	667,131	687,145	707,759
Power Generation Station	0	0	0	0	0	0	0	0	0	0
Rental Property Income	87,523	90,148	92,853	95,638	98,507	101,463	104,507	107,642	110,871	114,197
Sales to Other Funds - Partner Share	942,283	984,685	1,028,996	1,075,301	1,123,690	1,174,256	1,227,097	1,282,317	1,340,021	1,400,322
COB Wheeling Revenue	244,264	251,592	259,139	266,914	274,921	283,169	291,664	300,414	309,426	318,709
Interest Earnings - Cash & Investments	1,253,781	1,195,237	1,134,789	1,083,572	854,854	745,957	905,988	1,027,949	1,033,212	1,058,824
Annual Totals - Non-Rate Revenues	\$8,111,158	\$8,283,300	\$8,464,271	\$8,660,163	\$8,688,704	\$8,848,361	\$9,283,214	\$9,691,223	\$9,989,228	\$10,319,249
Total Annual Revenues	\$160,954,218	\$167,095,896	\$173,397,135	\$179,863,575	\$186,104,056	\$192,473,250	\$199,334,974	\$206,394,795	\$213,577,425	\$221,033,033

* Note: Non-Rate Revenues are net of related expenses.

TWWD Forecast Model Summary

Table 7
Tualatin Valley Water District
2022-23 Financial Plan
Revenue Forecast

	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Rate Revenue Growth Assumptions										
Class Customer/System Growth Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sales Growth / Conservation Adj.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<i>Ratio - Volumetric Revenue</i>	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%	78.89%
Internal Revenue Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rate Revenue Adjustments										
Nov. 1 Rate Adjustment	3.5%	3.5%	3.5%	3.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
May 1 Rate Adjustment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Retail Rate Revenue										
Revenue Before Increase	\$214,505,936	\$222,013,643	\$229,784,121	\$237,826,565	\$246,150,495	\$253,535,010	\$261,141,060	\$268,975,292	\$277,044,550	\$285,355,887
Revenue from Increase(s)	3,582,831	3,708,230	3,838,018	3,972,349	3,524,041	3,629,762	3,738,655	3,850,814	3,966,339	4,085,329
Annual Totals - Rate Revenue	\$218,088,766	\$225,721,873	\$233,622,139	\$241,798,914	\$249,674,535	\$257,164,771	\$264,879,715	\$272,826,106	\$281,010,889	\$289,441,216
FY2022 Favorable Variance from Budget										
Favorable Variance from Budget (July '21 - Nov '21)										
Total in FY2022	\$218,088,766	\$225,721,873	\$233,622,139	\$241,798,914	\$249,674,535	\$257,164,771	\$264,879,715	\$272,826,106	\$281,010,889	\$289,441,216
Total User Charges										
Non-Rate Revenues*										
Meter & Svc Revenue	\$3,445,650	\$3,563,925	\$3,687,900	\$3,816,625	\$3,951,525	\$4,091,175	\$4,232,250	\$4,383,300	\$4,534,825	\$3,812,825
Special Service & Turn On Fees	3,522	3,628	3,736	3,848	3,964	4,083	4,205	4,332	4,461	4,595
Penalty Fees	21,809	22,463	23,137	23,831	24,546	25,282	26,041	26,822	27,627	28,456
Dispatch Fees	0	0	0	0	0	0	0	0	0	0
Miscellaneous Income	365,512	376,477	387,771	399,405	411,387	423,728	436,440	449,533	463,019	476,910
Plan Review	47,185	48,600	50,058	51,560	53,107	54,700	56,341	58,031	59,772	61,565
Contract Reimbursements	2,889,778	2,976,471	3,065,765	3,157,738	3,252,471	3,350,045	3,450,546	3,554,062	3,660,684	3,770,505
Inspection Fees	165,530	170,496	175,611	180,879	186,306	191,895	197,652	203,581	209,689	215,979
Backflow Program Reimbursement	728,992	750,861	773,387	796,589	820,487	845,101	870,454	896,568	923,465	951,169
Power Generation Station	0	0	0	0	0	0	0	0	0	0
Rental Property Income	117,623	121,152	124,786	128,530	132,386	136,357	140,448	144,661	149,001	153,471
Sales to Other Funds - Partner Share	1,463,336	1,529,186	1,598,000	1,669,910	1,745,056	1,823,583	1,905,645	1,991,399	2,081,011	2,174,657
COB Wheeling Revenue	328,270	338,118	348,262	358,710	369,471	380,555	391,972	403,731	415,843	428,318
Interest Earnings - Cash & Investments	1,235,024	1,416,938	1,604,034	1,744,327	1,463,843	1,123,639	1,152,829	1,351,279	1,338,076	1,352,470
Annual Totals - Non-Rate Revenues	\$10,812,231	\$11,318,316	\$11,842,448	\$12,331,952	\$12,814,547	\$13,291,144	\$13,864,822	\$14,437,299	\$15,014,744	\$15,602,136
Total Annual Revenues	\$228,900,997	\$237,040,189	\$245,464,587	\$254,130,866	\$262,089,082	\$269,614,916	\$277,744,537	\$286,293,405	\$294,878,363	\$302,872,136

* Note: Non-Rate Revenues are net of related expenses.

TVWD Forecast Model Summary

Table 8
 Tuolumne Valley Water District
 2022-23 Financial Plan
SDC Revenue Forecast

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
SDC Fee Escalation		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Annual Fee per EDU										
Improvement Fee	\$6,809	\$6,945	\$7,084	\$7,225	\$7,370	\$7,517	\$7,667	\$0	\$0	\$0
Reimbursement Fee	1,614	1,646	1,679	1,712	1,747	1,782	1,817	9,674	9,868	10,065
New Equivalent Dwelling Units	568	530	520	510	500	475	450	425	400	375
SDC Forecast Revenue										
Improvement Fee	\$3,867,228	\$3,680,675	\$3,683,453	\$3,684,870	\$3,684,870	\$3,570,639	\$3,450,365	\$0	\$0	\$0
Reimbursement Fee	916,548	872,334	872,992	873,328	873,328	846,255	817,749	4,111,616	3,947,152	3,774,464
Total System Development Charges	\$4,783,776	\$4,553,009	\$4,556,445	\$4,558,198	\$4,558,198	\$4,416,893	\$4,268,114	\$4,111,616	\$3,947,152	\$3,774,464

TVWD Forecast Model Summary

Table 8
 Tualatin Valley Water District
 2022-23 Financial Plan
SDC Revenue Forecast

	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
SDC Fee Escalation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Annual Fee per EDU										
Improvement Fee	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reimbursement Fee	10,267	10,472	10,681	10,895	11,113	11,335	11,562	11,793	12,029	12,269
New Equivalent Dwelling Units										
	350	325	300	275	250	225	200	175	150	125
SDC Forecast Revenue										
Improvement Fee	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reimbursement Fee	3,593,290	3,403,359	3,204,393	2,996,107	2,778,209	2,550,396	2,312,359	2,063,780	1,804,333	1,533,683
Total System Development Charges	<u>\$3,593,290</u>	<u>\$3,403,359</u>	<u>\$3,204,393</u>	<u>\$2,996,107</u>	<u>\$2,778,209</u>	<u>\$2,550,396</u>	<u>\$2,312,359</u>	<u>\$2,063,780</u>	<u>\$1,804,333</u>	<u>\$1,533,683</u>

TVWD Forecast Model Summary

Table 8
 Tuolumne Valley Water District
 2022-23 Financial Plan
SDC Revenue Forecast

	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
SDC Fee Escalation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Annual Fee per EDU										
Improvement Fee	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reimbursement Fee	12,515	12,765	13,020	13,281	13,546	13,817	14,094	14,376	14,663	14,956
New Equivalent Dwelling Units										
	100	75	50	25	0	0	0	0	0	0
SDC Forecast Revenue										
Improvement Fee	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reimbursement Fee	1,251,486	957,387	651,023	332,022	0	0	0	0	0	0
Total System Development Charges	\$1,251,486	\$957,387	\$651,023	\$332,022	\$0	\$0	\$0	\$0	\$0	\$0

TWWD Forecast Model Summary

Table 9
Tualatin Valley Water District
2022-23 Financial Plan
Debt Service Coverage Calculations

	<i>Growth-related Revenue</i>												
	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	
Estimated Gross Revenues													
Total User Charges	\$77,782,363	\$84,469,704	\$97,840,213	\$109,196,519	\$120,281,733	\$125,280,374	\$130,472,991	\$135,839,784	\$141,356,789	\$147,024,465	\$152,843,060	\$158,812,596	
Non-Rate Revenue													
Meter & Sys Revenue	1,697,650	1,757,975	1,818,775	1,884,325	1,950,825	2,016,850	2,112,050	2,200,700	2,278,575	2,357,425	2,441,500	2,525,575	
Special Service & Turn On Fees	1,950	2,009	2,069	2,131	2,195	2,261	2,328	2,470	2,544	2,621	2,699	2,779	
Penalty Fees	12,075	12,437	12,810	13,195	13,598	13,998	14,418	14,851	15,296	15,755	16,228	16,715	
Dispatch Fees	0	0	0	0	0	0	0	0	0	0	0	0	
Miscellaneous Income	202,375	208,446	214,700	221,141	227,775	234,608	241,646	248,896	256,363	264,053	271,975	280,134	
Plan Review	26,125	26,909	27,716	28,547	29,404	30,286	31,195	32,130	33,094	34,087	35,110	36,163	
Contract Reimbursements	1,600,000	1,648,000	1,697,440	1,748,363	1,800,814	1,854,839	1,910,484	1,967,798	2,026,832	2,087,637	2,150,266	2,214,774	
Inspection Fees	91,650	94,400	97,231	100,148	103,153	106,247	109,435	112,718	116,099	119,582	123,170	126,865	
Backflow Program Reimbursement	403,625	415,734	428,206	441,052	454,283	467,912	481,949	496,408	511,300	526,639	542,438	558,711	
Power Generation Station	25,075	25,827	26,602	27,400	28,222	29,069	29,942	30,841	31,766	32,718	33,698	34,707	
Rental Property Income	65,125	67,079	69,091	71,164	73,299	75,498	77,763	80,096	82,498	84,973	87,523	90,148	
Sales to Other Funds - Partner Share	1,423,109	1,538,764	1,667,769	1,853,704	2,058,345	2,270,704	2,498,870	2,825,043	3,169,308	3,533,920	3,919,283	4,327,685	
COB Wheeling Revenue	1,082,935	922,129	762,684	591,383	407,606	210,704	217,025	223,536	230,242	237,149	244,264	251,592	
Interest Earnings on Reserve Funds													
Cash & Investments	903,197	2,583,865	1,702,274	675,504	650,700	810,133	941,133	1,139,541	1,208,352	1,253,781	1,293,781	1,195,237	
Rev. Bond Debt Service	0	0	99,180	239,874	262,442	218,701	174,961	174,961	174,961	174,961	174,961	174,961	
Total System Development Charges	4,783,776	4,553,009	4,556,445	4,558,198	4,558,198	4,416,893	4,268,114	4,111,616	3,947,152	3,774,464	3,593,290	3,403,359	
Gross Revenue (incl. Growth-related Revenue)	\$90,101,028	\$98,326,287	\$111,023,206	\$121,652,648	\$132,902,584	\$136,495,021	\$141,859,922	\$147,469,976	\$153,096,858	\$158,813,795	\$164,722,469	\$170,674,215	
Gross Revenue (excl. Growth-related Revenue)	83,619,608	92,015,303	104,647,986	115,210,125	126,393,561	130,061,278	135,464,758	141,158,160	146,871,131	152,681,906	158,687,679	164,745,282	
Operating Expenses (excluding depreciation)													
Total O&M Costs	\$42,607,743	\$46,610,795	\$51,945,174	\$56,902,803	\$60,071,958	\$60,370,185	\$63,051,903	\$65,961,341	\$69,244,568	\$72,663,693	\$75,982,479	\$79,438,019	
Less Capitalized OH & Capital Outlays	(3,909,751)	(3,846,253)	(4,378,381)	(4,721,738)	(5,094,190)	(3,482,184)	(3,638,416)	(3,802,345)	(3,973,632)	(4,153,230)	(4,340,125)	(4,535,431)	
Net O&M (less Capital Outlays)	\$38,697,992	\$42,764,542	\$47,566,793	\$52,181,065	\$54,977,768	\$56,888,001	\$59,413,487	\$62,158,996	\$65,270,936	\$68,510,463	\$71,642,354	\$74,902,588	
Net Revenue (incl. Growth-related Revenue)	\$51,403,037	\$55,561,744	\$63,456,413	\$69,471,583	\$77,924,816	\$79,607,020	\$82,446,435	\$85,310,980	\$87,825,922	\$90,303,331	\$93,080,115	\$95,771,627	
Net Revenue (excl. Growth-related Revenue)	44,921,611	49,250,761	57,081,193	63,029,060	71,415,793	73,173,277	76,051,271	78,999,164	81,600,195	84,171,442	87,045,325	89,842,693	
Annual DS Subject to Coverage	\$0	\$0	\$3,781,525	\$10,499,913	\$13,456,775	\$13,456,775	\$25,234,693	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	
DSC Test 1 (including Growth-related Revenue)													
Estimated Coverage	0.00	0.00	16.78	6.62	5.80	5.82	3.27	2.59	2.66	2.74	2.82	2.90	
Target Coverage	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Additional Revenues Required - Test 1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
DSC Test 2 (excluding Growth-related Revenue)													
Estimated Coverage	0.00	0.00	15.09	6.00	5.31	5.45	3.01	2.40	2.47	2.55	2.64	2.72	
Target Coverage	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	
Additional Revenues Required - Test 2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
DSC Target Coverage Check 1	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	
DSC Target Coverage Check 2	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	

TWWD Forecast Model Summary

Table 9
Tualatini Valley Water District
2022-23 Financial Plan
Debt Service Coverage Calculations

	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2040	FY2041	FY2042	FY2043	FY2044	FY2045
<i>Growth-related Revenue</i>												
Estimated Gross Revenues												
Total User Charges	\$164,932,864	\$171,203,412	\$177,415,352	\$183,624,889	\$190,051,760	\$196,703,572	\$203,588,197	\$210,713,784	\$218,088,766	\$225,721,873	\$233,622,139	\$241,798,914
Non-Rate Revenue												
Meter & Svc Revenue	2,615,350	2,705,600	2,800,600	2,901,300	3,002,475	3,108,875	3,215,750	3,327,850	3,445,650	3,563,925	3,687,900	3,816,625
Special Service & Turn On Fees	2,780	2,864	2,950	3,038	3,129	3,223	3,320	3,419	3,522	3,628	3,736	3,848
Penalty Fees	17,216	17,733	18,265	18,812	19,377	19,958	20,557	21,174	21,809	22,463	23,137	23,831
Dispatch Fees	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous Income	288,538	297,195	306,110	315,294	324,750	334,495	344,530	354,866	365,512	376,477	387,771	399,405
Plan Review	37,248	38,365	39,516	40,702	41,923	43,181	44,476	45,810	47,185	48,600	50,058	51,560
Contract Reimbursements	2,281,217	2,349,654	2,420,144	2,493,748	2,567,530	2,644,556	2,723,893	2,805,610	2,889,778	2,976,471	3,065,765	3,157,738
Inspection Fees	130,671	134,591	138,629	142,788	147,071	151,483	156,028	160,709	165,530	170,496	175,611	180,879
Backflow Program Reimbursement	575,473	592,737	610,519	628,835	647,700	667,131	687,145	707,759	728,992	750,861	773,387	796,589
Power Generation Station	0	0	0	0	0	0	0	0	0	0	0	0
Rental Property Income	92,853	95,638	98,507	101,463	104,507	107,642	110,871	114,197	117,623	121,152	124,786	128,530
Sales to Other Funds - Partner Share	1,028,996	1,075,301	1,123,690	1,174,256	1,227,097	1,282,317	1,340,021	1,400,322	1,463,336	1,529,186	1,598,000	1,669,910
COB Wheeling Revenue	259,139	266,914	274,921	283,169	291,664	300,414	309,426	318,709	328,270	338,118	348,262	358,710
Interest Earnings on Reserve Funds												
Cash & Investments	1,134,789	1,083,572	854,854	745,957	905,988	1,027,949	1,033,212	1,058,824	1,235,024	1,416,938	1,604,034	1,744,327
Rev. Bond Debt Service	174,961	174,961	174,961	174,961	174,961	174,961	174,961	174,961	174,961	174,961	174,961	174,961
Total System Development Charges	3,204,393	2,996,107	2,778,209	2,550,396	2,312,359	2,063,780	1,804,333	1,533,683	1,251,486	957,387	651,023	332,022
Gross Revenue (incl. Growth-related Revenue)	\$176,776,489	\$183,094,644	\$189,057,226	\$195,196,607	\$201,822,294	\$208,639,536	\$215,556,719	\$222,741,677	\$230,327,444	\$238,172,537	\$246,290,571	\$254,637,848
Gross Revenue (excl. Growth-related Revenue)	170,956,746	177,332,956	183,478,417	189,746,911	196,507,460	203,460,881	210,536,636	217,880,144	225,630,308	233,651,225	241,951,648	250,489,202
Operating Expenses (excluding depreciation)												
Total O&M Costs	\$83,034,966	\$87,365,918	\$90,675,530	\$94,746,521	\$99,001,052	\$103,446,536	\$108,091,455	\$112,945,678	\$118,017,776	\$123,318,445	\$128,896,917	\$135,470,988
Less Capitalized OH & Capital Outlays	(4,739,525)	(4,952,804)	(5,175,680)	(5,408,586)	(5,651,972)	(5,906,311)	(6,172,095)	(6,449,839)	(6,740,082)	(7,043,386)	(7,360,338)	(7,691,553)
Net O&M (less Capital Outlays)	\$78,295,440	\$82,413,114	\$85,499,850	\$89,337,935	\$93,349,080	\$97,540,225	\$101,919,360	\$106,495,838	\$111,277,694	\$116,275,059	\$121,496,579	\$127,779,434
Net Revenue (incl. Growth-related Revenue)	\$98,481,049	\$100,621,529	\$103,557,376	\$105,860,671	\$108,473,214	\$111,093,311	\$113,637,359	\$116,245,839	\$118,949,749	\$121,897,478	\$124,793,992	\$126,858,414
Net Revenue (excl. Growth-related Revenue)	92,661,306	94,919,822	97,978,567	100,408,976	103,158,380	105,920,656	108,617,276	111,384,305	114,352,614	117,376,166	120,455,069	122,709,767
Annual DS Subject to Coverage	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275
DSC Test 1 (including Growth-related Revenue)												
Estimated Coverage	2.99	3.05	3.14	3.21	3.29	3.37	3.45	3.53	3.61	3.70	3.78	3.85
Target Coverage	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Additional Revenues Required - Test 1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DSC Test 2 (excluding Growth-related Revenue)												
Estimated Coverage	2.81	2.88	2.97	3.05	3.13	3.21	3.29	3.38	3.47	3.56	3.65	3.72
Target Coverage	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Additional Revenues Required - Test 2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DSC Target Coverage Check 1	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
DSC Target Coverage Check 2	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 9
Tualatin Valley Water District
2022-23 Financial Plan
Debt Service Coverage Calculations

	Growth-related Revenue					
	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Estimated Gross Revenues						
Total User Charges	\$249,674,535	\$257,164,771	\$264,879,715	\$272,826,106	\$281,010,889	\$289,441,216
Non-Rate Revenue						
Meter & Svc Revenue	3,951,525	4,091,175	4,232,250	4,383,300	4,534,825	3,812,825
Special Service & Turn On Fees	3,964	4,083	4,205	4,332	4,461	4,595
Penalty Fees	24,546	25,282	26,041	26,822	27,627	28,456
Dispatch Fees	0	0	0	0	0	0
Miscellaneous Income	411,387	423,728	436,440	449,533	463,019	476,910
Plan Review	53,107	54,700	56,341	58,031	59,772	61,565
Contract Reimbursements	3,252,471	3,350,045	3,450,546	3,554,062	3,660,684	3,770,505
Inspection Fees	186,306	191,895	197,652	203,381	209,089	215,979
Backflow Program Reimbursement	820,487	845,101	870,454	896,568	923,465	951,169
Power Generation Station	0	0	0	0	0	0
Rental Property Income	132,386	136,357	140,448	144,661	149,001	153,471
Sales to Other Funds - Partner Share	1,745,056	1,823,583	1,905,645	1,991,399	2,081,011	2,174,657
COB Wheeling Revenue	369,471	380,555	391,972	403,731	415,843	428,318
Interest Earnings on Reserve Funds						
Cash & Investments	1,463,843	1,123,639	1,152,829	1,351,279	1,338,076	1,352,470
Rev. Bond Debt Service	174,961	174,961	174,961	174,961	174,961	174,961
Total System Development Charges	0	0	0	0	0	0
Gross Revenue (incl. Growth-related Revenue)	\$262,264,043	\$269,789,877	\$277,919,498	\$286,468,366	\$295,053,324	\$303,047,098
Gross Revenue (excl. Growth-related Revenue)	258,312,518	265,698,702	273,687,248	282,085,066	290,518,499	299,234,273
Operating Expenses (excluding depreciation)						
Total O&M Costs	\$140,691,632	\$147,010,630	\$153,614,284	\$160,514,147	\$167,711,345	\$175,232,105
Less Capitalized OH & Capital Outlays	(8,037,673)	(8,399,368)	(8,777,340)	(9,172,320)	(9,585,075)	(10,016,403)
Net O&M (less Capital Outlays)	\$132,653,959	\$138,611,262	\$144,836,944	\$151,341,826	\$158,126,271	\$165,215,703
Net Revenue (incl. Growth-related Revenue)	\$129,610,084	\$131,178,615	\$133,082,554	\$135,126,540	\$136,927,054	\$137,831,395
Net Revenue (excl. Growth-related Revenue)	125,658,559	127,087,440	128,850,304	130,743,240	132,392,229	134,018,570
Annual DS Subject to Coverage	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275
DSC Test 1 (including Growth-related Revenue)						
Estimated Coverage	3.93	3.98	4.04	4.10	4.15	4.18
Target Coverage	2.00	2.00	2.00	2.00	2.00	2.00
Additional Revenues Required - Test 1	\$0	\$0	\$0	\$0	\$0	\$0
DSC Test 2 (excluding Growth-related Revenue)						
Estimated Coverage	3.81	3.85	3.91	3.97	4.02	4.06
Target Coverage	1.50	1.50	1.50	1.50	1.50	1.50
Additional Revenues Required - Test 2	\$0	\$0	\$0	\$0	\$0	\$0
DSC Target Coverage Check 1	OK	OK	OK	OK	OK	OK
DSC Target Coverage Check 2	OK	OK	OK	OK	OK	OK

5/10/2022

TWWD Forecast Model Summary

Table 10
 Tualatin Valley Water District
 2022-23 Financial Plan
Projected Net Leverage Ratio (Fitch Ratings)
 — Net Adjusted Debt to Adjusted Net Revenue (FADS)

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Calculation of Net Adjusted Debt										
Outstanding Debt Balances										
Future Revenue Bonds	\$0	\$0	\$137,510,000	\$244,305,000	\$244,305,000	\$244,305,000	\$240,189,849	\$235,845,252	\$231,258,417	\$226,415,837
WIFIA Proceeds	100,000,000	357,500,000	387,748,990	387,748,990	387,748,990	387,748,990				
Capitalized Interest on WIFIA Proceeds	112,500	3,789,991	9,093,607	14,469,063	19,917,333	25,439,402				
WIFIA Loan Balance							411,046,679	401,085,138	390,988,661	380,755,423
TWWD Share of Wilsonville Ground Lease	9,409,510	9,307,231	9,204,952	9,102,673						
Total Outstanding Debt	(a) \$109,522,010	\$370,597,222	\$543,557,548	\$655,625,726	\$651,971,323	\$657,493,392	\$631,236,528	\$636,930,390	\$622,247,078	\$607,171,260
Capitalized Fixed Charges										
Purchased Water - PWB Ratio	\$8,274,600	\$9,664,200	\$10,617,495	\$11,438,897	\$11,917,653	\$0	\$0	\$0	\$0	\$0
	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%
Fixed Services Expense Multiplier	\$2,896,110	\$3,382,470	\$3,716,123	\$4,003,614	\$4,171,179	\$0	\$0	\$0	\$0	\$0
	7	7	7	7	7	7	7	7	7	7
Total Capitalized Fixed Charge	(b) \$20,272,770	\$23,677,290	\$26,012,864	\$28,025,296	\$29,198,251	\$0	\$0	\$0	\$0	\$0
Adjusted Net Pension Liability	(c) \$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421
Total Adjusted UAL	\$125,172,020	\$133,214,498	\$37,012,946	\$40,187,564	\$46,572,443	\$83,048,890	\$105,189,689	\$122,718,436	\$117,857,166	\$123,813,315
Less Cash and Restricted Funds										
Available Cash	0	0	9,918,039	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111
Funds Restricted for Debt Service										
Total Cash/Restricted	(d) \$125,172,020	\$133,214,498	\$46,930,985	\$57,683,675	\$64,068,554	\$100,545,001	\$122,685,800	\$140,214,547	\$135,353,277	\$141,309,426
Net Adjusted Debt	(a)-(b)+(c)-(d) \$19,341,181	\$275,778,434	\$537,357,848	\$640,685,769	\$631,819,441	\$571,666,812	\$543,269,149	\$511,434,264	\$501,612,222	\$480,580,254
Calculation of Adjusted Net Revenue (FADS)										
Net Revenue (Funds Available for Debt Service)	\$51,403,037	\$55,561,744	\$63,456,413	\$69,471,583	\$77,924,816	\$79,607,020	\$82,446,435	\$85,310,980	\$87,825,922	\$90,303,331
Fixed Services Expense	2,896,110	3,382,470	3,716,123	4,003,614	4,171,179	0	0	0	0	0
Operating Leases	0	0	0	0	0	0	0	0	0	0
Net Transfers	0	0	0	0	0	0	0	0	0	0
Pension Expense (estimated)	547,587	547,587	547,587	547,587	547,587	547,587	547,587	547,587	547,587	547,587
Adjusted Net Revenue (FADS)	\$54,846,734	\$59,497,802	\$67,720,123	\$74,022,784	\$82,643,581	\$80,154,607	\$82,994,022	\$85,858,567	\$88,373,509	\$90,850,918
Net Adjusted Debt to Adjusted FADS	0.35	4.64	7.93	8.66	7.65	7.13	6.55	5.96	5.68	5.29
Target Maximum Ratio	8.00	8.00	8.00	9.00	8.00	8.00	8.00	8.00	8.00	8.00
Net Leverage Check	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TVWD Forecast Model Summary

Table 10
 Tuolumne Valley Water District
 2022-23 Financial Plan
Projected Net Leverage Ratio (Fitch Ratings)
 — Net Adjusted Debt to Adjusted Net Revenue (FADS)

	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
Calculation of Net Adjusted Debt										
Outstanding Debt Balances										
Future Revenue Bonds	\$221,303,253	\$215,905,610	\$210,207,015	\$204,190,688	\$197,838,913	\$191,132,987	\$184,053,164	\$176,578,596	\$168,687,274	\$160,355,962
WIFIA Proceeds										
Capitalized Interest on WIFIA Proceeds										
WIFIA Loan Balance	370,383,569	359,871,223	349,216,481	338,417,415	327,472,069	316,378,462	305,134,586	293,738,406	282,187,858	270,480,851
TVWD Share of Wilsonville Ground Lease										
Total Outstanding Debt	\$591,686,822	\$575,776,833	\$559,423,496	\$542,608,103	\$525,310,982	\$507,511,449	\$489,187,750	\$470,317,002	\$450,875,132	\$430,836,813
Capitalized Fixed Charges										
Purchased Water - PWB	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ratio	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%
Fixed Services Expense	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Multiplier	7	7	7	7	7	7	7	7	7	7
Total Capitalized Fixed Charge	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Adjusted Net Pension Liability										
Total Adjusted UAL	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421
Less Cash and Restricted Funds										
Available Cash	\$126,942,968	\$112,104,476	\$114,853,321	\$101,861,067	\$69,109,646	\$80,081,814	\$101,115,860	\$104,473,875	\$102,168,468	\$109,596,385
Funds Restricted for Debt Service	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111
Total Cash/Restricted	\$144,439,079	\$129,600,387	\$132,349,432	\$119,357,178	\$86,605,756	\$97,577,925	\$118,611,971	\$121,969,985	\$119,664,579	\$127,092,496
Net Adjusted Debt	\$461,966,164	\$460,894,667	\$441,792,485	\$437,969,345	\$453,423,647	\$424,651,946	\$385,294,200	\$363,065,437	\$345,928,974	\$318,462,738
Calculation of Adjusted Net Revenue (FADS)										
Net Revenue (Funds Available for Debt Service)	\$93,080,115	\$95,771,627	\$98,481,049	\$100,621,529	\$103,557,376	\$105,860,671	\$108,473,214	\$111,093,311	\$113,637,359	\$116,245,839
Fixed Services Expense	0	0	0	0	0	0	0	0	0	0
Operating Leases	0	0	0	0	0	0	0	0	0	0
Net Transfers	0	0	0	0	0	0	0	0	0	0
Pension Expense (estimated)	547,587	547,587	547,587	547,587	547,587	547,587	547,587	547,587	547,587	547,587
Adjusted Net Revenue (FADS)	\$93,627,702	\$96,319,214	\$99,028,636	\$101,169,117	\$104,104,963	\$106,408,258	\$109,020,801	\$111,640,898	\$114,184,946	\$116,793,426
Net Adjusted Debt to Adjusted FADS	4.93	4.79	4.46	4.33	4.36	3.99	3.53	3.25	3.03	2.73
Target: Maximum Ratio	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Net Leverage Check	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 10
 Tuolumne Valley Water District
 2022-23 Financial Plan
Projected Net Leverage Ratio (Fitch Ratings)
 — Net Adjusted Debt to Adjusted Net Revenue (FADS)

	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Calculation of Net Adjusted Debt										
Outstanding Debt Balances										
Future Revenue Bonds	\$151,560,127	\$142,273,870	\$132,469,845	\$122,119,185	\$111,191,411	\$99,654,345	\$87,474,015	\$74,614,556	\$61,038,102	\$46,704,676
WIFIA Proceeds										
Capitalized Interest on WIFIA Proceeds										
WIFIA Loan Balance	258,615,266	246,588,955	234,399,741	222,045,418	209,523,748	196,832,464	183,969,271	170,931,838	157,717,806	144,324,782
TWWD Share of Wilsonville Ground Lease										
(a) Total Outstanding Debt	\$410,175,393	\$388,862,825	\$366,869,586	\$344,164,602	\$320,715,158	\$296,486,809	\$271,443,286	\$245,546,394	\$218,755,908	\$191,029,458
Capitalized Fixed Charges										
Purchased Water - PWB	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ratio	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%
Fixed Services Expense	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Multiplier	7	7	7	7	7	7	7	7	7	7
(b) Total Capitalized Fixed Charge	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Adjusted Net Pension Liability										
Total Adjusted UAL	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421	\$14,718,421
Less Cash and Restricted Funds										
Available Cash	\$137,408,477	\$145,979,100	\$174,827,675	\$174,037,765	\$118,730,877	\$105,997,019	\$124,568,792	\$145,686,989	\$121,928,242	\$148,565,802
Funds Restricted for Debt Service	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111
Total Cash/Restricted	\$154,904,588	\$163,475,211	\$192,323,786	\$191,533,876	\$136,226,988	\$123,493,130	\$142,064,902	\$163,183,100	\$139,424,353	\$166,061,913
(c) Net Adjusted Debt	\$269,989,226	\$240,106,035	\$189,264,222	\$167,349,147	\$199,206,591	\$187,712,100	\$144,096,805	\$97,081,715	\$94,049,976	\$39,685,966
(a)-(b)+(c)-(d)										
Calculation of Adjusted Net Revenue (FADS)										
Net Revenue (Funds Available for Debt Service)	\$119,049,749	\$121,897,478	\$124,793,992	\$126,858,414	\$129,610,084	\$131,178,615	\$133,082,554	\$135,126,540	\$136,927,054	\$137,831,395
Fixed Services Expense	0	0	0	0	0	0	0	0	0	0
Operating Leases	0	0	0	0	0	0	0	0	0	0
Net Transfers	0	0	0	0	0	0	0	0	0	0
Pension Expense (estimated)	547,587	547,587	547,587	547,587	547,587	547,587	547,587	547,587	547,587	547,587
(d) Adjusted Net Revenue (FADS)	\$119,597,336	\$122,445,065	\$125,341,579	\$127,406,001	\$130,157,671	\$131,726,202	\$133,630,141	\$135,674,127	\$137,474,641	\$138,378,982
Net Adjusted Debt to Adjusted FADS										
Target Maximum Ratio	2.26	1.96	1.51	1.31	1.53	1.43	1.08	0.72	0.68	0.29
Net Leverage Check	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 11
Tualatin Valley Water District
2022-23 Financial Plan
Fund Balance Summary

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Beginning Fund Balances										
Cash & Investments	\$80,100,000	\$125,172,020	\$133,214,498	\$37,012,946	\$40,187,564	\$46,572,443	\$83,048,890	\$105,189,689	\$122,718,436	\$117,857,166
Bond Proceeds	0	0	0	0	0	0	0	0	0	0
Rev. Bond Debt Service	0	0	0	9,918,039	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111
Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Reimbursement SDC Account	0	0	0	0	0	0	0	0	0	0
Improvement SDC Account	0	0	0	0	0	0	0	0	0	0
WIFIA Reserve	0	0	0	0	0	0	0	0	0	0
Totals	\$80,100,000	\$125,172,020	\$133,214,498	\$46,930,985	\$57,683,675	\$64,068,554	\$100,545,001	\$122,685,800	\$140,214,547	\$135,353,277
Ending Fund Balances										
Cash & Investments	\$125,172,020	\$133,214,498	\$37,012,946	\$40,187,564	\$46,572,443	\$83,048,890	\$105,189,689	\$122,718,436	\$117,857,166	\$123,813,315
Bond Proceeds	0	0	0	0	0	0	0	0	0	0
Rev. Bond Debt Service	0	0	9,918,039	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111
Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Reimbursement SDC Account	0	0	0	0	0	0	0	0	0	0
Improvement SDC Account	0	0	0	0	0	0	0	0	0	0
WIFIA Reserve	0	0	0	0	0	0	0	0	0	0
Totals	\$125,172,020	\$133,214,498	\$46,930,985	\$57,683,675	\$64,068,554	\$100,545,001	\$122,685,800	\$140,214,547	\$135,353,277	\$141,309,426
Year-End Min. Balance Assumptions										
Cash & Investments										
Operating Reserve				250	250	250	250	250	250	250
Days of O&M in Fund Balance				250	250	250	250	250	250	250
Cash & Investments Minimum Ending Balance	\$124,183,386	\$131,925,202	\$35,578,886	\$38,974,523	\$41,145,177	\$41,349,442	\$43,186,235	\$45,179,001	\$47,427,786	\$49,769,653
Minimum Cash & Investments Overrides	124,183,386	131,925,202								
Rev. Bond Debt Service	\$0	\$0	\$9,918,038	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
Reimbursement SDC Account	0	0	0	0	0	0	0	0	0	0
WIFIA Reserve	0	0	0	0	0	0	0	0	0	0
Check Beginning Fund Balances	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balances	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 11
Tualatin Valley Water District
2022-23 Financial Plan
Fund Balance Summary

	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
Beginning Fund Balances										
Cash & Investments	\$123,813,315	\$126,942,968	\$112,104,476	\$114,853,321	\$101,861,067	\$69,109,646	\$80,081,814	\$101,115,860	\$104,473,875	\$102,168,468
Bond Proceeds	0	0	0	0	0	0	0	0	0	0
Rev. Bond Debt Service	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111
Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Reimbursement SDC Account	0	0	0	0	0	0	0	0	0	0
Improvement SDC Account	0	0	0	0	0	0	0	0	0	0
WiFiA Reserve	0	0	0	0	0	0	0	0	0	0
Totals	\$141,309,426	\$144,439,079	\$129,600,587	\$132,349,432	\$119,357,178	\$86,605,756	\$97,577,925	\$118,611,971	\$121,969,985	\$119,664,579
Ending Fund Balances										
Cash & Investments	\$126,942,968	\$112,104,476	\$114,853,321	\$101,861,067	\$69,109,646	\$80,081,814	\$101,115,860	\$104,473,875	\$102,168,468	\$109,596,385
Bond Proceeds	0	0	0	0	0	0	0	0	0	0
Rev. Bond Debt Service	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111
Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Reimbursement SDC Account	0	0	0	0	0	0	0	0	0	0
Improvement SDC Account	0	0	0	0	0	0	0	0	0	0
WiFiA Reserve	0	0	0	0	0	0	0	0	0	0
Totals	\$144,439,079	\$129,600,587	\$132,349,432	\$119,357,178	\$86,605,756	\$97,577,925	\$118,611,971	\$121,969,985	\$119,664,579	\$127,092,496
Year-End Min. Balance Assumptions										
Cash & Investments										
Operating Reserve										
Days of O&M in Fund Balance	250	250	250	250	250	250	250	250	250	250
Cash & Investments Minimum Ending Balance	\$52,042,794	\$54,409,602	\$56,873,264	\$59,839,670	\$62,106,527	\$64,894,878	\$67,808,940	\$70,853,792	\$74,035,243	\$77,360,053
<i>Minimum Cash & Investments Overrides</i>										
Rev. Bond Debt Service	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
Reimbursement SDC Account	0	0	0	0	0	0	0	0	0	0
WiFiA Reserve	0	0	0	0	0	0	0	0	0	0
Check Beginning Fund Balances	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balances	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TVWD Forecast Model Summary

Table 11
Tualatin Valley Water District
2022-23 Financial Plan
Fund Balance Summary

	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Beginning Fund Balances										
Cash & Investments	\$109,596,385	\$137,408,477	\$145,979,100	\$174,827,675	\$174,037,675	\$118,730,877	\$105,997,019	\$124,568,792	\$145,686,989	\$121,928,242
Bond Proceeds	0	0	0	0	0	0	0	0	0	0
Rev. Bond Debt Service	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111
Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Reimbursement SDC Account	0	0	0	0	0	0	0	0	0	0
Improvement SDC Account	0	0	0	0	0	0	0	0	0	0
WiFiA Reserve	0	0	0	0	0	0	0	0	0	0
Totals	\$127,092,496	\$154,904,588	\$163,475,211	\$192,323,786	\$191,533,876	\$136,226,988	\$123,493,130	\$142,064,902	\$163,183,100	\$139,424,353
Ending Fund Balances										
Cash & Investments	\$137,408,477	\$145,979,100	\$174,827,675	\$174,037,675	\$118,730,877	\$105,997,019	\$124,568,792	\$145,686,989	\$121,928,242	\$148,565,802
Bond Proceeds	0	0	0	0	0	0	0	0	0	0
Rev. Bond Debt Service	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111
Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Reimbursement SDC Account	0	0	0	0	0	0	0	0	0	0
Improvement SDC Account	0	0	0	0	0	0	0	0	0	0
WiFiA Reserve	0	0	0	0	0	0	0	0	0	0
Totals	\$154,904,588	\$163,475,211	\$192,323,786	\$191,533,876	\$136,226,988	\$123,493,130	\$142,064,902	\$163,183,100	\$139,424,353	\$166,061,913
Year-End Min. Balance Assumptions										
Cash & Investments										
Operating Reserve										
Days of O&M in Fund Balance	250	250	250	250	250	250	250	250	250	250
Cash & Investments Minimum Ending Balance	\$80,834,093	\$84,464,688	\$88,258,162	\$92,788,348	\$96,364,132	\$100,692,242	\$105,215,263	\$109,941,196	\$114,870,784	\$120,021,990
<i>Minimum Cash & Investments Overrides</i>										
Rev. Bond Debt Service	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
Reimbursement SDC Account	0	0	0	0	0	0	0	0	0	0
WiFiA Reserve	0	0	0	0	0	0	0	0	0	0
Check Beginning Fund Balances	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balances	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 12
Tualatin Valley Water District
2022-23 Financial Plan
Fund Summary – Cash & Investments

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
	0.88%	2.00%	2.00%	1.75%	1.50%	1.25%	1.00%	1.00%	1.00%	1.00%
Interest Rate on Fund Balance										
Sources of Funds										
Beginning Cash & Investments Balance	\$80,100,000	\$125,172,020	\$133,214,498	\$37,012,946	\$40,187,564	\$46,572,443	\$83,048,890	\$105,189,689	\$122,718,436	\$117,857,166
Total User Charges	77,782,363	84,469,704	97,840,213	109,196,519	120,281,733	125,280,374	130,472,991	135,839,784	141,356,789	147,024,465
Non-Rate Revenues										
Meter & Svc. Revenue	1,697,650	1,757,975	1,818,775	1,884,325	1,950,825	2,016,850	2,127,050	2,200,200	2,278,575	2,357,425
Special Service & Turn On Fees	1,950	2,009	2,069	2,131	2,195	2,261	2,328	2,398	2,470	2,544
Penalty Fees	12,075	12,437	12,810	13,195	13,591	13,998	14,418	14,851	15,296	15,755
Dispatch Fees	0	0	0	0	0	0	0	0	0	0
Miscellaneous Income	202,375	208,446	214,700	221,141	227,775	234,608	241,646	248,896	256,363	264,053
Plan Review	26,125	26,909	27,716	28,547	29,404	30,286	31,195	32,130	33,094	34,087
Contract Reimbursements	1,600,000	1,648,000	1,697,440	1,748,363	1,800,814	1,854,839	1,910,484	1,967,798	2,026,632	2,087,637
Inspection Fees	91,650	94,400	97,231	100,148	103,153	106,247	109,435	112,718	116,099	119,582
Backflow Program Reimbursement	403,625	415,734	428,206	441,052	454,283	467,912	481,949	496,408	511,300	526,639
Power Generation Station	25,075	25,827	26,602	27,400	28,222	29,076	29,963	30,882	31,834	32,819
Rental Property Income	65,125	67,079	69,091	71,164	73,299	75,498	77,763	80,096	82,498	84,973
Sales to Other Funds – Partner Share	1,423,109	1,538,764	1,667,769	1,853,704	2,058,345	2,275,716	2,500,043	2,731,043	2,968,308	3,212,006
COB Wheeling Revenue	1,082,935	922,129	762,684	591,383	407,606	210,704	217,025	223,536	230,242	237,149
Transfers In										
WIFIA Reserve to Cash & Investments	100,000,000	0	0	0	0	0	0	0	0	0
Interest Earnings - Cash & Investments	903,197	2,583,865	1,702,274	675,504	650,700	810,133	941,193	1,139,541	1,203,878	1,208,352
Total Sources of Funds	\$265,417,253	\$218,945,298	\$239,382,079	\$153,867,523	\$168,269,508	\$178,431,869	\$220,465,737	\$248,373,088	\$271,693,181	\$272,721,536
Uses of Funds										
Net O&M Expenditures	\$38,697,992	\$42,764,542	\$47,566,793	\$52,181,065	\$54,977,768	\$56,888,001	\$59,413,487	\$62,158,996	\$65,270,936	\$68,510,463
Capital Outlays from Budget	495,600	210,350	500,000	522,500	546,013	570,583	596,259	623,091	651,130	680,431
Transfers Out										
Cash & Investments to Construction Clearing Account										
Cash & Investments to Rev. Bond Debt Service	101,051,641	42,755,907	150,819,994	50,716,356	52,998,951	24,706,321	30,206,571	30,074,251	55,115,634	46,919,012
Cash & Investments to WIFIA Reserve	0	0	3,682,345	10,260,039	13,174,333	13,218,074	17,321,149	17,321,149	17,321,149	17,321,149
Transfers Out for Reserves	0	0	0	0	0	0	7,738,582	15,477,165	15,477,165	15,477,165
Ending Cash & Investments Balance	125,172,020	133,214,498	133,214,498	40,187,564	46,572,443	83,048,890	105,189,689	122,718,436	117,857,166	123,813,315
Total Uses of Funds	\$265,417,253	\$218,945,298	\$239,382,079	\$153,867,523	\$168,269,508	\$178,431,869	\$220,465,737	\$248,373,088	\$271,693,181	\$272,721,536
Minimum Fund Balance Assumptions	\$124,183,386	\$131,925,202	\$35,578,886	\$38,974,523	\$41,145,177	\$41,349,442	\$43,186,235	\$45,179,001	\$47,427,786	\$49,769,653
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 12
Tualatin Valley Water District
2022-23 Financial Plan
Fund Summary – Cash & Investments

	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Interest Rate on Fund Balance										
Sources of Funds										
Beginning Cash & Investments Balance	\$123,813,315	\$126,942,968	\$112,104,476	\$114,853,321	\$101,861,067	\$69,109,646	\$80,081,814	\$101,115,860	\$104,473,875	\$102,168,468
Total User Charges	152,843,060	158,812,596	164,932,864	171,203,412	177,415,352	183,624,889	190,051,760	196,703,572	203,888,197	210,713,784
Non-Rate Revenues										
Meter & Svc Revenue	2,441,500	2,525,575	2,615,350	2,705,600	2,800,600	2,901,300	3,002,475	3,108,875	3,215,750	3,327,850
Special Service & Turn On Fees	2,621	2,699	2,780	2,864	2,950	3,038	3,129	3,223	3,320	3,419
Penalty Fees	16,228	16,715	17,216	17,733	18,265	18,812	19,377	19,958	20,557	21,174
Dispatch Fees	0	0	0	0	0	0	0	0	0	0
Miscellaneous Income	271,975	280,134	288,538	297,195	306,110	315,294	324,752	334,495	344,530	354,866
Plan Review	35,110	36,163	37,248	38,365	39,516	40,702	41,923	43,181	44,476	45,810
Contract Reimbursements	2,150,266	2,214,774	2,281,217	2,349,654	2,420,144	2,493,748	2,567,530	2,644,556	2,723,893	2,805,610
Inspection Fees	123,170	126,865	130,671	134,591	138,629	142,788	147,071	151,483	156,028	160,709
Backflow Program Reimbursement	542,438	558,711	575,473	592,737	610,519	628,835	647,700	667,131	687,145	707,759
Power Generation Station	0	0	0	0	0	0	0	0	0	0
Rental Property Income	87,523	90,148	92,853	95,638	98,507	101,463	104,507	107,642	110,871	114,197
Sales to Other Funds – Partner Share	942,283	984,685	1,028,996	1,075,301	1,123,690	1,174,256	1,227,097	1,282,317	1,340,021	1,400,322
COB Wheeling Revenue	244,264	251,592	259,139	266,914	274,921	283,169	291,664	300,414	309,426	318,709
Transfers In										
WIFIA Reserve to Cash & Investments	0	0	0	0	0	0	0	0	0	0
Interest Earnings - Cash & Investments	1,253,781	1,195,237	1,134,789	1,083,572	854,854	745,957	905,988	1,027,949	1,033,212	1,058,824
Total Sources of Funds	\$284,767,533	\$294,038,864	\$285,501,611	\$294,716,896	\$287,965,123	\$261,582,895	\$279,416,788	\$307,510,655	\$318,051,299	\$323,201,500
Uses of Funds										
Net O&M Expenditures	\$71,642,354	\$74,902,588	\$78,295,440	\$82,413,114	\$85,499,850	\$89,337,935	\$93,349,080	\$97,540,225	\$101,919,360	\$106,495,838
Capital Outlays from Budget	711,050	743,048	776,485	811,427	847,941	886,098	925,972	967,641	1,011,185	1,056,688
Transfers Out										
Cash & Investments to Construction Clearing Account	52,672,847	73,490,437	58,778,051	76,832,974	99,709,373	58,478,734	51,227,561	71,730,600	80,153,972	73,294,275
Cash & Investments to Rev. Bond Debt Service	17,321,149	17,321,150	17,321,149	17,321,149	17,321,149	17,321,149	17,321,149	17,321,149	17,321,149	17,321,149
Cash & Investments to WIFIA Reserve	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165
Transfers Out for Reserves										
Ending Cash & Investments Balance	126,942,968	112,104,476	114,853,321	101,861,067	69,109,646	80,081,814	101,115,860	104,473,875	102,168,468	109,596,385
Total Uses of Funds	\$284,767,533	\$294,038,864	\$285,501,611	\$294,716,896	\$287,965,123	\$261,582,895	\$279,416,788	\$307,510,655	\$318,051,299	\$323,201,500
Minimum Fund Balance Assumptions	\$52,042,794	\$54,409,602	\$56,873,264	\$59,839,670	\$62,106,527	\$64,894,878	\$67,808,940	\$70,853,792	\$74,035,243	\$77,360,053
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 12
Tualatin Valley Water District
2022-23 Financial Plan
Fund Summary – Cash & Investments

	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Interest Rate on Fund Balance	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Sources of Funds										
Beginning Cash & Investments Balance	\$109,596,385	\$137,408,477	\$145,979,100	\$174,827,675	\$174,037,765	\$118,730,877	\$105,997,019	\$124,568,792	\$145,686,989	\$121,928,242
Total User Charges	218,088,766	225,721,873	233,022,139	241,798,914	249,674,535	257,164,771	264,879,715	272,826,106	281,010,889	289,441,216
Non-Rate Revenues	3,445,650	3,563,925	3,687,900	3,816,625	3,951,525	4,091,175	4,232,250	4,383,300	4,534,825	3,812,825
Meter & Svc Revenue	3,522	3,628	3,736	3,848	3,964	4,083	4,205	4,332	4,461	4,595
Special Service & Turn On Fees	21,809	22,463	23,137	23,831	24,546	25,282	26,041	26,822	27,627	28,456
Penalty Fees	0	0	0	0	0	0	0	0	0	0
Dispatch Fees	365,512	376,477	387,771	399,405	411,387	423,728	436,440	449,533	463,019	476,910
Miscellaneous Income	47,185	48,600	50,058	51,560	53,107	54,700	56,341	58,031	59,772	61,565
Plan Review	2,889,778	2,976,471	3,065,765	3,157,738	3,252,471	3,350,045	3,450,546	3,554,062	3,660,684	3,770,505
Contract Reimbursements	165,530	170,496	175,611	180,879	186,306	191,955	197,652	203,381	209,689	215,979
Inspection Fees	728,592	750,861	773,387	796,589	820,487	845,101	870,454	896,568	923,465	951,169
Backflow Program Reimbursement	0	0	0	0	0	0	0	0	0	0
Power Generation Station	117,623	121,152	124,786	128,530	132,386	136,357	140,448	144,661	149,001	153,471
Rental Property Income	1,463,336	1,529,186	1,598,000	1,669,910	1,743,056	1,823,583	1,905,645	1,991,399	2,081,011	2,174,657
Sales to Other Funds – Partner Share	328,270	338,118	348,262	358,710	369,471	380,555	391,972	403,731	415,843	428,318
COB Wheeling Revenue	0	0	0	0	0	0	0	0	0	0
Transfers In	1,235,024	1,416,938	1,604,034	1,744,327	1,463,843	1,123,639	1,152,829	1,351,279	1,338,076	1,352,470
WIFIA Reserve to Cash & Investments	0	0	0	0	0	0	0	0	0	0
Interest Earnings - Cash & Investments	\$338,497,382	\$374,448,666	\$391,443,687	\$428,958,540	\$436,126,847	\$388,345,793	\$383,741,556	\$410,862,197	\$440,565,352	\$424,800,378
Total Sources of Funds	\$111,277,694	\$116,275,059	\$121,496,579	\$127,779,434	\$132,653,959	\$138,611,262	\$144,836,944	\$151,341,826	\$158,126,271	\$165,215,703
Capital Outlays from Budget	1,104,239	1,153,930	1,205,857	1,260,121	1,316,826	1,376,083	1,438,007	1,502,717	1,570,340	1,641,005
Transfers Out	55,908,657	78,242,263	61,115,262	99,082,906	150,626,871	109,563,115	80,099,500	79,532,350	126,142,186	76,579,555
Cash & Investments to Construction Clearing Account	17,321,149	17,321,149	17,321,149	17,321,149	17,321,149	17,321,149	17,321,149	17,321,149	17,321,149	17,321,149
Cash & Investments to Rev. Bond Debt Service	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165
Cash & Investments to WIFIA Reserve	137,408,477	145,979,100	174,827,675	174,037,765	118,730,877	105,997,019	124,568,792	145,686,989	121,928,242	148,565,802
Transfers Out for Reserves	\$338,497,382	\$374,448,666	\$391,443,687	\$428,958,540	\$436,126,847	\$388,345,793	\$383,741,556	\$410,862,197	\$440,565,352	\$424,800,378
Ending Cash & Investments Balance	\$80,834,093	\$84,464,688	\$88,258,162	\$92,788,348	\$96,364,132	\$100,692,212	\$105,215,263	\$109,941,196	\$114,870,784	\$120,021,990
Total Uses of Funds	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Minimum Fund Balance Assumptions	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 13
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summary – Bond Proceeds

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Interest Rate on Fund Balance	0.88%	2.00%	2.00%	1.75%	1.50%	1.25%	1.00%	1.00%	1.00%	1.00%
Sources of Funds										
Beginning Bond Proceeds Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bond Proceeds	0	0	137,510,000	106,795,000	0	0	0	0	0	0
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$0	\$0	\$137,510,000	\$106,795,000	\$0	\$0	\$0	\$0	\$0	\$0
Uses of Funds										
Issuance Costs	\$0	\$0	\$1,031,325	\$800,963	\$0	\$0	\$0	\$0	\$0	\$0
STD Retirement	0	0	0	0	0	0	0	0	0	0
Transfers Out										
Bond Proceeds to Rev. Bond Debt Service	\$0	\$0	\$9,918,038	\$7,578,072	\$0	\$0	\$0	\$0	\$0	\$0
Bond Proceeds to Construction Clearing Account	0	0	126,560,637	98,415,965	0	0	0	0	0	0
Use of Prior Bond Proceeds for CIP										
Ending Bond Proceeds Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$0	\$0	\$137,510,000	\$106,795,000	\$0	\$0	\$0	\$0	\$0	\$0
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 13
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summary – Bond Proceeds

	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
Interest Rate on Fund Balance	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Sources of Funds										
Beginning Bond Proceeds Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bond Proceeds	0	0	0	0	0	0	0	0	0	0
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Uses of Funds										
Issuance Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
STD Retirement	0	0	0	0	0	0	0	0	0	0
Transfers Out										
Bond Proceeds to Rev. Bond Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bond Proceeds to Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Use of Prior Bond Proceeds for CIP	0	0	0	0	0	0	0	0	0	0
Ending Bond Proceeds Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 13
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summary – Bond Proceeds

	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Interest Rate on Fund Balance	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Sources of Funds										
Beginning Bond Proceeds Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bond Proceeds	0	0	0	0	0	0	0	0	0	0
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Uses of Funds										
Issuance Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
STD Retirement	0	0	0	0	0	0	0	0	0	0
Transfers Out										
Bond Proceeds to Rev. Bond Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bond Proceeds to Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Use of Prior Bond Proceeds for CIP	0	0	0	0	0	0	0	0	0	0
Ending Bond Proceeds Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TVWD Forecast Model Summary

Table 14
 Tualatin Valley Water District
 2022-23 Financial Plan
Fund Summary – Rev. Bond Debt Service

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Interest Rate on Fund Balance	0.88%	2.00%	2.00%	1.75%	1.50%	1.25%	1.00%	1.00%	1.00%	1.00%
Sources of Funds										
Beginning Rev. Bond Debt Service Balance	\$0	\$0	\$0	\$9,918,039	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111
Transfers In										
Cash & Investments to Rev. Bond Debt Service	\$0	\$3,682,345	\$3,682,345	\$10,260,039	\$13,174,333	\$13,218,074	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149
Bond Proceeds to Rev. Bond Debt Service	0	0	9,918,038	7,578,072	0	0	0	0	0	0
Interest Earnings	0	0	99,180	239,874	262,442	218,701	174,961	174,961	174,961	174,961
Total Sources of Funds	\$0	\$3,682,345	\$13,699,564	\$27,996,023	\$30,932,886	\$30,932,886	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221
Uses of Funds										
Total Debt Service	\$0	\$3,781,525	\$3,781,525	\$10,499,913	\$13,436,775	\$13,436,775	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
Ending Rev. Bond Debt Service Balance	0	0	9,918,039	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111
Total Uses of Funds	\$0	\$3,781,525	\$13,699,564	\$27,996,023	\$30,932,886	\$30,932,886	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221
Minimum Fund Balance Assumptions	\$0	\$0	\$9,918,038	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 14
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summary – Rev. Bond Debt Service

	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
Interest Rate on Fund Balance	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Sources of Funds										
Beginning Rev. Bond Debt Service Balance	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111
Transfers In										
Cash & Investments to Rev. Bond Debt Service	\$17,321,149	\$17,321,150	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149
Bond Proceeds to Rev. Bond Debt Service	0	0	0	0	0	0	0	0	0	0
Interest Earnings	174,961	174,961	174,961	174,961	174,961	174,961	174,961	174,961	174,961	174,961
Total Sources of Funds	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221
Uses of Funds										
Total Debt Service	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
Ending Rev. Bond Debt Service Balance	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111
Total Uses of Funds	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221
Minimum Fund Balance Assumptions	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 14
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summary – Rev. Bond Debt Service

	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Interest Rate on Fund Balance	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Sources of Funds										
Beginning Rev. Bond Debt Service Balance	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111	\$17,496,111
Transfers In										
Cash & Investments to Rev. Bond Debt Service	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149	\$17,321,149
Bond Proceeds to Rev. Bond Debt Service	0	0	0	0	0	0	0	0	0	0
Interest Earnings	174,961	174,961	174,961	174,961	174,961	174,961	174,961	174,961	174,961	174,961
Total Sources of Funds	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221
Uses of Funds										
Total Debt Service	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
Ending Rev. Bond Debt Service Balance	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111	17,496,111
Total Uses of Funds	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221	\$34,992,221
Minimum Fund Balance Assumptions	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 15
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summary – Construction Clearing Account

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
	0.88%	2.00%	2.00%	1.75%	1.50%	1.25%	1.00%	1.00%	1.00%	1.00%
Interest Rate on Fund Balance										
Sources of Funds										
Beginning Construction Clearing Account Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfers In	\$101,051,641	\$42,755,907	\$150,819,994	\$50,716,356	\$52,998,951	\$24,706,321	\$30,206,571	\$30,074,251	\$55,115,634	\$46,919,012
Cash & Investments to Construction Clearing Account	0	0	126,860,637	98,415,965	0	0	0	0	0	0
Bond Proceeds to Construction Clearing Account	916,548	872,334	872,992	873,328	873,328	846,255	817,749	4,111,616	3,947,152	3,774,464
Reimbursement SDC Account to Construction Clearing Account	3,867,228	3,680,675	3,683,453	3,684,870	3,684,870	3,570,639	3,450,365	0	0	0
WIEA Reserve to Construction Clearing Account	0	257,500,000	30,248,990	0	0	0	0	0	0	0
Short-Term Debt	0	0	0	0	0	0	0	0	0	0
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$105,835,417	\$304,808,916	\$312,186,066	\$153,690,519	\$57,557,149	\$29,123,214	\$34,474,685	\$34,185,867	\$59,062,786	\$50,693,476
Uses of Funds										
Capital Projects funded from Cash/Reserves	\$101,051,641	\$42,755,907	\$150,819,994	\$50,716,356	\$52,998,951	\$24,706,321	\$30,206,571	\$30,074,251	\$55,115,634	\$46,919,012
Projects funded from Debt Proceeds (incl fund Int.)	0	257,500,000	156,809,627	98,415,965	0	0	0	0	0	0
SDC-Funded Capital Projects	4,783,776	4,553,009	4,556,445	4,558,198	4,558,198	4,416,893	4,268,114	4,111,616	3,947,152	3,774,464
Ending Construction Clearing Account Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$105,835,417	\$304,808,916	\$312,186,066	\$153,690,519	\$57,557,149	\$29,123,214	\$34,474,685	\$34,185,867	\$59,062,786	\$50,693,476
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Total Capital Projects & Outlays	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 15
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summary – Construction Clearing Account

	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
Interest Rate on Fund Balance	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Sources of Funds										
Beginning Construction Clearing Account Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfers In	\$52,672,847	\$73,490,437	\$58,778,051	\$76,832,974	\$99,709,373	\$58,478,734	\$51,227,561	\$71,730,600	\$80,153,972	\$73,254,275
Cash & Investments to Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Bond Proceeds to Construction Clearing Account	3,593,290	3,403,359	3,204,393	2,996,107	2,778,209	2,550,396	2,312,359	2,063,780	1,804,333	1,533,683
Reimbursement SDC Account to Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Improvement SDC Account to Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
WIEFA Reserve to Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Short-Term Debt	0	0	0	0	0	0	0	0	0	0
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$56,266,137	\$76,893,796	\$61,982,444	\$79,829,081	\$102,487,582	\$61,029,130	\$53,539,920	\$73,794,380	\$81,958,306	\$74,787,958
Uses of Funds										
Capital Projects funded from Cash/Reserves	\$52,672,847	\$73,490,437	\$58,778,051	\$76,832,974	\$99,709,373	\$58,478,734	\$51,227,561	\$71,730,600	\$80,153,972	\$73,254,275
Projects funded from Debt Proceeds (incl fund Int.)	0	0	0	0	0	0	0	0	0	0
SDC-Funded Capital Projects	3,593,290	3,403,359	3,204,393	2,996,107	2,778,209	2,550,396	2,312,359	2,063,780	1,804,333	1,533,683
Ending Construction Clearing Account Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$56,266,137	\$76,893,796	\$61,982,444	\$79,829,081	\$102,487,582	\$61,029,130	\$53,539,920	\$73,794,380	\$81,958,306	\$74,787,958
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Total Capital Projects & Outlays	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 15
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summary – Construction Clearing Account

	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Interest Rate on Fund Balance	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Sources of Funds										
Beginning Construction Clearing Account Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfers In	\$55,908,657	\$78,242,263	\$61,115,262	\$93,082,906	\$150,626,871	\$109,563,115	\$80,099,500	\$79,532,350	\$126,142,186	\$76,579,555
Cash & Investments to Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Bond Proceeds to Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Reimbursement SDC Account to Construction Clearing Account	1,251,486	957,387	651,023	332,022	0	0	0	0	0	0
Improvement SDC Account to Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
WIFIA Reserve to Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Short-Term Debt	0	0	0	0	0	0	0	0	0	0
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$57,160,142	\$79,199,650	\$61,766,285	\$93,414,928	\$150,626,871	\$109,563,115	\$80,099,500	\$79,532,350	\$126,142,186	\$76,579,555
Uses of Funds										
Capital Projects funded from Cash/Reserves	\$55,908,657	\$78,242,263	\$61,115,262	\$93,082,906	\$150,626,871	\$109,563,115	\$80,099,500	\$79,532,350	\$126,142,186	\$76,579,555
Projects funded from Debt Proceeds (incl fund Int.)	0	0	0	0	0	0	0	0	0	0
SDC-Funded Capital Projects	1,251,486	957,387	651,023	332,022	0	0	0	0	0	0
Ending Construction Clearing Account Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$57,160,142	\$79,199,650	\$61,766,285	\$93,414,928	\$150,626,871	\$109,563,115	\$80,099,500	\$79,532,350	\$126,142,186	\$76,579,555
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Total Capital Projects & Outlays	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 16
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summaries – SDC Accounts

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Interest Rate on Account Balances	0.88%	2.00%	2.00%	1.75%	1.50%	1.25%	1.00%	1.00%	1.00%	1.00%
Fund Summary – Reimbursement SDC Account										
Sources of Funds										
Beginning Reimbursement SDC Account Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reimbursement Fee Receipts	916,548	872,334	872,992	873,328	873,328	846,255	817,749	4,111,616	3,947,152	3,774,464
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$916,548	\$872,334	\$872,992	\$873,328	\$873,328	\$846,255	\$817,749	\$4,111,616	\$3,947,152	\$3,774,464
Uses of Funds										
Transfers Out										
Reimbursement SDC Account to Construction Clearing Account	\$916,548	\$872,334	\$872,992	\$873,328	\$873,328	\$846,255	\$817,749	\$4,111,616	\$3,947,152	\$3,774,464
Ending Reimbursement SDC Account Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$916,548	\$872,334	\$872,992	\$873,328	\$873,328	\$846,255	\$817,749	\$4,111,616	\$3,947,152	\$3,774,464
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fund Summary – Improvement SDC Account										
Sources of Funds										
Beginning Improvement SDC Account Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Improvement Fee Receipts	3,867,228	3,680,675	3,683,453	3,684,870	3,684,870	3,570,639	3,450,365	0	0	0
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$3,867,228	\$3,680,675	\$3,683,453	\$3,684,870	\$3,684,870	\$3,570,639	\$3,450,365	\$0	\$0	\$0
Uses of Funds										
Transfers Out										
Improvement SDC Account to Construction Clearing Account	\$3,867,228	\$3,680,675	\$3,683,453	\$3,684,870	\$3,684,870	\$3,570,639	\$3,450,365	\$0	\$0	\$0
Ending Improvement SDC Account Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$3,867,228	\$3,680,675	\$3,683,453	\$3,684,870	\$3,684,870	\$3,570,639	\$3,450,365	\$0	\$0	\$0
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 16
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summaries – SDC Accounts

	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
Interest Rate on Account Balances	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Fund Summary – Reimbursement SDC Account										
Sources of Funds										
Beginning Reimbursement SDC Account Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reimbursement Fee Receipts	3,593,290	3,403,359	3,204,393	2,996,107	2,778,209	2,550,396	2,312,359	2,063,780	1,804,333	1,533,683
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$3,593,290	\$3,403,359	\$3,204,393	\$2,996,107	\$2,778,209	\$2,550,396	\$2,312,359	\$2,063,780	\$1,804,333	\$1,533,683
Uses of Funds										
Transfers Out										
Reimbursement SDC Account to Construction Clearing Account	\$3,593,290	\$3,403,359	\$3,204,393	\$2,996,107	\$2,778,209	\$2,550,396	\$2,312,359	\$2,063,780	\$1,804,333	\$1,533,683
Ending Reimbursement SDC Account Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$3,593,290	\$3,403,359	\$3,204,393	\$2,996,107	\$2,778,209	\$2,550,396	\$2,312,359	\$2,063,780	\$1,804,333	\$1,533,683
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fund Summary – Improvement SDC Account										
Sources of Funds										
Beginning Improvement SDC Account Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Improvement Fee Receipts	0	0	0	0	0	0	0	0	0	0
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Uses of Funds										
Transfers Out										
Improvement SDC Account to Construction Clearing Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ending Improvement SDC Account Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 16
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summaries – SDC Accounts

	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Interest Rate on Account Balances	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Fund Summary – Reimbursement SDC Account										
Sources of Funds										
Beginning Reimbursement SDC Account Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reimbursement Fee Receipts	1,251,486	957,387	651,023	332,022	0	0	0	0	0	0
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$1,251,486	\$957,387	\$651,023	\$332,022	\$0	\$0	\$0	\$0	\$0	\$0
Uses of Funds										
Transfers Out										
Reimbursement SDC Account to Construction Clearing Account	\$1,251,486	\$957,387	\$651,023	\$332,022	\$0	\$0	\$0	\$0	\$0	\$0
Ending Reimbursement SDC Account Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$1,251,486	\$957,387	\$651,023	\$332,022	\$0	\$0	\$0	\$0	\$0	\$0
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fund Summary – Improvement SDC Account										
Sources of Funds										
Beginning Improvement SDC Account Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Improvement Fee Receipts	0	0	0	0	0	0	0	0	0	0
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Uses of Funds										
Transfers Out										
Improvement SDC Account to Construction Clearing Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ending Improvement SDC Account Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TVWD Forecast Model Summary

Table 17
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summary – WIFIA Reserve

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
	0.88%	2.00%	2.00%	1.75%	1.50%	1.25%	1.00%	1.00%	1.00%	1.00%
Interest Rate on Fund Balance										
Sources of Funds										
Beginning WIFIA Reserve Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
WIFIA Proceeds	100,000,000	257,500,000	30,248,990	0	0	0	0	0	0	0
Transfers In										
Cash & Investments to WIFIA Reserve	\$0	\$0	\$0	\$0	\$0	\$0	\$7,738,582	\$15,477,165	\$15,477,165	\$15,477,165
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$100,000,000	\$257,500,000	\$30,248,990	\$0	\$0	\$0	\$7,738,582	\$15,477,165	\$15,477,165	\$15,477,165
Uses of Funds										
WIFIA Issuance Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
WIFIA Interest-only Payments	0	0	0	0	0	0	0	0	0	0
WIFIA Loan Repayments	0	0	0	0	0	0	7,738,582	15,477,165	15,477,165	15,477,165
Transfers Out										
WIFIA Reserve to Cash & Investments	\$100,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
WIFIA Reserve to Construction Clearing Account	0	257,500,000	30,248,990	0	0	0	0	0	0	0
Ending WIFIA Reserve Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$100,000,000	\$257,500,000	\$30,248,990	\$0	\$0	\$0	\$7,738,582	\$15,477,165	\$15,477,165	\$15,477,165
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 17
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summary – WIFIA Reserve

	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Interest Rate on Fund Balance										
Sources of Funds										
Beginning WIFIA Reserve Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
WIFIA Proceeds	0	0	0	0	0	0	0	0	0	0
Transfers In										
Cash & Investments to WIFIA Reserve	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165
Uses of Funds										
WIFIA Issuance Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
WIFIA Interest-only Payments	0	0	0	0	0	0	0	0	0	0
WIFIA Loan Repayments	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165
Transfers Out										
WIFIA Reserve to Cash & Investments	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
WIFIA Reserve to Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Ending WIFIA Reserve Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 17
 Tuolumne Valley Water District
 2022-23 Financial Plan
Fund Summary – WIFIA Reserve

	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Interest Rate on Fund Balance										
Sources of Funds										
Beginning WIFIA Reserve Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
WIFIA Proceeds	0	0	0	0	0	0	0	0	0	0
Transfers In										
Cash & Investments to WIFIA Reserve	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165
Interest Earnings	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165
Uses of Funds										
WIFIA Issuance Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
WIFIA Interest-only Payments	0	0	0	0	0	0	0	0	0	0
WIFIA Loan Repayments	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165
Transfers Out										
WIFIA Reserve to Cash & Investments	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
WIFIA Reserve to Construction Clearing Account	0	0	0	0	0	0	0	0	0	0
Ending WIFIA Reserve Balance	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165
Minimum Fund Balance Assumptions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Check Sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Check Ending Fund Balance	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 18
Tualatin Valley Water District
2022-23 Financial Plan
Sources and Uses Summary with Changes in Reserves by Fund

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Sources of Funds										
Water Sales	\$77,782,363	\$84,469,704	\$97,840,213	\$109,196,519	\$120,281,733	\$125,280,374	\$130,472,991	\$135,839,784	\$141,356,789	\$147,024,465
SDCs	4,783,776	4,553,009	4,556,445	4,558,198	4,558,198	4,416,893	4,268,114	4,111,616	3,947,152	3,774,464
Other Revenue	7,534,890	9,303,574	8,626,548	7,897,931	8,062,653	6,797,754	7,118,817	7,518,576	7,792,917	8,014,866
WIFIA Proceeds	100,000,000	257,500,000	30,248,990	0	0	0	0	0	0	0
Debt Proceeds	0	0	137,510,000	106,795,000	0	0	0	0	0	0
Reserves	0	0	0	0	0	0	0	0	0	0
Cash & Investments	0	0	96,201,552	0	0	0	0	0	4,861,269	0
Rev. Bond Debt Service	0	0	0	0	0	0	0	0	0	0
Improvement SDC Account	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$190,101,028	\$355,826,287	\$374,983,748	\$228,447,648	\$132,902,584	\$136,495,021	\$141,859,922	\$147,469,976	\$157,958,127	\$158,813,795
Uses of Funds										
Operating Exp.	\$27,378,092	\$29,614,842	\$34,494,500	\$37,744,678	\$39,055,656	\$42,329,612	\$44,111,660	\$46,082,133	\$48,392,905	\$50,805,047
Purchased Water & Pumping Power	11,319,900	13,149,700	14,103,618	15,237,349	15,922,112	14,558,389	15,301,826	16,076,863	16,878,031	17,705,417
Capital Outlay	106,331,017	305,019,266	312,686,066	154,213,019	58,103,162	29,693,797	35,070,944	34,808,958	59,713,916	51,373,907
Debt Service	0	0	3,781,525	10,499,913	13,436,775	13,436,775	25,234,693	32,973,275	32,973,275	32,973,275
Building Reserves	0	0	0	0	0	0	0	0	0	0
Cash & Investments	45,072,000	8,042,478	0	3,174,617	6,384,879	36,476,448	22,140,799	17,528,747	0	5,956,149
Rev. Bond Debt Service	0	0	9,918,039	7,578,072	0	0	0	0	0	0
Improvement SDC Account	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$190,101,028	\$355,826,287	\$374,983,748	\$228,447,648	\$132,902,584	\$136,495,021	\$141,859,922	\$147,469,976	\$157,958,127	\$158,813,795
Check sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 18
Tualatin Valley Water District
2022-23 Financial Plan
Sources and Uses Summary with Changes in Reserves by Fund

	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041
Sources of Funds										
Water Sales	\$152,843,060	\$158,812,596	\$164,932,864	\$171,203,412	\$177,415,352	\$183,624,889	\$190,051,760	\$196,703,572	\$203,588,197	\$210,713,784
SDCs	3,593,290	3,403,359	3,204,393	2,996,407	2,778,209	2,550,396	2,312,359	2,063,780	1,804,333	1,533,683
Other Revenue	8,286,119	8,458,261	8,639,232	8,835,124	8,863,665	9,023,322	9,458,175	9,866,184	10,164,189	10,494,210
WIFIA Proceeds	0	0	0	0	0	0	0	0	0	0
Debt Proceeds	0	0	0	0	0	0	0	0	0	0
Reserves	0	0	0	0	0	0	0	0	0	0
Cash & Investments	0	14,838,492	0	12,992,253	32,751,422	0	0	0	2,305,407	0
Rev. Bond Debt Service	0	0	0	0	0	0	0	0	0	0
Improvement SDC Account	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$164,722,469	\$185,512,707	\$176,776,489	\$196,026,897	\$221,808,648	\$195,198,607	\$201,822,294	\$208,633,536	\$217,862,126	\$222,741,677
Uses of Funds										
Operating Exp.	\$53,083,308	\$55,463,712	\$57,950,646	\$61,136,502	\$63,265,790	\$66,103,343	\$69,068,931	\$72,167,469	\$75,404,830	\$78,788,155
Purchased Water & Pumping Power	18,559,046	19,438,876	20,344,794	21,276,612	22,234,060	23,234,592	24,280,149	25,372,756	26,514,530	27,707,684
Capital Outlay	56,977,187	77,636,843	62,758,929	80,640,508	103,335,523	61,915,228	54,465,892	74,762,021	82,969,491	75,804,647
Debt Service	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275
Building Reserves	0	0	0	0	0	0	0	0	0	0
Cash & Investments	3,129,653	0	2,748,844	0	0	10,972,168	21,034,046	3,358,015	0	7,427,917
Rev. Bond Debt Service	0	0	0	0	0	0	0	0	0	0
Improvement SDC Account	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$164,722,469	\$185,512,707	\$176,776,489	\$196,026,897	\$221,808,648	\$195,198,607	\$201,822,294	\$208,633,536	\$217,862,126	\$222,741,677
Check sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 18
Tualatin Valley Water District
2022-23 Financial Plan
Sources and Uses Summary with Changes in Reserves by Fund

	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	FY2051
Sources of Funds										
Water Sales	\$218,088,766	\$225,721,873	\$233,622,139	\$241,798,914	\$249,674,535	\$257,164,771	\$264,879,715	\$272,826,106	\$281,010,889	\$289,441,216
SDCs	1,251,486	957,387	651,023	332,022	0	0	0	0	0	0
Other Revenue	10,987,192	11,493,277	12,017,409	12,506,913	12,589,508	12,625,105	13,039,784	13,642,260	14,042,435	13,605,882
WIFIA Proceeds	0	0	0	0	0	0	0	0	0	0
Debt Proceeds	0	0	0	0	0	0	0	0	0	0
Reserves	0	0	0	0	0	0	0	0	0	0
Cash & Investments	0	0	0	789,910	55,306,888	12,733,858	0	0	23,758,747	0
Rev. Bond Debt Service	0	0	0	0	0	0	0	0	0	0
Improvement SDC Account	0	0	0	0	0	0	0	0	0	0
Total Sources of Funds	\$230,327,444	\$238,172,537	\$246,290,571	\$255,427,758	\$317,570,931	\$282,523,735	\$277,919,498	\$286,468,366	\$318,812,072	\$303,047,098
Uses of Funds										
Operating Exp.	\$82,323,165	\$86,017,576	\$89,877,509	\$94,737,506	\$98,125,145	\$102,528,650	\$107,130,615	\$111,938,713	\$116,950,017	\$122,186,517
Purchased Water & Pumping Power	28,954,529	30,257,483	31,619,070	33,041,928	34,528,815	36,082,611	37,706,329	39,403,114	41,176,254	43,029,185
Capital Outlay	58,264,382	80,353,580	62,972,142	94,675,048	151,943,697	110,939,198	81,537,507	81,035,067	127,712,526	78,220,560
Debt Service	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275
Building Reserves	0	0	0	0	0	0	0	0	0	0
Cash & Investments	27,812,093	8,570,622	28,848,575	0	0	0	18,571,772	21,118,198	0	26,637,560
Rev. Bond Debt Service	0	0	0	0	0	0	0	0	0	0
Improvement SDC Account	0	0	0	0	0	0	0	0	0	0
Total Uses of Funds	\$230,327,444	\$238,172,537	\$246,290,571	\$255,427,758	\$317,570,931	\$282,523,735	\$277,919,498	\$286,468,366	\$318,812,072	\$303,047,098
Check sources/Uses	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

TWWD Forecast Model Summary

Table 19
Tualatin Valley Water District
2022-23 Financial Plan
45-year Revenue Requirements Forecast

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
O&M Summary									
Fixed Expenses	\$39,562,443	\$43,125,295	\$48,459,051	\$53,104,351	\$56,067,499	\$52,266,873	\$54,574,692	\$57,093,600	\$59,969,638
Variable Costs									
JWC	2,595,300	2,999,500	2,961,243	3,231,582	3,412,079	6,739,115	7,042,375	7,359,282	7,690,450
Pumping Power	450,000	486,000	524,880	566,870	592,380	1,364,197	1,434,836	1,508,459	1,584,480
Total O&M	\$42,607,743	\$46,610,795	\$51,945,174	\$56,902,803	\$60,071,938	\$60,370,185	\$63,051,903	\$65,961,341	\$69,244,568
Less Capitalized OH & Outlays from O&M	\$3,909,751	\$3,846,233	\$4,378,381	\$4,721,738	\$5,094,190	\$3,482,184	\$3,638,416	\$3,802,345	\$3,973,632
Net O&M (A)	\$38,697,992	\$42,764,542	\$47,566,793	\$52,181,065	\$54,977,768	\$56,888,001	\$59,413,487	\$62,158,996	\$65,270,936
Debt Service from Rates (net of Debt Reserve Retirements)									
Future Revenue Bonds	\$0	\$0	\$3,781,525	\$10,499,913	\$13,436,775	\$13,436,775	\$17,496,110	\$17,496,110	\$17,496,110
WIFA	0	0	0	0	0	0	7,738,582	15,477,165	15,477,165
Total Debt Service (B)	\$0	\$0	\$3,781,525	\$10,499,913	\$13,436,775	\$13,436,775	\$25,234,693	\$32,973,275	\$32,973,275
Cash-Funded Capital Expenditures									
Capital Projects & Outlays from O&M	\$106,331,017	\$305,019,266	\$312,686,066	\$154,213,019	\$58,103,162	\$29,693,797	\$55,070,944	\$34,808,958	\$59,713,916
Less Debt Funding	0	(237,500,000)	(156,809,627)	(98,415,965)	0	0	0	0	0
CIP & Outlays from Cash/Reserves (C)	\$106,331,017	\$47,519,266	\$155,876,439	\$55,797,053	\$58,103,162	\$29,693,797	\$55,070,944	\$34,808,958	\$59,713,916
Total Requirements (A)+(B)+(C) (D)	\$145,029,009	\$90,283,808	\$207,224,758	\$118,478,031	\$126,517,705	\$100,018,573	\$119,719,123	\$129,941,230	\$157,958,127
Less Non-Rate Revenues and Reserves									
Meter & Svc Revenue	\$1,697,650	\$1,757,975	\$1,818,775	\$1,884,325	\$1,950,825	\$2,016,850	\$2,127,050	\$2,200,200	\$2,278,575
Non-Rate Revenue (net of related expenses)	4,934,043	4,961,733	5,006,318	5,098,228	5,198,686	3,752,069	3,875,613	4,003,874	4,136,503
SDC Funding for Capital	4,783,776	4,553,009	4,556,445	4,558,198	4,558,198	4,416,893	4,268,114	4,111,616	3,947,152
Funding from Reserves (incl. interest earnings)	903,197	2,583,865	98,003,007	915,378	913,142	1,028,835	1,116,154	1,314,502	6,239,108
Totals (E)	\$12,318,666	\$13,856,583	\$109,384,545	\$12,456,129	\$12,620,851	\$11,214,647	\$11,386,931	\$11,630,192	\$16,601,339
Net Revenue Requirements (D)-(E) (F)	\$132,710,343	\$76,427,226	\$97,840,213	\$106,021,902	\$113,896,854	\$88,803,926	\$108,332,192	\$118,311,037	\$141,356,789

TWWD Forecast Model Summary

Table 19
 Tualatin Valley Water District
 2022-23 Financial Plan
 45-year Revenue Requirements Forecast

	FY2031	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039
O&M Summary									
Fixed Expenses	\$62,964,282	\$65,840,636	\$68,835,114	\$71,951,665	\$75,782,161	\$78,570,504	\$82,096,769	\$85,782,061	\$89,632,690
Variable Costs									
JWC	8,036,520	8,398,163	8,776,081	9,171,004	9,583,700	10,014,966	10,465,640	10,936,593	11,428,740
Pumping Power	1,662,891	1,743,680	1,826,824	1,912,296	2,000,057	2,090,060	2,184,113	2,282,398	2,385,106
Total O&M	\$72,663,693	\$75,982,479	\$79,438,019	\$83,034,966	\$87,365,918	\$90,675,530	\$94,746,521	\$99,001,052	\$103,446,536
Less Capitalized OH & Outlays from O&M	\$4,153,230	\$4,340,125	\$4,535,431	\$4,739,525	\$4,952,804	\$5,175,680	\$5,408,586	\$5,651,972	\$5,906,311
Net O&M (A)	\$68,510,463	\$71,642,354	\$74,902,588	\$78,295,440	\$82,413,114	\$85,499,850	\$89,337,935	\$93,349,080	\$97,540,225
Debt Service from Rates (net of Debt Reserve Retirements)									
Future Revenue Bonds	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
WiFiA	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165
Total Debt Service (B)	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275
Cash-Funded Capital Expenditures									
Capital Projects & Outlays from O&M	\$51,373,907	\$56,977,187	\$77,636,843	\$62,758,929	\$80,640,508	\$103,335,523	\$61,915,228	\$54,465,892	\$74,762,021
Less Debt Funding	0	0	0	0	0	0	0	0	0
CIP & Outlays from Cash/Reserves (C)	\$51,373,907	\$56,977,187	\$77,636,843	\$62,758,929	\$80,640,508	\$103,335,523	\$61,915,228	\$54,465,892	\$74,762,021
Total Requirements (A)+(B)+(C)	\$152,857,646	\$161,592,816	\$185,512,707	\$174,027,645	\$196,026,897	\$221,808,648	\$184,226,439	\$180,788,248	\$205,275,521
Less Non-Rate Revenues and Reserves									
Meter & Svc Revenue	\$2,357,425	\$2,441,500	\$2,525,575	\$2,615,350	\$2,705,600	\$2,800,600	\$2,901,300	\$3,002,475	\$3,108,875
Non-Rate Revenue (net of related expenses)	4,274,127	4,415,877	4,562,487	4,714,132	4,870,991	5,033,250	5,201,103	5,374,750	5,554,399
SDC Funding for Capital	3,774,464	3,593,290	3,403,359	3,204,393	2,996,107	2,778,209	2,550,396	2,312,359	2,063,780
Funding from Reserves (incl. interest earnings)	1,383,314	1,428,743	1,620,860	1,309,750	14,250,787	33,781,237	920,918	1,080,949	1,202,910
Totals (E)	\$11,789,330	\$11,879,409	\$26,700,111	\$11,843,625	\$24,823,485	\$44,393,296	\$11,573,717	\$11,770,533	\$11,929,964
Net Revenue Requirements (D)-(E)	\$141,068,316	\$149,713,407	\$158,812,596	\$162,184,019	\$171,203,412	\$177,415,352	\$172,652,721	\$169,017,714	\$193,345,557

TVWD Forecast Model Summary

Table 19
Tualatin Valley Water District
2022-23 Financial Plan
45-year Revenue Requirements Forecast

	FY2040	FY2041	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048
O&M Summary									
Fixed Expenses	\$93,655,986	\$97,860,613	\$102,253,884	\$106,845,177	\$111,642,352	\$117,481,767	\$121,892,897	\$127,365,951	\$133,085,595
Variable Costs									
JWC	11,943,033	12,480,470	13,042,091	13,628,985	14,242,290	14,883,193	15,552,936	16,252,818	16,984,195
Pumping Power	2,492,435	2,604,595	2,721,802	2,844,283	2,972,275	3,106,028	3,245,799	3,391,860	3,544,494
Total O&M	\$108,091,455	\$112,945,678	\$118,017,776	\$123,318,445	\$128,856,917	\$135,470,988	\$140,691,632	\$147,010,630	\$153,614,284
Less Capitalized OH & Outlays from O&M	\$6,172,095	\$6,449,839	\$6,740,082	\$7,043,386	\$7,360,338	\$7,691,553	\$8,037,673	\$8,399,368	\$8,777,340
Net O&M (A)	\$101,919,360	\$106,495,838	\$111,277,694	\$116,275,059	\$121,496,579	\$127,779,434	\$132,653,959	\$138,611,262	\$144,836,944
Debt Service from Rates (net of Debt Reserve Retirements)									
Future Revenue Bonds	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
WiFiA	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165
Total Debt Service (B)	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275
Cash-Funded Capital Expenditures									
Capital Projects & Outlays from O&M	\$82,969,491	\$75,844,647	\$58,264,382	\$80,353,580	\$62,972,142	\$94,675,048	\$151,943,697	\$110,939,198	\$81,537,507
Less Debt Funding	0	0	0	0	0	0	0	0	0
CIP & Outlays from Cash/Reserves (C)	\$82,969,491	\$75,844,647	\$58,264,382	\$80,353,580	\$62,972,142	\$94,675,048	\$151,943,697	\$110,939,198	\$81,537,507
Total Requirements (A)+(B)+(C) (D)	\$217,862,126	\$215,313,760	\$202,515,351	\$229,601,914	\$217,441,996	\$255,427,758	\$317,570,931	\$282,523,735	\$259,347,726
Less Non-Rate Revenues and Reserves									
Meter & Svc Revenue	\$3,215,750	\$3,327,850	\$5,445,650	\$3,563,925	\$3,687,900	\$3,816,625	\$3,951,525	\$4,091,175	\$4,232,250
Non-Rate Revenue (net of related expenses)	5,740,266	5,932,574	6,131,556	6,337,453	6,550,514	6,771,000	6,999,179	7,235,330	7,479,743
SDC Funding for Capital	1,804,333	1,533,683	1,251,486	957,387	651,023	332,022	0	0	0
Funding from Reserves (incl. interest earnings)	3,513,579	1,233,785	1,409,985	1,591,899	1,778,995	2,709,198	56,945,692	14,032,459	1,327,790
Totals (E)	\$14,473,929	\$12,027,893	\$12,238,677	\$12,450,664	\$12,668,432	\$13,628,844	\$67,896,396	\$25,358,963	\$13,059,784
Net Revenue Requirements (D)-(E)	\$203,588,197	\$203,285,867	\$190,276,674	\$217,151,251	\$204,773,564	\$241,798,914	\$249,674,535	\$257,164,771	\$246,307,942

TVWD Forecast Model Summary

Table 19
Tualatin Valley Water District
2022-23 Financial Plan
45-year Revenue Requirements Forecast

	FY2049	FY2050	FY2051	FY2052	FY2053	FY2054	FY2055	FY2056	FY2057
O&M Summary									
Fixed Expenses	\$139,061,667	\$145,293,504	\$151,805,461	\$158,609,279	\$165,718,040	\$173,145,409	\$180,905,667	\$189,013,734	\$197,485,198
Variable Costs									
JWC	17,748,484	18,547,166	19,381,788	20,253,969	21,165,397	22,117,840	23,113,143	24,153,234	25,240,130
Pumping Power	3,703,996	3,870,676	4,044,856	4,226,875	4,417,084	4,615,853	4,823,566	5,040,627	5,267,455
Total O&M	\$160,514,147	\$167,711,345	\$175,232,105	\$183,090,123	\$191,300,521	\$199,879,102	\$208,842,376	\$218,207,595	\$227,992,783
Less Capitalized OH & Outlays from O&M	\$9,172,320	\$9,585,075	\$10,016,403	\$10,467,141	\$10,938,162	\$11,430,380	\$11,944,747	\$12,482,260	\$13,043,962
Net O&M (A)	\$151,341,826	\$158,126,271	\$165,215,703	\$172,622,982	\$180,362,359	\$188,448,722	\$196,897,630	\$205,725,335	\$214,948,821
Debt Service from Rates (net of Debt Reserve Retirements)									
Future Revenue Bonds	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
WiFiA	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165	15,477,165
Total Debt Service (B)	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275	\$32,973,275
Cash-Funded Capital Expenditures									
Capital Projects & Outlays from O&M	\$81,035,067	\$127,712,526	\$78,220,560	\$85,227,354	\$75,755,018	\$78,422,109	\$81,374,094	\$149,661,667	\$126,056,229
Less Debt Funding	0	0	0	0	0	0	0	0	0
CIP & Outlays from Cash/Reserves (C)	\$81,035,067	\$127,712,526	\$78,220,560	\$85,227,354	\$75,755,018	\$78,422,109	\$81,374,094	\$149,661,667	\$126,056,229
Total Requirements (A)+(B)+(C)	\$265,350,169	\$318,812,072	\$276,409,538	\$290,823,611	\$289,088,652	\$294,885,087	\$297,537,925	\$370,864,167	\$356,482,215
Less Non-Rate Revenues and Reserves									
Meter & Svc Revenue	\$4,383,300	\$4,534,825	\$5,812,825	\$5,205,776	\$2,695,377	\$2,266,240	\$1,905,427	\$1,602,059	\$1,346,992
Non-Rate Revenue (net of related expenses)	7,732,720	7,994,573	8,265,625	8,545,868	8,835,611	9,135,179	9,444,903	9,765,128	10,096,210
SDC Funding for Capital	0	0	0	381,389	389,016	396,797	404,733	412,827	421,084
Funding from Reserves (incl. interest earnings)	1,526,240	2,527,178	1,527,431	1,495,322	1,752,807	12,001,940	10,046,932	23,493,384	2,480,918
Totals (E)	\$13,642,260	\$37,801,182	\$13,605,882	\$13,626,354	\$13,672,812	\$23,800,155	\$21,801,994	\$35,273,398	\$14,345,204
Net Revenue Requirements (D)-(E)	\$251,707,908	\$281,010,889	\$262,803,656	\$277,197,256	\$275,415,840	\$271,084,932	\$275,735,931	\$335,590,769	\$342,137,011

TVWD Forecast Model Summary

Table 19
Tualatin Valley Water District
2022-23 Financial Plan
45-year Revenue Requirements Forecast

	FY2058	FY2059	FY2060	FY2061	FY2062	FY2063	FY2064	FY2065	FY2066
O&M Summary									
Fixed Expenses	\$206,336,347	\$215,584,196	\$225,246,527	\$235,341,916	\$245,889,772	\$256,910,375	\$268,424,911	\$280,455,520	\$293,025,331
Variable Costs									
JWC	26,375,936	27,562,853	28,803,181	30,099,324	31,453,794	32,869,215	34,348,329	35,894,004	37,509,234
Pumping Power	5,504,490	5,732,192	6,011,041	6,281,538	6,564,207	6,859,596	7,168,278	7,490,851	7,827,939
Total O&M	\$238,216,773	\$248,899,242	\$260,060,750	\$271,722,778	\$283,907,773	\$296,639,186	\$309,941,519	\$323,840,375	\$338,362,504
Less Capitalized OH & Outlays from O&M	\$13,630,940	\$14,244,333	\$14,885,328	\$15,555,167	\$16,255,150	\$16,986,632	\$17,751,030	\$18,549,827	\$19,384,569
Net O&M (A)	\$224,585,832	\$234,654,909	\$245,175,422	\$256,167,611	\$267,652,623	\$279,652,554	\$292,190,489	\$305,290,549	\$318,977,936
Debt Service from Rates (net of Debt Reserve Retirements)									
Future Revenue Bonds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
WIFA	15,477,165	15,477,165	15,477,165	15,477,165	0	0	0	0	0
Total Debt Service (B)	\$15,477,165	\$15,477,165	\$15,477,165	\$15,477,165	\$0	\$0	\$0	\$0	\$0
Cash-Funded Capital Expenditures									
Capital Projects & Outlays from O&M	\$109,438,581	\$95,254,674	\$96,612,121	\$100,133,047	\$103,802,510	\$114,326,586	\$110,946,068	\$118,711,082	\$242,670,321
Less Debt Funding	0	0	0	0	0	0	0	0	0
CIP & Outlays from Cash/Reserves (C)	\$109,438,581	\$95,254,674	\$96,612,121	\$100,133,047	\$103,802,510	\$114,326,586	\$110,946,068	\$118,711,082	\$242,670,321
Total Requirements (A)+(B)+(C)	\$349,501,578	\$345,386,747	\$357,264,708	\$371,777,822	\$371,455,133	\$393,979,140	\$403,136,556	\$424,001,630	\$561,648,256
Less Non-Rate Revenues and Reserves									
Meter & Svc Revenue	\$1,132,534	\$952,221	\$800,615	\$673,148	\$565,974	\$475,864	\$400,101	\$336,400	\$282,841
Non-Rate Revenue (net of related expenses)	10,438,518	10,792,431	11,158,343	11,536,662	11,927,807	12,332,214	12,750,332	13,182,626	13,629,577
SDC Funding for Capital	429,505	438,096	446,857	455,795	464,910	474,209	483,693	493,367	503,234
Funding from Reserves (incl. interest earnings)	2,599,465	2,882,151	3,239,462	3,582,190	3,975,207	4,382,545	4,760,564	5,121,252	5,462,244,131
Totals (E)	\$14,600,022	\$15,064,898	\$15,645,278	\$16,247,793	\$16,933,899	\$17,664,831	\$18,394,690	\$19,133,644	\$19,659,783
Net Revenue Requirements (D)-(E)	\$334,901,556	\$330,321,849	\$341,619,430	\$355,530,029	\$354,521,234	\$376,314,308	\$384,741,867	\$404,867,986	\$451,008,474

TWWD Forecast Model Summary

Table 20
 Tualatin Valley Water District
 2022-23 Financial Plan
 45-Year Rate Revenue, Coverage, and Reserves

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Rate Revenue Forecast									
Revenue Before Increase	\$72,442,859	\$78,695,132	\$94,884,574	\$105,895,255	\$118,166,944	\$123,077,803	\$128,179,128	\$133,451,567	\$138,871,576
Revenue from Increase(s)	3,284,265	5,774,572	2,955,640	3,305,264	2,114,789	2,202,571	2,293,863	2,388,218	2,485,213
FY2022 Favorable Variance from Budget	2,055,239								
Total Rate Revenue	\$77,782,363	\$84,469,704	\$97,840,213	\$109,196,519	\$120,281,733	\$125,280,374	\$130,472,991	\$135,839,784	\$141,356,789
Debt Service Coverage Summary									
Net Revenue (incl. SDCs & interest earnings)	\$51,403,037	\$55,561,744	\$63,456,413	\$69,471,583	\$77,924,816	\$79,607,020	\$82,446,435	\$85,310,980	\$87,825,922
Debt Service	0	0	3,781,525	10,495,913	13,436,775	13,436,775	25,234,693	32,973,275	32,973,275
Debt Service Coverage	0.00	0.00	16.78	6.62	5.80	5.92	3.27	2.59	2.66
Cash & Investments Summary									
Beginning Fund Balance	\$80,100,000	\$125,172,020	\$133,214,498	\$37,012,947	\$40,187,564	\$46,572,443	\$83,048,891	\$105,189,689	\$122,718,436
Change in Cash Balance (net of interest earnings)	45,072,020	8,042,478	(96,201,552)	3,174,617	6,384,879	36,476,448	22,140,799	17,528,747	(4,861,269)
Ending Cash Balance	\$125,172,020	\$133,214,498	\$37,012,947	\$40,187,564	\$46,572,443	\$83,048,891	\$105,189,689	\$122,718,436	\$117,857,167
Debt Service Reserve	\$0	\$0	\$9,918,038	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
Total Year-End Reserves	\$125,172,020	\$133,214,498	\$46,930,985	\$57,683,675	\$64,068,554	\$100,545,001	\$122,685,800	\$140,214,547	\$135,353,277
Min. Ending Cash Balance	\$124,183,386	\$131,925,202	\$35,578,886	\$38,974,523	\$41,145,177	\$41,349,442	\$43,186,235	\$45,179,001	\$47,427,786

TWWD Forecast Model Summary

Table 20
 Tualatin Valley Water District
 2022-23 Financial Plan
 45-Year Rate Revenue, Coverage, and Reserves

	FY2031	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039
Rate Revenue Forecast									
Revenue Before Increase	\$144,439,608	\$150,155,905	\$156,020,490	\$162,083,157	\$168,193,462	\$174,500,717	\$180,608,242	\$186,929,530	\$193,472,064
Revenue from Increase(s)	2,584,857	2,687,154	2,792,106	2,898,707	3,009,950	2,914,635	3,016,647	3,122,230	3,231,508
FY2022 Favorable Variance from Budget									
Total Rate Revenue	\$147,024,465	\$152,843,060	\$158,812,596	\$164,982,864	\$171,203,412	\$177,415,352	\$183,624,889	\$190,051,760	\$196,703,572
Debt Service Coverage Summary									
Net Revenue (incl. SDCs & interest earnings)	\$90,303,331	\$93,080,115	\$95,771,627	\$98,481,049	\$100,621,529	\$103,557,376	\$105,860,671	\$108,473,214	\$111,093,311
Debt Service	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275
Debt Service Coverage	2.74	2.82	2.90	2.99	3.05	3.14	3.21	3.29	3.37
Cash & Investments Summary									
Beginning Fund Balance	\$117,857,167	\$123,813,316	\$126,942,968	\$112,104,477	\$114,853,321	\$101,861,068	\$69,109,646	\$80,081,814	\$101,115,860
Change in Cash Balance (net of interest earnings)	5,956,149	3,129,652	(14,838,492)	2,748,844	(12,992,253)	(32,751,422)	10,972,168	21,034,046	3,358,015
Ending Cash Balance	\$123,813,316	\$126,942,968	\$112,104,477	\$114,853,321	\$101,861,068	\$69,109,646	\$80,081,814	\$101,115,860	\$104,473,875
Debt Service Reserve	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
Total Year-End Reserves	\$141,309,426	\$144,439,079	\$129,600,587	\$132,349,432	\$119,357,178	\$86,605,756	\$97,577,925	\$118,611,971	\$121,969,985
Min. Ending Cash Balance	\$49,769,653	\$52,042,794	\$54,409,602	\$56,873,264	\$59,839,670	\$62,106,527	\$64,894,878	\$67,808,940	\$70,853,792

TWWD Forecast Model Summary

Table 20
 Tualatin Valley Water District
 2022-23 Financial Plan
 45-Year Rate Revenue, Coverage, and Reserves

	FY2040	FY2041	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048
Rate Revenue Forecast									
Revenue Before Increase	\$200,243,586	\$207,252,112	\$214,505,936	\$222,013,643	\$229,784,121	\$237,826,565	\$246,150,495	\$253,535,010	\$261,141,060
Revenue from Increase(s)	3,344,611	3,461,672	3,582,831	3,706,230	3,838,018	3,972,349	3,524,041	3,629,762	3,738,655
FY2022 Favorable Variance from Budget									
Total Rate Revenue	\$203,588,197	\$210,713,784	\$218,088,766	\$225,721,873	\$233,622,139	\$241,798,914	\$249,674,535	\$257,164,771	\$264,879,715
Debt Service Coverage Summary									
Net Revenue (incl. SDCs & interest earnings)	\$113,637,359	\$116,245,839	\$119,049,749	\$121,897,478	\$124,799,992	\$126,858,414	\$129,610,084	\$131,178,615	\$133,082,554
Debt Service	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275
Debt Service Coverage	3.45	3.53	3.61	3.70	3.78	3.85	3.93	3.98	4.04
Cash & Investments Summary									
Beginning Fund Balance	\$104,473,875	\$102,168,468	\$109,596,385	\$137,408,478	\$145,979,100	\$174,827,675	\$174,037,766	\$118,730,878	\$105,997,020
Change in Cash Balance (net of interest earnings)	(2,305,407)	7,427,917	27,812,093	8,370,622	28,848,575	(789,910)	(55,306,888)	(12,733,858)	18,571,772
Ending Cash Balance	\$102,168,468	\$109,596,385	\$137,408,478	\$145,979,100	\$174,827,675	\$174,037,766	\$118,730,878	\$105,997,020	\$124,568,792
Debt Service Reserve	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110
Total Year-End Reserves	\$119,664,579	\$127,092,496	\$154,904,588	\$163,475,211	\$192,323,786	\$191,533,876	\$136,226,988	\$123,493,130	\$142,064,902
Min. Ending Cash Balance	\$74,035,243	\$77,360,053	\$80,834,093	\$84,464,688	\$88,258,162	\$92,788,348	\$96,364,132	\$100,692,212	\$105,215,263

TWWD Forecast Model Summary

Table 20
 Tualatin Valley Water District
 2022-23 Financial Plan
 45-Year Rate Revenue, Coverage, and Reserves

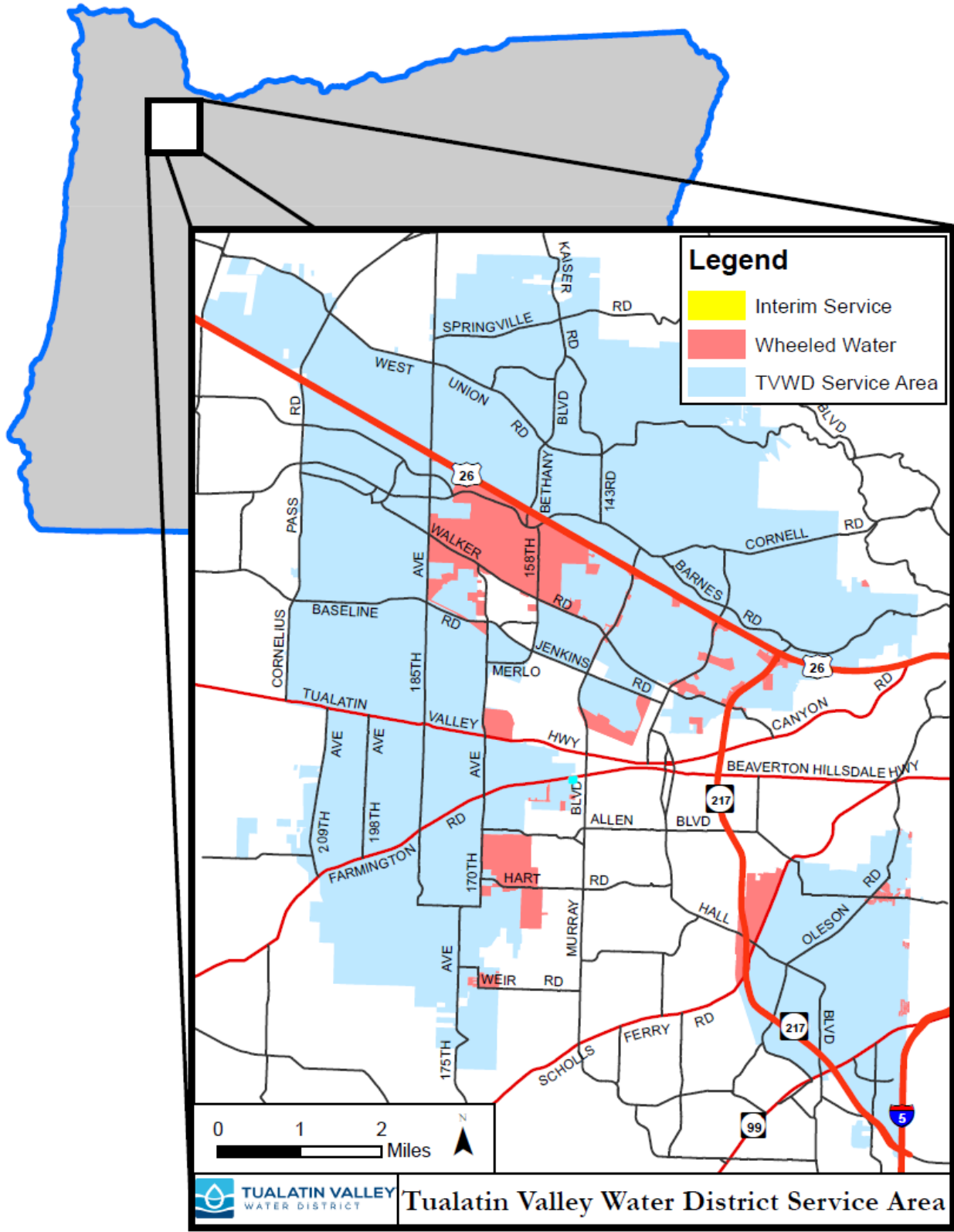
	FY2049	FY2050	FY2051	FY2052	FY2053	FY2054	FY2055	FY2056	FY2057
Rate Revenue Forecast									
Revenue Before Increase	\$268,975,292	\$277,044,550	\$285,355,887	\$293,916,564	\$302,734,060	\$311,816,082	\$321,170,565	\$330,805,682	\$340,729,852
Revenue from Increase(s)	3,850,814	3,966,339	4,085,329	4,207,889	4,334,126	4,464,149	4,598,074	4,736,016	4,878,096
FY2022 Favorable Variance from Budget									
Total Rate Revenue	\$272,826,106	\$281,010,889	\$289,441,216	\$298,124,452	\$307,068,186	\$316,280,232	\$325,768,639	\$335,541,698	\$345,607,949
Debt Service Coverage Summary									
Net Revenue (incl. SDCs & interest earnings)	\$135,126,540	\$136,927,054	\$137,831,395	\$137,634,503	\$138,625,832	\$139,629,725	\$140,626,071	\$141,596,377	\$142,523,413
Debt Service	32,973,275	32,973,275	32,973,275	32,973,275	32,973,275	28,014,256	19,266,201	15,477,165	15,477,165
Debt Service Coverage	4.10	4.15	4.18	4.17	4.20	4.98	7.30	9.15	9.21
Cash & Investments Summary									
Beginning Fund Balance	\$124,568,792	\$145,686,990	\$121,928,242	\$148,565,802	\$169,535,943	\$201,232,689	\$236,555,855	\$279,057,953	\$258,136,997
Change in Cash Balance (net of interest earnings)	21,118,198	(23,758,747)	26,637,560	20,970,140	31,696,746	35,323,166	42,502,098	(20,920,955)	3,521,673
Ending Cash Balance	\$145,686,990	\$121,928,242	\$148,565,802	\$169,535,943	\$201,232,689	\$236,555,855	\$279,057,953	\$258,136,997	\$261,658,670
Debt Service Reserve	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$17,496,110	\$7,578,072	\$0	\$0	\$0
Total Year-End Reserves	\$163,183,100	\$139,424,353	\$166,061,913	\$187,032,053	\$218,728,799	\$244,133,927	\$279,057,953	\$258,136,997	\$261,658,670
Min. Ending Cash Balance	\$109,941,196	\$114,870,784	\$120,021,990	\$125,404,194	\$131,027,754	\$136,903,494	\$143,042,724	\$149,457,257	\$156,159,440

TWWD Forecast Model Summary

Table 20
 Tualatin Valley Water District
 2022-23 Financial Plan
 45-year Rate Revenue, Coverage, and Reserves

	FY2058	FY2059	FY2060	FY2061	FY2062	FY2063	FY2064	FY2065	FY2066
Rate Revenue Forecast									
Revenue Before Increase	\$350,951,748	\$361,480,300	\$372,324,709	\$383,494,450	\$394,999,284	\$406,849,262	\$419,054,740	\$431,626,383	\$444,575,174
Revenue from Increase(s)	5,024,439	5,175,173	5,330,428	5,490,341	5,655,051	5,824,702	5,999,443	6,179,427	6,364,809
FY2022 Favorable Variance from Budget									
Total Rate Revenue	\$355,976,187	\$366,655,473	\$377,655,137	\$388,984,791	\$400,654,335	\$412,673,965	\$425,054,184	\$437,805,809	\$450,939,983
Debt Service Coverage Summary									
Net Revenue (incl. SDCs & interest earnings)	\$143,390,912	\$144,183,311	\$144,885,531	\$145,482,784	\$145,960,403	\$146,303,697	\$146,497,820	\$146,527,653	\$146,377,700
Debt Service	15,477,165	15,477,165	15,477,165	15,477,165	0	0	0	0	0
Debt Service Coverage	9.26	9.32	9.36	9.40	0.00	0.00	0.00	0.00	0.00
Cash & Investments Summary									
Beginning Fund Balance	\$261,658,670	\$282,785,756	\$319,173,613	\$355,265,392	\$388,778,128	\$434,971,167	\$471,392,795	\$511,769,184	\$544,773,251
Change in Cash Balance (net of interest earnings)	21,127,086	36,387,857	36,091,779	33,512,735	46,193,040	36,421,627	40,376,389	33,004,068	(91,401,334)
Ending Cash Balance	\$282,785,756	\$319,173,613	\$355,265,392	\$388,778,128	\$434,971,167	\$471,392,795	\$511,769,184	\$544,773,251	\$453,371,917
Debt Service Reserve	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Year-End Reserves	\$282,785,756	\$319,173,613	\$355,265,392	\$388,778,128	\$434,971,167	\$471,392,795	\$511,769,184	\$544,773,251	\$453,371,917
Min. Ending Cash Balance	\$163,162,173	\$170,478,933	\$178,123,801	\$186,111,492	\$194,457,379	\$203,177,524	\$212,288,712	\$221,808,476	\$231,755,140

H. Map – Tualatin Valley Water District (Washington County, Oregon)





TUALATIN VALLEY

WATER DISTRICT

This is the fourth publication in a biennial series of financial communication tools:

2021-2023 Financial Plan (Published May 2021)

2021-2023 Adopted Budget (Published June 2021)

Annual Comprehensive Financial Report for the fiscal years ended June 30, 2021 and 2020
(Published December 2021)

2022-23 Financial Plan (Published May 2022)

Annual Comprehensive Financial Report for the fiscal years ended June 30, 2022 and 2021
(Published December 2022)

1850 SW 170th Ave., Beaverton, OR 97003

Phone: (503) 848-3000

www.TVWD.org