FINAL

RATE SUFFICIENCY STUDY

BV PROJECT NO. 184678

PREPARED FOR

City of St. Louis, Missouri, Water Division

22 OCTOBER 2021

BLACK & VEATCH

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October 22, 2021

City of St. Louis, Missouri,
Water Division
Mr. Curtis B. Skouby, P.E.
1640 S. Kingshighway Blvd.
St. Louis, MO 63110-2285

Subject: Adequacy of Current Water Utility Revenues

Dear Mr. Skouby:

Enclosed for your consideration is Black & Veatch Corporation's (Black & Veatch) report, *Rate Sufficiency Report* dated October 18, 2021 (Report), concerning the sufficiency of current water utility rates for the City of St. Louis (City) Water Division (Water Division). This Report updates our November 2017 report.

Black & Veatch wishes to acknowledge the cooperation and assistance provided by Water Division staff during this engagement. We greatly appreciate this opportunity to be of service to the Water Division. If you have any questions about this Report, please call Ms. Pam Lemoine at (636) 536-5813.

Very truly yours,

Ann Bui
Managing Director
Black & Veatch Management Consulting, LLC

cc: Ms. Perla Burk, City of St. Louis Water Division
Ms. Diane Grossenheider, Project Mgmt/Commercial Mgmt, Black & Veatch Corporation
Ms. Pam Lemoine, Principal Consultant, Black & Veatch Management Consulting, LLC

Table of Contents

LIST OF TABLES

LIST OF FIGURES

Executive Summary

As discussed within this Report, Black & Veatch estimates the need for annual revenue increases in Fiscal Years (FY) 2023 through 2026 to provide sufficient funding for all operating and capital expenses and maintain required fund balances and debt service coverage. Important drivers of the projected revenue increase requirement include:

- **The historical and anticipated continued decline in metered water usage:** This trend continues to affect water utilities across the US and is also occurring in St. Louis. In addition, while the number of flat-rate accounts has also declined over the past several years, beginning in 2018, flat-rate accounts have remained stable. Black & Veatch anticipates that flat-rate customers will remain stable at the current level during the Study Period.
- **Increased capital spending in FY 2025 and FY 2026:** The Water Division's annual capital spending has remained low due to the lack of funding capacity. The Water Division projects increased spending in the latter years of the Study Period, allowing time to prepare for this important investment in the City's aging infrastructure.

Over the Study Period, Black & Veatch observes that while projected revenues under existing rates will continue to decline slightly, the Water Division's annual expenditures will increase over the same period. These projected increases in operating expenditures reflect general inflationary impact on utility costs and support the Water Division's activities in maintaining levels of service. In addition, the Water Division is projecting the need for certain important capital projects required to allow the utility to maintain itself as a sound, viable utility into the future. Under the City's current plan, these capital projects will be funded by a mix of revenue bonds, annual revenues (pay-as-you-go financing), and existing fund balances. In accordance with that plan, the City anticipates debt service payments on the anticipated revenue bond issuance beginning in FY 2025.

Based on our analyses of the data provided by the City and under the assumptions described in the Report, Black & Veatch presents the following findings:

1. Throughout the Study Period, Black & Veatch estimates that the Water Division's projected net revenues will be sufficient to meet projected obligations, contingent upon on enactment of 4.0% annual revenue increases in FY 2023, FY 2024, FY 2025, and FY 2026. We do not project the need for rate increases for FY 2022. As indicated in this Report, these increases are necessary for the Water Division to comply with the requirements outlined in the Master Indenture.
2. Implementation of the recommended series of 4.0% revenue increases should allow the Water Division to maintain its operating balance at or above 200 days of operating and maintenance expenses throughout the Study Period.
3. Under the assumptions described in detail in the Report, the series of 4.0% revenue increases should allow the Water Division to meet annual debt service coverage requirements with debt service coverage levels at or above 180% throughout the Study Period.
4. Based on the City's financing plan, the Water Division will need to issue approximately $25.4 million in revenue bonds in FY 2025 and FY 2026 to fund the Capital Improvement Program proposed by Water Division management.

As noted above, the findings outlined above is based on information provided by the City and Water Division not within the control of Black & Veatch. While it is believed that the information, data and opinions contained herein will be reliable under the conditions and subject to the limitations set forth in the Report, Black & Veatch does not guarantee the accuracy thereof. We have assumed that the information provided by others, both verbal and written, is complete and correct. The projections set forth in this Report are intended as "forward-looking statements." In formulating these projections, Black & Veatch has made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. While Black & Veatch believes the assumptions are reasonable actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that occur. As such, Black & Veatch does not take responsibility for the accuracy of data or projections provided by or prepared on behalf of the City and Water Division, nor does Black & Veatch have any responsibility for updating this Report for events occurring after the date of this Report.

Legal Notice

This Report was prepared for the City of St. Louis Water Division (City) by Black & Veatch and is based on information provided by the City not within the control of Black & Veatch. While it is believed that the information, data and opinions contained herein will be reliable under the conditions and subject to the limitations set forth in this Report, Black & Veatch does not guarantee the accuracy thereof. Black & Veatch has assumed that the information provided by others, both verbal and written, is complete and correct. The projections set forth in this report are intended as “forward-looking statements.” In formulating these projections, Black & Veatch has made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. While Black & Veatch believes the assumptions are reasonable, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that occur. As such, Black & Veatch does not take responsibility for the accuracy of data or projections provided by or prepared on behalf of the City, nor does Black & Veatch have any responsibility for updating this Report for events occurring after the date of this Report.

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1.0 Introduction

1.1 Purpose and Limitations

The City of St. Louis, Missouri (City), Water Division (Water Division) engaged Black & Veatch to conduct an analysis of the revenues and revenue requirements of the Water Division from July 1, 2019, through June 30, 2026 (Study Period), comprising the Water Division's Fiscal Years (FY) 2020-2026. The purpose of this report (Report) is to summarize the financial analyses' findings and provide recommendations regarding the sufficiency of the Water Division's water rate revenue compared to the requirements of the Master Indenture and other financial criteria outlined in the Report.[1]

1.2 Primary Assumptions

The following are primary assumptions used in the forecast of future expenses and revenues:

1. The City's estimates of content, scheduling, and cost of the six-year capital improvement program (CIP) present a reasonable projection of the future construction program.

2. City staff will recommend the indicated revenue increases to the Board of Aldermen in time for their stated implementation.

3. The Board of Aldermen will approve the indicated revenue increases and the issuance of the proposed new debt in FY 2025 and FY 2026 required to finance the CIP.

4. Debt service for the proposed revenue bonds will be approximately as estimated.

5. The City will provide a minimum operating reserve balance by the end of the Study Period that is equal to 200 days of operating expenditures.

6. There will be no significant changes in water sales from the projections shown herein.

7. There will be no material changes in federal and state laws or regulations that would adversely affect the City's ability to secure tax-exempt financing for its Water Division, place more stringent limitations on water quality, materially increase the cost of constructing or operating the water system, or otherwise adversely affect operating of the water system.

8. Local and regional economic conditions will remain relatively stable over the Study Period.

1

2.0 Revenue Adequacy Under Existing Rates

Table 1 presents a comparison summary of revenues under existing rates and revenue requirements. This summary table demonstrates the extent to which the City expects to comply with the rate covenants of the Master Indenture for FY 2020 through 2026 under current rates. While the Water Division has not had a rate increase since FY 2011, revenues remained sufficient to fund necessary revenue requirements and meet rate covenant requirements.

Under the current rate structure, the City projects to have sufficient adjusted net revenues in FY 2020-2024 to meet the debt service coverage requirement of 110% outlined in the Indenture of Trust, Series 2013 Water Revenue Refunding Bonds (Series 2013 Bonds). However, the analysis conducted herein shows that projected net revenues in FY 2025 and 2026 will not be sufficient to meet requirements outlined in the Indenture of Trust. The City must satisfy such requirements to issue revenue bonds in FY 2025 and FY 2026 to finance proposed capital improvement projects in FY 2025-2026.

As indicated by Table 1, annual debt service coverage is well above 110% in FY 2020 through 2024. However, with the City's planned debt issuance in FY 2025 and FY 2026, the Indenture of Trust requirements are not met without adopted revenue increases. To maintain its position to meet these coverage requirements over the long term and retain and/or improve the water utility's current bond rating, Black & Veatch recommends that the City establish a policy to maintain a minimum annual debt service coverage target of 180%.

While projected revenues should meet rate covenant debt service coverage requirements, without revenue increases in or before FY 2024, the Water Division's net annual operating fund balance will be negative each year of the Study Period. Furthermore, while the operating fund balance remains above the minimum 120 days of operation and maintenance expense each year of the Study Period, it drops precipitously over the Study Period with no rate increases. Such a decline over a short period results in a reduction in liquidity that could place the Water Division in an unstable financial position and result in deferral of operational and capital needs that will impact service levels.

While operating fund balances are available to absorb short-term annual revenue shortfalls, Black & Veatch recommends 4.0% revenue increases in each of the fiscal years 2023 through 2026. These increases should help the Water Division balance the need for adequate annual operating fund balance and maintain an operating fund balance above 200 days of operation and maintenance expenses. It also will allow the Water Division to meet debt service coverage requirements at or above 180%, as expected by rating agencies[2], while allowing sufficient funding for the capital projects included in the CIP and any unforeseen capital funding needs that may arise during the Study Period. The recommended revenues increases are critical for the financial stability and resiliency of the Water Division. Presented in the following pages of this Report is a detailed discussion of the methodology used for Table 1 and a similar table (Table 3) showing the effect of proposed revenue increases.

[2] Moody's Investor Service, Rating Methodology: US Municipal Utility Revenue Debt, October 19, 2017. Expected Annual Debt Service Coverage of 1.7x-2.0x for Aa rated utility. Expected Days Cash on Hand of 150-250 days for Aa rated utility, and 35-150 days for an "A" rated utility.

Table 1 Operating Flow of Funds under Existing Rates

Line No.		Year	Proposed Retail Rate Increase	Months Effective	2020	2021	2022	2023	2024	2025	2026
					$	$	$	$	$	$	$
	Water Sales Revenue at Existing Rates										
1	Retail (a)				45,534,000	45,493,000	45,452,000	45,411,000	45,370,000	45,329,000	45,288,000
2	Wholesale (b)				3,272,000	3,272,000	3,272,000	3,272,000	3,272,000	3,272,000	3,272,000
	Additional Retail Water Sales Revenue:										
3		2020	0.0%	0	0	0	0	0	0	0	0
4		2021	0.0%	12		0	0	0	0	0	0
5		2022	0.0%	12			0	0	0	0	0
6		2023	0.0%	12				0	0	0	0
7		2024	0.0%	12					0	0	0
8		2025	0.0%	12						0	0
9		2026	0.0%	12							0
10	Total Additional Water Sales Revenue				0	0	0	0	0	0	0
11	Total Water Sales Revenue				48,806,000	48,765,000	48,724,000	48,683,000	48,642,000	48,601,000	48,560,000
	Other Revenue										
12	Other Operating Revenue				2,629,000	2,629,000	2,629,000	2,629,000	2,629,000	2,629,000	2,629,000
13	Interest Income (c)				127,000	120,000	111,900	105,000	97,200	88,300	73,800
14	Net Other Nonoperating Revenues (d)				627,000	627,000	627,000	627,000	627,000	627,000	627,000
15	Total Revenue				52,189,000	52,141,000	52,091,900	52,044,000	51,995,200	51,945,300	51,889,800
16	**Operation and Maintenance Expense (e)**				45,907,000	44,280,000	45,173,000	45,978,000	46,687,000	47,408,000	48,147,000
17	**Gross Receipts Tax (f)**				3,124,000	3,121,000	3,119,000	3,116,000	3,114,000	3,111,000	3,109,000
18	Net Revenue				3,158,000	4,740,000	3,799,900	2,950,000	2,194,200	1,426,300	633,800
	Debt Service Deposits (g)										
19	Existing				594,000	593,900	594,600	594,100	594,500	593,600	594,500
20	Proposed				0	0	0	0	0	976,300	2,929,000
21	Total Debt Service Deposits				594,000	593,900	594,600	594,100	594,500	1,569,900	3,523,500
22	**Routine Annual Improvements**				0	0	0	0	0	0	0
23	**Transfer from Ordinance Funds**				0	0	0	0	0	0	0
24	**Transfer to Construction Funds**				3,630,000	7,607,000	5,000,000	5,000,000	4,000,000	4,000,000	4,000,000
25	Net Annual Balance				(1,066,000)	(3,460,900)	(1,794,700)	(2,644,100)	(2,400,300)	(4,143,600)	(6,889,700)
26	Balance Available at Beginning of Year				40,475,000	39,409,000	35,948,100	34,153,400	31,509,300	29,109,000	24,965,400
27	Balance Available at End of Year				39,409,000	35,948,100	34,153,400	31,509,300	29,109,000	24,965,400	18,075,700
28	Debt Service Payments (h)				594,000	593,900	594,600	594,100	594,500	1,569,900	3,523,500
29	Debt Service Coverage (i)				532%	798%	639%	497%	369%	91%	18%
30	Days Cash				313	296	276	250	228	192	137

(a) Includes net revenue from metered and flat rate customers. Revenue is projected to decrease at an average annual rate of -0.2 percent per year for metered customers and 0.0 percent for flat rate customers.

(b) Revenue increases for the wholesale customers is proportional to expected growth and increases in O&M expense.

(c) Interest income is based on the average balance of funds available for investment and an average annual interest rate of 0.3 percent. Also includes interest earned on the Bond and Interest Account.

(d) Includes net miscellaneous nonoperating revenue and interest expense on consumer deposits.

(e) Excludes depreciation expense.

(f) Equal to 6.0 percent of gross operating revenue.

(g) Deposits to the Bond and Interest Account.

(h) Actual payments to the bondholders.

(i) Net revenue (Line 18) divided by debt service payments made to bondholders (Line 28).

3.0 Revenues and Revenue Requirements

3.1 Revenue

Revenue for the Water Division comes principally from charges for treated water service, which includes flat-rate water sales, metered water sales, and wholesale water service. Historically, metered water sales were the largest source of water revenue for the City, but beginning in 2009, flat rate water sales exceeded metered water sales. This trend is likely due partly to declining water usage for metered water customers, affecting utilities across the country.

The revenue projection graph in Figure 1 shows the change in revenue due to usage changes and various rate increases in FY 2010 and 2011 and the projection under the existing rates as of July 2019 for FY 2020 through 2026.

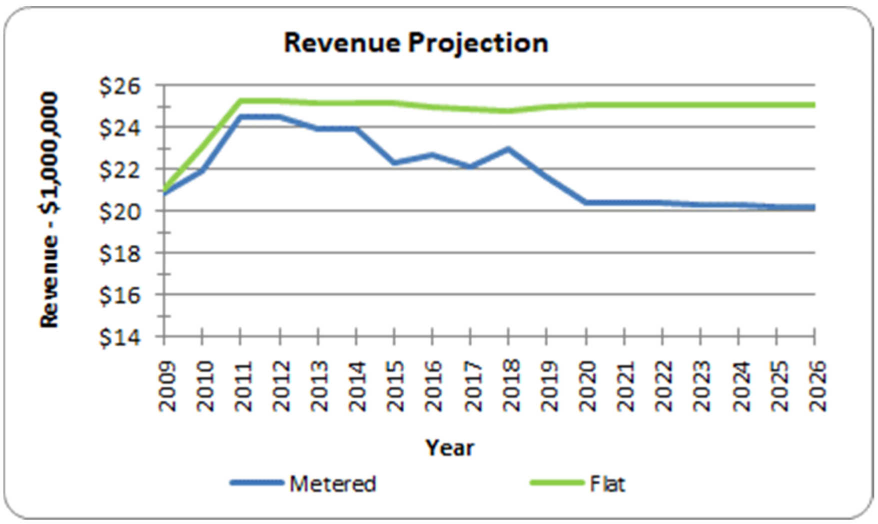

Figure 1 Projected Flat-Rate and Metered Water Sales (Existing Rates)

Black & Veatch projects revenue from wholesale customers to remain constant at FY 2020 levels over the study period. Wholesale customer usage increased sharply in FY 2012, largely because of a significant drought in the region, which caused wholesale customers to turn to the City for a larger portion of their source of supply than they traditionally had obtained. The result was a 41% increase in wholesale revenue for 2012. Wholesale revenues decreased sharply in FY 2013 and remained steady in FY 2014 and FY 2015. In FY 2016, wholesale revenues increased substantially due to increased sales to Public Water Supply District #2 of St. Charles Co. Overall, wholesale water sales volume in FY 2017 was 23% lower than in FY 2016. Since FY 2017, wholesale revenue has declined each year, stabilizing at approximately $3.2 million in FY 2019.

Projected metered and flat rate retail water sales revenues are based on past revenues received, along with observed trends in billed water sales volumes and customer accounts from historical customer billing information. Using this information, projected water revenue from metered customers is projected to decrease approximately 0.2% per year, and projected water revenue from flat-rate customers is projected to remain steady at current levels.

The last water rate increase of 12.0% occurred in FY 2011. Figure 2 shows a history of the retail water rate increases enacted by the City since 2010. As indicated in Figure 2, the City has not adjusted water rates regularly, with no revenue adjustment for the past nine years.

Historical Rate Increases		
Fiscal Year	Increase	Cumulative Increase
2010	11.0%	11.0%
2011	12.0%	24.3%
2012	0.0%	24.3%
2013	0.0%	24.3%
2014	0.0%	24.3%
2015	0.0%	24.3%
2016	0.0%	24.3%
2017	0.0%	24.3%
2018	0.0%	24.3%
2019	0.0%	24.3%
2020	0.0%	24.3%

Figure 2 Historical Water Rate Increases

3.2 Revenue Requirements

The revenue required to provide for the continued operation of the Water Division adequately must be sufficient to meet the cash requirements for system operation. Revenue requirements include: (1) operating and maintenance expense; (2) gross receipts taxes paid to the City; (3) debt service (consisting of principal and interest payments) on existing and proposed bonds and projected state of Missouri Department of Natural Resources low-interest loan program; and (4) expenditures for routine and major capital improvements met from annual revenues. Projections of the cash requirements to meet these system expenditures for the Study Period are developed in this section.

3.2.1 Operation and Maintenance Expense

The elements of operation and maintenance expense for the Water Division include the annual expense associated with supply and purification, transmission and distribution, power and pumping, administrative and general, and customer accounting. These cost categories include salaries and wages, materials and supplies, support services, and other services. Some of the categories include additional costs for chemicals, purchased power, and the cost of service line maintenance. Actual audited costs recorded for FY 2019 and 2020 were used in this analysis. Projections for FY 2021 through 2026 are based on actual FY 2019 and FY 2020 costs, with assumed inflation allowances ranging between 1.0% and 3.0% per year based on the expenditure category. The result of these projections is an average increase in total operating and maintenance expenses of approximately 2% per year over the Study Period.

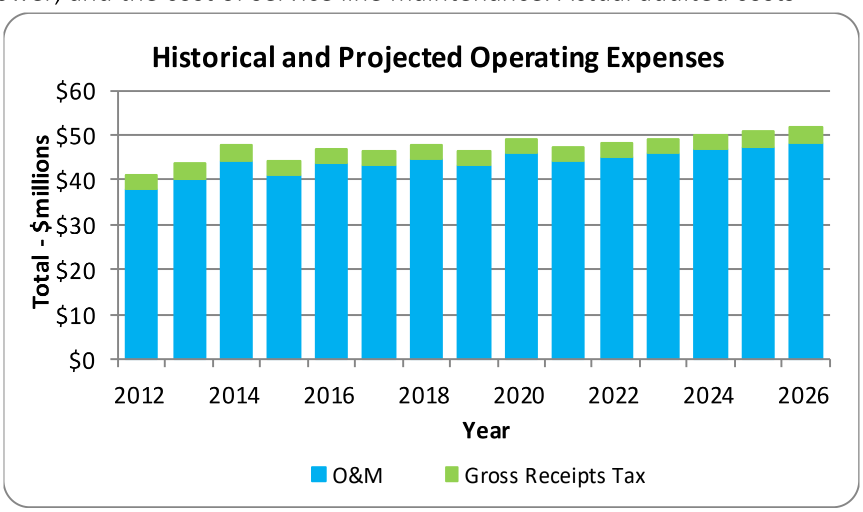

Figure 3 Historical Operating Expenses

Operation and maintenance expense also includes costs for other City department services, the additional year-end adjustment for expenses incurred due to the Collector of Revenue and the cost of community services. Total operating and maintenance expense is projected to increase from $45.9 million in FY 2020 to approximately $48.1 million in FY 2026, as shown in Figure 3.

3.2.2 Gross Receipts Tax

Gross receipts tax payable by the Water Division is equal to 6% of gross water revenue. An additional 4.0% gross receipts tax, which is shown as a separate line item on each water bill, is paid directly to the City's General Fund and does not affect the rate design process of the Water Division. Gross water revenue equals total retail water sales revenue, wholesale water sales revenue, interest income, and all other operating and non-operating revenue. Based on projected revenues with no revenue increases over the Study Period, gross receipts tax payments are projected to be approximately $3.1 million each year. Figure 3 shows the projection of total operating expenses, consisting of total operation and maintenance expenses and gross receipts tax payments based on projected revenues with proposed rate increases as depicted in Table 3.

3.2.3 Routine Annual Improvements

Expenditures for routine annual capital improvements include those costs that tend to be routinely incurred each year for ongoing improvements or repairs as well as normal replacements such as vehicles and office equipment. Since the costs of these improvements are a continuing expense to be met each year, the Water Division appropriately finances these expenditures from current water revenues. These expenditures are originally recorded as operating and maintenance expenses but are capitalized each year and deducted from the Water Division's annual operation and maintenance expenses. Routine annual improvements are projected to remain at about $4.0 million throughout the Study Period.

3.2.4 Major Capital Improvements

Figure 4 summarizes the proposed major capital improvements from FY 2020 through 2026, as prepared by Water Division. The total cost of improvements included in the proposed financing plan is currently estimated to be $108.6 million. Major projects include distribution and transmission main replacement and improvements ($77.0 million), miscellaneous plant improvements ($28.0 million), and other capital expenditures ($3.6 million). Water Division staff has determined that these capital projects are needed to improve operations, provide system redundancy and replace aging infrastructure.

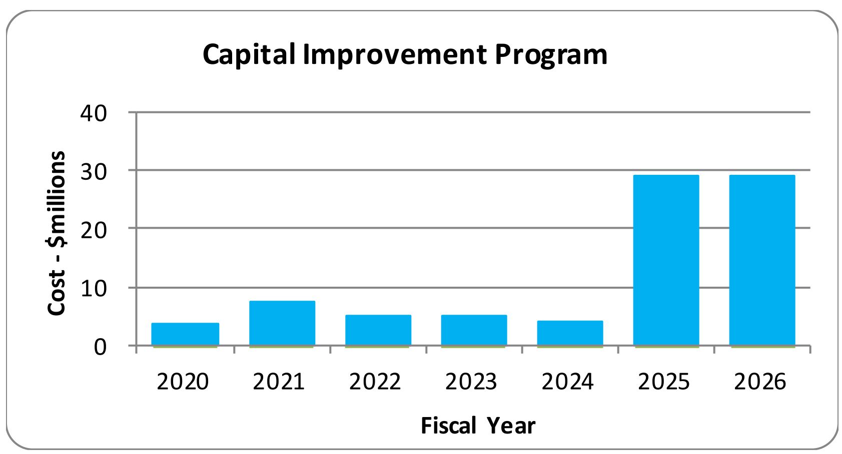

Figure 4 Capital Improvement Program Costs

3.2.5 Major Capital Improvement Financing

Table 2 presents the proposed CIP financing plan proposed by the City and summarizes the projected source and application of funds over the Study Period. This plan anticipates that proposed capital improvements will be financed from a combination of available funds on hand, annual operating revenues resulting from additional rate increases, revenue bonds, and interest income.

The beginning of year balances for FY 2020, as shown in Table 2, is based on audited financial statements. The unencumbered balance available at the beginning of FY 2020 was $3.2 million. This balance includes monies held in the Water Ordinances, Water Bond Ordinance, and Unappropriated Construction Funds accounts. Total cash financing of major capital improvements from annual revenues is anticipated to total $33.2 million for the Study Period. Interest income is projected to provide approximately $70,400 during the Study Period and is determined based on the average beginning and ending fund balances shown on Lines 1 and 13 of Table 2 and an average annual interest rate of 0.3% per year. Revenue bond issues of $25.4 million in FY 2025 and FY 2026 are shown on Line 5 of Table 2. These bonds are expected to finance approximately 60% of the total CIP costs.

Table 2 Capital Flow of Funds

Line No.		2020	2021	2022	2023	2024	2025	2026	Total 2020 - 2026
		$	$	$	$	$	$	$	
	Source of Funds								
1	Beginning of Year Balance	3,205,000	3,214,900	3,224,800	3,234,800	3,244,800	3,254,800	3,352,300	
2	Cash Financing of Improvements	3,630,000	7,607,000	5,000,000	5,000,000	4,000,000	4,000,000	4,000,000	33,237,000
3	DNR Loan	0	0	0	0	0	0	0	0
4	Interest Income	9,900	9,900	10,000	10,000	10,000	10,100	10,400	70,300
5	Proposed Revenue Bonds	0	0	0	0	0	25,400,000	25,400,000	50,800,000
6	Total	6,844,900	10,831,800	8,234,800	8,244,800	7,254,800	32,664,900	32,762,700	84,107,300
	Application of Funds								
7	Major Capital Improvements	3,630,000	7,607,000	5,000,000	5,000,000	4,000,000	29,000,000	29,000,000	83,237,000
8	Revenue Bond Issuance Cost	0	0	0	0	0	254,000	254,000	508,000
9	DNR Loan Issuance Cost	0	0	0	0	0	0	0	0
10	Purchase of Surety Bond	0	0	0	0	0	58,600	58,600	117,200
11	Transfers Out	0	0	0	0	0			0
12	Total	3,630,000	7,607,000	5,000,000	5,000,000	4,000,000	29,312,600	29,312,600	83,862,200
13	**End of Year Balance**	3,214,900	3,224,800	3,234,800	3,244,800	3,254,800	3,352,300	3,450,100	

The application of funds shows that $83.2 million total CIP expenditures are expected for FY 2020 through 2026. Lines 8, 9, and 10 of Table 2 allow for costs typically associated with the issuance of revenue bonds. The costs to issue the proposed revenue bonds in FY 2025 and FY 2026 are estimated to total $508,500 during the Study Period. Based on discussions with the City, this estimate assumes issuance costs equal 1.0% of the principal amounts borrowed. In addition, this assumes that the City would purchase a surety bond for each bond issuance, which the City has estimated will cost approximately 3.0% of the expected maximum debt service payment for each revenue bond issue. Although surety bonds are assumed for this analysis, it is not intended to preclude the option of satisfying a debt reserve requirement by establishing a debt service reserve fund should the City find this to be a more preferable option. The City should consult with its financial advisor to determine the most preferable option.

3.2.6 Debt Service Requirements

The Water Division currently has one outstanding loan, the Series 2013 loan from the Missouri Department of Natural Resources (DNR), with an initial principal amount of $9.5 million. Two new revenue bonds are projected to be issued within the Study Period, with Series 2025 revenue bonds assumed to be issued on January 1, 2025, and Series 2026 revenue bonds assumed to be issued on January 1, 2026. This analysis reflects projected annual debt service requirements on the proposed revenue bonds, assuming equal annual principal and interest payments with 20-year maturities and an average annual interest rate of 4.5%. Annual debt service on the DNR loan and projected future revenue bond issuance is expected to increase annual debt service requirements from $0.6 million in FY 2020 to $3.5 million in FY 2026.

3.2.7 Operating Reserve

The operating reserve is a cash balance maintained in the Operating Fund to accommodate annual revenues and expenditures fluctuations. Black & Veatch recommends that the Water Division establish a policy to require a <u>minimum</u> operating reserve is set equal to 200 days or approximately 55% of annual operation and maintenance expense. This operating reserve level is is consistent with the median operating reserve level recommended by rating agencies.

3.3 Summary of Revenue and Revenue Requirements

A pro forma cash flow statement showing projected revenues and revenue requirements for the Water Division during FY 2020 through 2026 is presented in Table 3. Water revenues must be at least sufficient to finance the costs of operation and maintenance, gross receipts taxes, routine annual capital improvements, and debt service costs on existing and future revenue bonds and loans while maintaining adequate operating reserves and complying with all applicable revenue bond coverage requirements. Annual revenue can also be used to provide cash financing of major capital improvements.

Lines 1 and 2 of Table 3 show actual and projected revenue under existing rates attributable to the respective retail and wholesale customers. Lines 3 through 9 show projected increases in retail water sales revenues assumed to be in effect for the number of months indicated for each fiscal year. Rate increases are projected for FY 2023 through 2026 to meet projected revenue requirements, maintain the operating reserve, and provide the recommended debt service coverage of 180% to enable the Water Division to issue additional revenue bonds for the planned capital improvement projects. These annual revenue increases are necessary to comply with the requirements set forth in the City's Water Revenue Bond Indenture of Trust. They are also designed to maintain a minimum balance in the Operating Fund at least equal to a 200-day operating reserve. The indicated revenue increases are calculated to be the minimum increases required by the Water Division to meet its policy targets of 180% DSC and 200 days of operating reserve.

As indicated on Line 3 through 9 of Table 3, 4.0% increases are projected to be effective at the beginning of each fiscal year 2023 through 2026, effective July 1 of each fiscal year. Such revenue increases are proposed to produce the additional revenue required to pay additional debt service on the new bonds, provide adequate debt service coverage, cash finance a portion of the capital improvement program, maintain the available fund balances at their desired levels, and lessen the effect on future revenue increases. Such rate increases will also allow for a reserve fund balance that could be used for any unanticipated capital project or emergency that could arise during the Study Period.

Other operating revenue available for the Water Division is projected to remain constant at $2.6 million over the Study Period. Interest income earned on available funds is shown on Line 13 of Table 3. The interest income shown in Table 2 is not included in Line 13 of Table 3 because such construction-related interest earnings are not available for debt service coverage. Projected interest income amounts are based on a 0.3% annual interest rate applied to average beginning and end of year fund balances. Funds available for this interest calculation include the Waterworks Revenue Fund, Waterworks Operation and Maintenance Account, Water Replacement and Improvement Account, and the Water Contingent Account, which comprise the amounts shown in Lines 26 and 27 of Table 3. Interest income includes amounts earned on monies deposited and retained by the Bond and Interest Account during each year and any residual interest earned on the Water Bond Reserve Fund. Other non-operating revenue is shown on Line 14 and consists of miscellaneous non-operating revenue and the interest expense on customer deposits in excess of non-operating expenditures. Total Water Division revenue is shown on Line 15 of Table 3.

Operation and maintenance expense and gross receipts tax payments are shown on Lines 16 and 17 of Table 3. The projected gross receipts tax payments are greater than those shown in Table 1 due to the proposed retail revenue increases. Line 18 shows the net revenue remaining after deducting operating and maintenance expenses and gross receipts tax from total revenue. This net revenue is available for debt service coverage and other purposes.

Debt service requirements on existing revenue bonds reflect the annual debt service due and are shown on Line 19 of Table 3. Additional revenue bonds are expected to be issued in FY 2025 and FY 2026 to help finance the CIP. As indicated on Lines 21 of Table 3, the debt service requirement on this future debt issuance is projected to increase from $0 in FY 2020 to approximately $2.9 million by FY 2026.

The costs for routine annual improvements, transfer from Ordinance Funds, and the funds available to cash finance part of the CIP are shown on Lines 22, 23, and 24, respectively, in Table 3. The net annual balance shown on Line 25 of Table 3 is equal to net revenue (Line 18) less total debt service (Line 21), less routine annual improvements (Line 22), plus transfers from Ordinance Funds (Line 23), and less cash financing of major capital improvements (Line 24). Balances indicated for the combined fund balances included in Table 3 are shown on Lines 26 and 27. The beginning of year balance for FY 2020 matches the balance reported by the Water Division for the combined funds for FY 2020.

Debt service coverage is reported on Line 29 of Table 3. Debt service coverage equals net revenue (Line 18) divided by total revenue bond principal and interest payments made to the bondholders (Line 28). The Indenture of Trust requires that the City maintain an annual debt service coverage ratio of at least 110%. Under the proposed revenue adjustments, this targeted level is exceeded in each year of the Study Period, as shown on Line 29. Black & Veatch recommends that the City target a future coverage level of at least 180%. A target of this nature provides the City with an operational cushion in the event of small performance variances. Moreover, the increased debt service coverage provides the City with additional monies for its CIP, thereby helping to manage debt reliance. Debt service coverage of at least 180% is consistent with rating agencies' expectations for AA-rated bonds.

(This spacing is intentional)

Table 3 Operating Flow of Funds under Proposed Rates

Line No.				2020	2021	2022	2023	2024	2025	2026
				$	$	$	$	$	$	$
	Water Sales Revenue at Existing Rates									
1	Retail (a)			45,534,000	45,493,000	45,452,000	45,411,000	45,370,000	45,329,000	45,288,000
2	Wholesale (b)			3,272,000	3,272,000	3,272,000	3,272,000	3,272,000	3,272,000	3,272,000
	Additional Retail Water Sales Revenue:									
	Year	Proposed Retail Rate Increase	Months Effective							
3	2020	0.0%	0	0	0	0	0	0	0	0
4	2021	0.0%	12		0	0	0	0	0	0
5	2022	0.0%	12			0	0	0	0	0
6	2023	4.0%	12				1,667,100	1,814,800	1,813,200	1,811,500
7	2024	4.0%	12					1,732,300	1,730,700	1,729,100
8	2025	4.0%	12						1,794,200	1,621,400
9	2026	4.0%	12							1,852,100
10	Total Additional Water Sales Revenue			0	0	0	1,667,100	3,547,100	5,338,100	7,014,100
11	Total Water Sales Revenue			48,806,000	48,765,000	48,724,000	50,350,100	52,189,100	53,939,100	55,574,100
	Other Revenue									
12	Other Operating Revenue			2,629,000	2,629,000	2,629,000	2,629,000	2,629,000	2,629,000	2,629,000
13	Interest Income (c)			127,000	120,000	111,900	107,400	107,200	111,300	114,800
14	Net Other Nonoperating Revenues (d)			627,000	627,000	627,000	627,000	627,000	627,000	627,000
15	Total Revenue			52,189,000	52,141,000	52,091,900	53,713,500	55,552,300	57,306,400	58,944,900
16	**Operation and Maintenance Expense (e)**			45,907,000	44,280,000	45,173,000	45,978,000	46,687,000	47,408,000	48,147,000
17	**Gross Receipts Tax (f)**			3,124,000	3,121,000	3,119,000	3,216,000	3,327,000	3,432,000	3,530,000
18	Net Revenue			3,158,000	4,740,000	3,799,900	4,519,500	5,538,300	6,466,400	7,267,900
	Debt Service Deposits (g)									
19	Existing			594,000	593,900	594,600	594,100	594,500	593,600	594,500
20	Proposed			0	0	0	0	0	976,300	2,929,000
21	Total Debt Service Deposits			594,000	593,900	594,600	594,100	594,500	1,569,900	3,523,500
22	**Routine Annual Improvements**			0	0	0	0	0	0	0
23	**Transfer from Ordinance Funds**			0	0	0	0	0	0	0
24	**Transfer to Construction Funds**			3,630,000	7,607,000	5,000,000	5,000,000	4,000,000	4,000,000	4,000,000
25	Net Annual Balance			(1,066,000)	(3,460,900)	(1,794,700)	(1,074,600)	943,800	896,500	(255,600)
26	Balance Available at Beginning of Year			40,475,000	39,409,000	35,948,100	34,153,400	33,078,800	34,022,600	34,919,100
27	Balance Available at End of Year			39,409,000	35,948,100	34,153,400	33,078,800	34,022,600	34,919,100	34,663,500
28	Debt Service Payments (h)			594,000	593,900	594,600	594,100	594,500	1,569,900	3,523,500
29	Debt Service Coverage (i)			532%	798%	639%	761%	932%	412%	206%
30	Days Cash			313	296	276	263	266	269	263

(a) Includes net revenue from metered and flat rate customers. Revenue is projected to decrease at an average annual rate of -0.2 percent per year for metered customers and 0.0 percent for flat rate customers.
(b) Revenue increases for the wholesale customers is proportional to expected growth and increases in O&M expense.
(c) Interest income is based on the average balance of funds available for investment and an average annual interest rate of 0.3 percent. Also includes interest earned on the Bond and Interest Account.
(d) Includes net miscellaneous nonoperating revenue and interest expense on consumer deposits.
(e) Excludes depreciation expense.
(f) Equal to 6.0 percent of gross operating revenue.
(g) Deposits to the Bond and Interest Account.
(h) Actual payments to the bondholders.
(i) Net revenue (Line 18) divided by debt service payments made to bondholders (Line 28).

4.0 Rate Sufficiency

The results of the financial analysis based on the current rates, as provided in Table 1, show that under the assumptions stated in the Report the current rates do not generate sufficient revenue to meet the requirements of the Indenture of Trust and other financial criteria, including maintaining a reserve equal to 200 days of operation and maintenance expenses. The current revenues produce negative net annual balances, resulting in the Water Division's reserves drawdown.

The proposed revenue increases should provide sufficient revenues to meet the requirements of the Indenture of Trust and other financial criteria under the assumptions outlined in this Report. As previously stated, the increases indicated in this Report are calculated to be the minimum required by the Water Division. Table 1 shows a significant depletion of fund balances available over the Study Period, indicating that revenue increases are required. The proposed revenue increases presented in Table 3 should allow the Water Division to maintain a strong financial condition over the Study Period.