

Village of Oswego

Water & Sewer Rate Study

Revised September 2024

BAXTER & WOODMAN
Consulting Engineers

Village of Oswego, Illinois Water and Sewer Rate Study

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LIST OF ABBREVIATIONS

AMR	-	automatic meter reading
AWWA	-	American Water Works Association
CDWM	-	Chicago Department of Water Management
CIP	-	capital improvement plan
CMAP	-	Chicago Metropolitan Agency for Planning
CPI	-	consumer price index
DWC	-	DuPage Water Commission
ft	-	feet
ft ²	-	square feet
ft ³	-	cubic feet
FY	-	Fiscal Year
GFOA	-	Government Finance Officers Association
GIS	-	Geographic Information System
GO	-	General Obligation
gpcpd	-	gallons per capita per day
gpd	-	gallons per day
gpm	-	gallons per minute
hp	-	horsepower
IDNR	-	Illinois Department of Natural Resources
IEPA	-	Illinois Environmental Protection Agency
kgal	-	1,000 gallons
MG	-	million gallons (or mil gal)
MGD	-	million gallons per day
MWRD	-	Metropolitan Water Reclamation District
NRW	-	non-revenue water
PE	-	population equivalent
psi	-	pounds per square inch
SCADA	-	supervisory control and data acquisition
USEPA	-	United States Environmental Protection Agency
WIFIA	-	Water Infrastructure Finance and Innovation Act

1. WATER AND SEWER RATE STUDY OVERVIEW

1.1 Water and Sewer Rate Study Background

Enterprise Funds, like the Village's Water and Sewer Fund, are specific municipal funds that are used to account for operations that provide goods or services to the general public on a continuing basis and are financed primarily through user rates and charges, as well as other sources such as connection/tap-on fees, late/shut-off fees, and investment income. In addition to covering the day-to-day expenses related to operating the utility systems, the fund is responsible for costs related to the rehabilitation, replacement, and improvement of the infrastructure as well as any debt service incurred to finance such projects.

As part of the Village of Oswego's Alternate Water Source Evaluation, the Village elected to conduct a Water and Sewer Rate Study in order to understand the financial impacts to its customer base as a result of the proposed change in the Village's water supply source. On December 14, 2021, the Village's Board elected to proceed with Lake Michigan water via DuPage Water Commission (DWC) as the preferred long term water supply source for the community.

This study specifically evaluated the Village's existing water and sewer rates and charges to assess the adequacy of any implemented rate increases to sustainably support the Village's operational, capital, and debt services needs beginning Fiscal Year 2024 through 2031. Additionally, this study investigated the potential adoption of alternative rate structures that would allow the Village to more equitably prorate its expenses across its diverse customer base.

The capital infrastructure improvements necessary to accommodate the change to DuPage Water Commission are specifically included based on the planning costs outlined in the Alternate Water Source Evaluation last updated January 13, 2022. However, it is important to note that many of the planned construction costs utilized under this rate study including the new water supply have not been finalized by the DWC as of the writing of this report. Similarly, the proposed debt service schedules outlined under the Alternate Water Source Evaluation are based on the best available data at this time but are not executed contracts and are subject to change. As a result, it is strongly recommended that the Village update its financial projections as these larger capital costs are further developed and finalized.

The Village of Oswego should discuss any information and material contained in this report with any and all internal or external advisors and experts that the Village deems appropriate before acting on this information. Baxter & Woodman, Inc. is not acting as a financial advisor to the Village and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to the Village of Oswego with respect to the information and material contained in this report. This report is representative of the data made available to Baxter & Woodman, Inc. through October 31, 2023.

1.2 Water and Sewer Usage Patterns

The Village of Oswego's water and sewer utilities serve a population of approximately 35,316 as of the 2021 Census. The customers served are generally categorized as Senior, Residential, Commercial, Government, and Industrial. Currently, the Village's water system is supplied by eight groundwater treatment plants and five elevated storage tanks. The Village also operates and maintains a sanitary sewer collection system that is conveyed to the Fox Metro Water Reclamation District for treatment.

As of the writing of this report, it is projected that the Village of Oswego will transition from its own groundwater supply to Lake Michigan water from DWC by the end of 2027, who in turn purchases treated Lake Michigan water from the Chicago Department of Water Management (CDWM). Both DWC and CDWM own, operate, and maintain a wide range of infrastructure used in the treatment and distribution of potable water to serve customers like the Village of Oswego.

Customer Base Analysis

In discussions with Village staff, the following user groups were identified within the billing system that were assigned to each customer account:

- Senior
- Residential
- Commercial
- Government
- Industrial
- Outside Corporate Limit Customers

The following observations are made in relation to each of the major user groups based on real billing data issued by the Village in 2022, and was consistent with the total billing data from 2020 and 2021:

- Over the past three years, the Seniors generally represented approximately 4% of the total bills issued by the Village and approximately 2% of the total usage. The Village maintains a Senior tier that qualifying residents may sign up for to receive a discount on their utility bills with the intent to insulate these specific users from excessive cost burdens.
- The Village's Residential customer class is the largest customer group, representing a total of 90% of the total bills issued by the Village and approximately 80% of the total usage.
- The Village's Commercial, Governmental, and Industrial Class constitute approximately 7% of the total bills issued by the Village and 18% of the total usage.
- The Village's Outside Corporate Limits Customers represent approximately 0.01% of the total bills issued by the Village and 0.01% of the total usage.

- The Village meters water consumption for Village Hall, Village Garden, Public Works, Happy Tails Dog Park, Fire Station 1, Fire Station 2, and the Police Department, however these entities are currently not issued a utility bill and their water and sewer usage is funded directly by the Water and Sewer Fund. The Village currently intends to begin billing Fire Station 1 and Fire Station 2 on January 1, 2024.

Water Usage Patterns and Non-Revenue Water

The Illinois Department of Natural Resources (IDNR) requires all communities who receive Lake Michigan water to complete an annual water allocation audit (LMO-2) which includes monitoring Non-Revenue Water (NRW). As part of the Village's permit to obtain a Lake Michigan Water Allocation, the Village is required to maintain its annual Non-Revenue Water below 10%. In the event the Village exceeds the 10% threshold, the IDNR will require an action plan outlining steps to reduce the non-revenue water to be submitted.

As part of its Permit application, the Village prepared an LMO-2 from October 1, 2020 through September 30, 2021 in compliance with the Water Federal Calendar Year and reported a 7.9% Non-Revenue Water. For the 2022 LMO-2, which recorded the non-revenue water between October 1, 2021 through September 30, 2022, the Village saw a slight increase in its Non-Revenue Water to 8.4%.

For the purposes of this rate study however, a separate high level non-revenue water was specifically evaluated utilizing the Village's real customer billing data against its water production records. This deviates from the required calculation for Non-Revenue Water for the LMO-2 in the following ways:

- The rate study non-revenue water calculation aligns with the Village's current Fiscal Year Calendar, which ranges from May 1st to April 30th of each year.
- The rate study non-revenue water is a simplified calculation of the difference between water produced and water billed and does not further breakdown the components of total water into billed metered, billed unmetered, unbilled metered, unbilled unmetered, apparent losses, and real losses as required by the LMO-2.

Although the Village's total water Produced and Billed has fluctuated between 2018 through 2023, there is an observed slight increase across the six years with an average of 891 million gallons and 815 million gallons annually respectively. Over the same time period, the simplified non-revenue water that was calculated within the rate study observed an average non-revenue water of 8.5%, and generally matched the slight increase observed between 2021 and 2022 from the LMO-2 Non-Revenue Water calculations.

In discussions with Village staff, a 10% non-revenue water was applied beginning in Fiscal Year 2024 through 2031 to provide a more conservative rate projection and represent the minimum threshold the Village would want to maintain for its Non-Revenue Water throughout the forecast. This buffer would also allow the Village to cover any improvements that may become necessary over the next eight years to continue to address its aging infrastructure and reduce its Non-Revenue Water.

Population Projections

For the purposes of this rate study, the population projection percentage increases identified by the Chicago Metropolitan Agency for Planning (CMAP) were along with the Village's 2021 Population Equivalent (PE) census data in order to project each subsequent year's total change in population. In general, the CMAP projected percentage increase ranged between 0% to 1.25% per year across the duration of the model.

These population projections yield a slightly lower total count of population that what had originally been projected under the Alternate Water Source Evaluation reports, ranging from 35,316 PE in 2021 to 38,894 in 2031. These figures were discussed with Village staff and intentionally kept to maintain a slightly more conservative total rate projection with the lower population count.

1.3 Existing Utility Rate Structure

The Village's current water and sewer rate structure is comprised of a Fixed Fee and Volumetric rate structure which is billed on a bi-monthly basis. The Water and Sewer Volumetric Rates are calculated against the total water metered for each customer in addition to the Fixed Fee which is applied per bill.

The Village's existing rates and fees are summarized in Table 1 below for its In Village customers. For the customers outside of the Village's corporate limits, only the Volumetric Water and Sewer Rates are applied at 200% of the In Village rates. The bi-monthly fixed fee is the same for In Village and Outside Corporate Limits customers. The Village's wastewater is treated by the Fox Metro Water Reclamation District which assesses their own rates and fees to the customers they serve, these rates and fees are not modeled as part of this rate study.

Table 1 – Village of Oswego 2023 Water and Sewer Rates

Rates and Charges	Volumetric (per 1,000 gallons)		Fixed Fee (Bi-Monthly)
	Water	Sewer	Fixed Fee
Non-Senior	\$7.39	\$1.71	\$6.34
Senior	\$3.70	\$0.86	\$6.34

1.4 Utility Revenue and Expense Analysis

For this assessment, the revenue line items associated with the Water and Sewer Fund were modeled using historical data and the following assumptions and inputs, confirmed with the Village's Finance and Public Works Departments:

- The Village will be transitioning from a May to April fiscal year to a January to December Fiscal Year, in which the first full January to December fiscal year will occur in 2025. The Revenues and Expenses have been updated accordingly to account for the transition.
- The Population Equivalent (PE) for the Village of Oswego, which takes into account the Village's real water billed against its projected population, is forecasted to increase based on CMAP projections, between 0% to 1.25% per year. The Village's calculated historical water usage was an average of 64 gallons per capita per day (gpcpd) between 2018 and 2021. The projected water usage was calculated by multiplying 64 gpcpd against the projected population, and multiplied by 365 to calculate the annual water usage. The projected sewer usage is equivalent to the projected annual water usage.
- The total number of customers by water meter diameter size was provided by the Village for Fiscal Year 2023 to estimate the revenue generated by the Fixed Fee. The total number of accounts is increased each year based on the population projections and is assumed to increase the number of ¾-inch water meter which generally represents residential growth to remain conservative for Rate Scenarios 2 through 4.
- The Village of Oswego's ordinance includes a 200% multiplier to its In Village Water and Sewer volumetric rates for its Outside Corporate Limits customers. In order to adhere to the Village's current ordinance, the 200% multiplier is maintained.
- The Village is currently evaluating increases to the Water and Sewer Connection Fees. However, in order to remain conservative, the model does not include any projected increases to Connection Fees.
- Based on discussions with the Village, it was determined that the first rate increase to be projected would start on January 1, 2024 as opposed to waiting until May 1, 2024 utilizing the Village's existing rate structure. This enables subsequent rates to be lower due to the earlier start, and would transition well once the Village moves to a calendar-based Fiscal Year in Fiscal Year 2025.

Similarly, the following assumptions and inputs were made with the Village's Finance and Public Works Departments to develop and project the Water and Sewer Fund expense line items:

- The Water and Sewer Fund currently has one debt obligation: the 2017 General Obligation Bond. The bond has a maturity date in Fiscal Year 2030. The total annual payment of principal and interest were provided by Village staff and are included in the projected expenses.
- The cost to purchase water from DuPage Water Commission is projected to begin in late 2027 or early 2028 as of the writing of this report. Due to the change in water source, the cost to maintain and operate wells is reduced to \$150,000 in 2028 and inflated at 2% each subsequent year. The cost for radium removal has been removed upon the anticipated completion of the alternative water supply projects in 2028.
- The Chicago Department of Water Management water rate is projected to increase at a rate of 3.6% to 2% annually through the projected forecast, which would likely be passed through DWC to the Village's cost to purchase water. Although it is anticipated that the CDWM will adopt an alternative rate structure in 2030, the straight rate projection is maintained through 2031 for the financial model at this time as no additional details are available to model their proposed change in rate structures.
- The proposed Capital Improvement Project Plan and associated debt service are covered in greater detail below.

For this assessment, all other revenue line items were set to the amounts identified under the Village's Fiscal Year 2024 Adopted Annual Budget and were held constant through the projection period. Expense line items not modeled were assigned an inflationary rate or fixed value to reflect their anticipated projections through the forecast period.

This provides for a conservative financial model that projects revenues based largely upon the change in water and sewer rates taking into account the increased costs to both operate and maintain the infrastructure systems.

Capital Improvement Project Plan

The American Water Works Association (AWWA) M1 *Principals of Water Rates, Fees, and Charges Manual* outlines two generally accepted approaches to calculating the revenue requirements:

- **Utility Basis:** Forecasts revenue requirements taking into account existing operations and maintenance expenses and the depreciation of historical capital expenditures to generate sufficient future revenues. The Utility Basis approach is best suited for utilities that have minimal projected growth, but can leave utilities vulnerable to changes in economic pricing or Federal/State regulations that require additional capital improvements to a system.
- **Cash Basis:** Forecasts revenue requirements using inflated historical operations and maintenance expenses, as well as budgeted near-term capital improvement projects that are

Village of Oswego, Illinois

identified via strategic planning studies. The Cash Basis approach is best suited for utilities where significant capital improvement projects are identified that are added to or modify existing infrastructure. However, this can lead to potential rate shocks in years where significant amounts of capital are needed suddenly.

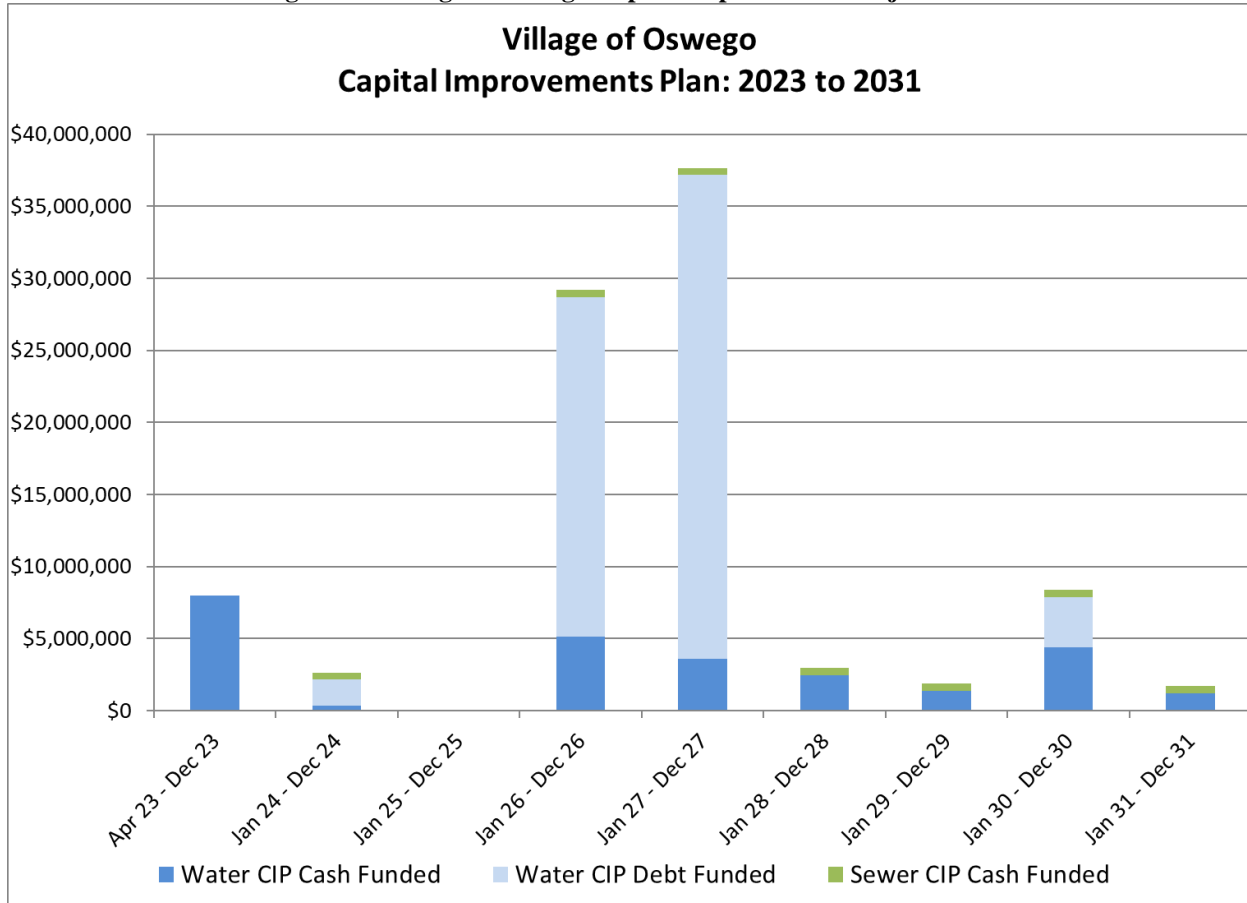
Both approaches are heavily influenced by the on-going need to address large capital expenditures generally associated with aging infrastructure, growth and development, and/or changes in Federal and State requirements. Without proper oversight and management of either approach, this can lead to negative impacts on the financial health of the fund, the health of the infrastructure systems, or steep rate hikes necessary to meet the revenue requirements.

For this study, the Cash basis is utilized in conjunction with the Village's Capital Improvement Project Plan. This would allow the financial model to set rates that would enable the Water and Sewer Fund to manage its year over year net operating balance to address its critical infrastructure needs while providing a level of stability to the rates being set.

The Village's Capital Improvement Plan consists of a variety of internal improvements to the water and sewer system, as well as capital projects required for the new water supply connection to the DuPage Water Commission. The total projected cost of cash-funded water improvement projects between Fiscal Year 2024 through 2031 is \$26,543,800 and the anticipated cost of the loan funded projects is \$62,445,400.

The total projected cost of cash funded sewer projects is \$3,550,000 with no planned debt funded sewer projects. The projected cost of the capital improvement projects is subject to change based on a variety of factors including detailed engineering design estimates, the selected transmission main route, and the cost-sharing agreements between Oswego, Montgomery, and Yorkville which have not been finalized as of the writing of this report. The total projected Capital Improvement Project costs are shown below in Figure 1.

Figure 1 – Village of Oswego Capital Improvement Projects Plan



Proposed Debt Service Schedules

The Village has evaluated a variety of low-interest loans to fund the projects associated with the internal system improvements and the infrastructure required for the connection to DWC as part of the Alternate Water Supply Source Study:

- The Village submitted the Letter of Interest for the Water Infrastructure Finance and Innovation Act (WIFIA) funding in September 2023, which is anticipated to fund approximately 49% of the total project costs. The Village currently anticipates the agreement with WIFIA to be negotiated in early 2024.
- The Village is also negotiating a 0% interest loan with DWC for the connection fee and plans to apply with the IEPA State Revolving Fund for the remainder of the project costs. The anticipated dates for executing these loan agreements are still unknown at this time, but are inserted into the rate study to start in Fiscal Year 2028.

The Debt Service Assumptions are shown in below and are subject to change based on total project costs and approved loan agreements.

Table 2 – Preliminary Debt Service Assumptions

	Total Loan Amount	Loan Period (years)	Interest Rate	Annual Debt Service	Payments Begin
WIFIA	\$29,699,096	30	4.27%	\$1,774,248	2028
DWC	\$10,373,000	30	0.00%	\$345,767	2028
IEPA	\$17,088,304	20	2.00%	\$1,045,065	2028
IEPA	\$3,450,000	20	2.00%	\$210,991	2030

CDWM and DWC Water Rates

CDWM currently charges a uniform volumetric rate to all of its wholesale customers, including DWC, and its historical rates are shown in Table 3 below. As of the writing of this report, it is anticipated that the CDWM will adopt an alternative rate structure in 2030.

Table 3 – Chicago Department of Water Management Water Rates

Effective Date	Percent Increase	Water Rate (per 1,000 Cubic Feet)	Approximate Water Cost (per kgal)
1/1/2002	4.00%	\$9.02	\$1.20
1/1/2003	4.00%	\$9.38	\$1.25
1/1/2004	3.00%	\$9.66	\$1.29
1/1/2005	3.00%	\$9.95	\$1.33
1/1/2006	0.00%	\$9.95	\$1.33
1/1/2007	0.00%	\$9.95	\$1.33
1/1/2008	15.00%	\$11.44	\$1.53
1/1/2009	15.00%	\$13.15	\$1.76
1/1/2010	14.00%	\$15.00	\$2.01
1/1/2011	0.00%	\$15.00	\$2.01
1/1/2012	25.00%	\$18.75	\$2.51
1/1/2013	15.00%	\$21.56	\$2.88
1/1/2014	15.00%	\$24.80	\$3.31
1/1/2015	15.00%	\$28.52	\$3.81
1/1/2016	0.00%	\$28.52	\$3.81
6/1/2017	1.83%	\$29.04	\$3.88
6/1/2018	1.54%	\$29.49	\$3.95
6/1/2019	0.82%	\$29.73	\$3.98
6/1/2020	2.45%	\$30.46	\$4.08
6/1/2021	1.10%	\$30.79	\$4.13
6/1/2022	5.00%	\$32.33	\$4.33
6/1/2023	5.00%	\$33.95	\$4.55

Based on the available data provided by the Village and the historical CDWM rates, a projected annual increase of 3.6% to 2% is anticipated, which would be passed on through the DWC. Although the DWC also assesses its own fee in addition to the base cost of water from CDWM, which is inclusive of a base fixed cost and volumetric usage, the overall DWC component of the rate is currently anticipated to remain stable with no anticipated increases.

The Village’s estimated water purchase cost from DWC, which is broken out by the CDWM and DWC component, are summarized in Table 4 below. As of the writing of this report, it is anticipated that the Village will begin purchasing water from DWC in late 2027 or early 2028.

Table 4 – Projected Water Rates

Fiscal Year	CDWM (per kgal)	DWC (per kgal)	Village's Estimated Water Purchase Cost (per kgal)
2024	\$4.55	\$0.95	\$5.49
2025	\$4.70	\$0.95	\$5.65
2026	\$4.82	\$0.95	\$5.78
2027	\$4.93	\$0.95	\$5.88
2028	\$5.02	\$0.95	\$5.98
2029	\$5.12	\$0.95	\$6.08
2030	\$5.23	\$0.95	\$6.18
2031	\$5.33	\$0.95	\$6.28

1.5 Reserve Goals

The AWWA M1 *Principles of Water Rates, Fees, and Charges Manual* emphasizes the importance of establishing and maintaining adequate financial reserves. Historically, it was recommended that an operating reserve goal be set at 25% of a utility’s total annual expenses less capital, depreciation, and debt.

However, recent trends such as declining water usage, aging infrastructure, and the potential for water supply shortages and/or restrictions are contributing to increased financial liability and revenue volatility. AWWA has since emphasized and encouraged utilities to identify individual reserve goals dedicated to large capital improvement projects, depreciation, and/or debt service. Set properly, reserves can help shield utilities from sudden financial shifts and provide for more reactionary time to address planned and, to a lesser degree, unplanned years of deficit that can be caused by sudden dips in water usage, large capital expenditures, and emergency repairs without the need to borrow debt.

Additionally, reserves can help mitigate rate shocks that may otherwise be necessary to cover sudden changes in either revenues or expenses and temporary shortfalls that can occur due to seasonal changes in demand that impact a utility’s revenue stream month to month. These reserves should be set to appropriate levels above those established for normalized, recurring operating cash flow, and be replenished over time if drawn down.

In discussions with the Village’s Finance Department, the current Village policy is to maintain an Operating Reserve goal of 30% of the Water and Sewer Fund’s annual expenditures less capital, debt,

and depreciation. Additionally, the Village maintains a Debt Reserve goal that is equivalent to the subsequent year's debt service payments.

Based on discussions with the Village, a minimum fund balance was set at \$1,000,000 above the fund's operating reserve goal as an acceptable minimum goal between the Operating and Debt Reserve Goal. Although this may result in an annual fund balance lower than the combined operating and debt reserve goals, it is accounted for throughout the financial projection to allow the Village to implement more stable rate increases to reduce any large rate impacts within a single year.

2. WATER AND SEWER RATE STUDY ANALYSIS

2.1 Scenario 0: Baseline – No Rate Increases

A preliminary Baseline Scenario was prepared to observe the Village's Water and Sewer Fund's balance in which no rate increases were applied to the existing rates as of January 1, 2024. The Baseline Scenario serves as a boundary condition to observe the Fund's balance over time as expense line items are inflated in addition to the Village's budgeted Capital Improvement Project Plan and proposed debt service schedules.

Generally, a five-year projection is utilized for rate study evaluations that are intended to observe nominal adjustments to rates and/or rate structures with identified and budgeted operating, capital, and debt expenses. The accuracy of the financial model is heavily dependent on the input data, which may change during or between fiscal years and should be updated as an on-going and cyclical process to ensure that the rates identified are sufficient.

A long-term forecast may be beneficial in certain cases where long term debt is being considered and/or if larger capital expenditures have not been identified to occur in a specific year. However, the loss of accuracy in a long-term projection can stem from any number of the data inputs to the financial model including large changes in usage pattern, population, capital addition/deferral, and rising inflation rates that are assigned to specific expense line items within the model, which may overestimate expenses in the long run.

Based on the Village's projected timeline for the alternate water supply source projects as well as the numerous variables associated with the larger capital improvement projects and associated debt service, the financial forecast was run for eight years through Fiscal Year 2031.

Figure 2 shows the Village's projected Revenues and Expenses under the Baseline Scenario through Fiscal Year Ending 2031. The following observations are made:

- The Village's Operating Revenues, represented by the dotted blue line, is comprised primarily of the revenue generated from water and sewer bills but also includes miscellaneous revenue items such as Inspection Fees, Permits, and Bulk Water Sales. The Operating Revenue has generally stayed in excess of the Village's historical Operating Expenses, however the operating revenue is projected to fall below the Operating Expenses beginning in Fiscal Year 2027.
- The Village's Capital Revenues, represented by the solid blue line, is comprised of a variety of revenue sources including loan disbursements, real estate transfer tax, grants, and meter tap-on fees.

- The large gain in revenue in Fiscal Years 2026 and 2027 reflect the anticipated loan disbursements from WIFIA, IEPA, and/or DWC associated with their capital improvement projects and expenses. These revenue line items correspond to the increased capital expenditures, as shown in the blue bars, for their respective projects.
- As of the writing of this report, the anticipated completion date of the DWC water supply source connection is late 2027 to early 2028. In order to provide a conservative buffer, the financial model includes five months of water purchasing costs in Fiscal Year 2027 before fully transitioning to water purchases from DWC in Fiscal Year 2028. This can be observed in the sudden jumps to the Operating Expenses over those years.

Figure 2 – Scenario 0: Baseline Revenues and Expenses Cash Flow Projection

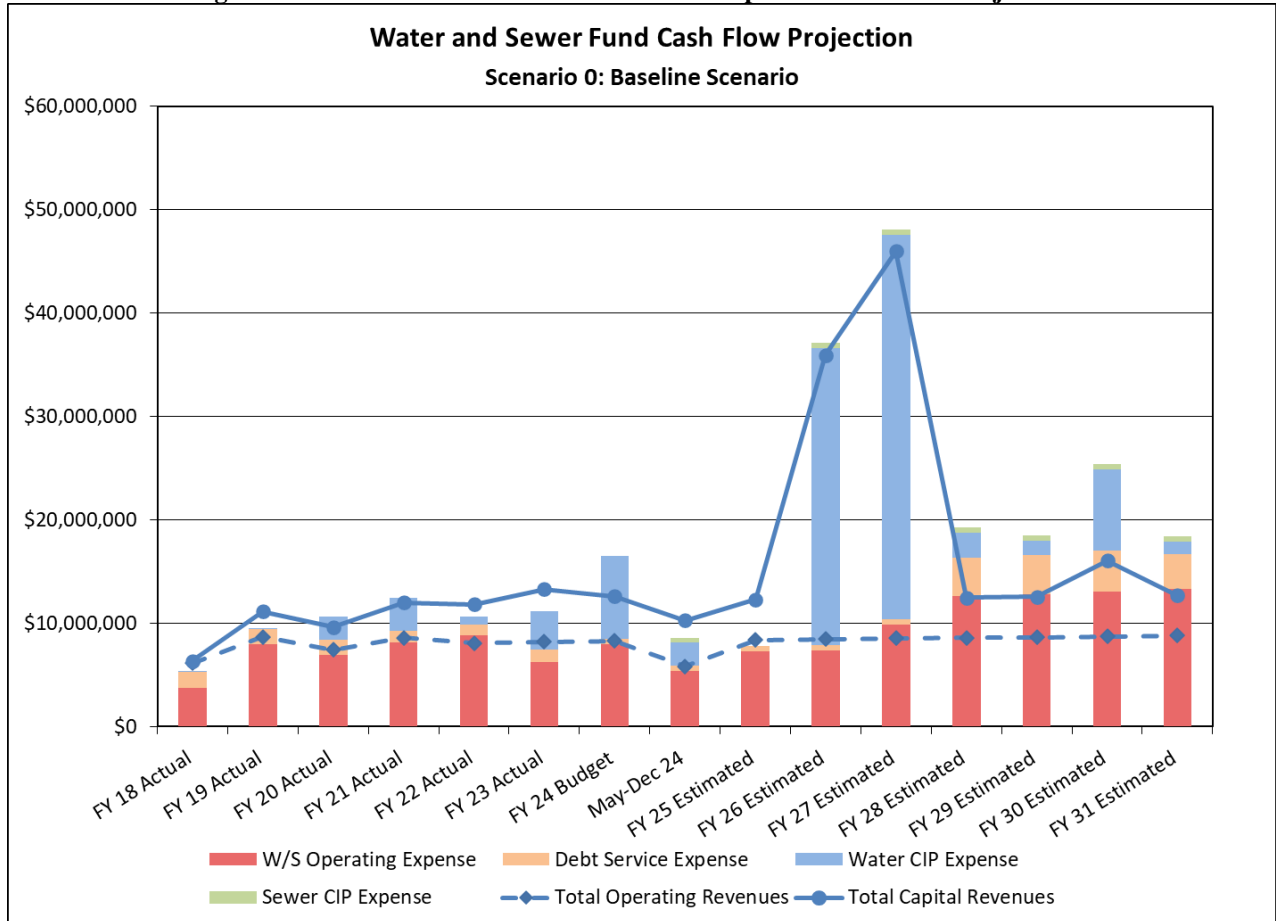
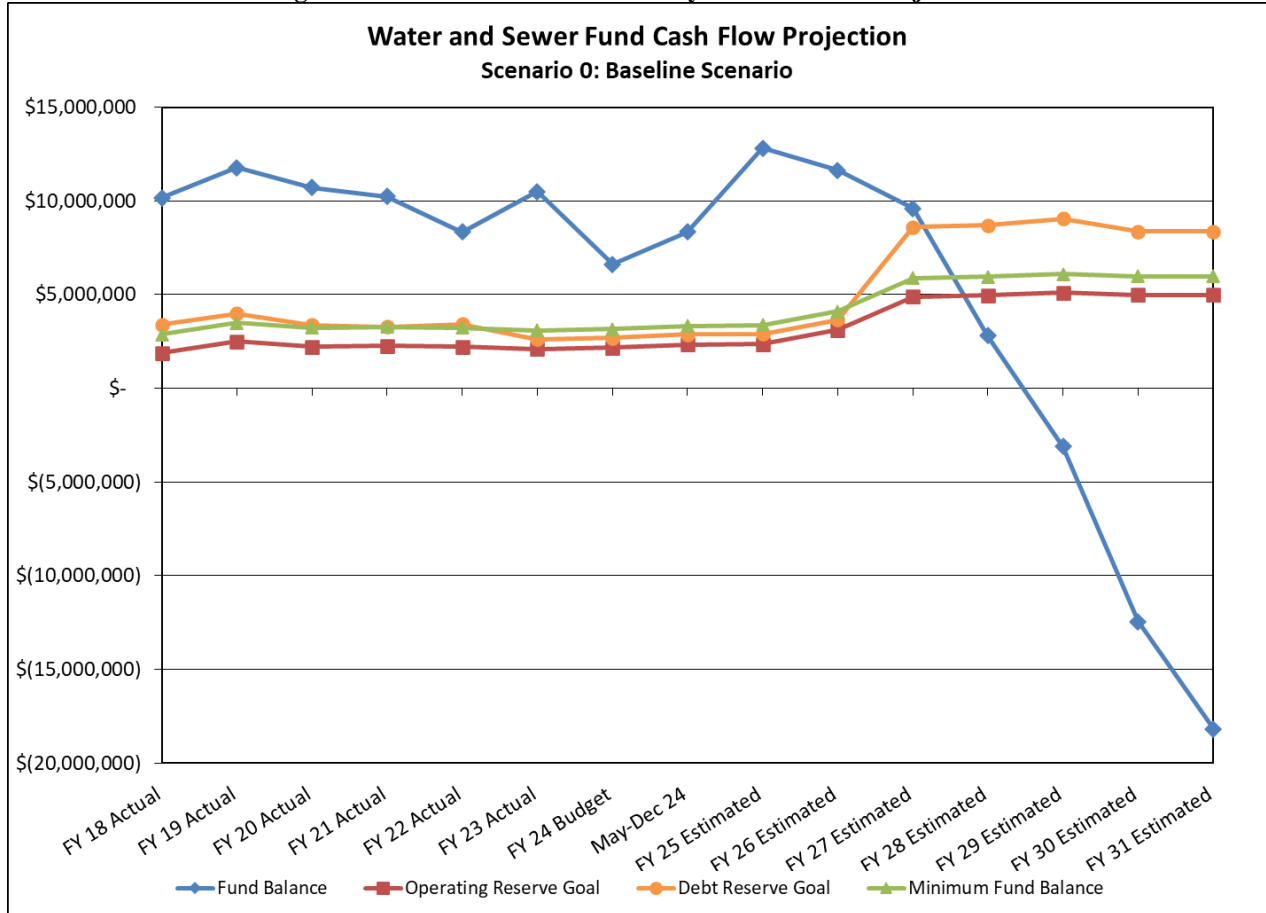


Figure 3 shows the projected Utility Fund’s balance and Operating and Capital Reserve Goals.

Figure 3 – Scenario 0: Baseline Utility Fund Balance Projection



In analyzing the Water and Sewer Fund’s projected fund balance, represented in the blue line in Figure 3, the Village has maintained a balance above its operating and debt reserve goals over the past several years and is able to stay above its various reserve goals through Fiscal Year 2027.

The operating and debt reserve goals observe a jump in Fiscal Year 2027 as a result of the increased operating cost for purchasing water and the anticipated debt service payments associated with the alternative water supply projects. Overall, with no additional rate increases applied to any of the Village’s existing rates, the Water and Sewer Fund balance is projected to fall below \$0 after Fiscal Year 2028.

Ultimately, rate increases will be needed to finance the anticipated revenue requirements based on the budgeted and planned capital expenditures, projected debt service payments, and water purchasing cost identified. Rate adjustments allow the Village to maintain a proactive stance towards addressing its aging infrastructure, upsizing or installing new infrastructure for the connection with DWC, maintaining the high level of quality and services the Village's customers depend on, and preventing costly emergency repairs.

2.2 Scenario 1: Existing Water and Sewer Rate Structure Increases

Scenario 1 evaluates proposed rate increases to the Village's existing rate structure to meet the revenue requirements and developed two subset analyses:

- Scenario 1A, in which a single rate increase occurs in 2027 to anticipate the onset of purchasing water from DWC.
- Scenario 1B, in which the existing rates gradually increases annually starting on January 1, 2024 to spread the rate impact across several years.

Due to the large, singular spike that was observed in customer bills under Scenario 1A, Scenario 1B was selected by Village staff for further evaluation and comparison and is hereafter referred to as Scenario 1. Based on the analysis conducted, an annual increase of \$2 is applied to the Fixed Fee beginning on January 1, 2024 through January 1, 2031. The water and sewer volumetric rates are increased at 6% and 4% respectively on an annual basis beginning on January 1, 2024 through January 1, 2031. Table 5 outlines the rates and charges throughout the projection period.

Table 5 – Scenario 1: Existing Rate Structure Rate Increases

		2023	2024	2025	2026	2027	2028	2029	2030	2031
Fixed Fee	Rate Increases		\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00
	Fixed Fee	\$6.34	\$8.34	\$10.34	\$12.34	\$14.34	\$16.34	\$18.34	\$20.34	\$22.34
Water Rate (Non-Senior)	Rate Increases		6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
	Volumetric Rate	\$7.39	\$7.83	\$8.30	\$8.80	\$9.33	\$9.89	\$10.48	\$11.11	\$11.78
Water Rate (Senior)	Rate Increases		6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
	Volumetric Rate	\$3.70	\$3.92	\$4.15	\$4.40	\$4.66	\$4.94	\$5.24	\$5.56	\$5.89
Sewer Rate (Non-Senior)	Rate Increases		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
	Volumetric Rate	\$1.71	\$1.78	\$1.85	\$1.93	\$2.00	\$2.08	\$2.17	\$2.25	\$2.34
Sewer-Rate (Senior)	Rate Increases		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
	Volumetric Rate	\$0.86	\$0.89	\$0.93	\$0.96	\$1.00	\$1.04	\$1.08	\$1.13	\$1.17

These rate increases allow the Water and Sewer Fund to generate the necessary revenues to maintain a minimum fund balance of \$1 million above the operating reserve goal throughout the financial projection. Figure 4 and Figure 5 show the Revenue and Expense and Water and Sewer Fund balance for Scenario 1, respectively.

Figure 4 – Scenario 1: Revenue and Expense Cash Flow Projection

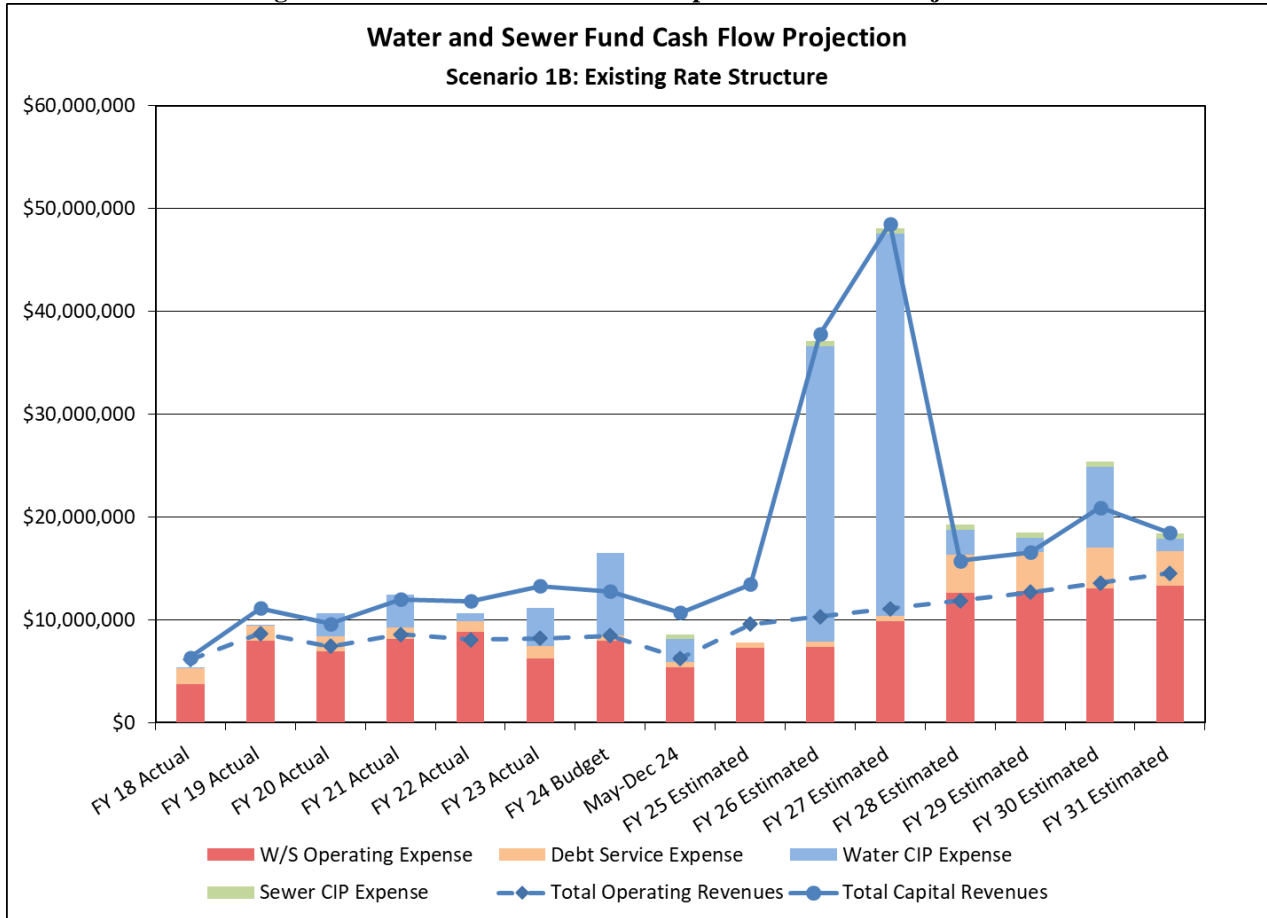
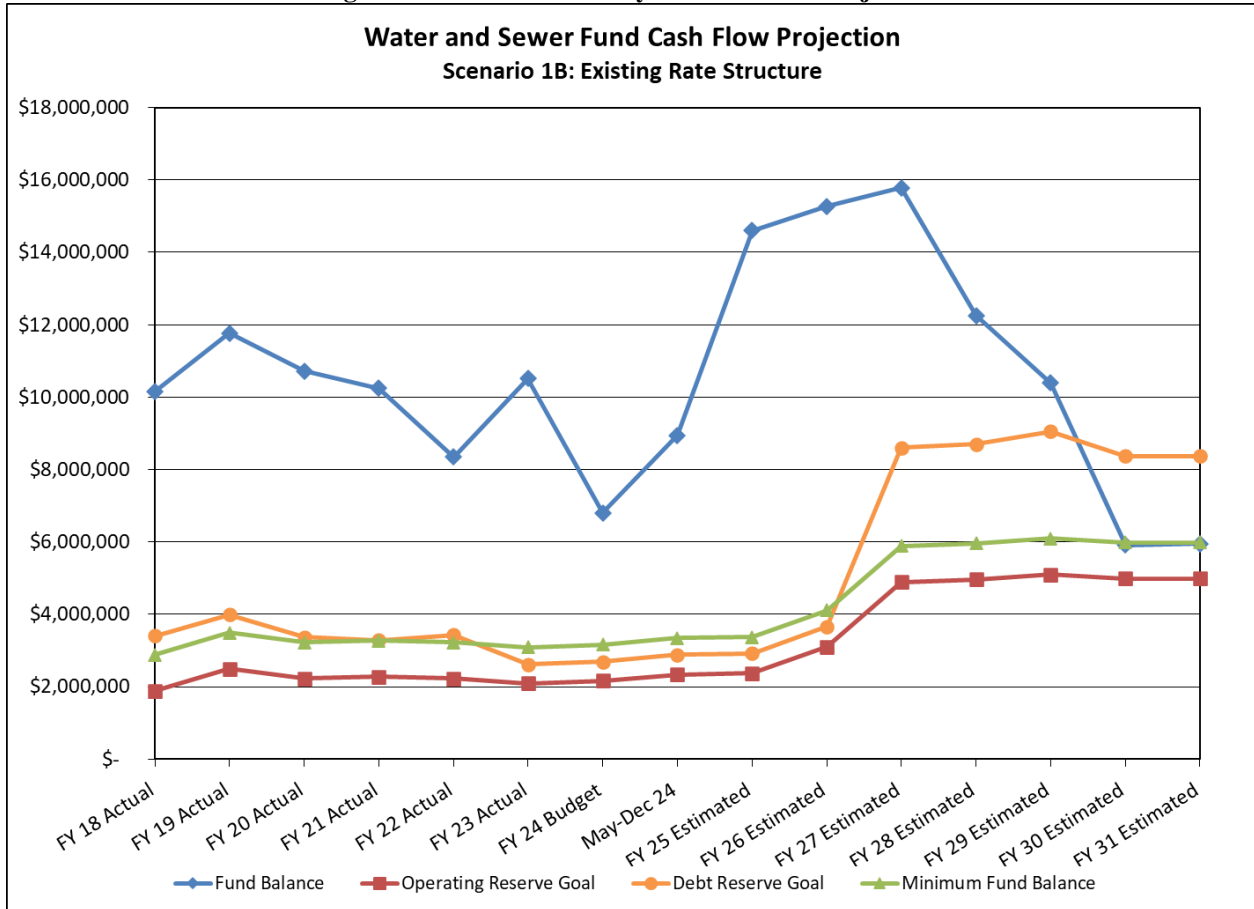


Figure 5 – Scenario 1: Utility Fund Balance Projection



Overall, the Village’s early planning and foresight to build its reserves through Fiscal Year 2023 enables the Village to mitigate the immediate impact of the necessary rate hikes. These rate increases allow the Village to maintain a minimum fund balance of \$1 million above the operating reserve goal, even with three years of projected operating deficits between Fiscal Years 2027 through Fiscal Year 2030.

The increases identified have significantly different impacts based on the customer group and usage patterns. As part of the analysis, sample bills were prepared based on specific user groups to better understand the consequences of the rate increases and were used to develop the rates.

Although the Village’s Fixed Fee revenues represent a stable revenue stream for the Village and would allow it to better recover its larger upcoming fixed expenses such as capital improvement projects and debt, a rate cap of \$2.00 annually was deemed necessary during discussions with Village staff. This is primarily caused by the fact that all of the Village’s customers, irrespective of usage or water meter size, are charged the same Fixed Fee.

As a result, the Fixed Fee has a disproportionately larger impact on the Village's customers that use relatively little water such as Seniors, Residents, and even smaller Commercial and Industrial entities. This impact can be readily observed by the relative impact the Fixed Fee has on customers that use less than 10,000 gallons bi-monthly compared to users with larger water consumption, ranging from 100,000 to 2,000,000 gallons bi-monthly in the sample bills provided below.

1. A Residential User billed at 10,000 and 80,000 gallons bi-monthly served by a ¾-inch and 1-inch water meter respectively.

Table 6 – Scenario 1: Average Residential User 10,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$97.36	-	-	\$584.16	-
2024	\$104.48	\$7.12	7.3%	\$626.87	\$42.71
2025	\$111.89	\$7.41	7.1%	\$671.35	\$44.47
2026	\$119.61	\$7.72	6.9%	\$717.68	\$46.34
2027	\$127.67	\$8.05	6.7%	\$765.99	\$48.31
2028	\$136.06	\$8.40	6.6%	\$816.38	\$50.39
2029	\$144.83	\$8.77	6.4%	\$868.98	\$52.60
2030	\$153.99	\$9.16	6.3%	\$923.92	\$54.94
2031	\$163.56	\$9.57	6.2%	\$981.33	\$57.41

Table 7 – Scenario 1: Large Residential User 80,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$734.50	-	-	\$4,407.00	-
2024	\$777.45	\$42.95	5.8%	\$4,664.70	\$257.70
2025	\$822.75	\$45.30	5.8%	\$4,936.49	\$271.79
2026	\$870.53	\$47.78	5.8%	\$5,223.18	\$286.69
2027	\$920.94	\$50.41	5.8%	\$5,525.64	\$302.46
2028	\$974.13	\$53.19	5.8%	\$5,844.79	\$319.15
2029	\$1,030.27	\$56.13	5.8%	\$6,181.60	\$336.81
2030	\$1,089.52	\$59.25	5.8%	\$6,537.10	\$355.50
2031	\$1,152.06	\$62.55	5.7%	\$6,912.37	\$375.28

2. A Senior Residential user billed at 6,000 gallons bi-monthly served by a ¾-inch water meter.

Table 8 – Scenario 1: Senior Residential User 6,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$33.65			\$201.88	
2024	\$37.18	\$3.54	10.5%	\$223.09	\$21.21
2025	\$40.81	\$3.62	9.7%	\$244.83	\$21.74
2026	\$44.52	\$3.72	9.1%	\$267.13	\$22.30
2027	\$48.34	\$3.82	8.6%	\$290.03	\$22.89
2028	\$52.26	\$3.92	8.1%	\$313.54	\$23.52
2029	\$56.29	\$4.03	7.7%	\$337.72	\$24.18
2030	\$60.43	\$4.15	7.4%	\$362.60	\$24.88
2031	\$64.70	\$4.27	7.1%	\$388.23	\$25.62

3. An Average Municipal/School User billed at 100,000 gallons bi-monthly and served by a 2-inch water meter.

Table 9 – Scenario 1: Average Municipal/School User 100,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$916.54			\$5,499.24	
2024	\$969.73	\$53.19	5.8%	\$5,818.37	\$319.13
2025	\$1,025.85	\$56.12	5.8%	\$6,155.10	\$336.73
2026	\$1,085.08	\$59.23	5.8%	\$6,510.47	\$355.36
2027	\$1,147.59	\$62.51	5.8%	\$6,885.54	\$375.08
2028	\$1,213.58	\$65.99	5.8%	\$7,281.48	\$395.94
2029	\$1,283.25	\$69.67	5.7%	\$7,699.49	\$418.01
2030	\$1,356.81	\$73.56	5.7%	\$8,140.86	\$441.37
2031	\$1,434.49	\$77.68	5.7%	\$8,606.96	\$466.09

4. An Average Commercial/Industrial User billed at 240,000 gallons bi-monthly and served by a 3-inch water meter.

Table 10 – Scenario 1: Average Commercial/Industrial User 240,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$2,190.82			\$13,144.92	
2024	\$2,315.67	\$124.85	5.7%	\$13,894.03	\$749.11
2025	\$2,447.56	\$131.89	5.7%	\$14,685.39	\$791.36
2026	\$2,586.91	\$139.35	5.7%	\$15,521.46	\$836.07
2027	\$2,734.14	\$147.23	5.7%	\$16,404.84	\$883.38
2028	\$2,889.72	\$155.57	5.7%	\$17,338.29	\$933.45
2029	\$3,054.12	\$164.40	5.7%	\$18,324.72	\$986.43
2030	\$3,227.87	\$173.75	5.7%	\$19,367.21	\$1,042.49
2031	\$3,411.51	\$183.64	5.7%	\$20,469.04	\$1,101.83

5. A Large Commercial/Industrial User billed at 2,000,000 gallons bi-monthly and served by a 4-inch water meter.

Table 11 – Scenario 1: Large Commercial/Industrial User 2,000,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$18,210.34			\$109,262.04	
2024	\$19,236.10	\$1,025.76	5.6%	\$115,416.60	\$6,154.56
2025	\$20,320.55	\$1,084.45	5.6%	\$121,923.28	\$6,506.68
2026	\$21,467.09	\$1,146.54	5.6%	\$128,802.54	\$6,879.27
2027	\$22,679.35	\$1,212.25	5.6%	\$136,076.07	\$7,273.53
2028	\$23,961.13	\$1,281.79	5.7%	\$143,766.80	\$7,690.73
2029	\$25,316.50	\$1,355.37	5.7%	\$151,899.03	\$8,132.23
2030	\$26,749.75	\$1,433.24	5.7%	\$160,498.47	\$8,599.45
2031	\$28,265.39	\$1,515.65	5.7%	\$169,592.37	\$9,093.90

The annual percent increase is calculated for each sample user to demonstrate the impact to their bi-monthly sample bills. Notably, the increases to the existing Fixed Fee have a disproportionate impact on users with low bi-monthly water usage. This can be observed in the difference between the 10,000 and 80,000 gallon sample Residential Bill.

Similarly, the overall burden of the rate increases under the existing rate structures is placed higher on the Residential and Senior User Group in comparison to the Commercial and/or Industrial User Groups. The total bi-monthly bills for larger water volume users experience a smaller overall percent increase based on the rate increases applied under Scenario 1.

It should be noted however that while these percentages are intended to show the relative burden each sample customer bill experiences, the percentages should not be reviewed in isolation. This can be best observed when reviewing the Senior bill, in which the relatively low starting bills cause even small dollar increases to yield a large percentage increase.

2.3 Existing Water and Sewer Rate Structure Analysis

As part of this rate study analysis, alternative rate structure elements were assessed to replace or modify the Village's existing rate structure. Each alternative element would then be evaluated as to its financial sustainability and equitability to better align with the best practices outlined by the AWWA M1 *Principles of Water Rates, Fees, and Charges Manual* as well as meeting the Village's specific customer composition and revenue requirements.

In general, a utility's expenses can be categorized as either Volumetric-based expenses or Fixed-based expenses. Certain expenses like electricity and natural gas can fluctuate greatly based on seasonal factors. Additionally, the overall cost of producing or purchasing water as demands change represent volumetric-based expenses. In general, volumetric rates are designed to capture revenues attributed to variable expenses that change based on usage patterns and allow a utility to recover these costs as they are incurred.

Other expenses, such as the cost of administration, routine operations and maintenance expense, and debt service payments are generally consistent year to year and represent a fixed-based expense. Larger, planned capital improvement projects are generally assessed as fixed expenses as well to maintain or even improve the existing infrastructure.

In cases where a utility has little to no fixed income through the use of a Fixed Fee or Minimum Usage Charge, their funds can be more vulnerable to a temporary shortfall in which its revenues fall short of its expenses. This can occur when fixed charges are set too low and/or the rate structure is strictly volumetric based in which revenues are susceptible to sudden changes in demand, such as winter months where irrigation and general water usage is typically lower than average.

The following highlights some of the key considerations with respect to the Village's existing rate structure as well identifying proposed alternative rate structure elements to evaluate further:

Fixed Rate Structure Analysis

Although a utility's fixed expenses should generally be recuperated through fixed fees, this is often limited by the practical limitations of modifying an existing rate structure that more heavily leans on volumetric rates over fixed charges without causing a significant change to numerous customer bills. This limitation is further enforced in situations where a fixed fee is charged to all customers, which as previously noted can become limited to moderate the impact to customers that generally use less water per billing cycle.

The Village's existing rate structure assesses a \$6.34 bi-monthly Fixed Fee to all customers regardless of the amount of water used or size of the customer's meter. Although this does provide the Village with some amount of fixed income to cover its fixed expenses, it was generally noted through the evaluation of Scenario 1 that the Fixed Fee would ideally be increased more than the Volumetric rates

if not for the need for rate caps to limit the disproportionate impact to the Village's smaller usage customers.

A Fixed Scaled Meter rate structure, in which customers pay a fixed charge per bill proportional to their water meter size, was assessed to modify the existing Fixed Fee. The Meter Ratio would scale proportionally starting at 3/4-inch meters. Residential homes and multi-tenant complexes are generally served by 1-inch meters, as well as some of the smaller Commercial and Industrial entities. The meter ratios are developed by calculating the proportional flow through the diameter of the meter size at a constant velocity and scaled against the 3/4-inch meter size.

In general, meters sized above 1-inch begin to represent the larger usage customers and can be readily attributable to the larger share of expenses associated with the cost of serving these customers such as:

- During the development of new properties, a projected water use plan must be submitted which then determines the water meter size for the intended use. With larger water users, that can cause utilities to require engineering planning studies to determine the capacity and sufficiency of the existing infrastructure to support the proposed users ranging from things like water main sizing, water storage capacity, and fire flow requirements.
- Although larger water meters do not always correlate to the highest water usage, the burden of ensuring service to a larger water meter customer represents an on-going cost in the form of operational and maintenance costs as well as larger capital improvement projects over time.

Scaling the fixed charge by meter size would allow the Village to more equitably prorate the fixed expenses, which are predominantly driven by the on-going need to maintain its infrastructure, across its diverse customer base. The Meter Ratio used to scale the fixed charge and a breakdown of the Village's customers as of 2023 by meter size is provided in Table 12.

Table 12 – Existing Customers by Meter Size

Meter Size	Meter Ratio	Number of Accounts
3/4-inch meter	1	3,352
1-inch meter	1.78	8,488
1.5-inch meter	4	87
2-inch meter	7.11	140
3-inch meter	16	45
4-inch meter	28.44	11
6-inch meter	64	3

Volumetric Rate Structure Analysis

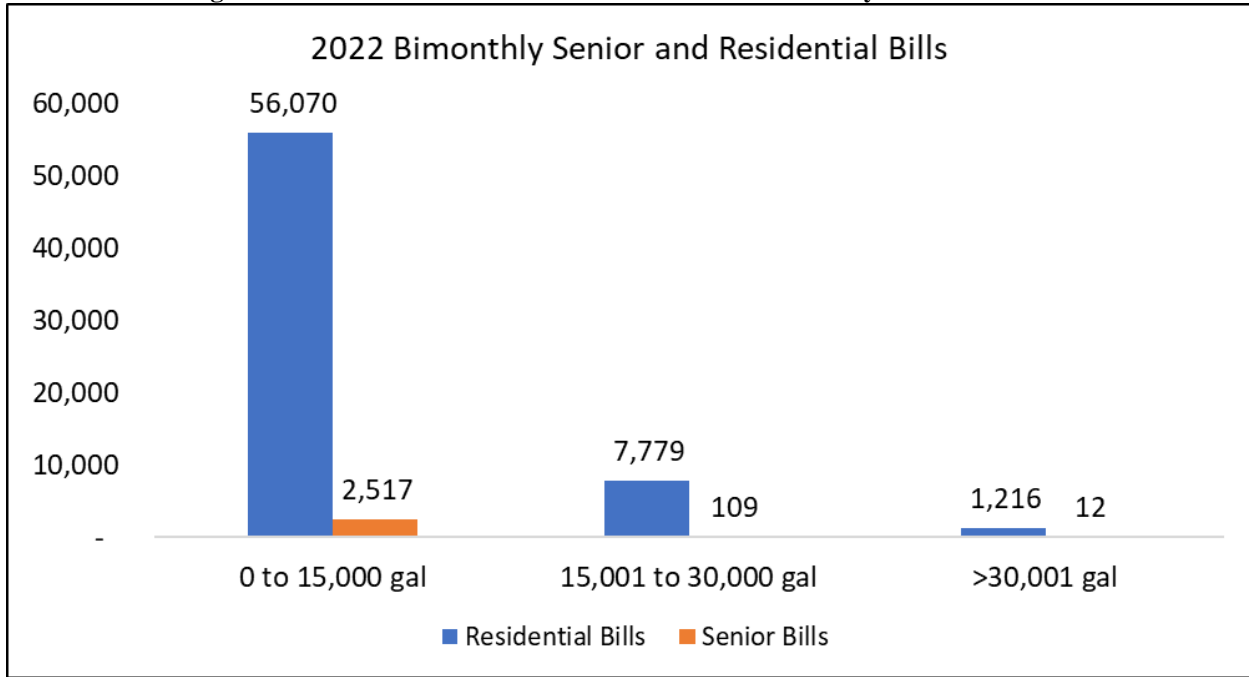
Similar to the proportional burden attributed to larger water meter customers, high volume water users generally contribute to accelerated wear and tear on the Village's infrastructure that can result in more frequent maintenance and improvements required. This can also add costs in the form of requiring larger pump sizes to deal with fire flows, and correlates strongly with the burdens identified under the Fixed Rate Structure in which a singular volumetric rate can ultimately result in a disproportionate burden across the customer groups.

An analysis was performed to determine the usage patterns of the Village's Residential, Senior, Government, Commercial, and Industrial customers. Using all of the Village's customer bills issued in 2022, a statistical analysis of the bi-monthly water usage patterns for the different user groups was conducted. There were a total of 72,687 bills issued, and specific ranges of usage were identified based on engineering experience related to typical uses. In reviewing the Village's Residential and Senior User Groups, the following observations were made:

- When reviewing typical Residential water usage patterns without factoring additional demands like irrigation, a 1-2 person household generally uses between 1,000 to 4,000 gallons monthly (doubled for bi-monthly billing). For a typical 2-3 person household, 3,000 to 8,000 gallons monthly is typically observed. For larger family households, 5,000 to 12,000 gallons can be observed. Factoring irrigation and higher seasonal usage periods, these figures were used to set the 7,500 gallon tier (15,000 gallons bi-monthly) and 15,000 gallon tier (30,000 gallons bi-monthly).
- For the Senior User Group, 95.7% of the bi-monthly bills fell between 0 and 15,000 gallons, 3.9% fell between 15,000 gallons and 30,000 gallons, and a remaining 0.4% of the bills fell over 30,000 gallons in a bi-monthly billing cycle.
- For the Residential User Group, 86.2% of the bi-monthly bills fell between 0 and 15,000 gallons, 12.0% fell between 15,000 gallons and 30,000 gallons, and a remaining 1.8% of the bills fell over 30,000 gallons in a bi-monthly billing cycle.

In reviewing some of the specific Residential bills that recorded greater than 30,000 gallons bi-monthly, although some were verified to be single family households, a portion of these bills were also tied to single meter, multi-tenant buildings with a maximum observed bi-monthly Residential bill of approximately 100,000 gallons. A breakdown of the Village's Senior and Residential Customer Bi-monthly Bills issued in 2022 is shown below in Figure 6.

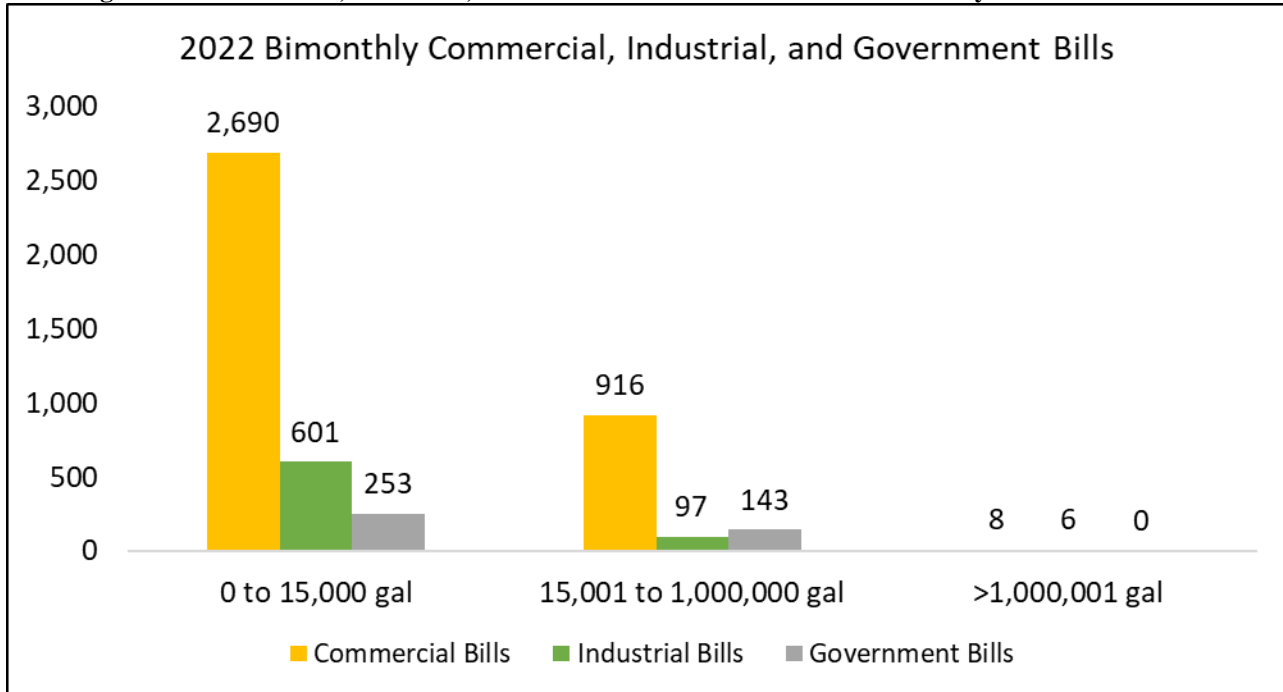
Figure 6 - Senior and Residential 2022 Customer Bi-monthly Bills Breakdown



The Village’s Commercial, Industrial, and Government bills, which consist of retail locations, restaurants, schools, and industries, were similarly assessed as the Residential and Senior user groups. Although the 15,000 gallon threshold for the first tier for these user groups provided a similar distribution to the Residential and Senior, the 1,000,000 gallon threshold was identified as the second tier.

This was intentionally selected to balance the range in total water billed by customers between 15,000 gallons and 1 million gallons with the few, but extremely large, water users which were observed to exceed 2.5 million gallons bi-monthly. A breakdown of the Village’s Commercial, Industrial, and Government Customer Bi-monthly Bills issued in 2022 is shown below in Figure 7.

Figure 7 – Commercial, Industrial, and Government 2022 Customer Bi-monthly Bills Breakdown



Although it is apparent that most the Village’s customer accounts are typical residential users, the following observations were made in reviewing specific usage patterns:

- Accounts using 0 to 15,000 gallons bi-monthly represented a wide range of Residential, Senior, Commercial, Government, and Industrial users.
- The bills with registered water usage above 15,000 gallons per month were comprised of large Residential users, as well as many Commercial, Government, and Industrial. These customers represented a wide range of usage types ranging from manufacturing, large office complexes, food and beverage establishments, and large institutions including schools.
- The Village’s largest customers consistently recorded water usage patterns of greater than 1,000,000 gallons bi-monthly, with a maximum recorded bi-monthly bill of over 2,700,000 gallons.
- Many of the Village’s largest water users are customers with meters of less than 6-inches. The highest usage customers were generally identified to have 2-inch through 4-inch meters.

Based on the above analysis of the volumetric usage, the inclining block volumetric rate structure was identified as an alternative rate structure to be evaluated to modify the Village’s existing water volumetric rate structures. The inclining block volumetric rate structure establishes blocks of usage,

referred to as tiers, which progressively charge more for usage within a given billing period. By establishing additional tiers, this would enable the Village to have greater control over the distribution of its volumetric rates to better prorate its expenses across its customer's usage pattern.

Given the relatively minimal infrastructure the Village maintains for its sewer infrastructure, which largely just conveys wastewater to the Fox Metro Water Reclamation District, the Village's existing rate structure for the sewer volumetric rate was maintained. At this time, no alternative rate structures are currently proposed for the sewer rates.

Alternative Rate Structure Scenarios

Three additional Scenarios were developed to evaluate the impacts of implementing the identified alternative rate structure elements and monitor the impacts these structures had on key sample customer bills. Each Scenario would be assigned rate increases that allow it to maintain the same total fund balance projection as observed under Scenario 1 to enable the more direct comparison the alternative rate structures have on allowing the Village to distribute its rate increases more equitably across the diverse customer base.

Scenario 2: Fixed Scaled Meter with Existing Water and Sewer Volumetric – Convert the Village's existing Fixed Fee to a Fixed Scaled Meter Rate Structure. The fixed scaled meter fee is set proportional to the customer's water meter size. No changes are proposed to the water and sewer volumetric rate structure.

Scenario 3: Fixed Scaled Meter with Residential Inclining Block Water Volumetric Rate – Convert the Village's existing Fixed Fee to a Fixed Scaled Meter Rate Structure. Add a three-tier Volumetric Inclining Block that is applied to Residential and Senior customers. No changes are proposed to the sewer volumetric rate structure.

Scenario 4: Fixed Scaled Meter with Universal Inclining Block Water Volumetric Rate – Convert the Village's existing Fixed Fee to a Fixed Scaled Meter Rate Structure. Add a three-tier Water Volumetric Inclining Block that is applied to all customers. No changes are proposed to the sewer volumetric rate structure.

2.4 Scenario 2: Fixed Scaled Meter with Existing Volumetric Rate Structure

As noted previously, the initial rate increase starting in January 1, 2024 does not include any changes to the rate structure due to the timing of this rate study. The implementation of the Fixed Scaled Meter would start on January 1, 2025, and the fixed fee increase ranges from \$1 to \$2 annually to the base rate. Table 13 summarizes the proposed rate increases to the Fixed Scaled Meter Fees. The table

shows the increase in dollars to the ¾-inch and less, and the meter ratio was used to scale the fees for meter diameters 1-inch and greater.

Table 13 – Scenario 2: Fixed Scaled Meter Fees

Meter Size	2023	2024	2025	2026	2027	2028	2029	2030	2031
3/4-inch meter Rate Increase (in Dollars)		\$1.00	\$1.00	\$1.00	\$1.00	\$2.00	\$2.00	\$2.00	\$2.00
3/4-inch meter	\$6.34	\$7.34	\$8.34	\$9.34	\$10.34	\$12.34	\$14.34	\$16.34	\$18.34
1-inch meter	\$6.34	\$7.34	\$14.85	\$16.63	\$18.41	\$21.97	\$25.53	\$29.09	\$32.65
1.5-inch meter	\$6.34	\$7.34	\$33.36	\$37.36	\$41.36	\$49.36	\$57.36	\$65.36	\$73.36
2-inch meter	\$6.34	\$7.34	\$59.30	\$66.41	\$73.52	\$87.74	\$101.96	\$116.18	\$130.40
3-inch meter	\$6.34	\$7.34	\$133.44	\$149.44	\$165.44	\$197.44	\$229.44	\$261.44	\$293.44
4-inch meter	\$6.34	\$7.34	\$237.19	\$265.63	\$294.07	\$350.95	\$407.83	\$464.71	\$521.59
6-inch meter	\$6.34	\$7.34	\$533.76	\$597.76	\$661.76	\$789.76	\$917.76	\$1,045.76	\$1,173.76

In developing Scenario 2, the following key notes were made:

- Similar to the increases to the Fixed Fee under Scenario 1, the annual increases to the Fixed Scaled Meter Fee were capped to limit the disproportionate impact that fixed charges have on customers with relatively low water usage.
- Although the fees for larger meters can appear high in isolation, these fees are often proportionally low relative to the larger water users. These fees are also intended to better recuperate the costs associated with the cost burden of supporting the larger water meter customers, irrespective of their actual usage.

The proposed Water Volumetric rate increases are summarized in Table 14. The Sewer Volumetric Rate Increases are identical to those discussed in Scenario 1.

Table 14 – Scenario 2: Water Volumetric Rate Increases

		2023	2024	2025	2026	2027	2028	2029	2030	2031
Water Rate (Non-Senior)	Rate Increases		4.0%	5.0%	5.0%	6.0%	6.0%	6.0%	6.0%	6.0%
	Volumetric Rate	\$7.39	\$7.69	\$8.07	\$8.47	\$8.98	\$9.52	\$10.09	\$10.70	\$11.34
Water Rate (Senior)	Rate Increases		4.0%	5.0%	5.0%	6.0%	6.0%	6.0%	6.0%	6.0%
	Volumetric Rate	\$3.70	\$3.84	\$4.03	\$4.24	\$4.49	\$4.76	\$5.05	\$5.35	\$5.67

Figure 8 and Figure 9 show the Revenue and Expense and Water and Sewer Fund balance for Scenario 2, respectively.

Figure 8 – Scenario 2: Revenue and Expense Cash Flow Projection

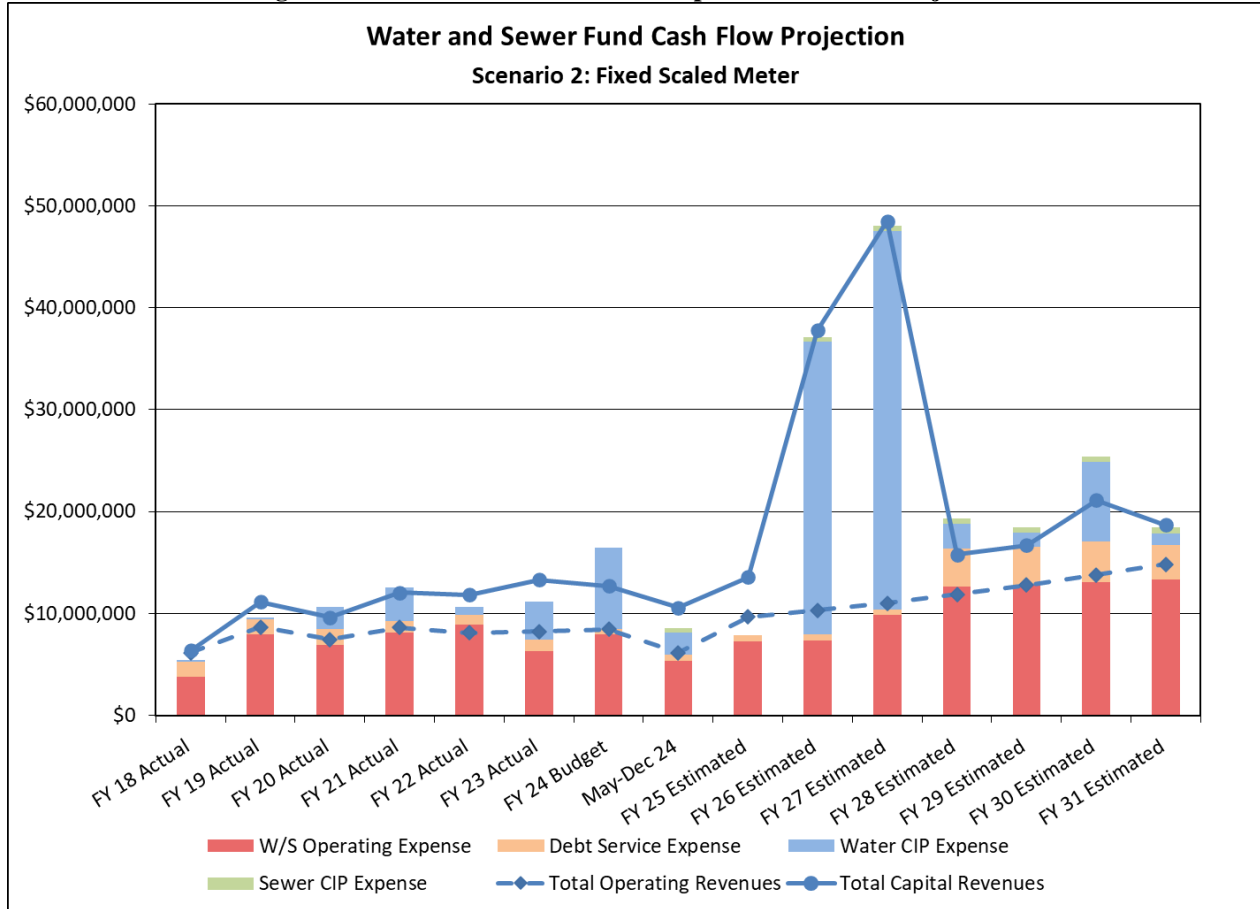
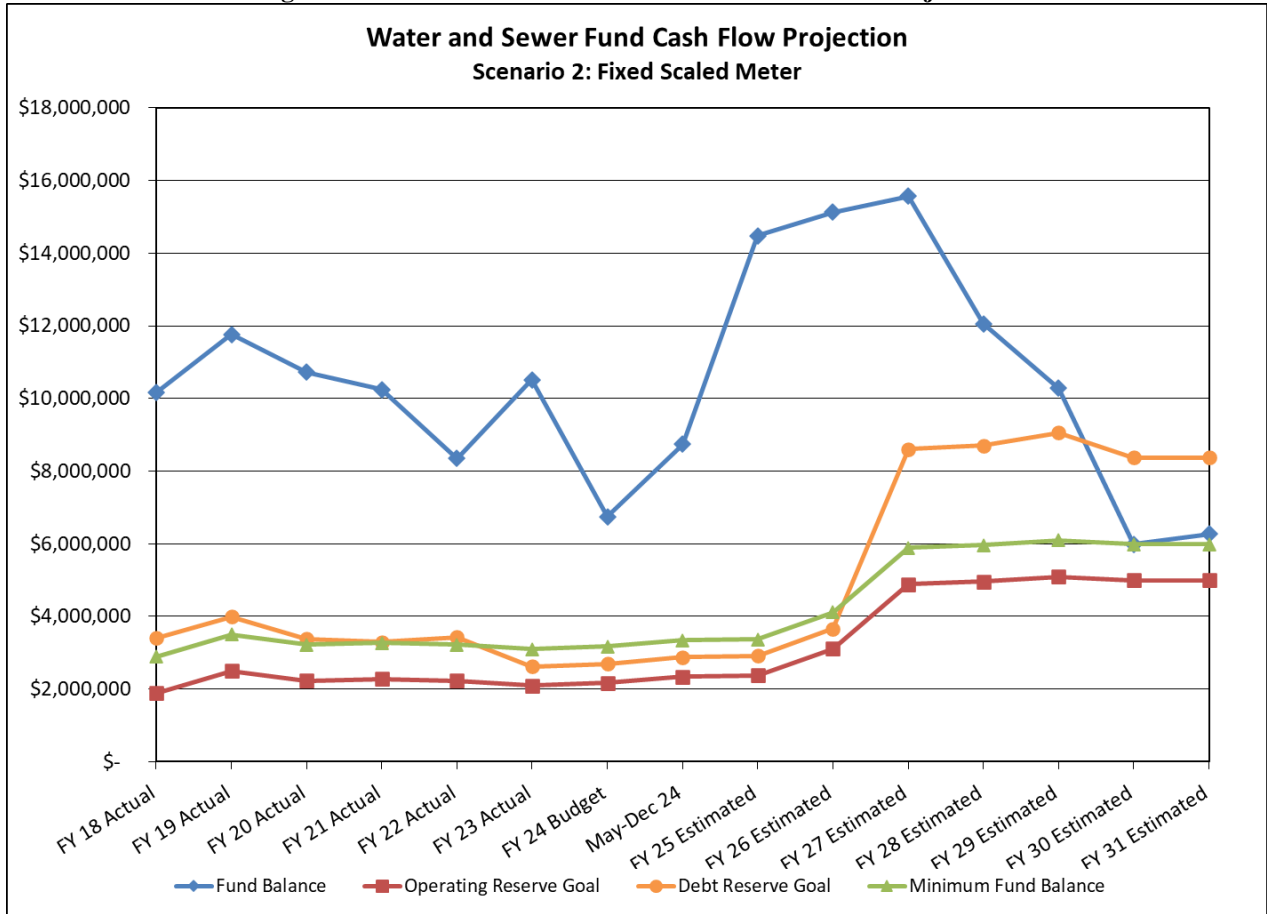


Figure 9 – Scenario 2: Water and Sewer Fund Balance Projection



As mentioned, these rate increases allow the Water and Sewer Fund to generate the necessary revenues to maintain a minimum fund balance of \$1 million above the operating reserve goal throughout the projection period and are specifically designed to closely match the final fund balance position established under Scenario 1 to evaluate the change in impact across the customer base. These sample bills were calculated under the proposed rates outlined under Scenario 2 and are summarized below:

1. A Residential User billed at 10,000 and 80,000 gallons bi-monthly served by a ¾-inch and 1-inch water meter respectively.

Table 15 – Scenario 2: Average Residential User 10,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$97.36			\$584.16	
2024	\$103.00	\$5.64	5.8%	\$618.00	\$33.84
2025	\$108.56	\$5.55	5.4%	\$651.33	\$33.33
2026	\$114.33	\$5.78	5.3%	\$685.99	\$34.65
2027	\$121.19	\$6.85	6.0%	\$727.11	\$41.13
2028	\$129.38	\$8.19	6.8%	\$776.26	\$49.14
2029	\$137.92	\$8.55	6.6%	\$827.53	\$51.27
2030	\$146.84	\$8.92	6.5%	\$881.06	\$53.53
2031	\$156.16	\$9.32	6.3%	\$936.98	\$55.92

Table 16 – Scenario 2: Large Residential User 80,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$734.50			\$4,407.00	
2024	\$764.63	\$30.13	4.1%	\$4,587.76	\$180.76
2025	\$808.57	\$43.95	5.7%	\$4,851.43	\$263.67
2026	\$848.56	\$39.98	4.9%	\$5,091.34	\$239.91
2027	\$897.17	\$48.61	5.7%	\$5,383.03	\$291.69
2028	\$950.25	\$53.08	5.9%	\$5,701.52	\$318.49
2029	\$1,006.18	\$55.92	5.9%	\$6,037.06	\$335.55
2030	\$1,065.11	\$58.93	5.9%	\$6,390.66	\$353.60
2031	\$1,127.23	\$62.12	5.8%	\$6,763.36	\$372.70

2. A Senior Residential user billed at 6,000 gallons bi-monthly served by a ¾-inch water meter.

Table 17 – Scenario 2: Senior Residential User 6,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$33.65			\$201.88	
2024	\$35.74	\$2.09	6.2%	\$214.43	\$12.55
2025	\$38.10	\$2.37	6.6%	\$228.63	\$14.20
2026	\$40.54	\$2.43	6.4%	\$243.22	\$14.60
2027	\$43.29	\$2.76	6.8%	\$259.76	\$16.54
2028	\$47.15	\$3.86	8.9%	\$282.90	\$23.14
2029	\$51.11	\$3.96	8.4%	\$306.69	\$23.78
2030	\$55.19	\$4.08	8.0%	\$331.15	\$24.46
2031	\$59.39	\$4.20	7.6%	\$356.32	\$25.18

3. An Average Municipal/School User billed at 100,000 gallons bi-monthly and served by a 2-inch water meter.

Table 18 – Scenario 2: Average Municipal/School User 100,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$916.54			\$5,499.24	
2024	\$953.95	\$37.41	4.1%	\$5,723.69	\$224.45
2025	\$1,051.46	\$97.51	10.2%	\$6,308.73	\$585.04
2026	\$1,106.32	\$54.87	5.2%	\$6,637.93	\$329.20
2027	\$1,171.97	\$65.65	5.9%	\$7,031.85	\$393.92
2028	\$1,248.10	\$76.12	6.5%	\$7,488.58	\$456.73
2029	\$1,327.77	\$79.68	6.4%	\$7,966.63	\$478.05
2030	\$1,411.21	\$83.44	6.3%	\$8,467.25	\$500.62
2031	\$1,498.63	\$87.42	6.2%	\$8,991.75	\$524.50

4. An Average Commercial/Industrial User billed at 240,000 gallons bi-monthly and served by a 3-inch water meter.

Table 19 – Scenario 2: Average Commercial/Industrial User 240,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$2,190.82			\$13,144.92	
2024	\$2,279.20	\$88.38	4.0%	\$13,675.20	\$530.28
2025	\$2,514.62	\$235.42	10.3%	\$15,087.71	\$1,412.52
2026	\$2,645.23	\$130.61	5.2%	\$15,871.40	\$783.69
2027	\$2,801.74	\$156.50	5.9%	\$16,810.43	\$939.02
2028	\$2,982.30	\$180.56	6.4%	\$17,893.81	\$1,083.39
2029	\$3,171.40	\$189.09	6.3%	\$19,028.38	\$1,134.56
2030	\$3,369.52	\$198.12	6.2%	\$20,217.09	\$1,188.72
2031	\$3,577.19	\$207.67	6.2%	\$21,463.12	\$1,246.02

5. A Large Commercial/Industrial User billed at 2,000,000 gallons bi-monthly and served by a 4-inch water meter.

Table 20 – Scenario 2: Large Commercial/Industrial User 2,000,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$18,210.34			\$109,262.04	
2024	\$18,939.50	\$729.16	4.0%	\$113,637.00	\$4,374.96
2025	\$20,080.35	\$1,140.85	6.0%	\$120,482.09	\$6,845.09
2026	\$21,063.91	\$983.56	4.9%	\$126,383.47	\$5,901.38
2027	\$22,263.22	\$1,199.31	5.7%	\$133,579.31	\$7,195.84
2028	\$23,558.14	\$1,294.92	5.8%	\$141,348.81	\$7,769.50
2029	\$24,924.13	\$1,365.99	5.8%	\$149,544.78	\$8,195.97
2030	\$26,365.34	\$1,441.21	5.8%	\$158,192.03	\$8,647.25
2031	\$27,886.14	\$1,520.80	5.8%	\$167,316.85	\$9,124.82

The most notable observation of implementing the Fixed Scaled Meter is the adjustment to the smaller volumetric users such as Seniors and Residentials, which see their total bills go down as a result of the implementation of the Fixed Scaled Meter. Although this results in a larger increase to the customer bills with larger water meters, this is to be expected with the implementation of the Fixed Scaled Meter which seeks to have the larger metered customers pay a more proportional share of their burden on the Village's infrastructure.

However, the implementation of the Fixed Scaled Meter is still generally limited in terms of offsetting the total cost burdens to meet the Village's revenue requirements without adjustments to the

volumetric rates. This is most apparent in the comparison of the Larger Commercial/Industrial User at 2,000,000 gallons bi-monthly generating a lower total Annual Bill year over year when compared to Scenario 1, as the high usage allows its bill to fall lower than the proposed rate increases under Scenario 1.

2.5 Scenario 3: Fixed Scaled Meter with Residential Inclining Block Water Volumetric Rate

During discussions with Village staff, it was determined that an inclining block rate structure could be evaluated to better capture the peak water usage that occurred during the Spring through Fall months associated with Residential usage for irrigation. Building off the implementation of the Fixed Scaled Meter rate structure evaluated under Scenario 2, the Village's water volumetric rate was modified to a three-tiered, inclining block rate structure for Scenario 3.

This inclining block rate structure would only be applied to its Residential user group. Seniors would also have the inclining block rate structure applied to them, though continue to receive a 50% discount to the water volumetric rates. In order to avoid spiking the total rate increases for the Residential customer base, the implementation of the Fixed Scaled Meter would occur on January 1, 2025 as outlined under Scenario 2, and begin implementing the Inclining Block Rate Structure on January 1, 2026.

Based on the analysis conducted on the Village's actual bi-monthly bills from historical years, the three tiers identified for the specific implementation of a Residential, three-tiered, inclining block rate structure are outlined below:

- Tier 1: 0 to 15,000 gallons bi-monthly
- Tier 2: 15,001 gallons to 30,000 gallons bi-monthly
- Tier 3: Over 30,001 gallons bi-monthly

The proposed inclining block structure is implemented beginning on January 1, 2026, and the rate schedule is shown below in Table 21. There are currently no proposed changes to the sewer volumetric rate structure, and the increases to the sewer volumetric rate are identical to those discussed in Scenario 1.

Table 21 – Scenario 3: Water Volumetric Rate Increases

		2023	2024	2025	2026	2027	2028	2029	2030	2031
Tier 1 Water Rate (Residential)	Rate Increases		4.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$7.39	\$7.69	\$8.07	\$8.47	\$8.90	\$9.34	\$9.81	\$10.30	\$10.81
Tier 2 Water Rate (Residential)	Rate Increases		4.0%	5.0%	8.0%	8.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$7.39	\$7.69	\$8.07	\$8.72	\$9.41	\$9.88	\$10.38	\$10.90	\$11.44
Tier 3 Water Rate (Residential)	Rate Increases		4.0%	5.0%	10.0%	10.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$7.39	\$7.69	\$8.07	\$8.88	\$9.76	\$10.25	\$10.77	\$11.30	\$11.87
Tier 1 Water Rate (Senior)	Rate Increases		4.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$3.70	\$3.84	\$4.03	\$4.24	\$4.45	\$4.67	\$4.90	\$5.15	\$5.41
Tier 2 Water Rate (Senior)	Rate Increases		4.0%	5.0%	8.0%	8.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$3.70	\$3.84	\$4.03	\$4.36	\$4.71	\$4.94	\$5.19	\$5.45	\$5.72
Tier 3 Water Rate (Senior)	Rate Increases		4.0%	5.0%	10.0%	10.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$3.70	\$3.84	\$4.03	\$4.44	\$4.88	\$5.13	\$5.38	\$5.65	\$5.93
Non-Residential Water Rate	Rate Increases		5.0%	4.0%	6.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$7.39	\$7.76	\$8.07	\$8.55	\$8.98	\$9.43	\$9.90	\$10.40	\$10.92

Figure 10 and Figure 11 show the Revenue and Expense and Water and Sewer Fund balance for Scenario 3, respectively.

Figure 10 – Scenario 3: Revenue and Expense Cash Flow Projection

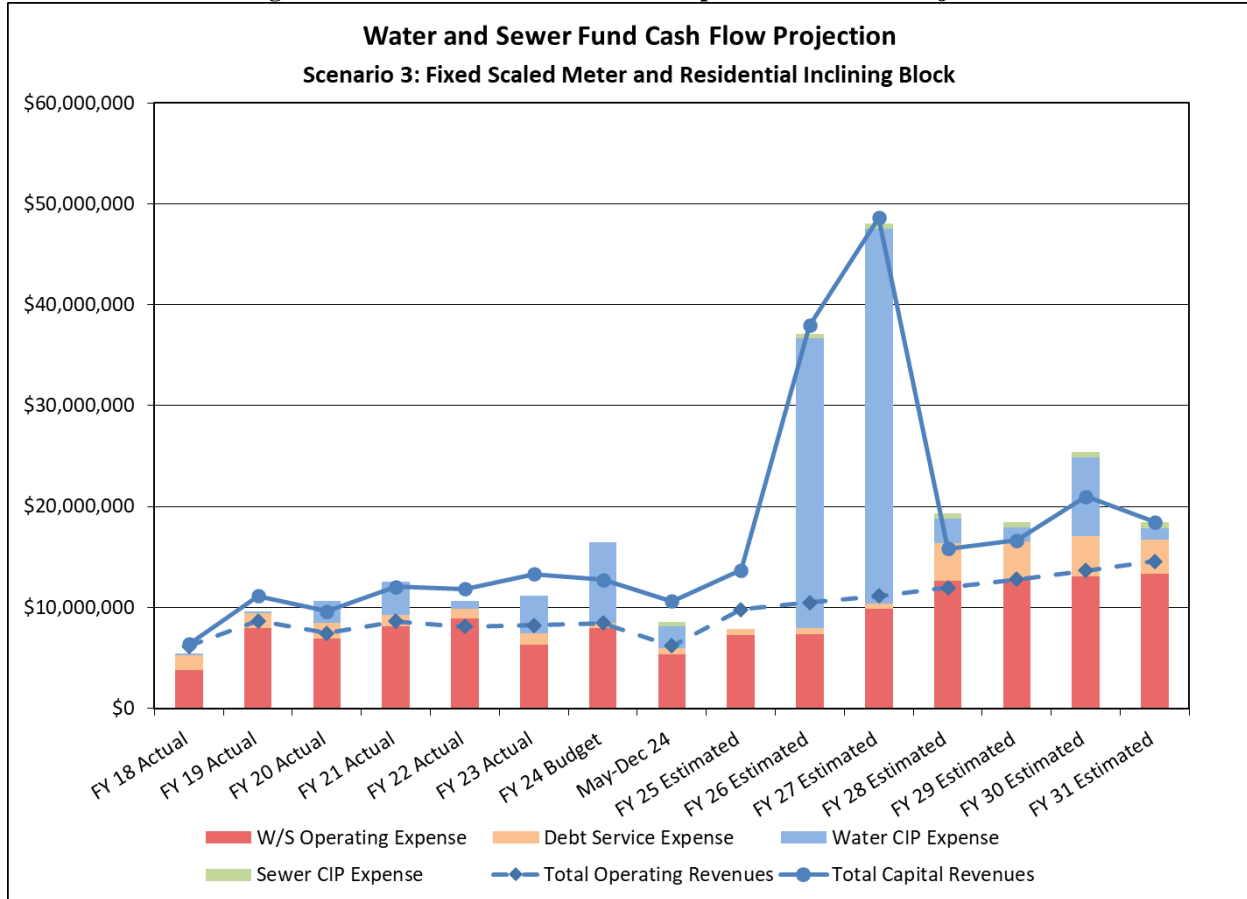
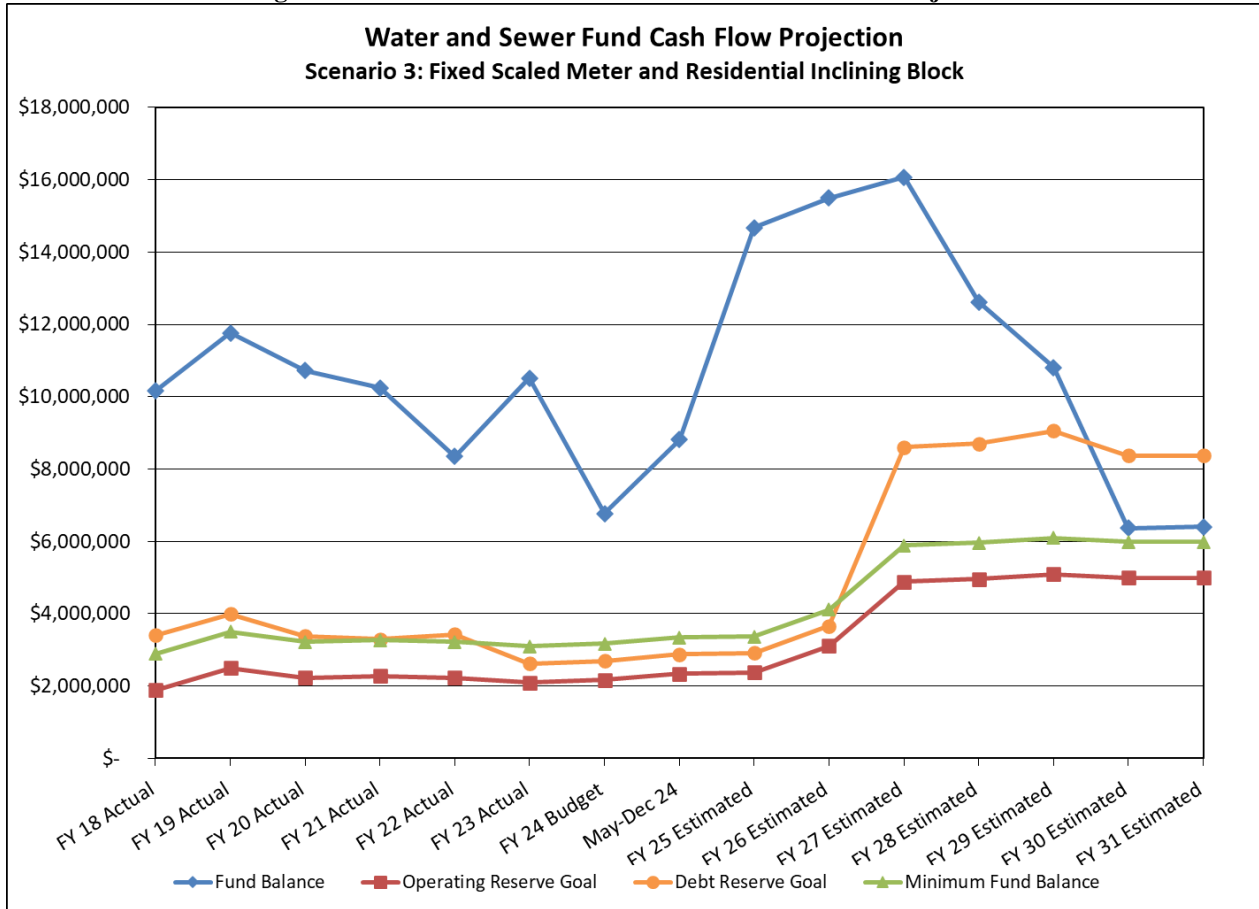


Figure 11 – Scenario 3: Water and Sewer Fund Balance Projection



As mentioned, these rate increases allow the Water and Sewer Fund to generate the necessary revenues to maintain a minimum fund balance of \$1 million above the operating reserve goal throughout the projection period and are specifically designed to closely match the final fund balance position established under Scenario 1 to evaluate the change in impact across the customer base. These sample bills were calculated under the proposed rates outlined under Scenario 3 and are summarized below:

1. A Residential User billed at 10,000 and 80,000 gallons bi-monthly served by a ¾-inch and 1-inch water meter respectively.

Table 22 – Scenario 3: Average Residential User 10,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$97.36			\$584.16	
2024	\$103.00	\$5.64	5.8%	\$618.00	\$33.84
2025	\$108.56	\$5.55	5.4%	\$651.33	\$33.33
2026	\$114.33	\$5.78	5.3%	\$685.99	\$34.65
2027	\$120.34	\$6.01	5.3%	\$722.03	\$36.04
2028	\$127.59	\$7.25	6.0%	\$765.53	\$43.50
2029	\$135.09	\$7.50	5.9%	\$810.55	\$45.02
2030	\$142.86	\$7.77	5.8%	\$857.18	\$46.63
2031	\$150.91	\$8.05	5.6%	\$905.48	\$48.31

Table 23 – Scenario 3: Large Residential User 80,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$734.50			\$4,407.00	
2024	\$765.63	\$31.13	4.2%	\$4,593.76	\$186.76
2025	\$810.35	\$44.73	5.8%	\$4,862.11	\$268.35
2026	\$874.14	\$63.79	7.9%	\$5,244.86	\$382.75
2027	\$943.28	\$69.14	7.9%	\$5,659.70	\$414.84
2028	\$991.40	\$48.11	5.1%	\$5,948.37	\$288.68
2029	\$1,041.67	\$50.28	5.1%	\$6,250.03	\$301.66
2030	\$1,094.22	\$52.55	5.0%	\$6,565.30	\$315.27
2031	\$1,149.14	\$54.93	5.0%	\$6,894.86	\$329.55

2. A Senior Residential user billed at 6,000 gallons bi-monthly served by a ¾-inch water meter.

Table 24 – Scenario 3: Senior Residential User 6,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$33.65			\$201.88	
2024	\$36.73	\$3.09	9.2%	\$220.39	\$18.55
2025	\$39.10	\$2.37	6.4%	\$234.59	\$14.20
2026	\$41.53	\$2.43	6.2%	\$249.18	\$14.59
2027	\$44.03	\$2.50	6.0%	\$264.20	\$15.01
2028	\$47.61	\$3.57	8.1%	\$285.64	\$21.45
2029	\$51.26	\$3.65	7.7%	\$307.55	\$21.91
2030	\$54.99	\$3.73	7.3%	\$329.93	\$22.39
2031	\$58.80	\$3.81	6.9%	\$352.82	\$22.89

3. An Average Municipal/School User billed at 100,000 gallons bi-monthly and served by a 2-inch water meter.

Table 25 – Scenario 3: Average Municipal/School User 100,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$916.54			\$5,499.24	
2024	\$962.13	\$45.79	5.0%	\$5,772.78	\$274.74
2025	\$1,058.35	\$96.22	10.0%	\$6,350.09	\$577.31
2026	\$1,121.28	\$62.93	5.9%	\$6,727.66	\$377.56
2027	\$1,178.85	\$57.57	5.1%	\$7,073.11	\$345.45
2028	\$1,245.98	\$67.13	5.7%	\$7,475.89	\$402.78
2029	\$1,315.68	\$69.70	5.6%	\$7,894.07	\$418.18
2030	\$1,388.06	\$72.39	5.5%	\$8,328.39	\$434.32
2031	\$1,463.27	\$75.21	5.4%	\$8,779.64	\$451.25

4. An Average Commercial/Industrial User billed at 240,000 gallons bi-monthly and served by a 3-inch water meter.

Table 26 – Scenario 3: Average Commercial/Industrial User 240,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$2,190.82			\$13,144.92	
2024	\$2,297.44	\$107.10	4.9%	\$13,784.62	\$642.58
2025	\$2,530.10	\$232.66	10.1%	\$15,180.60	\$1,395.98
2026	\$2,680.06	\$149.96	5.9%	\$16,080.37	\$899.77
2027	\$2,817.18	\$137.11	5.1%	\$16,903.06	\$822.69
2028	\$2,976.16	\$158.99	5.6%	\$17,856.97	\$953.91
2029	\$3,141.30	\$165.14	5.5%	\$18,847.83	\$990.86
2030	\$3,312.91	\$171.60	5.5%	\$19,877.43	\$1,029.60
2031	\$3,491.28	\$178.37	5.4%	\$20,947.67	\$1,070.24

5. A Large Commercial/Industrial User billed at 2,000,000 gallons bi-monthly and served by a 4-inch water meter.

Table 27 – Scenario 3: Large Commercial/Industrial User 2,000,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$18,210.34			\$109,262.04	
2024	\$19,084.14	\$877.80	4.8%	\$114,504.84	\$5,266.80
2025	\$20,104.46	\$1,020.32	5.3%	\$120,626.77	\$6,121.93
2026	\$21,249.25	\$1,144.79	5.7%	\$127,495.50	\$6,868.73
2027	\$22,286.98	\$1,037.73	4.9%	\$133,721.87	\$6,226.37
2028	\$23,402.07	\$1,115.09	5.0%	\$140,412.44	\$6,690.57
2029	\$24,568.48	\$1,166.40	5.0%	\$147,410.87	\$6,998.43
2030	\$25,788.69	\$1,220.22	5.0%	\$154,732.17	\$7,321.30
2031	\$27,065.35	\$1,276.65	5.0%	\$162,392.08	\$7,659.91

By splitting up the singular water volumetric rate into the three-tiered, inclining block rate structure, the cost burden is slightly shifted away from the lower volumetric users towards those who use more and can be readily observed in the comparison between the low and high usage Residential sample bills below. It should be noted that the higher usage customers do observe the lower rates for the usage that fall within any lower tiers for their total usage within the given billing period.

In discussions with Village staff, it was decided to evaluate the implementation of the inclining block to all of the Village's customers for Scenario 4. This would allow the Village to similarly prorate its

three-tiered, inclining block rate structure to more equitably set rates for its customers which range in usage from 1,000 gallons to 2.7 million gallons bi-monthly.

2.6 Scenario 4: Fixed Scaled Meter with Universal Inclining Block Water Volumetric Rate

In discussions with Village staff, it was determined that maintaining three tiers would be desired when implementing the inclining block rate structure to include all of the Village's customers. This would allow a more simplified tier structure for the proposed adoption of an alternative rate structure, with the ability for the Village to modify and add tiers in the future as needed.

Based on the analysis of the Village's billing data, the second tier was adjusted to range from 15,001 gallons to 1,000,000 gallons bi-monthly to accommodate the inclusion of the larger water usage customers. This tier was intentionally set based on an iterative review of the impact to the Village's largest customers that averaged bi-monthly water usage bills of well over two million gallons.

The following outlines the three tiers, which were determined based on the Village's customer billing data:

- Tier 1: 0 to 15,000 gallons bi-monthly
- Tier 2: 15,001 to 1,000,000 gallons bi-monthly
- Tier 3: Over 1,000,001 gallons bi-monthly

Similar to Scenario 3, the proposed inclining block structure would be implemented beginning on January 1, 2026 to avoid spiking the rate increases to the Village's customers during the implementation of the Fixed Scaled Meter set for January 1, 2025. The proposed rate schedule is shown below in Table 28. The Fixed Scaled Meter Rate Increases are identical to those discussed in Scenario 2. There are currently no proposed changes to the sewer volumetric rate structure, and the increases to the sewer volumetric rate are identical to those discussed in Scenario 1.

Table 28 – Scenario 4: Water Volumetric Rate Increases

		2023	2024	2025	2026	2027	2028	2029	2030	2031
Tier 1 Water Rate (Non-Senior)	Rate Increases		4.0%	5.0%	4.0%	4.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$7.39	\$7.69	\$8.07	\$8.39	\$8.73	\$9.16	\$9.62	\$10.10	\$10.61
Tier 2 Water Rate (Non-Senior)	Rate Increases		4.0%	5.0%	8.0%	8.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$7.39	\$7.69	\$8.07	\$8.72	\$9.41	\$9.88	\$10.38	\$10.90	\$11.44
Tier 3 Water Rate (Non-Senior)	Rate Increases		4.0%	5.0%	10.0%	10.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$7.39	\$7.69	\$8.07	\$8.88	\$9.76	\$10.25	\$10.77	\$11.30	\$11.87
Tier 1 Water Rate (Senior)	Rate Increases		4.0%	5.0%	4.0%	4.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$3.70	\$3.84	\$4.03	\$4.20	\$4.36	\$4.58	\$4.81	\$5.05	\$5.30
Tier 2 Water Rate (Senior)	Rate Increases		4.0%	5.0%	8.0%	8.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$3.70	\$3.84	\$4.03	\$4.36	\$4.71	\$4.94	\$5.19	\$5.45	\$5.72
Tier 3 Water Rate (Senior)	Rate Increases		4.0%	5.0%	10.0%	10.0%	5.0%	5.0%	5.0%	5.0%
	Volumetric Rate	\$3.70	\$3.84	\$4.03	\$4.44	\$4.88	\$5.13	\$5.38	\$5.65	\$5.93

Figure 12 and Figure 13 show the Revenue and Expense and Water and Sewer Fund balance for Scenario 4, respectively.

Figure 12 – Scenario 4: Revenue and Expense Cash Flow Projection

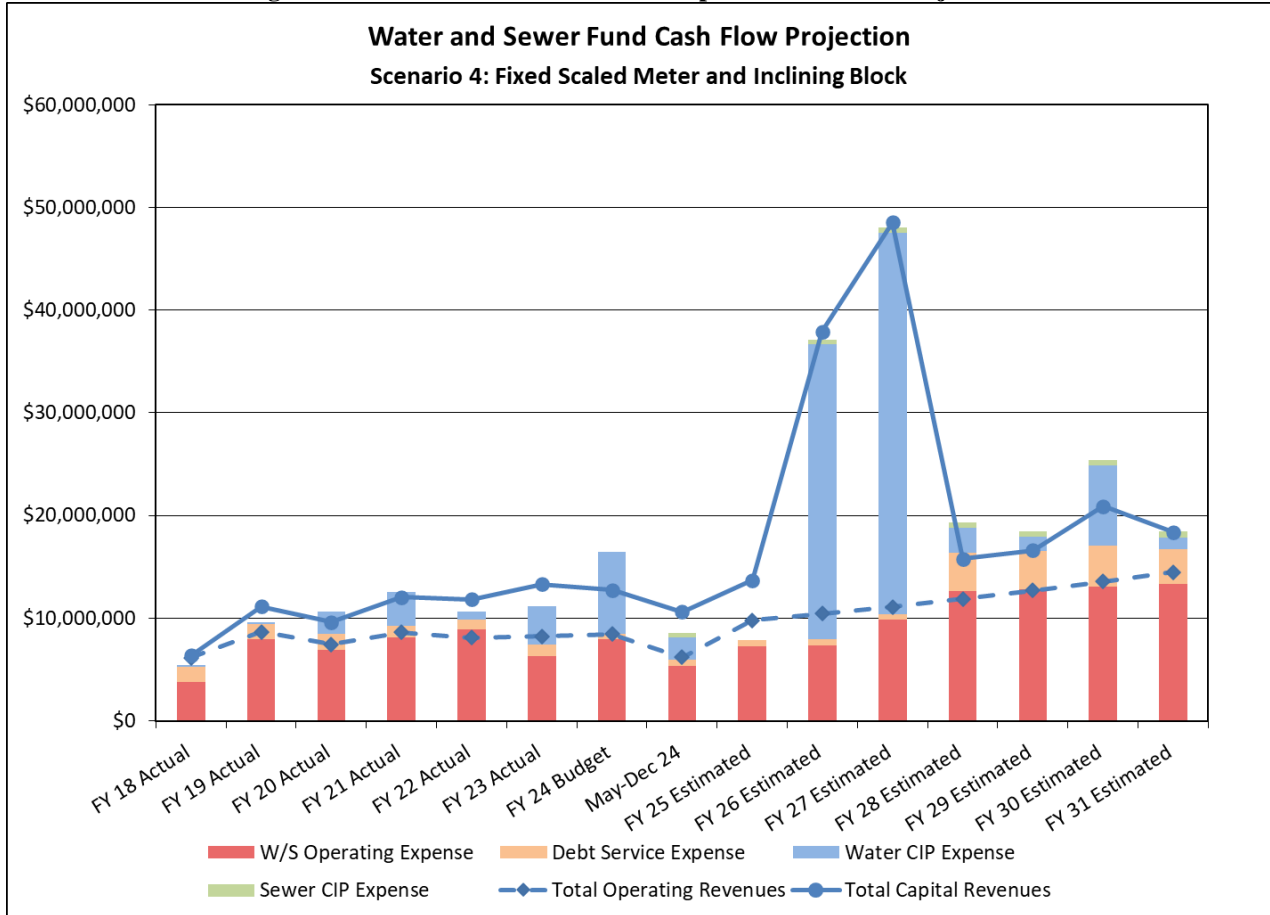
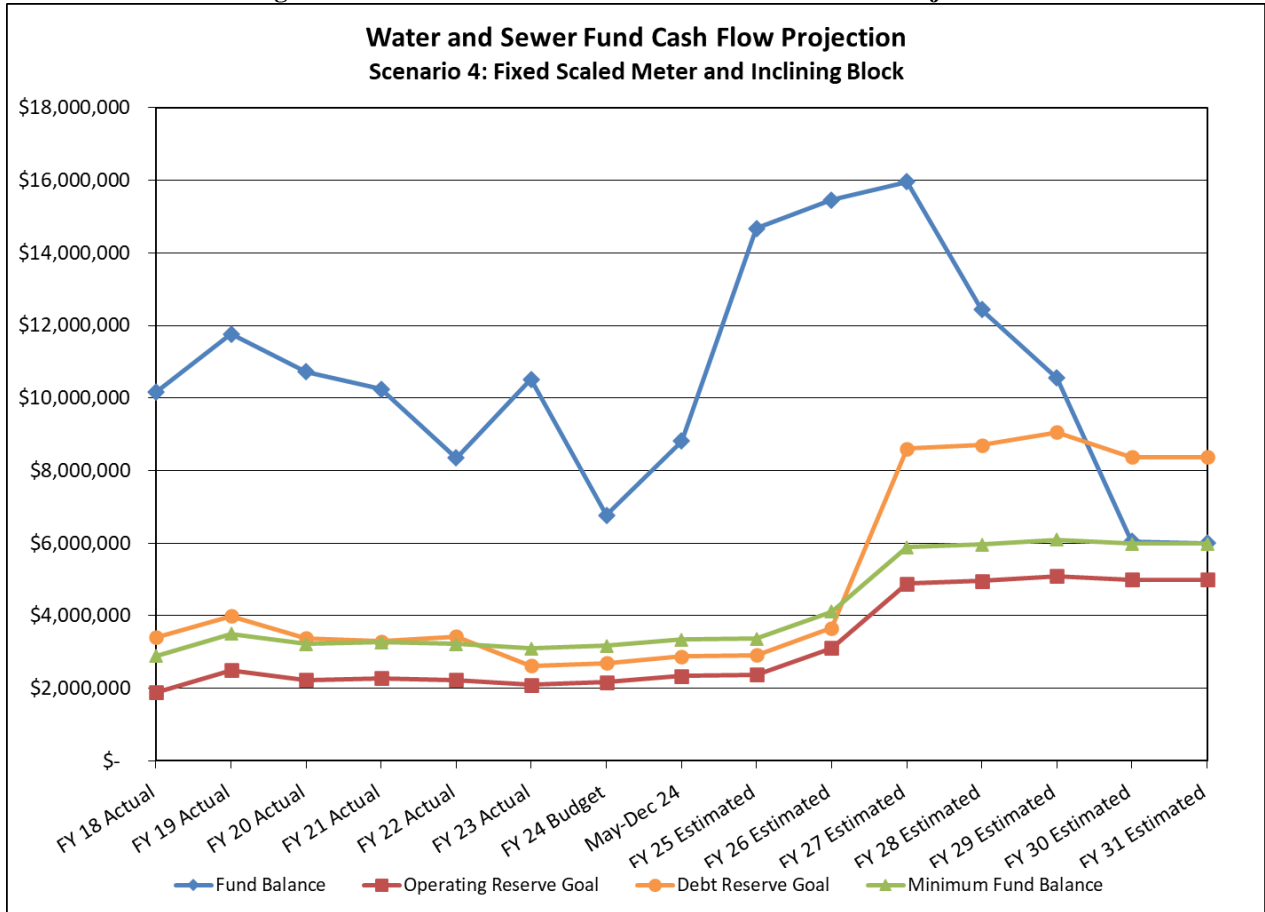


Figure 13 – Scenario 4: Water and Sewer Fund Balance Projection



Similar to the previous scenarios, these rate increases allow the Water and Sewer Fund to generate the necessary revenues to maintain a minimum fund balance of \$1 million above the operating reserve goal throughout the projection period.

Overall, the Village’s relatively stable starting financial position in Fiscal Year 2023 allows the Village to mitigate the immediate impact of the necessary rate hikes. These rate increases allow the Village to maintain a minimum fund balance of \$1 million above the operating reserve goal, even with three years of projected operating deficits between Fiscal Years 2027 through Fiscal Year 2030.

The increases identified can have significantly different impacts based on the customer group and usage patterns. As part of the analysis, sample bills were prepared based on specific user groups to better understand the consequences of the rate increases and were used to develop the rates. These sample bills were calculated under the proposed rates outlined under Scenario 4 and are summarized below:

1. A Residential User billed at 10,000 and 80,000 gallons bi-monthly served by a ¾-inch and 1-inch water meter respectively.

Table 29 – Scenario 4: Average Residential User 10,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$97.36			\$584.16	
2024	\$103.00	\$5.64	5.8%	\$618.00	\$33.84
2025	\$108.56	\$5.55	5.4%	\$651.33	\$33.33
2026	\$113.52	\$4.97	4.6%	\$681.15	\$29.81
2027	\$118.65	\$5.13	4.5%	\$711.91	\$30.76
2028	\$125.82	\$7.17	6.0%	\$754.90	\$42.99
2029	\$133.23	\$7.42	5.9%	\$799.40	\$44.49
2030	\$140.91	\$7.68	5.8%	\$845.46	\$46.07
2031	\$148.86	\$7.95	5.6%	\$893.18	\$47.72

Table 30 – Scenario 4: Large Residential User 80,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$734.50			\$4,407.00	
2024	\$765.46	\$31.12	4.2%	\$4,592.76	\$186.72
2025	\$810.18	\$44.72	5.8%	\$4,861.07	\$268.31
2026	\$864.68	\$54.50	6.7%	\$5,188.09	\$327.02
2027	\$922.97	\$58.29	6.7%	\$5,537.84	\$349.75
2028	\$970.07	\$47.10	5.1%	\$5,820.44	\$282.59
2029	\$1,019.28	\$49.21	5.1%	\$6,115.71	\$295.27
2030	\$1,070.71	\$51.43	5.0%	\$6,424.28	\$308.57
2031	\$1,124.46	\$53.75	5.0%	\$6,746.79	\$322.51

- A Senior Residential user billed at 6,000 gallons bi-monthly served by a ¾-inch water meter.

Table 31 – Scenario 4: Senior Residential User 6,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$33.65			\$201.88	
2024	\$36.73	\$3.09	9.2%	\$220.39	\$18.55
2025	\$39.10	\$2.37	6.4%	\$234.59	\$14.20
2026	\$41.29	\$2.19	5.6%	\$247.73	\$13.14
2027	\$43.53	\$2.24	5.4%	\$261.16	\$13.43
2028	\$47.08	\$3.55	8.2%	\$282.46	\$21.30
2029	\$50.70	\$3.62	7.7%	\$304.20	\$21.75
2030	\$54.40	\$3.70	7.3%	\$326.42	\$22.22
2031	\$58.19	\$3.79	7.0%	\$349.13	\$22.71

- An Average Municipal/School User billed at 100,000 gallons bi-monthly and served by a 2-inch water meter.

Table 32 – Scenario 4: Average Municipal/School User 100,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$916.54			\$5,499.24	
2024	\$954.74	\$38.40	4.2%	\$5,728.44	\$230.40
2025	\$1,058.35	\$103.61	10.9%	\$6,350.09	\$621.65
2026	\$1,132.57	\$74.23	7.0%	\$6,795.45	\$445.35
2027	\$1,211.68	\$79.10	7.0%	\$7,270.07	\$474.63
2028	\$1,280.45	\$68.77	5.7%	\$7,682.71	\$412.63
2029	\$1,351.87	\$71.42	5.6%	\$8,111.23	\$428.52
2030	\$1,426.07	\$74.20	5.5%	\$8,556.40	\$445.18
2031	\$1,503.18	\$77.11	5.4%	\$9,019.06	\$462.65

4. An Average Commercial/Industrial User billed at 240,000 gallons bi-monthly and served by a 3-inch water meter.

Table 33 – Scenario 4: Average Commercial/Industrial User 240,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$2,190.82			\$13,144.92	
2024	\$2,279.70	\$89.36	4.1%	\$13,678.20	\$536.16
2025	\$2,530.10	\$250.40	11.0%	\$15,180.60	\$1,502.40
2026	\$2,713.96	\$183.86	7.3%	\$16,283.73	\$1,103.13
2027	\$2,910.33	\$196.38	7.2%	\$17,462.01	\$1,178.28
2028	\$3,073.98	\$163.64	5.6%	\$18,443.87	\$981.86
2029	\$3,244.01	\$170.03	5.5%	\$19,464.07	\$1,020.20
2030	\$3,420.75	\$176.74	5.4%	\$20,524.49	\$1,060.41
2031	\$3,604.51	\$183.76	5.4%	\$21,627.08	\$1,102.59

5. A Large Commercial/Industrial User billed at 2,000,000 gallons bi-monthly and served by a 4-inch water meter.

Table 34 – Scenario 4: Large Commercial/Industrial User 2,000,000 Gallons Sample Bill

Fiscal Year	Bi-Monthly Bill	Bi-Monthly Increase	Percent Increase	Annual Bill	Annual Increase
2023	\$18,210.34			\$109,262.04	
2024	\$18,936.34	\$730.00	4.0%	\$113,618.04	\$4,380.00
2025	\$20,104.46	\$1,168.12	6.2%	\$120,626.77	\$7,008.73
2026	\$21,728.60	\$1,624.14	8.1%	\$130,371.61	\$9,744.84
2027	\$23,490.42	\$1,761.82	8.1%	\$140,942.54	\$10,570.94
2028	\$24,665.69	\$1,175.27	5.0%	\$147,994.14	\$7,051.60
2029	\$25,895.28	\$1,229.59	5.0%	\$155,371.66	\$7,377.51
2030	\$27,181.83	\$1,286.56	5.0%	\$163,090.99	\$7,719.34
2031	\$28,528.14	\$1,346.31	5.0%	\$171,168.85	\$8,077.86

By extending the tiers to include all of the Village’s customers, the proposed Water Volumetric Rate for the first tier which impacts the vast majority of the Village’s customers that utilize less than 15,000 gallons bi-monthly is able to be lowered when compared to Scenario 3. Although these offsets do result in increases for larger water users, these increases reflect the adjustments being made to set more equitable and proportional rates to have each customer class and usage group pay their fair share of the cost burden incurred by the Village.

2.7 Impact to Sample Bill Comparisons

Based on the identified large capital improvement projects for the internal system improvements and infrastructure required to receive purchased Lake Michigan Water, the Village's revenue requirements will necessitate rate increases in order to maintain the identified minimum fund balance of \$1 million above the operating reserve goal in any given year. Although all four scenarios allow the Village to generate the necessary revenue to finance and maintain its operating and capital reserves over time, the alternative rate structures have significantly different impacts on how the revenue is generated and the burden placed across the Village's customers.

Under the proposed rate structure examined under Scenario 4, the inclusion of a Universal Inclining Block Water Volumetric Rate better offsets the cost burden experienced by the lower usage customers of each tier when compared to the existing single volumetric rate structure. The tiers also allow the Village to have more granular control over its rate setting towards specific user groups to better recapture the proportional expenses typically attributed to its largest water customers.

Additionally, the implementation of the Fixed Scaled Meter Rate Structure under Scenario 4 prorates the fixed expenses based on the customer's meter size. This similarly correlates strongly to the exponential costs associated with supporting larger infrastructure and seeks to offset the disproportionate burden placed on the Village's largest user group which is predominantly Residential.

Ultimately, the underlying impacts of the rate structures implemented across Scenarios 1, 2, 3, and 4 can be observed when comparing their impacts to various sample bills. Specifically, the rate increases in Scenario 1 and 2 maintains the existing disproportionate impact to the lowest volume users and maintains the lower overall increases to the largest volume, and larger metered, users. In contrast, the rate design under Scenario 4 seeks to better prorate the cost burden incurred by the Village attributable to its larger volume and larger metered users.

Table 35 shows the sample bill for the average Residential user that consumes 10,000 gallons bi-monthly with a ¾-inch water meter, and Table 36 shows the sample bill for a large Residential user that consumes 80,000 gallons bi-monthly with a 1-inch water meter. Overall, the average Residential user experiences the highest impacts under Scenarios 1 and 2, with Scenario 4 providing the lowest impact. However, the large Residential users experience the highest impacts in Scenarios 1 and 3.

Table 35 – Average Residential Comparison, 10,000 Gallons Sample Bill

	2023	2024	2025	2026	2027	2028	2029	2030	2031
Scenario 1	\$97.36	\$104.48	\$111.89	\$119.61	\$127.67	\$136.06	\$144.83	\$153.99	\$163.56
Percent Increase		7.3%	7.1%	6.9%	6.7%	6.6%	6.4%	6.3%	6.2%
Dollar Increase		\$7.12	\$7.41	\$7.72	\$8.05	\$8.40	\$8.77	\$9.16	\$9.57
Scenario 2	\$97.36	\$103.00	\$108.56	\$114.33	\$121.19	\$129.38	\$137.92	\$146.84	\$156.16
Percent Increase		5.8%	5.4%	5.3%	6.0%	6.8%	6.6%	6.5%	6.3%
Dollar Increase		\$5.64	\$5.55	\$5.78	\$6.85	\$8.19	\$8.55	\$8.92	\$9.32
Scenario 3	\$97.36	\$103.00	\$108.56	\$114.33	\$120.34	\$127.59	\$135.09	\$142.86	\$150.91
Percent Increase		5.8%	5.4%	5.3%	5.3%	6.0%	5.9%	5.8%	5.6%
Dollar Increase		\$5.64	\$5.55	\$5.78	\$6.01	\$7.25	\$7.50	\$7.77	\$8.05
Scenario 4	\$97.36	\$103.00	\$108.56	\$113.52	\$118.65	\$125.82	\$133.23	\$140.91	\$148.86
Percent Increase		5.8%	5.4%	4.6%	4.5%	6.0%	5.9%	5.8%	5.6%
Dollar Increase		\$5.64	\$5.55	\$4.97	\$5.13	\$7.17	\$7.42	\$7.68	\$7.95

Table 36 – Large Residential Comparison, 80,000 Gallons Sample Bill

	2023	2024	2025	2026	2027	2028	2029	2030	2031
Scenario 1	\$734.50	\$777.45	\$822.75	\$870.53	\$920.94	\$974.13	\$1,030.27	\$1,089.52	\$1,152.06
Percent Increase		5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	5.7%
Dollar Increase		\$42.95	\$45.30	\$47.78	\$50.41	\$53.19	\$56.13	\$59.25	\$62.55
Scenario 2	\$734.50	\$764.63	\$808.57	\$848.56	\$897.17	\$950.25	\$1,006.18	\$1,065.11	\$1,127.23
Percent Increase		4.1%	5.7%	4.9%	5.7%	5.9%	5.9%	5.9%	5.8%
Dollar Increase		\$30.13	\$43.95	\$39.98	\$48.61	\$53.08	\$55.92	\$58.93	\$62.12
Scenario 3	\$734.50	\$765.63	\$810.35	\$874.14	\$943.28	\$991.40	\$1,041.67	\$1,094.22	\$1,149.14
Percent Increase		4.2%	5.8%	7.9%	7.9%	5.1%	5.1%	5.0%	5.0%
Dollar Increase		\$31.13	\$44.73	\$63.79	\$69.14	\$48.11	\$50.28	\$52.55	\$54.93
Scenario 4	\$734.50	\$765.46	\$810.18	\$864.68	\$922.97	\$970.07	\$1,019.28	\$1,070.71	\$1,124.46
Percent Increase		4.2%	5.8%	6.7%	6.7%	5.1%	5.1%	5.0%	5.0%
Dollar Increase		\$31.12	\$44.72	\$54.50	\$58.29	\$47.10	\$49.21	\$51.43	\$53.75

Table 37 shows the sample bill for the average Senior user that consumes 6,000 gallons bi-monthly with a $\frac{3}{4}$ -inch water meter. Similar to the average Residential user, the average Senior user sees the highest impacts in Scenarios 1 and 2 with Scenario 4 providing the lowest impact.

Table 37 – Senior Comparison, 6,000 Gallons Sample Bill

	2023	2024	2025	2026	2027	2028	2029	2030	2031
Scenario 1	\$33.65	\$37.18	\$40.81	\$44.52	\$48.34	\$52.26	\$56.29	\$60.43	\$64.70
Percent Increase		10.5%	9.7%	9.1%	8.6%	8.1%	7.7%	7.4%	7.1%
Dollar Increase		\$3.54	\$3.62	\$3.72	\$3.82	\$3.92	\$4.03	\$4.15	\$4.27
Scenario 2	\$33.65	\$35.74	\$38.10	\$40.54	\$43.29	\$47.15	\$51.11	\$55.19	\$59.39
Percent Increase		6.2%	6.6%	6.4%	6.8%	8.9%	8.4%	8.0%	7.6%
Dollar Increase		\$2.09	\$2.37	\$2.43	\$2.76	\$3.86	\$3.96	\$4.08	\$4.20
Scenario 3	\$33.65	\$36.73	\$39.10	\$41.53	\$44.03	\$47.61	\$51.26	\$54.99	\$58.80
Percent Increase		9.2%	6.4%	6.2%	6.0%	8.1%	7.7%	7.3%	6.9%
Dollar Increase		\$3.09	\$2.37	\$2.43	\$2.50	\$3.57	\$3.65	\$3.73	\$3.81
Scenario 4	\$33.65	\$36.73	\$39.10	\$41.29	\$43.53	\$47.08	\$50.70	\$54.40	\$58.19
Percent Increase		9.2%	6.4%	5.6%	5.4%	8.2%	7.7%	7.3%	7.0%
Dollar Increase		\$3.09	\$2.37	\$2.19	\$2.24	\$3.55	\$3.62	\$3.70	\$3.79

Table 38 shows the sample bill for the average Commercial/Industrial user that consumes 240,000 gallons bi-monthly with a 3-inch water meter, and Table 39 shows the sample bill for a large Commercial/Industrial user that consumes 2,000,000 gallons bi-monthly with a 4-inch water meter. The implementation of the Fixed Scaled Meter in 2025 results in a larger impact for the average and large Commercial/Industrial users due to the initial fixed increase, however the impact levels out over time. Although the large Commercial/Industrial user experiences the highest overall impact from Scenario 4, it is comparable to the increases required under the existing rate structure in Scenario 1.

Table 38 – Average Commercial/Industrial Comparison, 240,000 Gallons Sample Bill

	2023	2024	2025	2026	2027	2028	2029	2030	2031
Scenario 1	\$2,190.82	\$2,315.67	\$2,447.56	\$2,586.91	\$2,734.14	\$2,889.72	\$3,054.12	\$3,227.87	\$3,411.51
Percent Increase		5.7%	5.7%	5.7%	5.7%	5.7%	5.7%	5.7%	5.7%
Dollar Increase		\$124.85	\$131.89	\$139.35	\$147.23	\$155.57	\$164.40	\$173.75	\$183.64
Scenario 2	\$2,190.82	\$2,279.20	\$2,514.62	\$2,645.23	\$2,801.74	\$2,982.30	\$3,171.40	\$3,369.52	\$3,577.19
Percent Increase		4.0%	10.3%	5.2%	5.9%	6.4%	6.3%	6.2%	6.2%
Dollar Increase		\$88.38	\$235.42	\$130.61	\$156.50	\$180.56	\$189.09	\$198.12	\$207.67
Scenario 3	\$2,190.82	\$2,297.44	\$2,530.10	\$2,680.06	\$2,817.18	\$2,976.16	\$3,141.30	\$3,312.91	\$3,491.28
Percent Increase		4.9%	10.1%	5.9%	5.1%	5.6%	5.5%	5.5%	5.4%
Dollar Increase		\$107.10	\$232.66	\$149.96	\$137.11	\$158.99	\$165.14	\$171.60	\$178.37
Scenario 4	\$2,190.82	\$2,279.70	\$2,530.10	\$2,713.96	\$2,910.33	\$3,073.98	\$3,244.01	\$3,420.75	\$3,604.51
Percent Increase		4.1%	11.0%	7.3%	7.2%	5.6%	5.5%	5.4%	5.4%
Dollar Increase		\$89.36	\$250.40	\$183.86	\$196.38	\$163.64	\$170.03	\$176.74	\$183.76

Table 39 – Large Commercial/Industrial Comparison, 2,000,000 Gallons Sample Bill

	2023	2024	2025	2026	2027	2028	2029	2030	2031
Scenario 1	\$18,210.34	\$19,236.10	\$20,320.55	\$21,467.09	\$22,679.35	\$23,961.13	\$25,316.50	\$26,749.75	\$28,265.39
Percent Increase		5.6%	5.6%	5.6%	5.6%	5.7%	5.7%	5.7%	5.7%
Dollar Increase		\$1,025.76	\$1,084.45	\$1,146.54	\$1,212.25	\$1,281.79	\$1,355.37	\$1,433.24	\$1,515.65
Scenario 2	\$18,210.34	\$18,939.50	\$20,080.35	\$21,063.91	\$22,263.22	\$23,558.14	\$24,924.13	\$26,365.34	\$27,886.14
Percent Increase		4.0%	6.0%	4.9%	5.7%	5.8%	5.8%	5.8%	5.8%
Dollar Increase		\$729.16	\$1,140.85	\$983.56	\$1,199.31	\$1,294.92	\$1,365.99	\$1,441.21	\$1,520.80
Scenario 3	\$18,210.34	\$19,084.14	\$20,104.46	\$21,249.25	\$22,286.98	\$23,402.07	\$24,568.48	\$25,788.69	\$27,065.35
Percent Increase		4.8%	5.3%	5.7%	4.9%	5.0%	5.0%	5.0%	5.0%
Dollar Increase		\$877.80	\$1,020.32	\$1,144.79	\$1,037.73	\$1,115.09	\$1,166.40	\$1,220.22	\$1,276.65
Scenario 4	\$18,210.34	\$18,936.34	\$20,104.46	\$21,728.60	\$23,490.42	\$24,665.69	\$25,895.28	\$27,181.83	\$28,528.14
Percent Increase		4.0%	6.2%	8.1%	8.1%	5.0%	5.0%	5.0%	5.0%
Dollar Increase		\$730.00	\$1,168.12	\$1,624.14	\$1,761.82	\$1,175.27	\$1,229.59	\$1,286.56	\$1,346.31

In discussions with the Village, the local schools were identified as key customer bills to monitor during the evaluation of the alternative rate structures. However, in reviewing the actual bills issued to the schools in 2022, the following observations were made:

- Certain schools that had open fields or larger areas that required irrigation saw fairly high water usage, reaching approximately 600,000 gallons bi-monthly. This usage pattern did not necessarily correlate to the square footage of the facility or the type (i.e. High School, Elementary School, etc.)
- Some schools were equipped with several smaller meters to serve specific buildings and all generally experienced wide variations in their usage throughout the year. An example of this was a water meter account associated with the concession stand at a high school that reached approximately 600,000 gallons bi-monthly at its peak, but recorded a 0 gallon bi-monthly bill in the same year.

In order to demonstrate a compiled billed that a single school with multiple meters would generally observe, 100,000 gallons bi-monthly with a 2-inch meter was assessed as a reasonable average of the diverse school bills that the Village observed. Overall, the scenarios are comparable with a \$69 difference in 2031 between the lowest bill, Scenario 1, and the highest bill, Scenario 4.

Table 40 – Average School Comparison, 100,000 Gallons Sample Bill

	2023	2024	2025	2026	2027	2028	2029	2030	2031
Scenario 1	\$916.54	\$969.73	\$1,025.85	\$1,085.08	\$1,147.59	\$1,213.58	\$1,283.25	\$1,356.81	\$1,434.49
Percent Increase		5.8%	5.8%	5.8%	5.8%	5.8%	5.7%	5.7%	5.7%
Dollar Increase		\$53.19	\$56.12	\$59.23	\$62.51	\$65.99	\$69.67	\$73.56	\$77.68
Scenario 2	\$916.54	\$953.95	\$1,051.46	\$1,106.32	\$1,171.97	\$1,248.10	\$1,327.77	\$1,411.21	\$1,498.63
Percent Increase		4.1%	10.2%	5.2%	5.9%	6.5%	6.4%	6.3%	6.2%
Dollar Increase		\$37.41	\$97.51	\$54.87	\$65.65	\$76.12	\$79.68	\$83.44	\$87.42
Scenario 3	\$916.54	\$962.13	\$1,058.35	\$1,121.28	\$1,178.85	\$1,245.98	\$1,315.68	\$1,388.06	\$1,463.27
Percent Increase		5.0%	10.0%	5.9%	5.1%	5.7%	5.6%	5.5%	5.4%
Dollar Increase		\$45.79	\$96.22	\$62.93	\$57.57	\$67.13	\$69.70	\$72.39	\$75.21
Scenario 4	\$916.54	\$954.74	\$1,058.35	\$1,132.57	\$1,211.68	\$1,280.45	\$1,351.87	\$1,426.07	\$1,503.18
Percent Increase		4.2%	10.9%	7.0%	7.0%	5.7%	5.6%	5.5%	5.4%
Dollar Increase		\$38.40	\$103.61	\$74.23	\$79.10	\$68.77	\$71.42	\$74.20	\$77.11

Overall, based on the comparisons above, it is evident that lower usage customers experience the highest impacts under Scenario 1 and the lowest impacts under Scenario 4, where larger customers experience the opposite impacts. However, as discussed in the sections above, the cost of infrastructure increases exponentially with higher water consumption, and therefore the larger water users place a higher cost burden on the Village's Water and Sewer systems. The implementation of the Fixed Scaled Meter and Universal Inclining Block Rate Structure allows the Village to more equitably prorate the cost burden between all of the Village's customers.

2.8 Neighboring Rate Sample Bills

A rate comparison survey was conducted on both neighboring communities as well as similarly sized municipal utility systems to the Village of Oswego. These figures are intended to provide a "snapshot" of how the Village's current and proposed rate changes compare to other municipal systems, but is not necessarily an exact representation of what a customer might actually pay under other systems. Some of these key considerations include:

- The rates used to calculate the neighboring utilities were obtained by their public websites and/or municipal ordinances. Some rates and ordinances were last updated between one to two years ago.

- Certain charges may not necessarily be reflected through water and sewer rates alone, such as charges assessed by the Metropolitan Water Reclamation District which treats wastewater for much of the Cook County area and recuperates its costs through property taxes.
- Each utility is different and may not have the same infrastructure age or needs, which can lead to significantly different water and sewer rates. This can be caused by factors including, but not limited to different customer composition, treating versus purchasing water, and a lack of recent rate studies.
- Smaller utilities may often observe higher costs due to the relatively high costs of infrastructure being supported by fewer customers, or predominantly low usage users.
- The Total Bill for the neighboring and similar municipalities were increased at 3% per year between 2023 and 2030 in order to provide a slightly more fair comparison, however this is not an indication of what these utilities have planned for the future. The Fox Metro Water Reclamation District Cost was also increased at 3% per year and added to the Village of Oswego's bill projections.

The figures below show a comparison of a sample Residential, Commercial, and Industrial customer bill under the existing rate structure in Fiscal Year 2023 and the proposed rate increases and rate structure modifications under Scenario 4 in Fiscal Year 2030, respectively.

Figure 14 – 2023 Neighboring Sample Residential Customer Bill – 10,000 Gallon User, 3/4-inch Meter

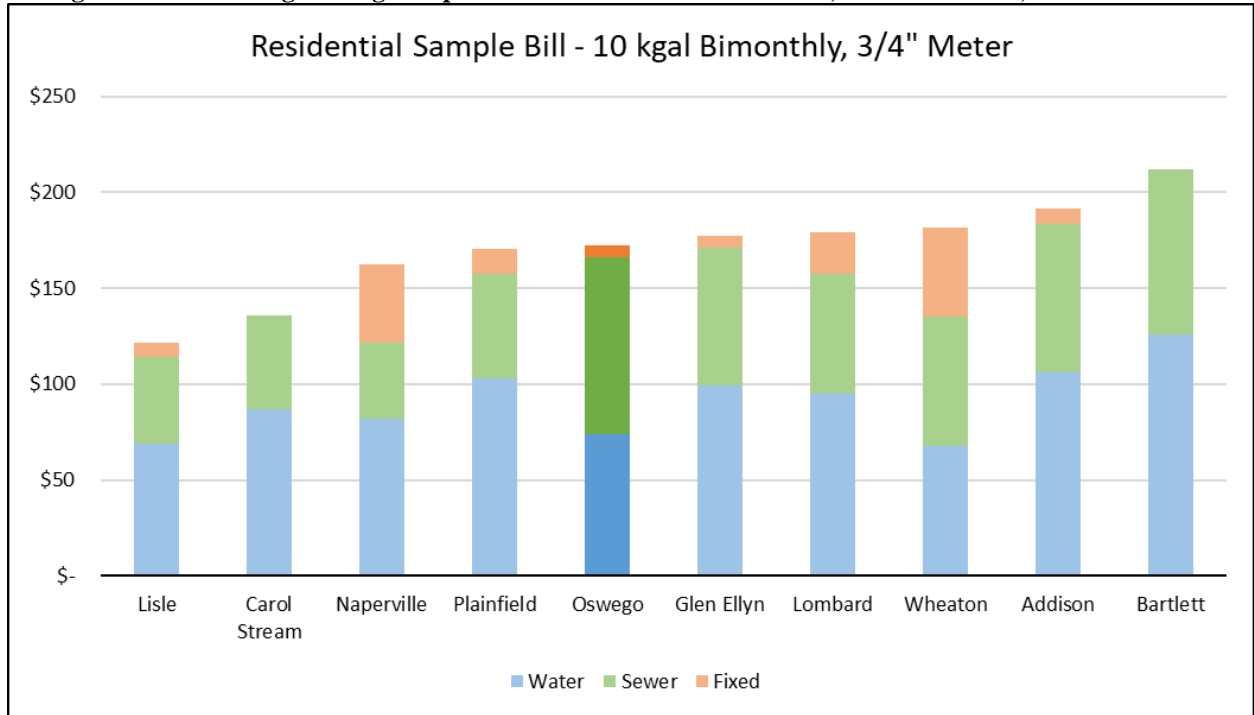
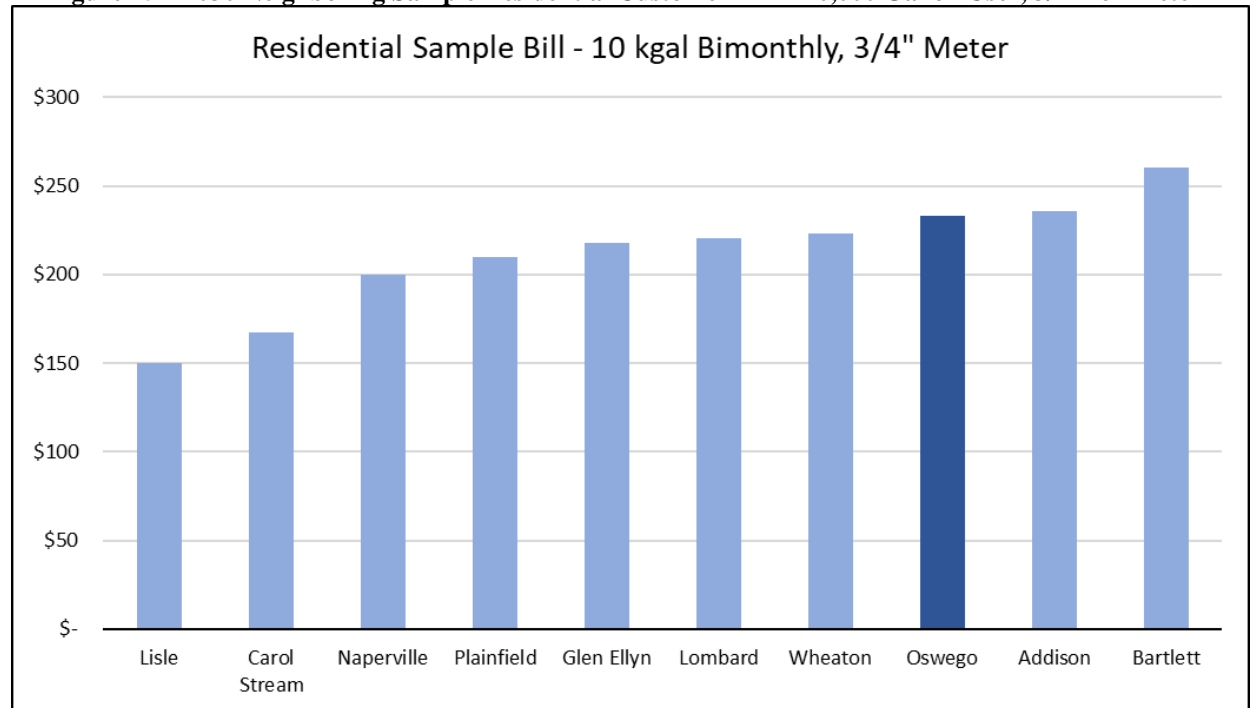


Figure 15 – 2030 Neighboring Sample Residential Customer Bill – 10,000 Gallon User, 3/4-inch Meter



For Residential users, the Village’s current water and sewer rates place it in the middle as compared to these neighboring utility rates. The proposed rate increases for Scenarios 4 in 2030 place the Village in the middle upper half compared to these neighboring rates.

Figure 16 – 2023 Neighboring Sample Commercial Customer Bill – 100,000 Gallon User, 2-inch Meter

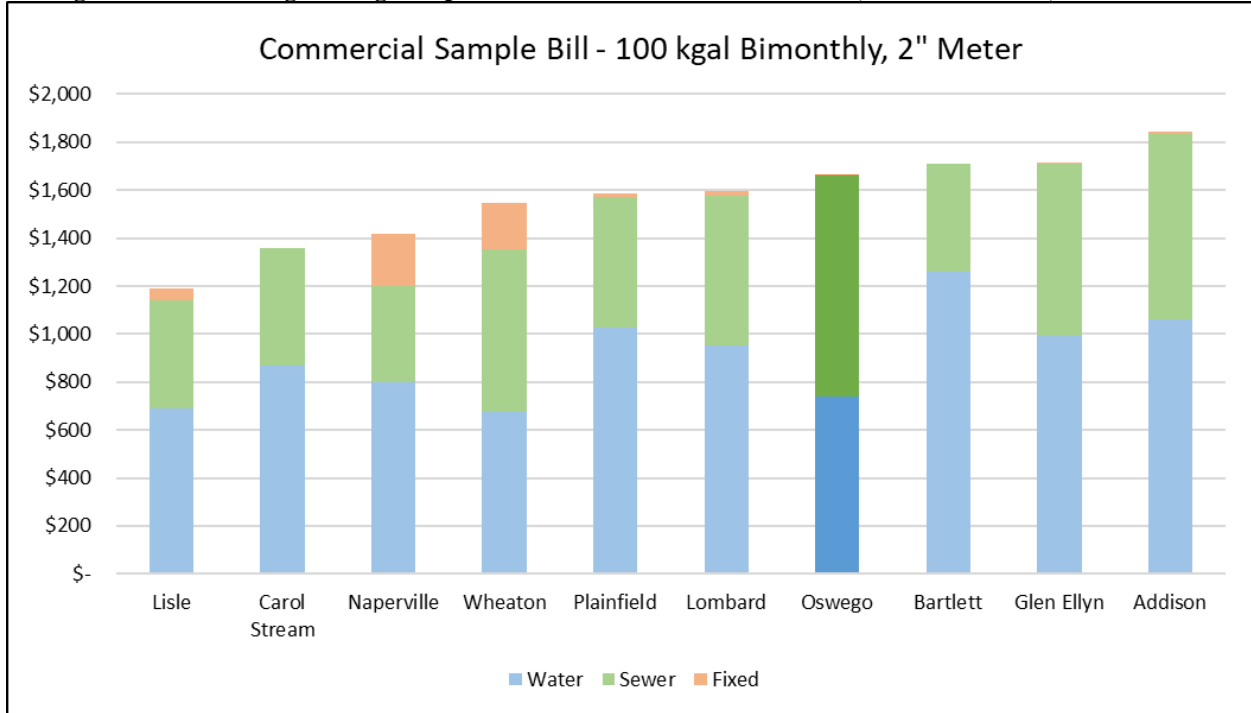


Figure 17 – 2030 Neighboring Sample Commercial Bill – 100,000 Gallon User, 2-inch Meter

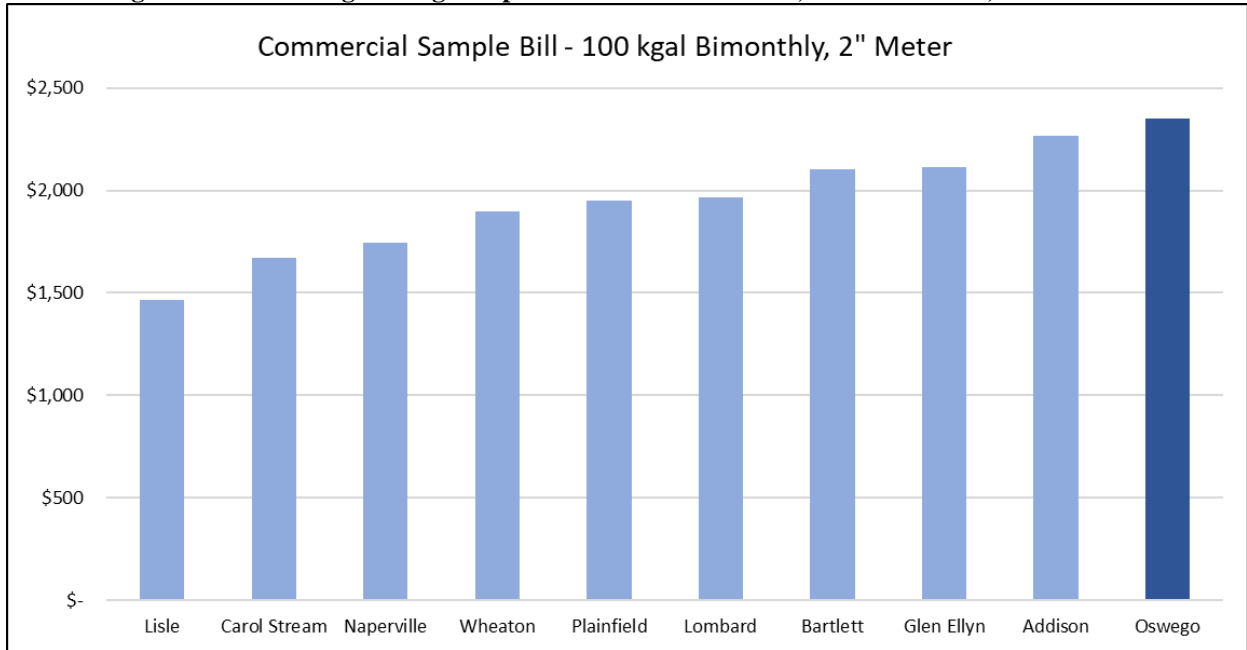


Figure 18 – 2023 Neighboring Sample Industrial Customer Bill – 2,000,000 Gallon User, 4-inch Meter

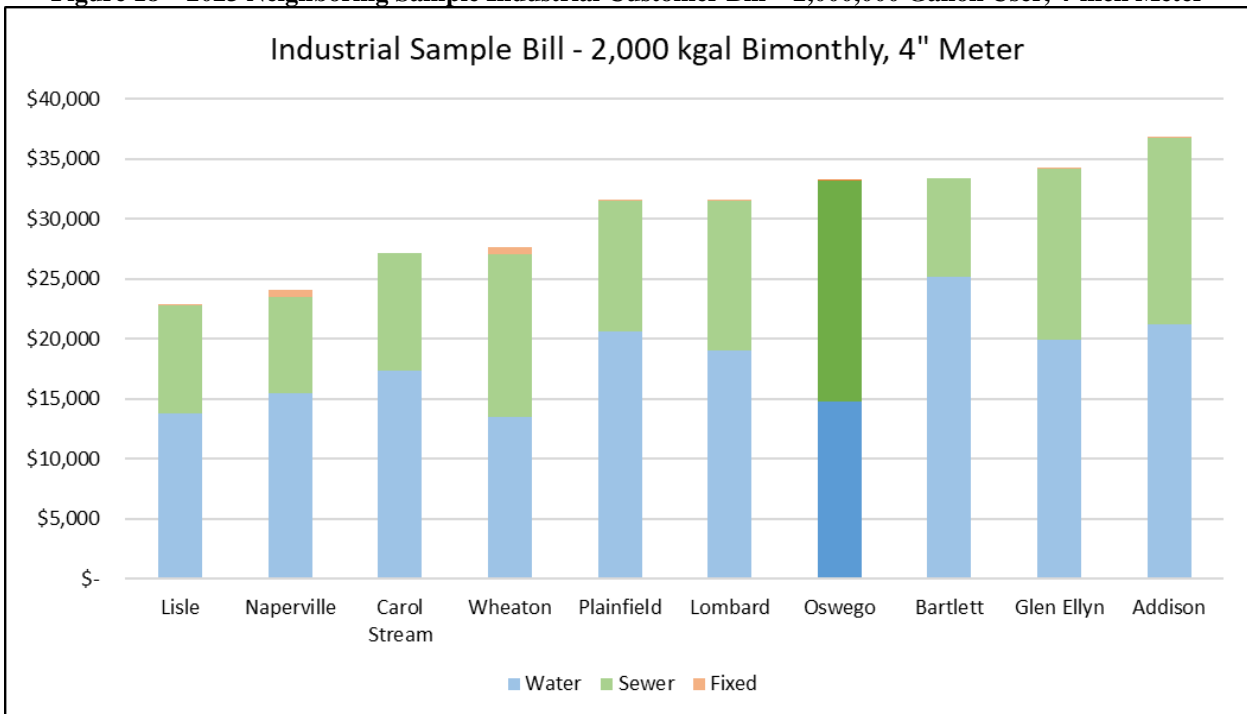
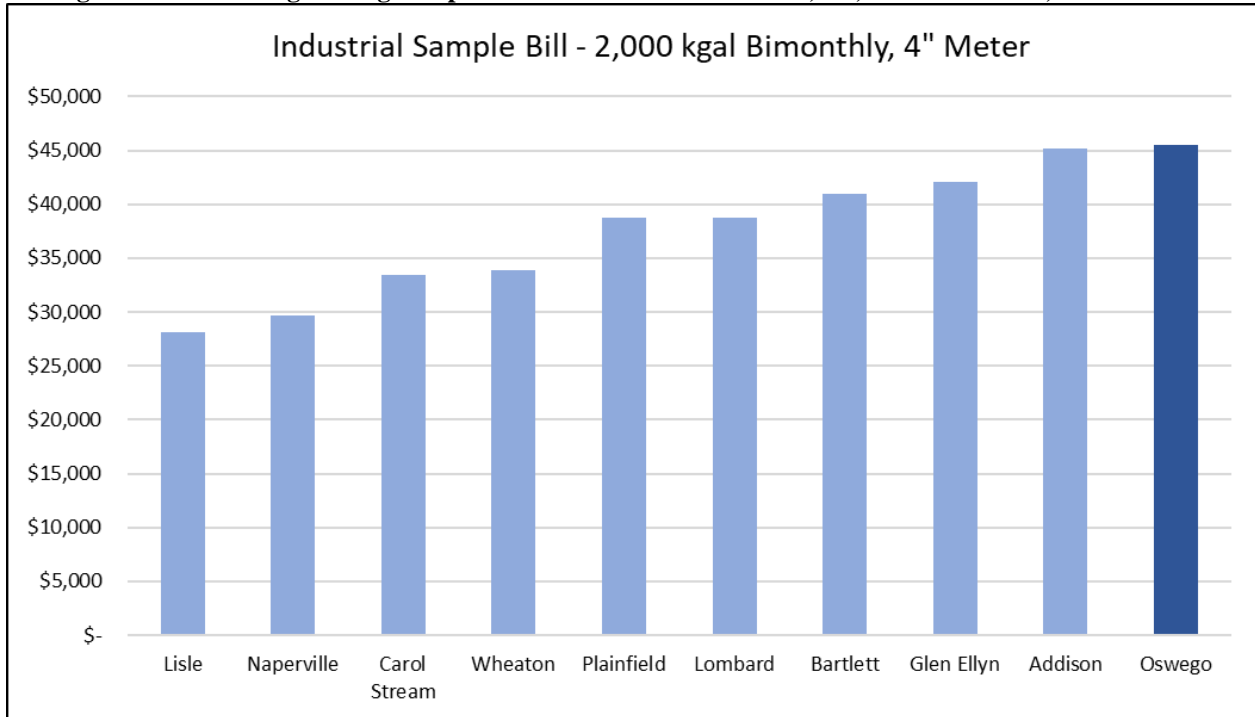


Figure 19 – 2030 Neighboring Sample Industrial Customer Bill – 2,000,000 Gallon User, 4-inch Meter



The Village’s existing rate structure for both the Commercial and Industrial user groups place it in the middle upper half compared to these neighboring utility rates. With the proposed implementation of the Fixed Scaled Meter and Universal Inclining Block Rate Structure and rate increases evaluated under Scenario 4, the sample bills reach the high end of the comparison. However, the bills remain competitive with the neighboring communities.

In reviewing the sample bills for the three major user groups for the Village of Oswego in comparison to its neighboring and other utilities of similar sizes, the following observations were made that provide insight as to the placement of its sample bills in the mid to upper range:

1. Every utility has its own unique operational, maintenance, and capital improvement needs. This makes comparing rates inaccurate across neighboring utilities. Additionally, utilities with infrastructure constructed more recently versus those who are in dire need of replacements can skew rate comparisons wildly based on the utility’s rates being set towards capturing depreciation or addressing emergency repairs.
2. The Village of Oswego’s wastewater is treated by Fox Metro Water Reclamation District, which has recently undergone significant capital improvements in recent years. Currently, the Fox Metro Water Reclamation District charges its customers, which include the Village of

Oswego's customers, a straight volumetric rate of \$7.50 per kgal irrespective of customer class or total usage per its available rate ordinance.

3. The 2023 Sample Bills for the Village's Residential, Commercial, and Industrial customers reflect the cost of Fox Metro Water Reclamation District's rates, which account for approximately 45% of the total bill observed in the charts above.
4. The Village of Oswego is investing a significant amount into its water infrastructure systems in order to transition from treated groundwater to purchased Lake Michigan water. These increased costs have a significant impact on the Water and Sewer Fund, however, due to the Village Staff's early planning and foresight for this large infrastructure change, the overall rate impacts are projected to remain competitive with the communities shown in this comparison.

3. CONCLUSION AND RECOMMENDATIONS

3.1 Conclusion and Recommendations

In order to continue providing the highest quality service to its customers and provide a new long term sustainable water source, the Village will ultimately need to increase its water and sewer rates to maintain its strong financial position. Although all identified scenarios accomplish this goal, it is recommended that the Fixed Scaled Meter and Universal Inclining Block Rate Structure be adopted as outlined under Scenario 4. This would allow the Village to more equitably prorate its revenue requirements across its diverse customer base.

It should be noted, however, that the rate increases identified and prepared as part of this rate study present a reasonably conservative estimate of future revenues and expenses, while taking into account the wide variability associated with some of the projected capital improvement projects and associated debt service. The major factors that could have a significant impact on the financial model calculated as part of this rate study include:

- The current Capital Improvement Plan may be adjusted after each year as planning, engineering, and construction costs become clearer. As of the writing of the report, the Village and DWC are finalizing costs associated with the infrastructure required to provide Lake Michigan Water to the Village of Oswego, which may result in significant changes to the estimated project costs. This may also have subsequent impacts to the current estimates for the Debt Service Projections, as well as changing interest rates.
- Significant growth or decline in population projections that deviate from the projected forecast can directly impact the total revenues and expenses associated with the water usage pattern. This could directly impact the projected rates to compensate for the variations in usage.
- The projection includes several inflating factors which may over or underestimate actuals, including expense line items such as operational and maintenance costs, the actual cost of purchasing water from CDWM and DWC in 2027/2028, and the annual inflation applied to the rest of Village's expense line items.

The Village retains the ability to fine tune the annual rate increases to adjust based on actual year-to-year revenues and expenses. The Village is able to further control the changes made to the Fixed Fee and Inclining Block Volumetric Rates to best reflect an equitable distribution of its expenses across its customer base.

Due to the number of assumptions and factors that could still change, it is strongly recommended that the financial model and rates be revisited frequently as certain larger costs are refined and decisions are finalized. At a minimum, the financial model is recommended to be updated with the following changes:

- The finalized total capital cost associated with the connection and infrastructure required for the Village to be supported by DWC.
- The final loan agreements with WIFIA, IEPA, and/or DWC.
- The timeframe in which the connection to DWC is active and the Village begins purchasing Lake Michigan water, near the end of 2027 or early 2028.
- At or around 2030 when the projected rates are updated by CDWM.

Baxter & Woodman recommends that the Village thoroughly review this report and consult with Village staff and any financial advisors which are familiar with all aspects of the Village's finances. The Village should discuss any information and material contained in this report with any and all internal or external advisors and experts that the Village deems appropriate before acting on this information. Baxter & Woodman is not acting as a financial advisor to the Village and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to the Village of Oswego with respect to the information and material contained in this report.