

# HANSFORD

ECONOMIC CONSULTING LLC

## Murphys Sanitary District

## Draft Rate Study

A graphic of a water splash with bubbles, transitioning from white at the top to a light blue gradient at the bottom. The splash is centered horizontally and spans most of the width of the page.

**February 27, 2025**

HEC No. 230423

The following report was prepared by Hansford Economic Consulting LLC.

The analyses and findings contained within this report are based on primary data provided by the Murphys Sanitary District, as well as additional secondary sources of data available as of the date of this report. Updates to information used in this report could change or invalidate the findings contained herein. While it is believed that the primary and secondary sources of information are accurate, this is not guaranteed.

Every reasonable effort has been made in order that the data contained in this study reflects the most accurate and timely information possible. No responsibility is assumed for inaccuracies in reporting by the client, its consultants and representatives, or any other data source used in the preparation of this study. No warranty or representation is made that any of the projected values or results contained in this study will actually be achieved. There will usually be differences between forecasted or projected results and actual results due to changes in events and circumstances.

Changes in economic and social conditions due to events including, but not limited to, major recessions, droughts, major environmental problems or disasters that would negatively affect operations, expenses and revenues may affect the result of the findings in this study. In addition, other factors not considered in the study may influence actual revenues achieved. Any applications for financing, or bond sales analyses, should re-evaluate the financial health and projection of revenues and expenses at the time of the application or preparation for bond sale.

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# Section 1: INTRODUCTION

## 1.1 STUDY BACKGROUND

The Murphys Sanitary District (District or MSD) provides wastewater collection, treatment and disposal services within its service territory. The District contracted with Hansford Economic Consulting LLC (HEC) to determine the level of funding required over the next five years to sufficiently fund service provision, and the fees to be collected from customers to achieve that level of funding. The wastewater financial model projects revenues and expenses and calculates annual property-related fees by customer type that will provide revenue sufficiency.

The fees for service (also called “rates” and “charges” in the Study) are exempt from Proposition 26 but are subject to California Constitution Article XIII D (commonly referred to as Proposition 218) requirements for water, wastewater, and solid waste property-related fees.

This Study provides an explanation of, and justification for, calculated annual wastewater fees by customer type through June 30, 2030, and documents adherence to the law regarding the setting of property-related fees by a special district. Specifically, the California Constitution requires that the fees for wastewater service shall not be extended, imposed, or increased by any agency unless all of the following requirements are met:

- (1) Revenues derived from the fee or charge shall not exceed the funds required to provide the property related service.
- (2) Revenues derived from the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
- (3) The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the parcel.
- (4) No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question. Fees or charges based on potential or future use of a service are not permitted.
- (5) No fee or charge may be imposed for general governmental services including, but not limited to, police, fire, ambulance or library services, where the service is available to the public at large in substantially the same manner as it is to property owners.

Fee studies are typically conducted every three to five years to ensure revenue sufficiency, or whenever there are major planning changes either in terms of number and type of customers to be served, or capital costs necessary to serve existing (and potentially future) customers. The District’s service fees have not changed since 2009. All customers have been charged \$60 per Equivalent Dwelling Unit (EDU) per month since 2009. Inflation alone would suggest that the current rate of

service should be \$93 per EDU per month<sup>1</sup> (a 55.6% increase). The rate study must examine current and projected costs to address revenue sufficiency, and it must examine whether customers are paying for their share of system costs. An important part of the fee study is a cost of service analysis, a requirement of the California Constitution Article XIII D and Government Code 54999.7 (c)<sup>2</sup>. Updating the District's wastewater rates adhering to the law has required a major examination of the District's costs and its customers' use of the wastewater system, adjusting the methodology by which to charge rates and creating customer classifications to achieve equity to the maximum extent practicable.

The following five steps outline how wastewater rates are calculated such that the wastewater fees meet California's legal requirements. The methodology uses principles established by the Water Environment Federation Manual of Practice No. 27 and guidelines prepared by the California State Water Resources Control Board for State Revolving Fund financing. This Study uses the functional cost allocation methodology to determine rates<sup>3</sup>.

**1. Establish the Wastewater Customer Base and User Characteristics** – The wastewater customer base includes residential and commercial users as described in Section 2 of the Study. Wastewater flow and strength data is based on District flow measurements and industry estimates of wastewater strength by customer type.

**2. Project Revenue Requirement** – The revenue requirement is the amount of money to be raised from rates. The revenue requirement analysis compares the revenues of the utility to its operating and capital costs to determine the adequacy of existing rates to recover the utility's costs. Components of revenue requirement include capital improvement costs, system rehabilitation costs, operations and maintenance costs, and prudent reserves.

Non-rate revenue credited against the projected costs include investment income and miscellaneous revenues. Revenue requirement calculations are provided in Section 3 of the Study.

**3. Allocate Revenue Requirement to Base Costs and Flow Costs** – The revenue requirement is functionalized by cost item to determine the proportion of costs that are incurred by every customer regardless of how much they use the system (the "Base Charge"), and costs incurred from use and load placed on the system (the "Flow Charge").

**4.A Allocate Base Costs to Customer Categories** – Base costs are allocated to all defined customer categories by dividing the Base cost by the number of wastewater accounts in each customer category.

**4.B Allocate Flow Costs to Customer Categories** – The portion of revenue requirement incurred for use of the system is allocated based on flow and load (strength) depending on the percentage distribution of operations and maintenance costs attributed to flow, Biological Oxygen Demand

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<sup>1</sup> Uses the West Region All-Urban Consumer Price Index produced by the Bureau of Labor Statistics.

<sup>2</sup> A public agency providing public utility service shall complete a cost of service study at least once every 10 years that addresses the cost of providing public utility service to public schools.

<sup>3</sup> Chapter 6, pages 110-120, Financing and Charges for Wastewater Systems, Manual of Practice No. 27.

(BOD)<sup>4</sup>, and Total Suspended Solids (TSS)<sup>5</sup>. Per unit costs for the three characteristics of wastewater are calculated by dividing the allocated costs to each characteristic by the total annual estimate of flow, BOD, and TSS generated by MSD customers. Per unit costs are then multiplied by the share of each characteristic generated by each customer category to determine the Flow cost by customer category.

**5. Determine Cost of Service by Customer Group** – Costs by customer category from steps 4a and 4b are added to determine the cost of service by customer group.

Section 4 describes the rate calculation methodology per steps one through five above and calculates the next five years of rates. Section 5 includes an analysis of the impact of the rates on customers and provides a comparison of bills with other regional communities' wastewater bills. **Appendix A** includes support tables for the wastewater rates analysis.

## **1.2 MAJOR ASSUMPTIONS OF THE STUDY**

### **Change to the Rate Structure**

The District currently has a rate structure that is based on EDUs which equates each wastewater account's sewer flow to the estimated sewer flow of one single-family home.

Resolution 06-2009, which last established the District's rates, included an annual adjustment to the number of EDUs (billing units) assigned to each commercial account. Commercial accounts used the methodology of reviewing each commercial customer's wintertime water use to calculate monthly wastewater charges. In 2017 the practice of determining wintertime water use to determine the number of EDUs for each commercial account was discontinued resulting in commercial customers paying the same monthly amount since 2017.

The proposed new rate structure continues to charge each wastewater account a flat fee each month, but the fee comprises two parts:

1. **Base Charge** – to recover the costs of every account receiving wastewater service, and
2. **Flow Charge** – to recover the costs for demand placed on the wastewater system by customer type.

### **Growth**

No growth is included in the financial projection to be conservative in revenue estimates. Both Calaveras County and Murphys have experienced negative growth since 2010 per US Census Bureau estimates.

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<sup>4</sup> BOD demand is the amount of dissolved oxygen needed by aerobic biological organisms in a body of water to break down organic material present in a given water sample at certain temperature over a specific time period. The term also refers to a chemical procedure for determining this amount.

<sup>5</sup> Total SS is a measure of the combined content of all inorganic and organic substances contained in a liquid in molecular, ionized or micro-granular (colloidal sol) suspended form.

### **Increases in Operating Costs**

The District’s operating costs increased at an annual average rate of 5.8% between 2021 and 2024. Using this information, and annual average increases by cost category, the financial model increases total operating costs between 5.0% and 6.0% each year.

### **Capital Improvements Plan (CIP) Funding Strategy**

In August 2024, MSD adopted a Master Plan that describes capital improvements that should be completed over the next nine fiscal years. The total cost of the CIP is \$18.84 million.

**State Revolving Fund (SRF) Funding.** A State loan to replace the influent force main and other wastewater treatment plant (WWTP) Phase 2 improvements of \$5.80 million is assumed. These improvements are expected to take two to three years to complete, with repayments starting in fiscal year 2029. It is possible that, as a Disadvantaged community, MSD will qualify for principal forgiveness (no interest) or other incentives provided by the State; however, it is not guaranteed and has not been accounted for in the rate study.

**USDA Financing.** The rate study estimates \$8.7 million in pipe replacements funded through two sales of bonds to the United States Department of Agriculture (USDA). The first bond sale is anticipated to occur in Fiscal Year (FY) 2029 with interest paid in FY 2030 and the first full debt service payment due FY 2031. The second bond sale is anticipated to occur at the end of FY 2031 with interest paid in 2032 and 2033, and the first full debt service payment due FY 2034. The second bond sale would occur after the 5-year horizon examined in this rate study therefore the calculated rates for the next five years do not include debt service for this bond sale.

**Cash Funding.** The remaining \$4.3 million is anticipated to be paid with cash collected from rates, or from cash reserves.

### **Financial Criteria**

Per District policy, the District will have at least \$500,000 in the capital fund, \$200,000 for equipment and special uses, and three months of operating expenses available in unrestricted funds. In addition, debt service coverage must be at least 1.1 times net operating income. The calculated rates ensure the District is able to meet these financial criteria for at least the next five years.

## **1.3 CALCULATED FEES**

The maximum calculated monthly wastewater fees are shown in **Table 1**. The proposed rates would be implemented on July 1, 2025. The proposed rates are the maximum that could be imposed. If adopted rates produce revenues that are greater than needed in future years, the District could freeze rates, or lower rates. Every customer pays for the Base Charge per account and the Flow Charge per customer unit. Example monthly bill calculations are provided below for fiscal year 2026 (FY26).

**Residential.** A single-family home will pay the Base (\$23.42) plus the Flow (\$56.88) charges which equals \$80.30 per month in FY2026. A group of apartments may have one account. For example, three apartments under one account would pay the Base Charge (\$23.42) plus the Flow Charge (\$56.88 x 3 units = \$170.64) which equals \$194.06 per month in FY2026 (\$64.69 per apartment per month).

The mobile home village will pay the \$23.42 Base Charge and \$10,750.32 Flow Charge ( $\$56.88 \times 189$  units = \$10,774.21) per month (\$57.01 per unit).

**Hotel/Motel.** A lodging facility with 20 rooms will pay the \$23.42 Base Charge plus the Flow Charge ( $\$24.52 \times 20$  rooms = \$490.40) for a total of \$513.82 per month.

**Church.** Each church will pay the \$23.42 Base Charge plus the Flow Charge of \$54.70 each month (total \$78.12 per month).

**School.** The school will pay \$2.14 per student ( $\$2.14 \times 210$  students = \$450.32) for the Flow Charge plus the \$23.42 Base Charge for a total of \$473.74 per month.

**Individual Commercial Accounts.** The car wash, grocery store, and Ironstone Vineyards each have individual commercial accounts. Each of these accounts will pay the Base Charge plus the Flow Charge shown in the table. For example, the grocery store will pay ( $\$23.42 + \$589.55 = \$612.97$ ) per month.

**Commercial Groups.** All other commercial accounts will pay the Base Charge plus the Flow Charge for the strength group of the account multiplied by the number of business units assigned to the account. For example, a restaurant is a high strength customer. If the restaurant has 2 business units, it will pay ( $\$23.42 + 2 * \$89.14 = \$178.28$ ). The total will be \$201.70 per month for the restaurant.

**Table 1**  
**Calculated Maximum Wastewater Fees**

## Section 2: DISTRICT CUSTOMERS AND FINANCIAL HEALTH

### 2.1 DISTRICT CUSTOMERS

#### RATE METHODOLOGY STEP 1: ESTABLISH THE WASTEWATER CUSTOMER BASE AND USER CHARACTERISTICS

##### Customer Base

The District’s customers send, on average, about 137,500 gallons of wastewater to the treatment plant each day, or 48.5 million gallons each year. Wastewater flow fluctuates from year to year depending on weather and occupation of properties in Murphys, as shown in **Figure 1**. During the winter months flows are exacerbated by inflow and infiltration from precipitation and snowmelt.

##### Figure 1 Historical Wastewater Generation

**Appendix Table A-1** provides detail of monthly sewer flows in calendar years 2022 and 2023. Sewer flows are expected to stay about the same through the 5-year rate study period as no growth is included in the financial model. The population of both Murphys and Calaveras County has decreased since 2010, as have the number of housing units.

Population and housing data for Murphys Census Designated Place (CDP) is provided in **Appendix Table A-2**. Included in the table is the number of housing units that are occupied and vacant. Occupancy has fallen in recent years from about 85% to 70% and the number of vacant units used for seasonal use (such as short term rentals) has increased from about 10% of total housing units to about 20% of total housing units. Occupancy of homes averages two people per unit.

### Customer Characteristics and Billing Units

The District provides wastewater service to 838 accounts; 1,121 connections; and 1,290.14 billing units, shown in **Table 2**.

**Table 2**  
**FY25 Number of Customers and Current Number of Billing Units**

Customer Type	Accounts	Connections	Billing Units
<b>Residential</b>			<b>dwelling units</b>
Single Family	694	697	710.00
Mobile Homes	1	189	189.00
Duplex, Triplex	13	27	27.00
Apartments, Condos	19	83	83.00
<b>Total Residential</b>	<b>727</b>	<b>996</b>	<b>1,009.00</b>
<b>Non-Residential</b>			<b>EDUs</b>
School	1	1	4.93
Community Hall or Church	11	11	11.88
Commercial	99	113	264.33
<b>Total Non-Residential</b>	<b>111</b>	<b>125</b>	<b>281.14</b>
<b>Total Billed</b>	<b>838</b>	<b>1,121</b>	<b>1,290.14</b>

Source: Murphys SD.

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This rate study restructures and recalculates the billing units for each account.

- For costs recovered through the Base Charge, every account is charged the same rate.
- For costs recovered through Flow Charges, an account may be charged by dwelling unit, room, church, student, car wash facility, grocery store, or complex (the latter only applies to Ironstone Vineyards). All other commercial accounts are grouped by wastewater strength and category of business(es) served. The new billing units for these commercial customers, expressed as business units, are assigned to each account based on business activities (retail, office, etc.)

### Methodology to Assign Business Units to Commercial Accounts

The number of new billing units (business units) for each commercial account was calculated using water meter data from a sample of commercial accounts following the steps explained below. Only a sample could be analyzed using water meter data from Union Public Utility District (UPUD) because not all MSD wastewater accounts could be correlated with UPUD water accounts. **Appendix Table A-3** shows the calculation using the methodology described.

1. Total annual water use as measured by UPUD was multiplied by a wastewater factor to estimate the annual sewer flow from each account. Sewer flow is metered water use less

outdoor water applications (such as for plants or dust control), and/or less other uses of metered water that does not leave the property in the sewer discharge pipe. For most business types, a factor of 80% was applied. For the grocery store and the car wash, where there is little outdoor application of water, a factor of 90% was used. For hotels/motels a factor of 70% was used because they generally have more landscaping, and 60% was used for the elementary school.

2. Estimated annual sewer flow for each account was divided by 36,500 gallons which is the estimated annual flow from a single family home each year. This determines the number of EDUs per account.
3. The number of EDUs per account from step 3 was divided by the number of businesses associated with the account (for example one sewer connection can serve four businesses) to determine the wastewater flow multiplier per business unit.
4. Finally, miscellaneous commercial, manufacturing and auto-related business units' wastewater flows were equated to 1.00; the average of three categories with greater estimated wastewater flows were divided by 1.3 (the average of miscellaneous commercial) to calculate the ratio of tasting rooms, restaurants, and mixed commercial with restaurants to miscellaneous commercial estimated sewer flows. **Table 3** shows the type of commercial business units and the business unit multiplier calculated for each.

**Table 3  
Business Unit Multipliers**

Commercial Type	Business Unit Multiplier
Auto-Related	1.00
Manufacturing	1.00
Misc. Comm'l	1.00
Tasting Room	1.30
Restaurant	2.00
Mixed Comm'l w Rest.	2.60

Source: UPUD.

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Having calculated business unit multipliers using the sample dataset, the number of business units for every MSD commercial account was determined based on either the number of wastewater connections or the number of business spaces served by the account multiplied by the business unit multipliers. Below are some examples:

- An account has one sewer connection and it serves four miscellaneous commercial businesses. This account has four business units.

- An account has two sewer connections and it serves a building with two businesses. The businesses are a spa and a clothing store. This is counted as two connections multiplied by 1.0, which equals two business units.
- An account with one sewer connection serves two tasting rooms. This account has two businesses multiplied by the business unit multiplier of 1.3 for tasting rooms, which equals 2.6 business units.
- An account has one sewer connection with one restaurant. This account has one business multiplied by the business unit multiplier of 2.0 for restaurants which equals two business units.
- An account has three sewer connections but two of them are for commercial use with four separate businesses served by the connections, and one sewer connection is residential. The residential connection will be charged per dwelling unit for Flow cost. If the businesses are a restaurant, a real estate office and two retail shops, then the number of business units is calculated as four businesses multiplied by 2.6 (mixed commercial with restaurant multiplier) which equals 10.4 business units.

Customer accounts are placed into categories as shown in **Table 4** depending on the use(s) of the accounts and the strength of wastewater from the homes and businesses receiving wastewater service. Flow generated by each unit (dwelling, room, church, student, facility, store, complex, or business unit) was determined as follows:

#### **Residential and Institutional**

- **Residential** – two persons per unit using 50 gallons of water per day for indoor purposes.
- **Hotel/Motel** – water use from sample lodging establishments in Murphys multiplied by a 70% wastewater factor, divided by number of rooms - 44 gallons per room per day.
- **Churches** – same as residential.
- **School** – water use multiplied by a wastewater factor of 60%, divided by number of students - 8.8 gallons per day per student.

The number of students at Albert Michelson Elementary is documented in **Appendix Table A-4**.

#### **Commercial Individual**

- **Car Wash and Grocery Store** – water use multiplied by a wastewater factor of 90% for each establishment.
- **Ironstone Vineyards** – observed wastewater flow measured by District staff minus estimated residential flows because the residential units are included in the Residential category.

#### **Commercial Groups**

- One business unit = one residential unit flow (100 gallons of wastewater flow per day).

**Table 4  
Customer Categories and Estimated Annual Sewer Flow**

<b>Customer Category</b>	<b>Number of Units</b>	<b>Unit Measure</b>	<b>Gallons per Day</b>	<b>Estimated Annual Sewer Flow</b>
<b>Residential and Institutional</b>			per Unit	Millions of Gallons
Residential	1,009	dwelling	100.0	36.83
Hotel/Motel	156	room	44.0	2.51
Churches	11	church	100.0	0.40
School	210	student	8.8	0.33
<b>Commercial Individual</b>				
Car Wash	1	facility	2,220.0	0.81
Grocery Store	1	store	640.0	0.23
Ironstone Vineyards [1]	1	complex	4,550.0	1.66
<b>Commercial Groups</b>				
<b>Low Strength</b>				
Misc. Comm'l	69.0	business unit	100.0	2.52
Tasting Rooms	11.7	business unit	100.0	0.43
<b>Total Low Strength</b>	<b>80.7</b>			<b>2.95</b>
<b>Medium Strength</b>				
Auto-Related	2.0	business unit	100.0	0.07
Misc. Comm'l	10.0	business unit	100.0	0.37
Manufacturing	3.0	business unit	100.0	0.11
<b>Total Medium Strength</b>	<b>15.0</b>			<b>0.55</b>
<b>Medium/High Strength</b>				
Mixed Comm'l w/Restaurant	71.5	business unit	100.0	2.61
<b>High Strength</b>				
Restaurants	26.0	business unit	100.0	0.95
<b>Total</b>				<b>49.82</b>

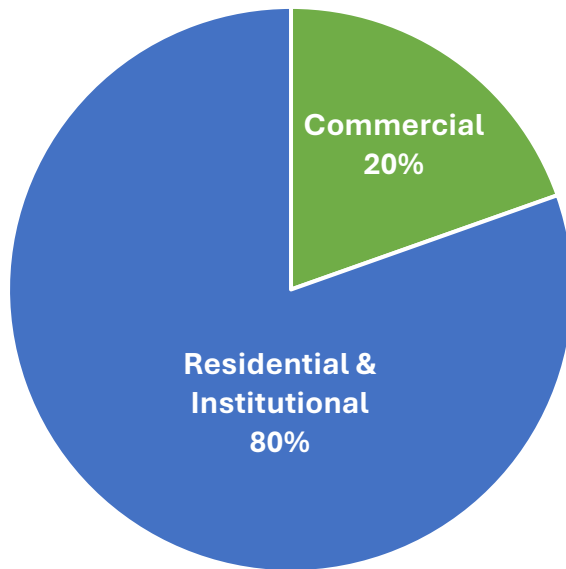
Source: Murphys SD, and HEC February 2025.

[1] Complex includes tasting room, restaurant, and shop. Housing on the estate is billed separately under residential.

The total estimated annual flow is 49.82 million gallons each year. This is higher than the estimated annual flow generated by customers as measured by influent received at the wastewater treatment plant because it assumes that all structures are occupied, and every commercial account is assigned at least one business unit even though the business could generate less flow than a home does each year. Treatment of residential and business accounts is equal in this regard. All accounts are charged as if they are occupied. The flow data indicates about 2.7% vacancy (residential and commercial accounts combined), which is reasonable.

Residential customers (which include duplexes, triplexes, apartments, condominiums, the mobile home park and hotel/motel rooms) and institutional customers (which includes Albert Michelson Elementary, and churches), generate approximately 80% of the wastewater flow. **Figure 2** shows the contribution of wastewater flow from each customer group.

**Figure 2**  
**Wastewater Generation by Customer Group**



## 2.2 FINANCIAL HEALTH OF THE DISTRICT

### Revenues

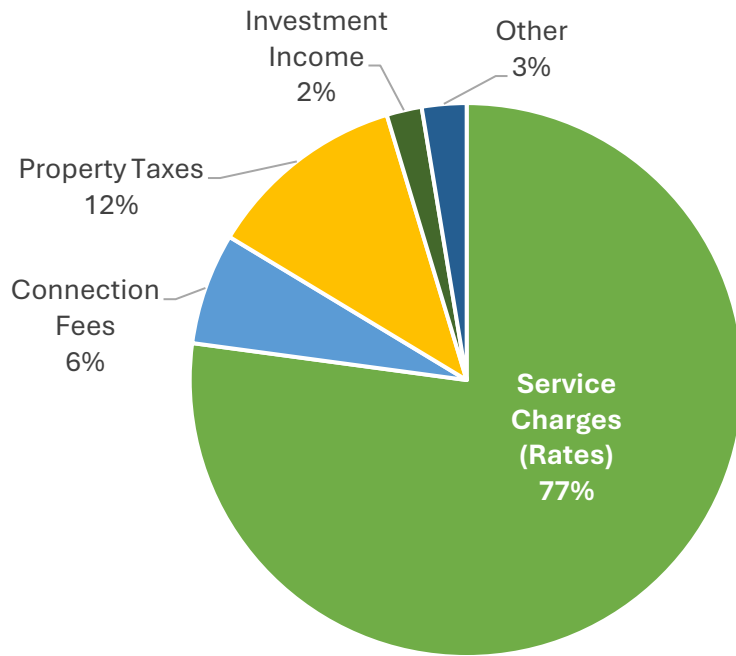
Most (77%) of the District’s revenues are generated by rates applied to monthly customer bills, as shown in **Figure 3**. Other sources of income include property taxes, connection fees, investment income, and small miscellaneous revenues.

The current wastewater rates schedule is shown in **Table 5**.

### Expenses

**Figure 4** illustrates that management of the District comprises approximately 68% of the total annual costs. Repairs and operations comprise 10%, and power costs comprise 8%. Other cost categories include professional services, insurance, licenses and permits, which together comprise 14% of total annual costs.

**Figure 3**  
**Historical District Revenue Sources**



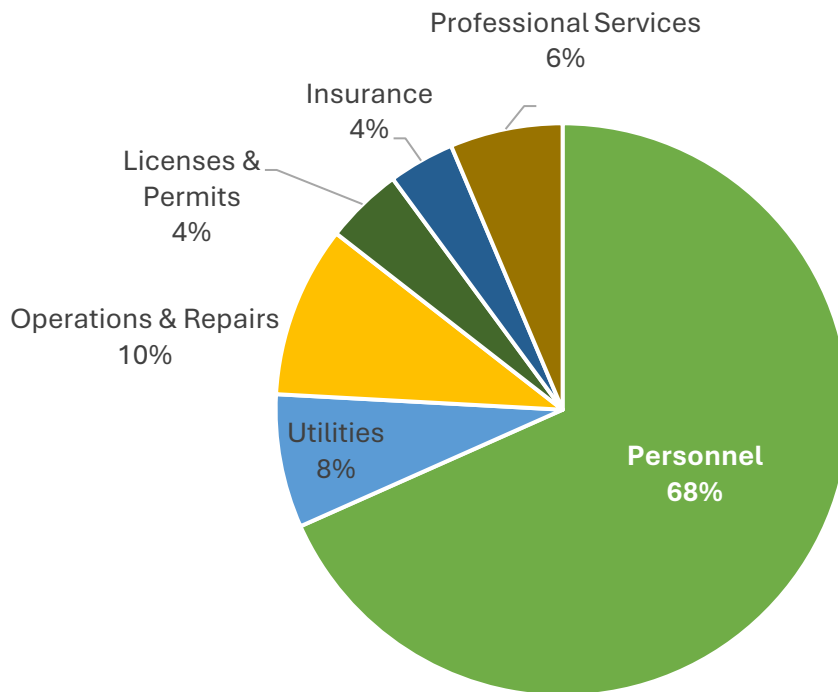
**Table 5**  
**Current Wastewater Rates Schedule**

<b>Basic Rate per Month per EDU</b>	<b>\$60.00</b> in effect since 11/1/2009
<b>Residential</b>	<b>one unit = one space = one EDU</b>
Single Family Residence	\$60.00 per unit
Mobile Homes, Condos	\$60.00 per unit
Duplex, Triplex, Apartments	\$60.00 per unit
Commercial Trailer Park	\$60.00 per space
<b>Non-Residential</b>	<b>multiply # EDUs per account by the base rate</b>
Hotel, Motel, Office	Per District resolution, the number of EDUs for each non-residential account is to be computed annually based on winter water use; <b>the District has not made these calculations since 2018</b>
Laundromats	
Other Commercial	
Community Hall or Church	
Gas Station, Schools	
Industrial, Restaurant or Bar	
<b>Vacant Lots</b>	<b>\$8.33</b> per month (\$100 per year)

Source: Murphys SD.

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**Figure 4**  
**Historical Operating Expenditures**



Operating costs have increased 5.8% per year for the past three fiscal years, as demonstrated in **Table 6**. The average annual cost increases compare with the West Region CPI increase of 5.0% per year over the same time period, and the San Francisco Engineering News Record Construction Cost Index increase of 4.5% per year over the same time period. Water utilities operating costs typically increase at a faster rate than inflation<sup>6</sup>.

**Net Income**

The District has experienced both positive and negative net annual income in the past few years, as illustrated in **Figure 5**. In fiscal year 2021 the District received a grant, which explains the large positive net income that year. Positive net income is added to cash reserves which may be designated for future operating or capital needs.

Details of historical financial information are provided in **Appendix Tables A-5 and A-6**.

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<sup>6</sup> Bluefield Research, 5 February 2025, analysis of water and wastewater bills serving approximately 20% of the US population. The report finds that sewer charges, in particular, represent a significant portion of monthly bills, highlighting the growing costs associated with wastewater treatment and regulatory compliance.

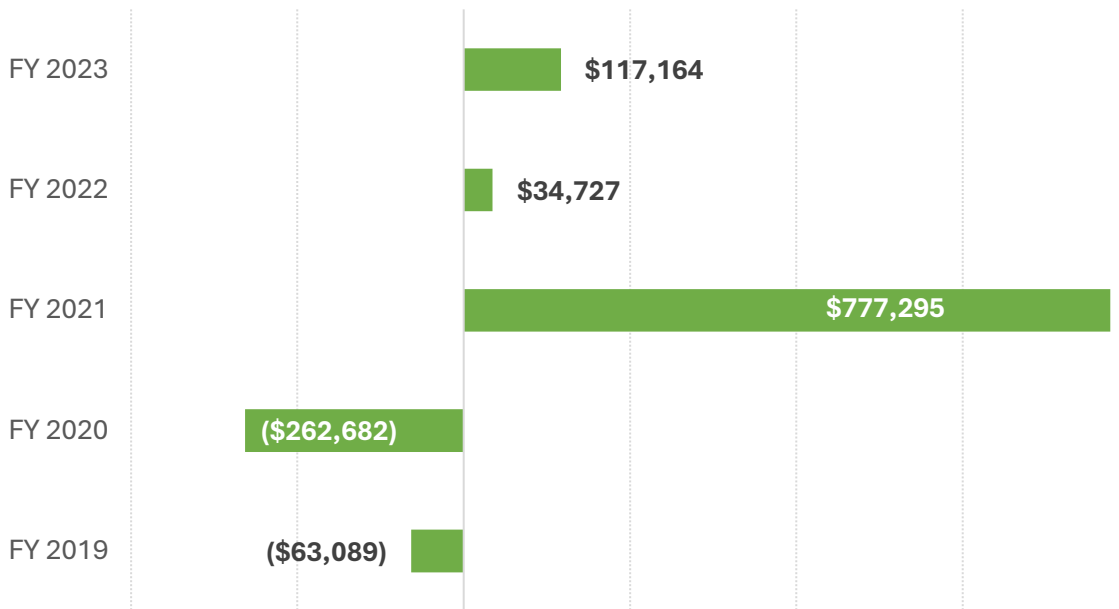
**Table 6**  
**Historical Average Annual Operating Cost Increases**

Operating Cost	FY 2021	FY 2022	FY 2023	FY 2024	2021 - 2024 Change	Avg. Annual %
Personnel	\$524,711	\$518,997	\$595,484	\$581,689	\$56,978	3.5%
Utilities	\$39,740	\$44,986	\$72,208	\$87,996	\$48,256	30.3%
Operations & Repairs	\$61,379	\$74,349	\$96,894	\$81,998	\$20,619	10.1%
Licenses & Permits	\$30,385	\$34,820	\$37,267	\$39,728	\$9,343	9.3%
Insurance	\$54,123	\$639	\$29,812	\$36,663	(\$17,460)	-12.2%
Professional Services	\$18,394	\$20,822	\$22,868	\$44,508	\$26,114	34.3%
Administrative Costs	\$44,642	\$64,798	\$52,464	\$44,485	(\$157)	-0.1%
<b>Total Operating Expenses</b>	<b>\$773,374</b>	<b>\$759,411</b>	<b>\$906,997</b>	<b>\$917,067</b>	<b>\$143,693</b>	<b>5.8%</b>
<b>June Index</b>						
San Francisco ENR CCI	13,459	15,356	15,367	15,367	1,908	4.5%
West Region CPI	288	313	324	334	45	5.0%

Source: Bureau of Labor Statistics, Engineering News Record, and District financial records.

cpu

**Figure 5**  
**Historical Net (Operating + Capital) Income**



## Reserves

The District ended FY 2024 with approximately \$2.5 million in reserves. Reserves are necessary for several reasons:

- Serve cash flow needs
- Pay for emergency and unplanned necessary repairs
- Accumulate for system rehabilitation (planned improvements)
- Provide rate stabilization

Per the Water Environment Federation, “The maintenance of reserves can be defined generally as the maintenance of cash or financial capabilities to meet unknown changes in the budgets and financial needs of a utility. These needs could arise from new laws and regulations, natural disasters, operating emergencies, financial losses in earning potential from idle cash, drop in economic conditions in the service area or the state, insurance losses, litigation, revenue collection process breakdowns, and operating emergencies in the service area. These needs may vary according to the types and designations of the funds collected or expenses require, thereby necessitating different policies for varying areas or funds of an agency’s operation.”<sup>7</sup>

“The utility should identify the drivers affecting [its] financial activities. It should determine the maximum length of time that it might have to operate without the revenue or expense and then determine the cumulative dollar value for this period of time.”<sup>8</sup>

In 2024, the District established a Reserve Policy which includes maintaining:

- an Operating Reserve equivalent to three months of operating expenses (currently about \$230,000),
- a Capital Reserve with minimum \$500,000, inflated 4% each year,
- an Equipment Reserve with minimum \$100,000, inflated 4% each year, and
- a Special Use Reserve with minimum \$100,000, inflated 4% each year.

Currently, with \$2.5 million in reserves, and a minimum requirement of \$930,000 per the Reserve Policy, the District is in a healthy financial position. However, the District does not currently meet its debt service requirement. Net income before debt service needs to be 1.10, per requirements of the State SRF Loan. Revenues from rates need to increase to meet the State’s requirement. In addition, the District has some large capital projects to complete over the next five years that will require the use of the cash reserves.

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<sup>7</sup> Page 35, Financing and Charges for Wastewater Systems, Manual of Practice No. 27.

<sup>8</sup> Page 37, Financing and Charges for Wastewater Systems, Manual of Practice No. 27.

## Section 3: PROJECTED REVENUE REQUIREMENT

### RATE METHODOLOGY STEP 2: PROJECT THE REVENUE REQUIREMENT

The revenue requirement is the amount to be raised by wastewater fees. The projection of the revenue requirement is the cornerstone for calculation of rates. This section explains the derivation of the projected revenue requirements for this Study.

Components of revenue requirement include:

- Operating Costs
- Capital Improvements Costs and Debt Service
- System Rehabilitation Costs

Non-wastewater fees revenue projections are credited against projected operations costs. Non-wastewater fee revenues include interest income and miscellaneous revenues. Property tax and connection fees are not included in the calculation of revenue requirement as those revenue sources are used for capital projects.

#### 3.1 OPERATING COSTS

Operating costs are projected based on actual fiscal year 2024 expenditures. Operating expenses include annual costs for personnel (including benefits), professional and contract services, treatment plant operations and maintenance, collection system and other wastewater facilities operations and maintenance, utilities, facilities equipment, tools, subscriptions, and supplies. The financial model increases operating costs between 5.0% and 6.0% each year.

#### 3.2 CAPITAL IMPROVEMENTS AND DEBT SERVICE

The District anticipates needing several critical capital improvements at the wastewater treatment plant and replacement of significant portions of collection system pipeline in the next 9 years.

**Table 7** summarizes the capital improvement projects and estimated costs contained in the District's Master Plan which was completed in August 2024. All the costs shown in the table are in inflated dollars (the estimated amount that the improvement would cost at the time it is constructed). All the costs are the responsibility of existing customers because the improvements are for the benefit of existing customers. In total, the Master Plan includes \$18.84 million of improvements: \$14.70 million for the collection system, \$2.25 million for the WWTP, and \$1.89 million for buildings and equipment.

The funding plan anticipates \$4.3 million of improvements funded with cash (rate revenue, property taxes and reserves), \$5.8 million funded with debt from the State Revolving Fund (SRF), and \$8.7 million funded with debt from the United States Department of Agriculture (USDA).

**Table 7**  
**10-Year Capital Improvement Projects Schedule in Inflated Dollars**

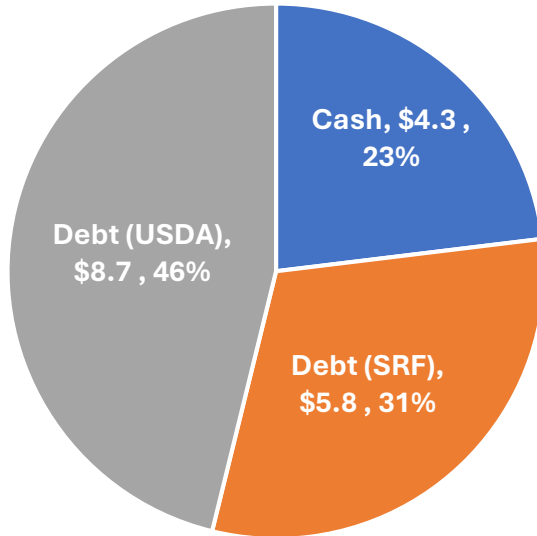
Capital Improvement	Fiscal Year Ending									
	2026	2027	2028	2029	2030	2031	2032	2033	2034	
<b>Collection System Improvements</b>										
Sewer Line Replacements	\$0	\$0	\$0	\$1,315,910	\$1,503,360	\$0	\$2,267,140	\$0	\$0	\$0
New Manhole	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$190,080	\$0	\$0
Clay Pipe Replacements	\$0	\$0	\$0	\$0	\$255,360	\$1,099,640	\$0	\$2,509,060	\$2,014,980	\$0
Influent Force Main	\$3,544,320	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Subtotal Collection System</b>	<b>\$3,544,320</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,315,910</b>	<b>\$1,758,720</b>	<b>\$1,099,640</b>	<b>\$2,267,140</b>	<b>\$2,699,140</b>	<b>\$2,014,980</b>	<b>\$0</b>
<b>Treatment Plant</b>										
Sand Filtration System	\$0	\$691,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Disinfection System	\$0	\$86,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Backup Generator	\$0	\$596,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Site Fencing	\$0	\$0	\$403,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pond 3 Sludge Removal	\$0	\$0	\$473,760	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Subtotal Treatment Plant</b>	<b>\$0</b>	<b>\$1,374,300</b>	<b>\$876,960</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Building and Equipment</b>										
Office Building	\$0	\$0	\$806,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Maintenance Building	\$0	\$0	\$0	\$835,200	\$0	\$0	\$0	\$0	\$0	\$0
Fleet Repair/Replace	\$0	\$0	\$112,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hydro Flusher	\$0	\$0	\$78,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sewer Camera	\$0	\$21,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Security Camera	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,880	\$0
Technology	\$0	\$23,760	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Subtotal Building &amp; Equipment</b>	<b>\$0</b>	<b>\$45,360</b>	<b>\$996,800</b>	<b>\$835,200</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$10,880</b>	<b>\$0</b>
<b>Total Capital Improvements</b>	<b>\$3,544,320</b>	<b>\$1,419,660</b>	<b>\$1,873,760</b>	<b>\$2,151,110</b>	<b>\$1,758,720</b>	<b>\$1,099,640</b>	<b>\$2,267,140</b>	<b>\$2,699,140</b>	<b>\$2,025,860</b>	<b>\$0</b>

full cip

Source: Murphys SD November 2024.

The funding plan is detailed in **Table 8** and illustrated in **Figure 6**.

**Figure 6**  
**CIP Funding Plan (in millions)**



### **Existing Debt**

The District has a current loan with the SRF that funded Phase 1 of the WWTP improvements. The loan was closed in 2018 for \$1.0 million. The loan paid for a small portion of the total cost of the Phase 1 improvements, which cost \$5.5 million in total. The State provided a grant of \$4.5 million for the remaining cost. The District makes annual payments of \$43,670 to service the loan, which will be paid off in 2051. Loan details are provided **Appendix A Table A-7**.

### **Additional Potential Debt**

The additional potential debt included in the CIP funding plan is with two agencies, the State SRF and the USDA. Assumptions and annual debt service associated with these debt financings is shown in **Table 9**. The A Series totals \$5.8 million for the influent force main and Phase 2 WWTP improvements. The estimated annual debt service is \$273,300 with payments beginning one year after completion.

The B Series totals \$2.8 million for sewer line replacements shown in fiscal years 2029 and 2030. Full payments will be due in March and September with the first payment following completion of the project. USDA loans do require payment of interest until the loan is closed.

The Series C USDA loan is estimated at \$5.9 million to pay for clay pipe replacements shown in the Master Plan between fiscal years 2030 and 2034. This loan would be taken out after the 5-year rate period calculated in this study and any impact on rates would be addressed in a future rate study.

**Table 8**  
**Capital Improvements Funding Plan**

Project	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9
<b>Funding Sources</b>									
<b>Cash</b>	\$4,345,500	\$45,360	\$996,800	\$835,200	\$0	\$0	\$2,267,140	\$190,080	\$10,880
<b>Debt</b>	\$14,493,900	\$1,374,300	\$876,960	\$1,315,910	\$1,758,720	\$1,099,640	\$0	\$2,509,060	\$2,014,980
SRF - Influent Force Main	\$3,544,320								
SRF - WWTP Improvements	\$2,251,260	\$1,374,300	\$876,960	\$1,315,910	\$1,503,360				
USDA - Sewer Line Replacement	\$2,819,270								
USDA - Clay Pipes Replacement	\$5,879,040				\$255,360	\$1,099,640		\$2,509,060	\$2,014,980
<b>Total</b>	<b>\$18,839,400</b>	<b>\$1,419,660</b>	<b>\$1,873,760</b>	<b>\$2,151,110</b>	<b>\$1,758,720</b>	<b>\$1,099,640</b>	<b>\$2,267,140</b>	<b>\$2,699,140</b>	<b>\$2,025,860</b>

Source: District 10-Year Capital Improvement Plan, August 2024.

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**Table 9**  
**Estimated New Debt**

<b>Description</b>	<b>A Series</b>	<b>B Series</b>	<b>C Series</b>	<b>Total</b>
	WWTP & Influent Force Main (complete 2028)	Sewer Line Replacements (complete 2030)	Clay Pipe Replacements (complete 2033)	
<b>Estimated Project Cost</b>	<b>\$5,795,580</b>	<b>\$2,819,270</b>	<b>\$5,879,040</b>	<b>\$14,493,890</b>
<b>Annual Debt Service</b>	<b>\$273,300</b>	<b>\$164,400</b>	<b>\$342,700</b>	<b>\$780,400</b>
Interest	\$2,403,420	\$3,756,730	\$7,828,960	\$13,989,110
<b>Total Payments</b>	<b>\$8,199,000</b>	<b>\$6,576,000</b>	<b>\$13,708,000</b>	<b>\$28,483,000</b>
<b>Terms:</b>	<b>SRF</b>	<b>USDA</b>	<b>USDA</b>	
Interest Rate	2.40%	5.00%	5.00%	
Repayment (years)	30	40	40	

Source: 10-Yr CIP August 2024, and HEC February 2025.

ph2

### Debt Requirements

The SRF program typically requires one year of debt service to be held in a restricted account until the end of the repayment period when it can be used to make the last payment. The SRF program also requires a debt service coverage of at least 1.1 (net income must be at least 10% greater than the debt service payment). The USDA requires that the District place 10% of the amount of annual debt service in a restricted fund for the first ten years of payments to accumulate one year of debt service. The restricted fund can be used in the event it is needed to make a payment, and it may be used as the last payment. In addition, USDA requires a short-lived asset reserve fund, which is also a restricted fund, to be established for repair and/or replacement of assets with a useful life of 15 years or less. Money in this fund can be used toward qualified rehabilitation projects that are included in the CIP. The financial model collects for the additional year of debt service, but it does not include the short-lived asset reserve fund because the amount required for this will not be known until a Preliminary Engineering Report is completed for the facilities to be funded by the USDA loan.

### 3.3 SYSTEM REHABILITATION COSTS

Depreciation is used as the basis on which to collect rates to cover system rehabilitation costs. Collecting for system rehabilitation in the rates allows the District to replace assets as they outlive their useful lives. System rehabilitation is included in the revenue requirements determination to cash-fund improvements in the CIP during the five-year period. In years when the cash-funded portion of the CIP is less than the amount collected for system rehabilitation, the net amount increases the District’s cash reserves which can be spent in future years on rehabilitation projects.

**Table 10** shows the estimated cost of depreciation of the wastewater system assets. The estimated cost includes replacement of existing assets and assets that are estimated to be constructed during the Study period. Over the Study period 50% of depreciation is included in the revenue requirements

for system rehabilitation.

**Table 10**  
**System Rehabilitation in the Revenue Requirement**

Item	Avg. Life	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
<b>Current Depreciation</b>		<b>\$279,000</b>	<b>\$279,000</b>	<b>\$279,000</b>	<b>\$279,000</b>	<b>\$279,000</b>
<b>New Assets</b>	years					
Building & Equipment	10	\$0	\$5,000	\$105,000	\$189,000	\$189,000
Collection System	80	\$50,000	\$50,000	\$50,000	\$66,000	\$88,000
Treatment Plant	30	\$0	\$46,000	\$75,000	\$75,000	\$75,000
<b>Total New Assets</b>		<b>\$50,000</b>	<b>\$101,000</b>	<b>\$230,000</b>	<b>\$330,000</b>	<b>\$352,000</b>
<b>Total Depreciation</b>		<b>\$329,000</b>	<b>\$380,000</b>	<b>\$509,000</b>	<b>\$609,000</b>	<b>\$631,000</b>
Depreciation in Rates		50%	50%	50%	50%	50%
<b>System Rehabilitation Collection</b>		<b>\$164,500</b>	<b>\$190,000</b>	<b>\$254,500</b>	<b>\$304,500</b>	<b>\$315,500</b>

Source: District FY2023 audit, District 2024 CIP, and HEC January 2025.

### 3.4 PROJECTED REVENUE REQUIREMENTS

**Table 11** estimates the revenue requirements for the next five years. The revenue requirement is projected to increase each year to account for increases in operating costs, to fund system rehabilitation, to make debt service payments, and contribute to restricted funds. Non-rate revenue is credited against the estimated annual costs.

In the first year (FY 2026), the revenue requirement is projected to increase from \$975,600 (FY 2025) to \$1.19 million. By year five, the revenue requirement is projected to be \$1.93 million. The components of revenue requirement, and total amounts anticipated to be needed over the next five years are illustrated in **Figure 7**. The brown line shows the amount that would be collected in rates if the amount collected is smoothed over the next five years. This approach avoids a jump in rates in fiscal year 2029.

**Table 11  
Projected Revenue Requirements**

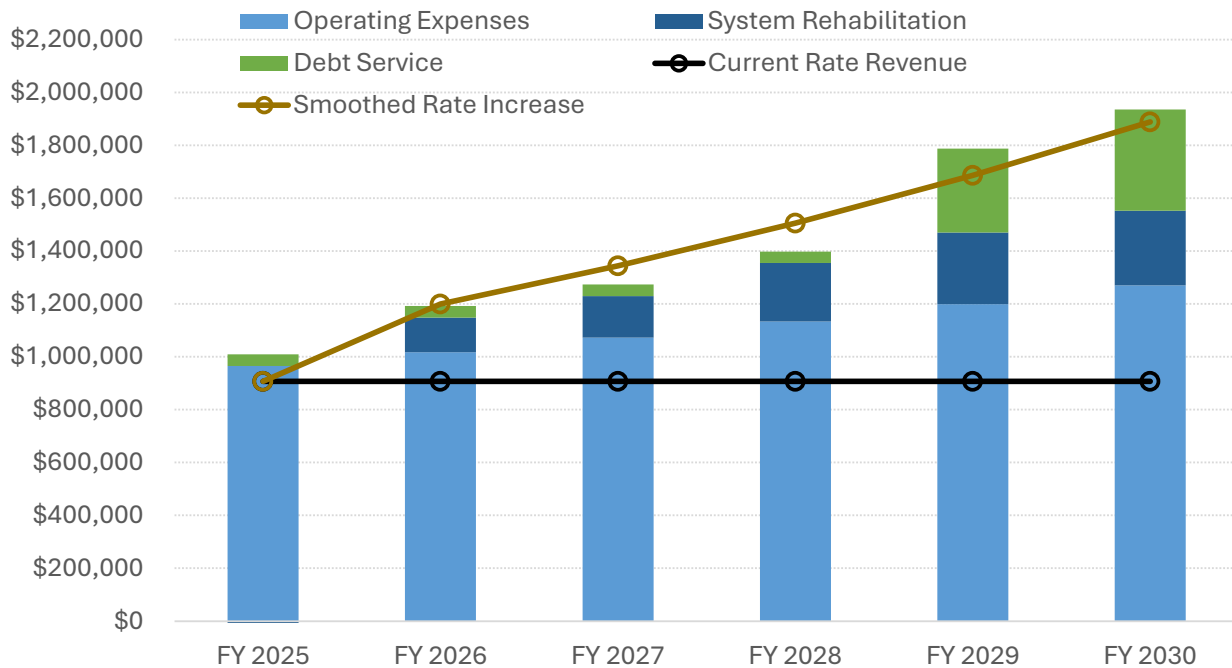
Expenses and Revenues	Annual Change	FY 2024 Actual	FY 2025 Projected	FY 2026 Yr 1	FY 2027 Yr 2	FY 2028 Yr 3	FY 2029 Yr 4	FY 2030 Yr 5	FY 2031 Yr 6	FY 2032 Yr 7	FY 2033 Yr 8	FY 2034 Yr 9
<b>Operating Expenses</b>												
Personnel	3.5%	\$581,689	\$602,050	\$623,120	\$644,930	\$667,500	\$690,860	\$715,040	\$740,070	\$765,970	\$792,780	\$820,530
Utilities	15.0%	\$87,996	\$101,200	\$116,380	\$133,840	\$153,920	\$177,010	\$203,560	\$234,090	\$269,200	\$309,580	\$356,020
Operations & Repairs	5.0%	\$81,998	\$86,100	\$90,410	\$94,930	\$99,680	\$104,660	\$109,890	\$115,380	\$121,150	\$127,210	\$133,570
Licenses & Permits	10.0%	\$39,728	\$43,700	\$48,070	\$52,880	\$58,170	\$63,990	\$70,390	\$77,430	\$85,170	\$93,690	\$103,060
Insurance	10.0%	\$36,663	\$40,330	\$44,360	\$48,800	\$53,680	\$59,050	\$64,960	\$71,460	\$78,610	\$86,470	\$95,120
Professional Services	3.0%	\$44,508	\$45,840	\$47,220	\$48,640	\$50,100	\$51,600	\$53,150	\$54,740	\$56,380	\$58,070	\$59,810
Administrative Costs	3.0%	\$44,485	\$45,820	\$47,190	\$48,610	\$50,070	\$51,570	\$53,120	\$54,710	\$56,350	\$58,040	\$59,780
<b>Total Operating Expenses</b>		<b>\$917,067</b>	<b>\$965,040</b>	<b>\$1,016,750</b>	<b>\$1,072,630</b>	<b>\$1,133,120</b>	<b>\$1,198,740</b>	<b>\$1,270,110</b>	<b>\$1,347,880</b>	<b>\$1,432,830</b>	<b>\$1,525,840</b>	<b>\$1,627,890</b>
<b>Capitales Activities</b>												
System Rehabilitation		\$0	\$0	\$164,500	\$190,000	\$254,500	\$304,500	\$315,500	\$322,500	\$336,500	\$353,500	\$366,500
<b>Total Capital Activities</b>		<b>\$0</b>	<b>\$0</b>	<b>\$164,500</b>	<b>\$190,000</b>	<b>\$254,500</b>	<b>\$304,500</b>	<b>\$315,500</b>	<b>\$322,500</b>	<b>\$336,500</b>	<b>\$353,500</b>	<b>\$366,500</b>
<b>Debt</b>												
Current Debt Service (SRF Loan)		\$43,670	\$43,670	\$43,670	\$43,670	\$43,670	\$43,670	\$43,670	\$43,670	\$43,670	\$43,670	\$43,670
Estimated Series A Debt (SRF Loan)							\$273,300	\$273,300	\$273,300	\$273,300	\$273,300	\$273,300
Estimated Series B Debt (USDA Bonds)								\$65,800	\$180,840	\$180,840	\$180,840	\$180,840
Estimated Series C Debt (USDA Bonds)										\$67,750	\$125,450	\$376,970
<b>Total Debt</b>		<b>\$43,670</b>	<b>\$43,670</b>	<b>\$43,670</b>	<b>\$43,670</b>	<b>\$43,670</b>	<b>\$316,970</b>	<b>\$382,770</b>	<b>\$497,810</b>	<b>\$565,560</b>	<b>\$623,260</b>	<b>\$874,780</b>
<b>Total Annual Costs</b>		<b>\$960,737</b>	<b>\$1,008,710</b>	<b>\$1,224,920</b>	<b>\$1,306,300</b>	<b>\$1,431,290</b>	<b>\$1,820,210</b>	<b>\$1,968,380</b>	<b>\$2,168,190</b>	<b>\$2,334,890</b>	<b>\$2,502,600</b>	<b>\$2,869,170</b>
<b>Credits</b>												
Investment Income	0.0%	\$19,643	\$19,640	\$19,640	\$19,640	\$19,640	\$19,640	\$19,640	\$19,640	\$19,640	\$19,640	\$19,640
Miscellaneous	0.0%	\$13,490	\$13,490	\$13,490	\$13,490	\$13,490	\$13,490	\$13,490	\$13,490	\$13,490	\$13,490	\$13,490
<b>Total Credits</b>		<b>\$33,133</b>	<b>\$33,130</b>	<b>\$33,130</b>	<b>\$33,130</b>	<b>\$33,130</b>	<b>\$33,130</b>	<b>\$33,130</b>	<b>\$33,130</b>	<b>\$33,130</b>	<b>\$33,130</b>	<b>\$33,130</b>
<b>Revenue Requirement</b>		<b>\$927,604</b>	<b>\$975,580</b>	<b>\$1,191,790</b>	<b>\$1,273,170</b>	<b>\$1,398,160</b>	<b>\$1,787,080</b>	<b>\$1,935,250</b>	<b>\$2,135,060</b>	<b>\$2,301,760</b>	<b>\$2,469,470</b>	<b>\$2,836,040</b>
FY24 Rate Revenue		\$907,100	\$907,100	\$907,100	\$907,100	\$907,100	\$907,100	\$907,100	\$907,100	\$907,100	\$907,100	\$907,100
<b>Smoothed Rate Increase [1]</b>			<b>\$907,100</b>	<b>\$1,200,000</b>	<b>\$1,344,000</b>	<b>\$1,505,280</b>	<b>\$1,685,914</b>	<b>\$1,888,223</b>	<b>\$2,067,604</b>	<b>\$2,264,027</b>	<b>\$2,479,109</b>	<b>\$2,714,625</b>

Source: District financial records and HEC February 2025.

[1] Rates in increased years 2-5 12.0% and years 4-9 9.5%

review

**Figure 7**  
**Projected 5-Year Revenue Requirement**



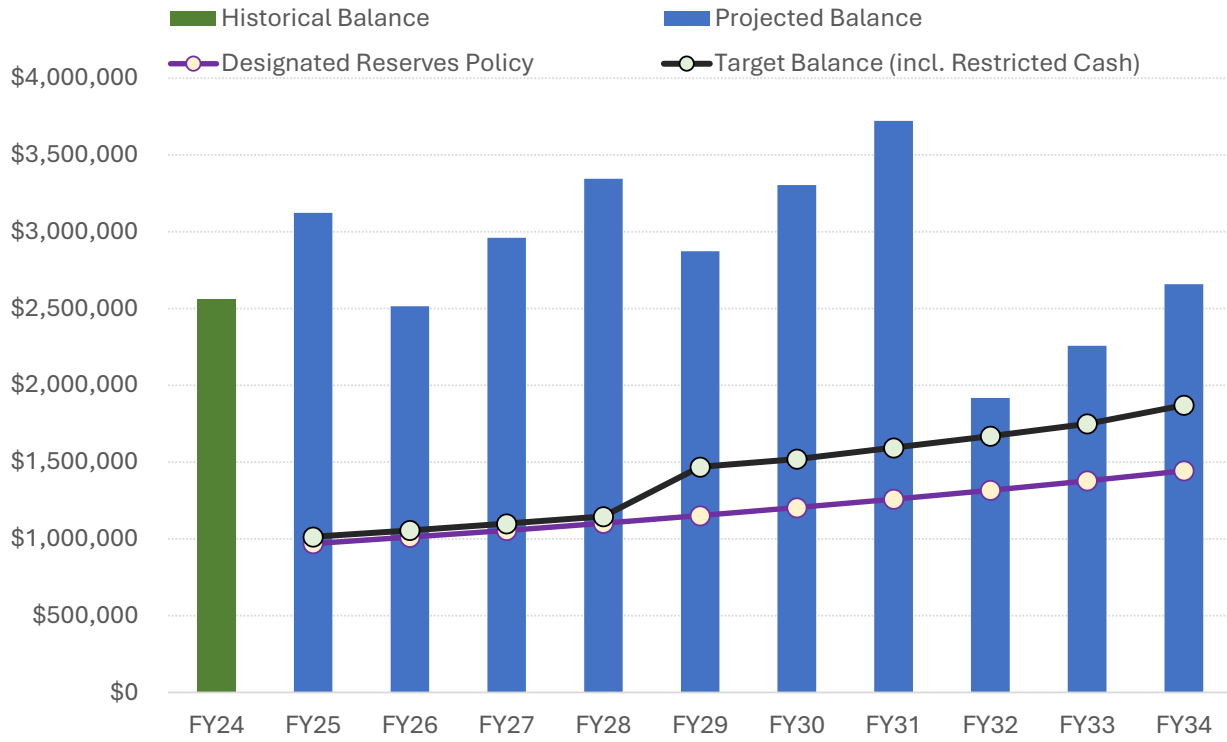
### 3.5 CASH FLOW PROJECTION

The projected cash flow assumes that the proposed fees are adopted and that rates continue to increase in years 6 through 9. **Table 12** shows the projected District cash flow for the next 9 years. The table shows debt service coverage exceeds the minimum 1.1 threshold in every year after the fees are adopted.

An illustration of projected cash balances, the target cash balances (which includes restricted cash), and the District’s designated reserve policy levels is shown in **Figure 8**. The graph shows that the District maintains the target cash balance in all years. The graph also shows that the cash reserves appear higher than necessary in fiscal year 2030 at the end of the 5-year period but this is anticipated to be reduced the following year when the District cash-funds a \$2.3 million pipeline replacement project.

Details of starting cash balances for the end of fiscal year 2024 are provided in **Appendix Table A-8**.

**Figure 8**  
**Projected Cash Balances**



**Table 12**  
**Projected District Cash Flow**

Revenues & Expenses	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11
<b>Revenues</b>											
Monthly Billing	\$907,100	\$1,344,000	\$1,505,280	\$1,685,914	\$1,888,223	\$2,067,604	\$2,264,027	\$2,479,109	\$2,714,625		
Investment Income	\$19,643	\$19,640	\$19,640	\$19,640	\$19,640	\$19,640	\$19,640	\$19,640	\$19,640		
Miscellaneous	\$13,490	\$13,490	\$13,490	\$13,490	\$13,490	\$13,490	\$13,490	\$13,490	\$13,490		
<b>Total Revenues</b>	<b>\$940,233</b>	<b>\$1,377,130</b>	<b>\$1,538,410</b>	<b>\$1,719,044</b>	<b>\$1,921,353</b>	<b>\$2,100,734</b>	<b>\$2,297,157</b>	<b>\$2,512,239</b>	<b>\$2,747,455</b>		
<b>Operating Expenses</b>	<b>\$917,067</b>	<b>\$1,072,630</b>	<b>\$1,133,120</b>	<b>\$1,198,740</b>	<b>\$1,270,110</b>	<b>\$1,347,880</b>	<b>\$1,432,830</b>	<b>\$1,525,840</b>	<b>\$1,627,890</b>		
<b>Net Revenues</b>	<b>\$23,166</b>	<b>\$304,500</b>	<b>\$405,290</b>	<b>\$520,304</b>	<b>\$651,243</b>	<b>\$752,854</b>	<b>\$864,327</b>	<b>\$986,399</b>	<b>\$1,119,865</b>		
Debt Service	\$43,670	\$43,670	\$43,670	\$316,970	\$382,770	\$497,810	\$565,560	\$623,260	\$874,780		
Debt Coverage [1]	0.53	6.97	9.28	1.64	1.70	1.51	1.53	1.58	1.28		
<b>Net Income</b>	<b>(\$20,504)</b>	<b>\$172,710</b>	<b>\$260,830</b>	<b>\$203,333</b>	<b>\$268,473</b>	<b>\$255,044</b>	<b>\$298,766</b>	<b>\$363,139</b>	<b>\$245,084</b>		
Beginning Balance	2,471,426	\$3,093,630	\$2,468,110	\$2,896,180	\$3,260,300	\$3,169,210	\$3,559,140	\$1,724,690	\$2,030,340		
Net Income	(\$20,504)	(\$68,480)	\$260,830	\$361,620	\$203,333	\$268,473	\$298,766	\$363,139	\$245,084		
Cash Adjustment	\$107,398	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
Uncollectible Revenue (2.4%)	\$159,981	(\$28,365)	(\$31,768)	(\$35,580)	(\$39,850)	(\$44,632)	(\$53,515)	(\$58,599)	(\$64,166)		
Property Taxes (2% growth)	\$10,000	\$166,440	\$169,770	\$173,170	\$176,630	\$180,160	\$183,760	\$187,440	\$191,190		
Connection Fees [2]	\$10,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
Cash-Funded CIP	(\$208,566)	\$479,200	(\$45,360)	(\$96,800)	(\$35,200)	\$0	(\$2,267,140)	(\$190,080)	(\$10,880)		
Debt-Funded CIP		(\$3,544,320)	(\$1,374,300)	(\$876,960)	(\$1,315,910)	(\$1,758,720)	(\$2,509,060)	(\$2,014,980)	(\$2,014,980)		
SRF Loan Proceeds	\$2,608,011	\$1,448,895	\$1,738,674	\$0	\$0	\$0	\$0	\$0	\$0		
USDA Bond Proceeds		\$0	\$0	\$0	\$1,315,910	\$1,758,720	\$1,099,640	\$0	\$0		
<b>Ending Balance</b>	<b>\$2,519,734</b>	<b>\$3,093,630</b>	<b>\$2,896,180</b>	<b>\$3,260,300</b>	<b>\$3,169,210</b>	<b>\$3,559,140</b>	<b>\$1,724,690</b>	<b>\$2,030,340</b>	<b>\$2,395,390</b>		
Restricted [3]	\$43,670	\$43,670	\$43,670	\$43,670	\$43,670	\$43,670	\$353,138	\$371,222	\$427,003		
<b>Unrestricted Balance</b>	<b>\$2,476,064</b>	<b>\$3,049,960</b>	<b>\$2,852,510</b>	<b>\$3,216,630</b>	<b>\$3,125,540</b>	<b>\$3,515,470</b>	<b>\$1,371,552</b>	<b>\$1,659,118</b>	<b>\$1,968,387</b>		
<b>Designated Reserves [4]</b>											
Operating	\$229,267	\$241,260	\$268,158	\$283,280	\$299,685	\$317,528	\$336,970	\$358,208	\$381,460		
Capital	\$500,000	\$520,000	\$562,432	\$584,929	\$608,326	\$632,660	\$657,966	\$684,285	\$711,656		
Equipment	\$100,000	\$104,000	\$112,486	\$116,986	\$121,665	\$126,532	\$131,593	\$136,857	\$142,331		
Special Use	\$100,000	\$104,000	\$112,486	\$116,986	\$121,665	\$126,532	\$131,593	\$136,857	\$142,331		
<b>Total Designated Reserves</b>	<b>\$929,267</b>	<b>\$1,011,308</b>	<b>\$1,055,562</b>	<b>\$1,102,181</b>	<b>\$1,151,342</b>	<b>\$1,203,251</b>	<b>\$1,258,122</b>	<b>\$1,316,206</b>	<b>\$1,377,778</b>		
<b>Remaining Reserves</b>	<b>\$1,546,797</b>	<b>\$1,413,132</b>	<b>\$1,796,947</b>	<b>\$2,114,449</b>	<b>\$1,974,199</b>	<b>\$2,352,219</b>	<b>\$2,297,420</b>	<b>\$2,342,912</b>	<b>\$2,620,611</b>		

Source: Murphys SD Financials, and HEC February 2025.

[1] SRF - Net revenues must be at least 110% of the maximum annual debt service of all outstanding system obligations so long as obligations other than the SRF obligation are outstanding.  
 [2] Assumes no new connections.  
 [3] One year debt service required for the SRF loans and 10% of debt service accumulated each year the first 10 years for the USDA loans.  
 Note, USDA will also require a short-lived asset reserve not currently included in the cash flow.  
 [4] Per District policy, minimum reserves include:  
 Operating 3 months of operating expenses  
 Equipment Minimum \$100,000, inflated 4% per year  
 Special Use Minimum \$500,000, inflated 4% per year  
 [5] Unrestricted and undesignated reserves. A negative number indicates drawdown on reserves.

## SECTION 4: COST OF SERVICE WASTEWATER FEE CALCULATIONS

### 4.1 COST OF SERVICE

The cost of service methodology is performed in this section.

#### RATE METHODOLOGY STEP 3: ALLOCATE REVENUE REQUIREMENT TO BASE COSTS AND FLOW COSTS

The revenue requirement is allocated between base costs and flow costs by functionalizing costs according to whether they are customer-related or flow-related. Cost functionalization is shown in **Table 13**. Supporting **Appendix Table A-9** provides the plant in service allocation of costs.

**Table 13**  
**Cost Functionalization**

Expenditures	FY24 Actuals	Allocation Basis	Customer-Related	Flow-Related	Unclassified
<b>Administrative</b>					
Personnel - Administration (30%)	\$174,507	Customers	100%	0%	0%
Advertising	\$461	Avg. of Classified	0%	0%	100%
Utilities	\$7,450	Customers	100%	0%	0%
Engineering	\$1,852	Plant in Service	2%	98%	0%
Rents - Leases	\$720	Avg. of Classified	0%	0%	100%
Supplies	\$11,549	Avg. of Classified	0%	0%	100%
Insurance	\$36,663	Plant in Service	2%	98%	0%
Other	\$22,453	Avg. of Classified	0%	0%	100%
Professional	\$44,508	Avg. of Classified	0%	0%	100%
Licenses & Permits	\$39,728	Customers	100%	0%	0%
<b>Operating</b>					
Personnel - Operations (70%)	\$407,182	Plant in Service	2%	98%	0%
Maintenance & Repairs (minor)	\$9,455	Plant in Service	2%	98%	0%
Other	\$35,216	Plant in Service	2%	98%	0%
Supplies	\$37,327	Plant in Service	2%	98%	0%
Utilities	\$87,996	Utilities	0%	100%	0%
<b>Total Expense</b>	<b>\$917,067</b>		<b>\$231,219</b>	<b>\$606,157</b>	<b>\$79,691</b>
Reallocation of Unclassified	\$79,691		\$22,005	\$57,686	
<b>Allocation of Operating Expenses</b>			<b>\$253,223</b>	<b>\$663,844</b>	
<b>Capital-Related Costs</b>					
Debt	\$43,670	Plant in Service	2%	98%	
Depreciation	\$278,905	Plant in Service	2%	98%	
<b>Allocation of Capital-Related Costs</b>			<b>\$5,828</b>	<b>\$316,747</b>	
<b>TOTAL ALLOCATED EXPENSES</b>	<b>\$1,239,642</b>		<b>\$259,052</b>	<b>\$980,591</b>	
<b>Percentage of Allocation</b>			<b>21%</b>	<b>79%</b>	

Source: HEC February 2025.

func alloc

Using the cost functionalization exercise, 20% of costs are allocated to the base cost and 80% to flow cost for each year as shown in **Table 14**.

**Table 14**  
**Allocation of Revenue Requirement**

<b>Costs</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>FY 2030</b>
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Revenue Requirement	\$907,100	\$1,200,000	\$1,344,000	\$1,505,280	\$1,685,914	\$1,888,223
Base Charge	20%	20%	20%	20%	20%	20%
<b>Base Charge Allocation</b>	<b>\$181,420</b>	<b>\$240,000</b>	<b>\$268,800</b>	<b>\$301,056</b>	<b>\$337,183</b>	<b>\$377,645</b>
Flow Charge	80%	80%	80%	80%	80%	80%
<b>Flow Charge Allocation</b>	<b>\$725,680</b>	<b>\$960,000</b>	<b>\$1,075,200</b>	<b>\$1,204,224</b>	<b>\$1,348,731</b>	<b>\$1,510,579</b>

Source: HEC February 2025.

**RATE METHODOLOGY STEP 4A: ALLOCATE BASE COSTS TO CUSTOMER CATEGORIES**

Calculation of the monthly Base Charge is shown in **Table 15**. The monthly charge applies to all wastewater accounts, including vacant lot accounts.

**Table 15**  
**Calculated Base Charges**

<b>Item</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>FY 2030</b>
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Base Charge Allocation	\$240,000	\$268,800	\$301,056	\$337,183	\$377,645
<b>Number of Accounts</b>					
Developed Lot Accounts	838	839	840	841	842
Vacant Lot Accounts	16	16	16	16	16
<b>Total Accounts</b>	<b>854</b>	<b>855</b>	<b>856</b>	<b>857</b>	<b>858</b>
<b>Monthly Base Charge</b>	<b>\$23.42</b>	<b>\$26.20</b>	<b>\$29.31</b>	<b>\$32.79</b>	<b>\$36.68</b>

Source: HEC February 2025.

**RATE METHODOLOGY STEP 4B: ALLOCATE FLOW COSTS TO CUSTOMER CATEGORIES**

The cost to treat wastewater is a function of the total volume (“flow”) and the level of pollutants (“strength”) of the wastewater discharged by a customer. Costs are allocated to customer categories as follows:

1. Allocate the collection and treatment costs to flow, BOD and SS
2. Determine the Unit Cost by Cost Category

**1. Cost Allocation to Flow, BOD, and SS**

Costs are first allocated between treatment and collection functions of the wastewater system and secondly, allocated to flow, BOD, and SS based on percentage allocation or distribution factors. These percentage allocation factors are based on the estimated distribution of the treatment and collection facilities operations and maintenance (O&M) activities between or related to flow, BOD, and SS. Collection costs are strictly related to flow, therefore 100 percent of the collection costs are allocated to flow.

**2. Unit Cost by Wastewater Categorization**

The allocated costs are then divided by total annual wastewater generation, pounds of BOD, and pounds of SS estimated in **Appendix Table A-10. Table 16** shows the calculation of unit costs by category for flow, BOD, and SS.

**Table 16  
Unit Cost Determination**

Unit Cost Component		FY 2026 Yr 1	FY 2027 Yr 2	FY 2028 Yr 3	FY 2029 Yr 4	FY 2030 Yr 5
<b>Allocated Cost</b>		<b>\$960,000</b>	<b>\$1,075,200</b>	<b>\$1,204,224</b>	<b>\$1,348,731</b>	<b>\$1,510,579</b>
<b>Collection</b>	<b>30%</b>	<b>\$289,265</b>	<b>\$323,976</b>	<b>\$362,853</b>	<b>\$406,396</b>	<b>\$455,163</b>
Flow	100%	\$289,265	\$323,976	\$362,853	\$406,396	\$455,163
<b>Treatment</b>	<b>70%</b>	<b>\$670,735</b>	<b>\$751,224</b>	<b>\$841,371</b>	<b>\$942,335</b>	<b>\$1,055,415</b>
Flow	60%	\$402,441	\$450,734	\$504,822	\$565,401	\$633,249
BOD	20%	\$134,147	\$150,245	\$168,274	\$188,467	\$211,083
SS	20%	\$134,147	\$150,245	\$168,274	\$188,467	\$211,083
<b>Annual Cost Allocated to Components</b>						
Flow		\$691,706	\$774,711	\$867,676	\$971,797	\$1,088,412
BOD		\$134,147	\$150,245	\$168,274	\$188,467	\$211,083
SS		\$134,147	\$150,245	\$168,274	\$188,467	\$211,083
	Annual Units					
<b>Cost per MG</b>	49.82	<b>\$13,882.86</b>	<b>\$15,548.80</b>	<b>\$17,414.66</b>	<b>\$19,504.42</b>	<b>\$21,844.95</b>
<b>Cost per Lb BOD</b>	107,482	<b>\$1.25</b>	<b>\$1.40</b>	<b>\$1.57</b>	<b>\$1.75</b>	<b>\$1.96</b>
<b>Cost per Lb SS</b>	110,837	<b>\$1.21</b>	<b>\$1.36</b>	<b>\$1.52</b>	<b>\$1.70</b>	<b>\$1.90</b>

Source: Murphys SD, and HEC February 2025.

Flow costs are allocated to each customer category as shown in **Appendix Table A-11. Figure 9** displays the cost difference per 1,000 gallons to treat wastewater for each customer category in Year 1 FY 2026.

**Figure 9**  
**FY26 Treatment Cost per Thousand Gallons**



**RATE METHODOLOGY STEP 5: DETERMINE COST OF SERVICE BY CUSTOMER GROUP**

The unit costs determined in **Table 16** are multiplied by the flow, BOD, or SS for each customer type. **Table A-12** in Appendix A shows the cost allocated to flow, BOD, and SS by customer category by year. These costs and the base costs are summed up to determine the total costs allocated to each customer group. The resulting cost of service by customer group is shown for FY26 under the current structure and the new structure in **Table 17**.

**Table 17**  
**FY26 Cost of Service Results**

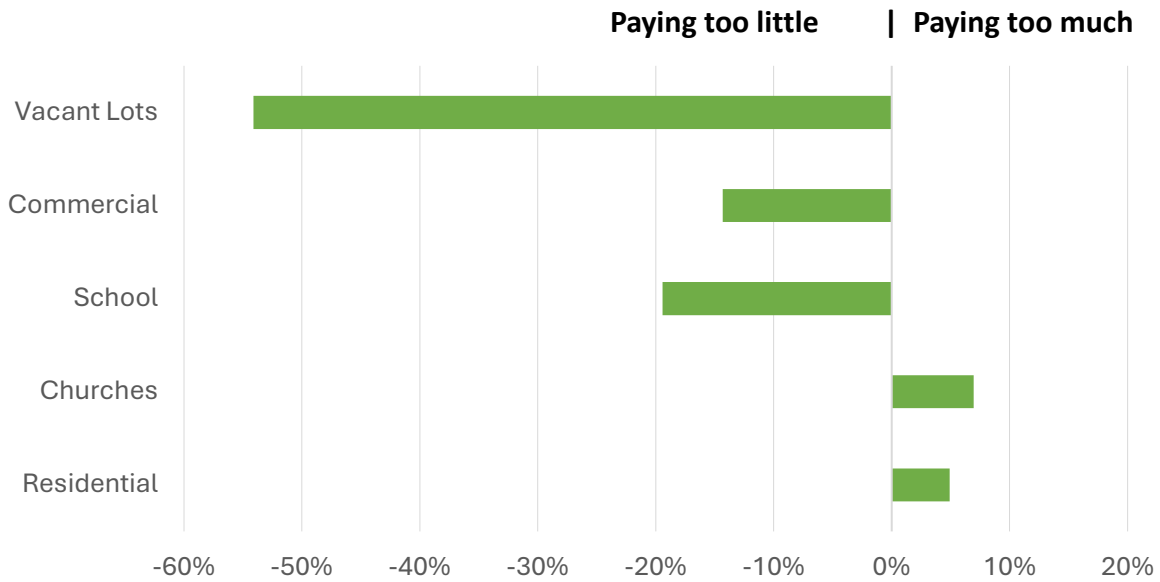
Customer Group	Current Structure	New Structure		
		Flow Charge	Base Charge	Total
Residential	\$936,890	\$688,733	\$204,309	\$893,042
Churches	\$11,029	\$7,220	\$3,091	\$10,312
School	\$4,581	\$5,404	\$281	\$5,685
Commercial	\$245,438	\$258,643	\$27,822	\$286,465
<b>Total</b>	<b>\$1,197,937</b>	<b>\$960,000</b>	<b>\$235,504</b>	<b>\$1,195,504</b>
Vacant Lots	\$2,063		\$4,496	\$4,496
<b>Total Revenue</b>	<b>\$1,200,000</b>	<b>\$960,000</b>	<b>\$240,000</b>	<b>\$1,200,000</b>

Source: HEC February 2025.

cos

Figure 10 shows which customer groups have been underpaying, and which have been overpaying under the current rate structure when compared to calculating rates using the new rate structure.

**Figure 10**  
**Cost of Service Graph**



#### 4.2 WASTEWATER FEE CALCULATIONS

The wastewater fee schedule includes the Base Charges, calculated in **Table 15**, and the Flow Charges calculated in **Table 18**.

**Table 18**  
**Calculated Flow Charges**

<b>Customer Category</b>	<b>Units</b>	<b>FY 2026</b> Yr 1	<b>FY 2027</b> Yr 2	<b>FY 2028</b> Yr 3	<b>FY 2029</b> Yr 4	<b>FY 2030</b> Yr 5
<b>Residential and Institutional</b>		<b>Annual Cost per Unit</b>				
Residential	1,009	\$683	\$765	\$856	\$959	\$1,074
Hotel/Motel	156	\$294	\$330	\$369	\$413	\$463
Churches	11	\$656	\$735	\$823	\$922	\$1,033
School	210	\$26	\$29	\$32	\$36	\$40
<b>Commercial Individual</b>						
Car Wash	1	\$12,645	\$14,162	\$15,862	\$17,765	\$19,897
Grocery Store	1	\$7,075	\$7,924	\$8,874	\$9,939	\$11,132
Ironstone Vineyards	1	\$39,165	\$43,864	\$49,128	\$55,023	\$61,626
<b>Commercial Groups</b>						
Low Strength	81	\$656	\$735	\$823	\$922	\$1,033
Medium Strength	15	\$769	\$861	\$964	\$1,080	\$1,209
Medium/High Strength	72	\$861	\$964	\$1,080	\$1,209	\$1,354
High Strength	26	\$1,070	\$1,198	\$1,342	\$1,503	\$1,683
<b>Residential and Institutional</b>		<b>Monthly Charge per Unit</b>				
Residential	dwelling	\$56.88	\$63.71	\$71.35	\$79.92	\$89.51
Hotel/Motel	room	\$24.52	\$27.46	\$30.76	\$34.45	\$38.58
Churches	church	\$54.70	\$61.26	\$68.62	\$76.85	\$86.07
School	student	\$2.14	\$2.40	\$2.69	\$3.01	\$3.37
<b>Commercial Individual</b>						
Car Wash	facility	\$1,053.74	\$1,180.19	\$1,321.81	\$1,480.43	\$1,658.08
Grocery Store	store	\$589.55	\$660.30	\$739.54	\$828.28	\$927.68
Ironstone Vineyards	complex	\$3,263.71	\$3,655.36	\$4,094.00	\$4,585.28	\$5,135.52
<b>Commercial Groups</b>						
Low Strength	business unit	\$54.70	\$61.26	\$68.62	\$76.85	\$86.07
Medium Strength	business unit	\$64.05	\$71.74	\$80.35	\$89.99	\$100.79
Medium/High Strength	business unit	\$71.73	\$80.34	\$89.98	\$100.78	\$112.87
High Strength	business unit	\$89.14	\$99.84	\$111.82	\$125.24	\$140.27

Source: Murphys SD, and HEC February 2025.

**Table 19** shows the calculated cost of service fees schedule for the next five fiscal years. Any new customers with a use not listed in the table will be categorized by use of property and strength of wastewater by the District General Manager or District Engineer and charged the same rate as all other uses listed within that customer category.

**Table 19**  
**Calculated Cost of Service Fees**

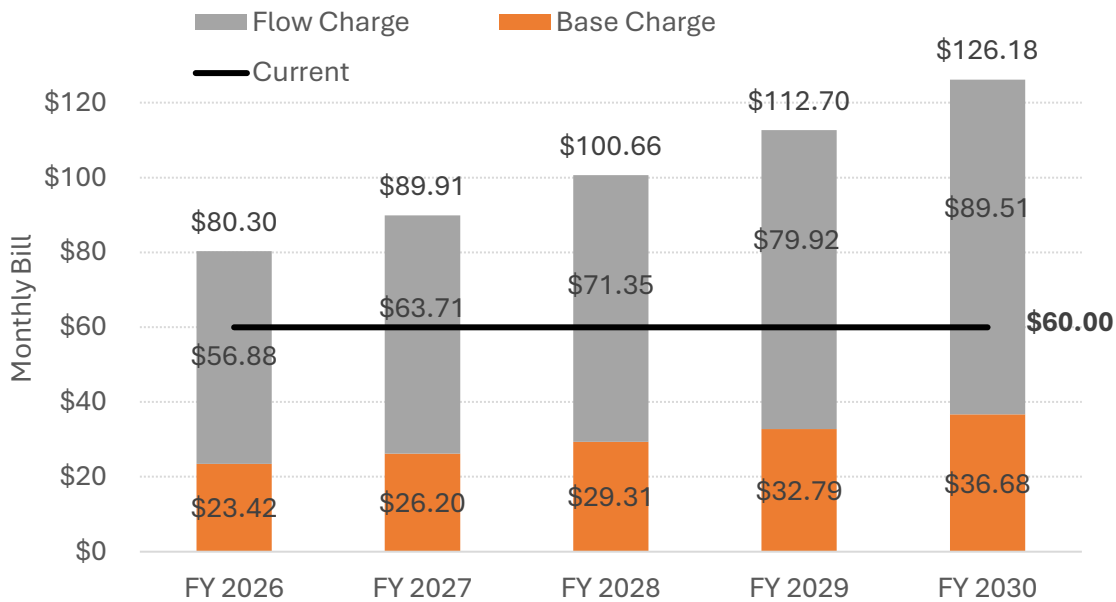
<b>Charge Category</b>	<b>Unit</b>	<b>FY 2026 Yr 1</b>	<b>FY 2027 Yr 2</b>	<b>FY 2028 Yr 3</b>	<b>FY 2029 Yr 4</b>	<b>FY 2030 Yr 5</b>
				<b>per month</b>		
Base Charge	account	\$23.42	\$26.20	\$29.31	\$32.79	\$36.68
<i>plus, Flow Charge, per Customer Unit</i>						
<b>Residential and Institutional</b>				<b>per month</b>		
Residential	dwelling	\$56.88	\$63.71	\$71.35	\$79.92	\$89.51
Hotel/Motel	room	\$24.52	\$27.46	\$30.76	\$34.45	\$38.58
Churches	church	\$54.70	\$61.26	\$68.62	\$76.85	\$86.07
School	student	\$2.14	\$2.40	\$2.69	\$3.01	\$3.37
<b>Commercial Individual</b>						
Car Wash	facility	\$1,053.74	\$1,180.19	\$1,321.81	\$1,480.43	\$1,658.08
Grocery Store	store	\$589.55	\$660.30	\$739.54	\$828.28	\$927.68
Ironstone Vineyards	complex	\$3,263.71	\$3,655.36	\$4,094.00	\$4,585.28	\$5,135.52
<b>Commercial Groups</b>						
Low Strength	business unit	\$54.70	\$61.26	\$68.62	\$76.85	\$86.07
Medium Strength	business unit	\$64.05	\$71.74	\$80.35	\$89.99	\$100.79
Medium/High Strength	business unit	\$71.73	\$80.34	\$89.98	\$100.78	\$112.87
High Strength	business unit	\$89.14	\$99.84	\$111.82	\$125.24	\$140.27

Source: Murphys SD, and HEC February 2025.

## SECTION 5: BILL IMPACTS AND AFFORDABILITY

Beginning July 1, 2025, the wastewater bill for a single family home would increase from \$60.00 per month to \$80.30 per month. Each year thereafter, for the next four years, it would increase 12% per year. In the last year of the increase, the bill for a single family home would be \$126.18 per month, an increase of \$66.18 per month from the current bill. The calculated monthly wastewater bills are shown in **Figure 11**.

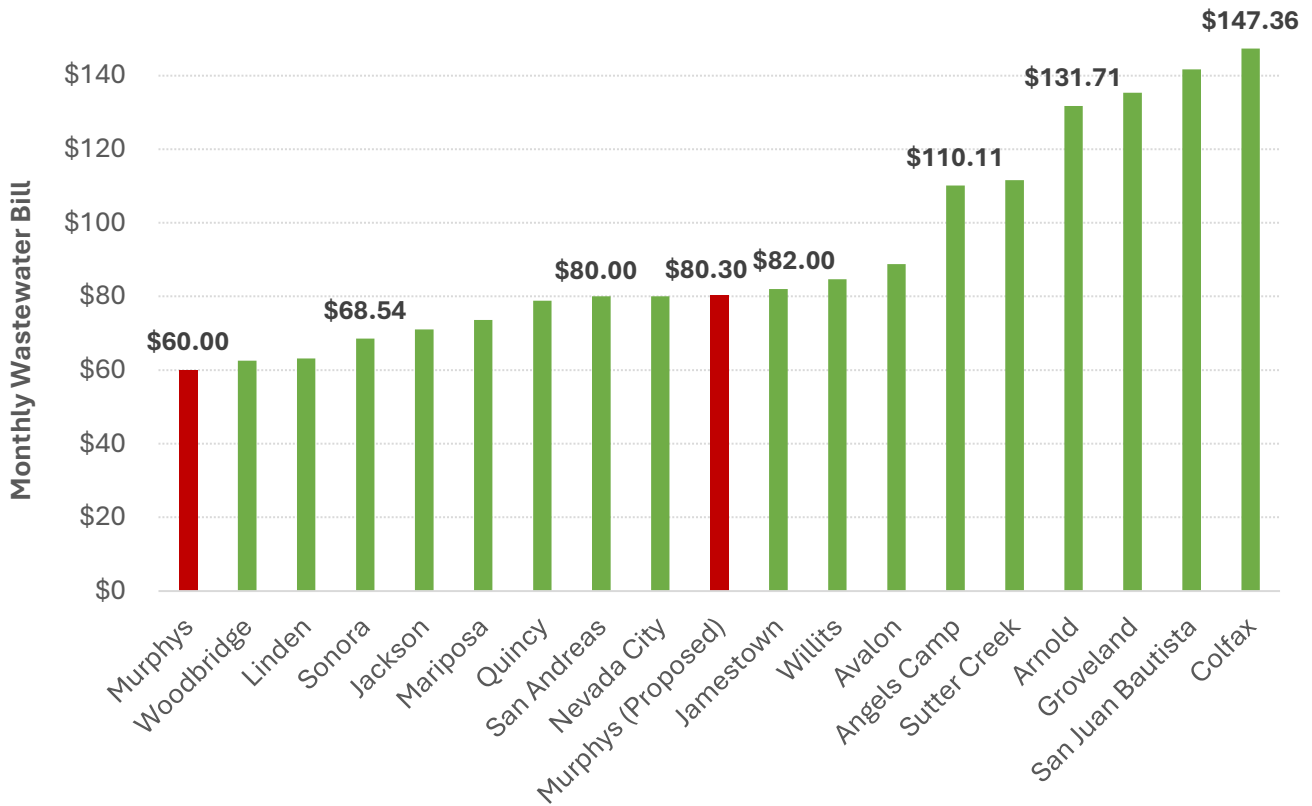
**Figure 11**  
**Single Family Home 5-Year Bill Increases**



The current and calculated fiscal year 2026 wastewater bill for a single family home in Murphys is compared with neighboring communities and other communities of a similar population size to Murphys in **Figure 12**. The graph can only compare for a snapshot in time; each one of these communities is increasing their rates each year.

The State Water Resources Control Board, which administers the California Clean Water SRF (CWSRF) program considers wastewater rates to be affordable if they are less than 4% of median household income (MHI) for communities that are not Disadvantaged, and affordable if they are 1.5% or lower than MHI for communities that are Disadvantaged. As is shown in **Table 20**, Murphys is considered Disadvantaged by the State, and the calculated rates would increase the wastewater bill above 1.5% of MHI. The State will use this information when Murphys applies to the SRF program for a loan and may be able to offer principal forgiveness or grant funding, an extended payback period for the loan, or some other advantageous financing terms.

**Figure 12**  
**Single Family Home Wastewater Bills Comparison**



**Table 20**  
**Wastewater Bill Affordability**

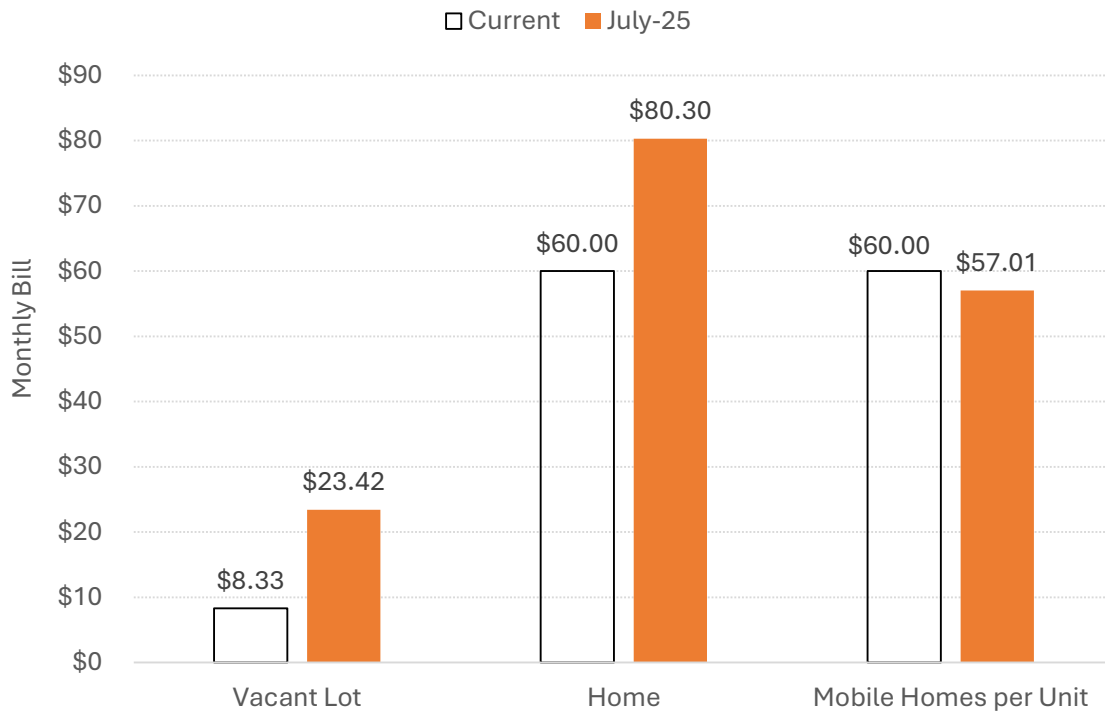
Item	Current	Calculated July 2025
<b>Median Household Income (MHI)</b>		
Statewide California [1]	\$96,334	
Estimated Murphys [1]	\$54,875	
<b>Murphys MHI as % of the State MHI [2]</b>	<b>57.0%</b>	
<b>Monthly Wastewater Bill</b>		
Murphys Monthly MHI	\$4,573	\$4,573
Typical Monthly Wastewater Bill	\$60.00	\$80.30
<b>Monthly Bill as % of Murphys MHI</b>	<b>1.3%</b>	<b>1.8%</b>

Source: HEC, California SWRCB, and US Census Bureau. aff

[1] 2023 5-year American Community Survey.  
 [2] Per the Clean Water State Revolving Fund program, a community with an MHI <80% of the Statewide MHI is Disadvantaged.

**Figure 13** shows the impact of the proposed rates on vacant lots and Murphys Diggins, a mobile home park community for people aged 55+ for the first year of the rate increases beginning July 1, 2025. The total bill decreases per unit for the mobile homes because the Base Charge is divided amongst all 189 units.

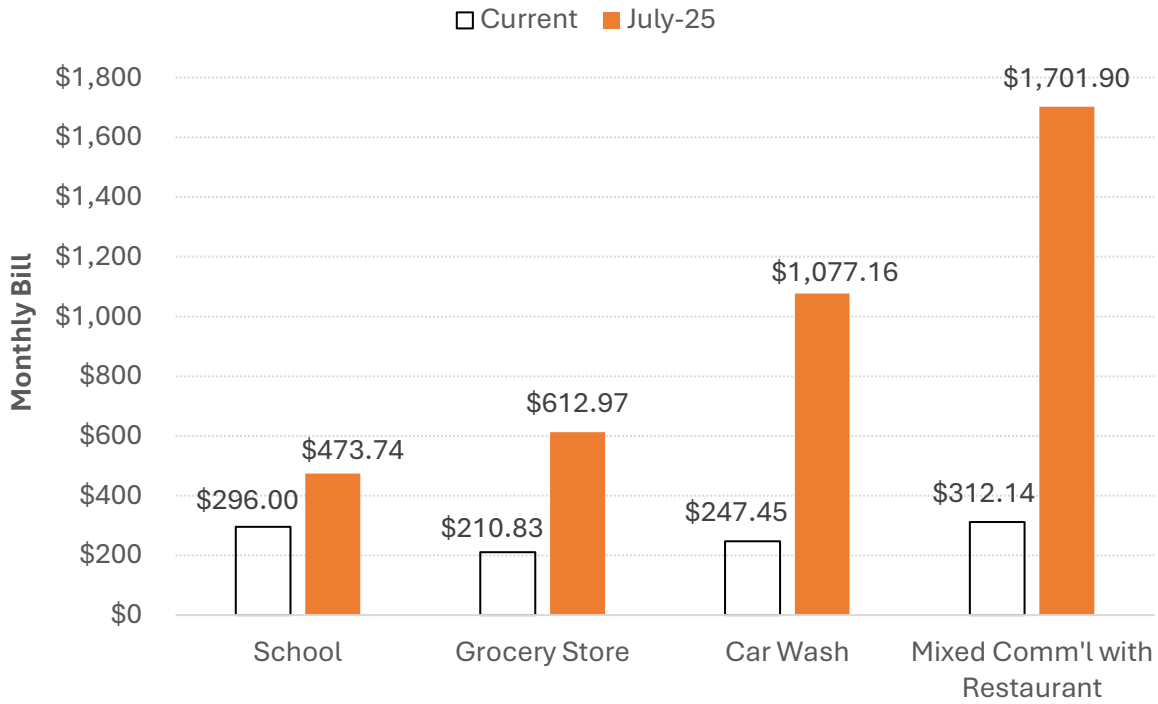
**Figure 13**  
**FY26 Bill Impacts on Vacant Lots and Residences**



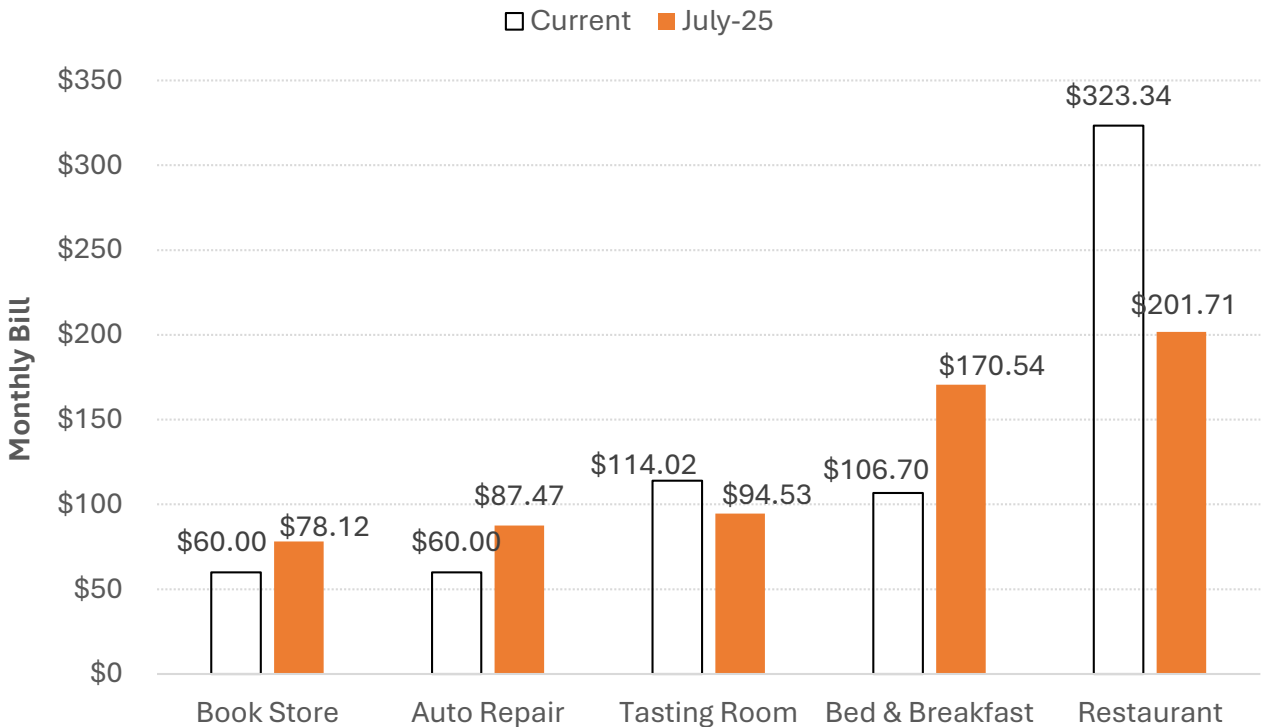
Bill impacts to the school, grocery store, car wash, and a mixed commercial with restaurant account are shown in **Figure 14**. Bill impacts for a sample of commercial accounts are shown in **Figure 15**. Not all commercial accounts with similar businesses will experience the same change in bills that are displayed. For example, the restaurant shown will have a reduced bill July 1, 2025 but most restaurants will have an increased bill. Some tasting rooms will have an increased bill, and others a decreased bill.

The current bills **are not based** on cost of service. The new rates, and calculated bills, **are based** on a cost of service methodology.

**Figure 14**  
**FY26 Bill Impacts on School and Various Businesses**



**Figure 15**  
**FY26 Bill Impacts on Commercial Accounts**



# **APPENDIX A**

## **RATE STUDY SUPPORT TABLES**

**ALL TABLES ARE DRAFT**



**Table A-1**  
**Historical Influent by Month**

<b>Month</b>	<b>2022</b>	<b>2023</b>
	<b>Millions of Gallons</b>	
Jan	4.7	4.5
Feb	3.5	4.0
Mar	3.8	4.5
Apr	3.8	3.9
May	3.7	3.9
Jun	3.4	3.9
Jul	3.6	4.3
Aug	3.4	4.2
Sep	3.4	4.0
Oct	3.4	4.4
Nov	3.6	3.8
Dec	6.0	6.6
<b>Annual Influent</b>	<b>46.4</b>	<b>52.0</b>
<b>Est. Sewer Flow [1]</b>	<b>42.4</b>	<b>48.5</b>
I&I Estimate	4.0	3.5
<i>% I&amp;I Estimate</i>	9%	7%

Source: Murphys SD.

inf

[1] Sewer flow to the treatment plant is based on average daily influent April through November.

**Table A-2**  
**Population and Housing Historical Growth for Murphys CDP**

Year	US Census Bureau Occupancy				US Census Bureau Vacancy			
	Popln	Housing Units	Occupied Units	Persons per HH	Occupancy	Vacant Units	Seasonal Use	Share Seasonal
Murphys Census Designated Place								
2010	2,325	1,348	1,121	2.07	83%	227	147	11%
2011	1,965	1,278	1,029	1.91	81%	249	163	13%
2012	2,012	1,132	956	2.10	84%	176	134	12%
2013	1,923	1,184	1,011	1.90	85%	173	141	12%
2014	1,884	1,137	952	1.98	84%	185	153	13%
2015	2,091	1,198	1,050	1.99	88%	148	95	8%
2016	2,088	1,319	1,061	1.97	80%	258	186	14%
2017	2,070	1,309	1,063	1.95	81%	246	184	14%
2018	2,100	1,261	1,010	2.08	80%	251	208	16%
2019	2,188	1,325	988	2.21	75%	337	252	19%
2020	1,944	1,258	914	2.13	73%	344	254	20%
2021	1,928	1,214	857	2.25	71%	357	289	24%
2022	2,022	1,266	899	2.25	71%	367	284	22%
2023	1,821	1,303	928	1.96	71%	375	269	21%
<b>13-Yr</b>				<b>Avg.</b>				
<b>Change</b>	<b>-504</b>	<b>-45</b>	<b>-193</b>	<b>2.05</b>	<b>79%</b>			<b>16%</b>

Source: US Census Bureau American Community Surveys.

pop data

**Table A-3  
Calculation of Business Unit Multipliers and Individual Accounts Sewer Gallons**

Category	Account		% Water		Account EDUs	Business Unit Multiplier
	Business Units	Gallons per Year	Use Indoors	Est. Annual Sewer Flow		
<b>Home (1 EDU)</b>				<b>36,500</b>		<b>per unit</b>
Misc. Comm'l 1	1	36,637	80%	29,310	0.80	0.80
Misc. Comm'l 2	1	53,190	80%	42,552	1.17	1.17
Misc. Comm'l 3	1	90,643	80%	72,514	1.99	1.99
Misc. Comm'l 4	1	7,757	80%	6,205	0.17	0.17
Misc. Comm'l 5	4	419,037	80%	335,230	9.18	2.30
Misc. Comm'l 6	1	51,073	80%	40,859	1.12	1.12
Misc. Comm'l 7	1	57,446	80%	45,957	1.26	1.26
Misc. Comm'l 8	2	209,971	80%	167,977	4.60	2.30
Misc. Comm'l 9	1	52,801	80%	42,241	1.16	1.16
Misc. Comm'l 10	1	15,132	80%	12,106	0.33	0.33
<b>Average of Misc. Comm'l</b>						<b>1.30</b>
Tasting Room 1	1	10,270	80%	8,216	0.23	0.23
Tasting Room 2 (two rooms)	2	241,335	80%	193,068	5.29	2.64
Tasting Room 3	1	83,028	80%	66,422	1.82	1.82
Tasting Room 4	1	99,641	80%	79,713	2.18	2.18
<b>Average of Tasting Rooms</b>						<b>1.70</b>
<b>Ratio to Average of Misc. Comm'l</b>						<b>1.30</b>
Restaurant 1	1	119,530	80%	95,624	2.62	2.62
Restaurant 2	1	116,621	80%	93,297	2.56	2.56
<b>Average of Restaurants</b>						<b>2.60</b>
<b>Ratio to Average of Misc. Comm'l</b>						<b>2.00</b>
Mixed Comm'l with Restaurant 1	3	452,099	80%	361,679	9.91	3.30
Mixed Comm'l with Restaurant 2	9	1,818,463	80%	1,454,770	39.86	4.43
Mixed Comm'l with Restaurant 3	2	220,653	80%	176,522	4.84	2.42
<b>Average of Mixed Comm'l with Restaurant</b>						<b>3.40</b>
<b>Ratio to Average of Misc. Comm'l</b>						<b>2.60</b>
						<b>Gallons / Day</b>
Grocery Store	1	260,184	90%	234,166		<b>640</b>
Car Wash	1	901,116	90%	811,004		<b>2,220</b>
						<b>Gallons / Room / Day</b>
Hotel/Motel 1	34	1,061,113	70%	742,779		60
Hotel/Motel 2	70	624,131	70%	436,892		17
Hotel/Motel 3	6	860,409	70%	602,287		275
<b>Average of Hotel/Motel Rooms</b>	<b>110</b>			<b>1,781,957</b>		<b>44</b>
						<b>Gallons / Student / Day</b>
School	210	1,126,264	60%	675,758		<b>8.8</b>

Source: UPUD water reads and HEC February 2025.

water

**Table A-4**  
**Enrollment Data for Albert Michelson Elementary**

---

<b>School Year</b>	
<b>Ending</b>	<b>Number Students</b>
2010	256
2011	233
2012	229
2013	232
2014	224
2015	227
2016	228
2017	223
2018	214
2019	224
2020	217
2021	181
2022	224
2023	213
2024	210

---

Source: Data Quest (CA Dep't of Education).

**Table A-5  
Historical Financial Audits Information**

Revenues and Expenses	Fiscal Year Ending				
	2019	2020	2021	2022	2023
<b>Revenue</b>					
Service Charges	\$867,586	\$866,608	\$865,202	\$879,944	\$898,922
Connection Fees	\$0	\$0	\$0	\$309,500	\$60,000
Property Taxes	\$119,536	\$128,856	\$131,370	\$135,026	\$149,306
Investment Income	\$38,070	\$47,238	\$1,536	\$10,181	\$57,249
Interest Expense	\$0	\$0	(\$2,103)	(\$18,029)	(\$17,561)
Other Income	\$11,893	\$37,733	\$68,910	\$12,720	\$16,585
<b>Total Revenue</b>	<b>\$1,037,085</b>	<b>\$1,080,435</b>	<b>\$1,064,915</b>	<b>\$1,329,342</b>	<b>\$1,164,501</b>
<b>Expense</b>					
Salaries & Wages	\$309,754	\$332,500	\$356,486	\$379,049	\$409,500
Employee Benefits	\$124,267	\$166,438	\$168,225	\$139,949	\$324,122
Professional Services	\$25,578	\$20,426	\$19,249	\$33,480	\$25,462
Operating Supplies	\$21,923	\$37,595	\$34,405	\$33,078	\$34,947
Permits	\$25,508	\$29,525	\$30,385	\$34,820	\$38,206
Repairs & Maintenance	\$18,762	\$46,663	\$1,911	\$11,262	\$123,708
Monitoring	\$19,129	\$35,342	\$23,210	\$29,851	\$38,365
Office	\$24,008	\$21,322	\$30,233	\$20,237	\$17,701
Utilities	\$31,291	\$26,647	\$34,787	\$40,078	\$84,926
Insurance	\$559	\$19,610	\$54,123	\$639	\$29,812
Transportation	\$6,331	\$8,357	\$0	\$0	\$0
Communications	\$9,988	\$10,314	\$11,719	\$11,889	\$14,410
Memberships & Publications	\$12,509	\$12,535	\$10,579	\$8,993	\$13,461
<b>Total Expense</b>	<b>\$629,607</b>	<b>\$767,274</b>	<b>\$775,312</b>	<b>\$743,325</b>	<b>\$1,154,620</b>
<b>Net Revenues (excl. capital activity)</b>	<b>\$407,478</b>	<b>\$313,161</b>	<b>\$289,603</b>	<b>\$586,017</b>	<b>\$9,881</b>
Depreciation	\$138,619	\$150,940	\$136,818	\$268,159	\$278,905
<b>Change in Net Position</b>	<b>\$268,859</b>	<b>\$162,221</b>	<b>\$152,785</b>	<b>\$317,858</b>	<b>(\$269,024)</b>
<b>Net Revenues</b>	<b>\$407,478</b>	<b>\$313,161</b>	<b>\$289,603</b>	<b>\$586,017</b>	<b>\$9,881</b>
Adjustments to Reconcile Op. Income (Loss)	\$32,857	\$11,915	(\$586,327)	(\$232,086)	\$168,972
Remove Interest	(\$38,070)	(\$47,238)	\$567	\$7,848	(\$39,688)
<b>Net Revenues with Adjustments</b>	<b>\$402,265</b>	<b>\$277,838</b>	<b>(\$296,157)</b>	<b>\$361,779</b>	<b>\$139,165</b>
<b>Capital</b>					
Capital Grants	\$250,622	\$160,009	\$4,481,345	\$134,963	\$0
Acquisition of Assets	(\$743,713)	(\$747,767)	(\$3,416,429)	(\$426,021)	(\$39,196)
Debt Service	(\$8,875)	\$0	\$0	(\$43,671)	(\$43,670)
<b>Capital Costs (Income)</b>	<b>(\$501,966)</b>	<b>(\$587,758)</b>	<b>\$1,064,916</b>	<b>(\$334,729)</b>	<b>(\$82,866)</b>
<b>Investing Activities</b>	<b>\$36,612</b>	<b>\$47,238</b>	<b>\$8,536</b>	<b>\$7,677</b>	<b>\$60,865</b>
<b>Net Income</b>	<b>(\$63,089)</b>	<b>(\$262,682)</b>	<b>\$777,295</b>	<b>\$34,727</b>	<b>\$117,164</b>
<b>Cash &amp; Investments</b>					
Beginning of Year	\$1,895,206	\$1,832,117	\$1,569,435	\$2,346,730	\$2,381,457
End of Year	\$1,832,117	\$1,569,435	\$2,346,730	\$2,381,457	\$2,498,620
<b>Change in Cash</b>	<b>(\$63,089)</b>	<b>(\$262,682)</b>	<b>\$777,295</b>	<b>\$34,727</b>	<b>\$117,163</b>

Source: District audited comprehensive financial records.

audits

**Table A-6**  
**Historical Operating Income and Expenses**

Income and Expenses	Actual					
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
<b>Income</b>						
Miscellaneous Income	\$169,500	\$198,956	\$215,990	\$467,426	\$197,000	\$193,114
Monthly Billing	\$867,586	\$866,608	\$865,202	\$879,944	\$896,108	\$907,102
<b>Total Income</b>	<b>\$1,037,086</b>	<b>\$1,065,565</b>	<b>\$1,081,193</b>	<b>\$1,347,371</b>	<b>\$1,093,108</b>	<b>\$1,100,216</b>
<b>Operating Expense</b>						
<b>Personnel</b>						
Wages	\$284,613	\$305,395	\$327,561	\$341,781	\$371,573	\$355,187
Employee Benefits	\$124,267	\$137,633	\$148,371	\$111,590	\$174,186	\$185,512
Workers' Compensation	\$559	\$28,805	\$19,853	\$28,359	\$16,125	\$10,002
Payroll Taxes	\$25,516	\$27,105	\$28,925	\$37,268	\$33,600	\$30,988
<b>Administrative</b>						
Advertising	\$0	\$1,834	\$0	\$396	\$950	\$461
Utilities	\$3,864	\$4,155	\$4,178	\$5,899	\$8,800	\$7,450
Engineering	\$7,777	\$1,485	\$855	\$12,573	\$5,000	\$1,852
Rents - Leases	\$7,860	\$8,520	\$8,520	\$5,487	\$720	\$720
Supplies	\$9,111	\$7,964	\$15,637	\$11,932	\$12,567	\$11,549
Insurance	\$0	\$19,610	\$54,123	\$639	\$29,812	\$36,663
Other	\$14,415	\$17,201	\$15,452	\$28,512	\$24,427	\$22,453
Professional	\$17,801	\$18,841	\$18,394	\$20,822	\$22,868	\$44,508
Licenses & Permits	\$25,508	\$29,525	\$30,385	\$34,820	\$37,267	\$39,728
<b>Operating</b>						
Maintenance & Repairs (minor)	\$9,927	\$34,590	(\$634)	\$9,412	\$11,000	\$9,455
Other	\$25,401	\$41,820	\$25,799	\$29,851	\$34,273	\$35,216
Supplies	\$29,182	\$40,105	\$36,214	\$35,086	\$51,621	\$37,327
Utilities	\$35,348	\$30,517	\$39,740	\$44,986	\$72,208	\$87,996
<b>Total Expense</b>	<b>\$621,148</b>	<b>\$755,103</b>	<b>\$773,374</b>	<b>\$759,411</b>	<b>\$906,997</b>	<b>\$917,067</b>
<b>Capital</b>						
Debt Service	\$0	\$0	\$0	\$0	\$43,670	\$43,670
<b>Net Revenues</b>	<b>\$415,938</b>	<b>\$310,462</b>	<b>\$307,819</b>	<b>\$587,959</b>	<b>\$142,441</b>	<b>\$139,479</b>

Source: District financial records.

hist

**Table A-7**  
**Existing Debt Information**

<b>Description</b>	<b>Item</b>
<b>Loan Amount</b>	<b>\$1,005,504</b>
<b>Annual Debt Service [1]</b>	<b>\$43,670</b>
Interest	\$304,610
<b>Total Payments</b>	<b>\$1,310,114</b>
<b>Terms:</b>	
Interest Rate	1.80%
Repayment (years)	30

Source: State Water Resources Control Board. srf1

[1] Last payment April 30, 2051.

**Table A-8**  
**Cash and Cash Equivalents Start FY 2025**

<b>Current Assets</b>	<b>FY Ending 2024</b>
<b>Checking/Savings</b>	
Operating Fund	\$96,804
Cash Drawer	\$200
<b>District Investments</b>	
Mark to Mkt Adjustment	\$22,007
CA Class Discretionary 5.40%	\$667,146
CA Class Equip R&R 5.40%	\$406,685
LAIF 4.30%	\$58,891
UBS T-Bill #1 7/11/2024 5.13%	\$200,000
UBS T-Bill #2 09/12/2024 5.13%	\$200,000
UBS T-Bill #3 08/08/2024 5.20%	\$200,000
UBS CD 06/24/25 5.30%	\$44,000
UBS CD 06/04/2025 5.40%	\$224,000
UBS CD 6/17/2025 5.45%	\$200,000
UBS CD 11/15/2024 5.80%	\$200,000
<b>Total Cash &amp; Cash Equivalents for Cash Flow</b>	<b>\$2,519,734</b>

Source: District financial records. cash

**Table A-9  
Plant In Service Allocation**

<b>Plant In Service</b>	<b>Customer</b>	<b>Flow</b>	<b>Total Cost</b>	<b>Customer-Related</b>	<b>Flow-Related</b>
Collection System		100%	\$76,249	\$0	\$76,249
Equipment		100%	\$15,775	\$0	\$15,775
Buildings	50%	50%	\$10,078	\$5,039	\$5,039
Treatment Plant		100%	\$176,803	\$0	\$176,803
<b>Total</b>			<b>\$278,905</b>	<b>\$5,039</b>	<b>\$273,866</b>
<b>Percentage of Plant In Service</b>				<b>2%</b>	<b>98%</b>

Source: Murphys SD and HEC May 2024.

plant

**Table A-10  
Customer Characteristics**

Customer Category	Number of Units	Unit Measure	Wastewater Characteristics				Existing Treatment Capacity/Load				Total Annual Capacity/Load			
			GPD per Unit	BOD MG/L	SS MG/L	Flow MGD	BOD Lbs/Day	SS Lbs/Day	Flow MG	BOD Lbs/Year	SS Lbs/Year	Flow MG	BOD Lbs/Year	SS Lbs/Year
	(A)		(B)	(C)	(D)	(E)=(A)(B)/1000000	(F)=(C)(E)x8.34	(G)=(D)(E)x8.34	(H)=(E)x365	(I)=(C)(H)x8.34	(J)=(D)(H)x8.34	(K)=(E)(H)x8.34		
<b>Residential and Institutional</b>														
Residential	1,009	dwelling	100	235	235	0.10	197.75	197.75	36.83	72,180	72,180	72,180		
Hotel/Motel	156	room	44	310	120	0.01	17.75	6.87	2.51	6,477	2,507	2,507		
Churches	11	church	100	200	200	0.00	1.83	1.83	0.40	670	670	670		
School	210	student	8.8	130	100	0.00	2.00	1.54	0.33	361	277	277		
<b>Commercial Individual</b>														
Car Wash	1	facility	2,220	20	150	0.00	0.37	2.78	0.81	135	1,014	1,014		
Grocery Store	1	store	640	800	800	0.00	4.27	4.27	0.23	1,559	1,559	1,559		
Ironstone Vineyards [1]	1	complex	4,550	350	600	0.00	13.28	22.77	1.66	4,848	8,310	8,310		
<b>Commercial Groups</b>														
<b>Low Strength</b>														
Misc. Comm'l	69.0	business unit	100	200	200	0.01	11.51	11.51	2.52	4,201	4,201	4,201		
Tasting Rooms	11.7	business unit	100	200	200	0.00	1.95	1.95	0.43	712	712	712		
<b>Total Low Strength</b>	<b>80.70</b>								<b>2.95</b>	<b>4,913</b>	<b>4,913</b>	<b>4,913</b>		
<b>Medium Strength</b>														
Auto-Related	2.0	business unit	100	350	350	0.00	0.58	0.58	0.07	213	213	213		
Misc. Comm'l	10.0	business unit	100	350	350	0.00	2.92	2.92	0.37	1,065	1,065	1,065		
Manufacturing	3.0	business unit	100	350	350	0.00	0.88	0.88	0.11	320	320	320		
<b>Total Medium Strength</b>	<b>15.00</b>								<b>0.55</b>	<b>1,598</b>	<b>1,598</b>	<b>1,598</b>		
<b>Medium/High Strength</b>														
Mixed Comm'l w/Restaurant	71.5	business unit	100	350	600	0.01	20.87	35.78	2.61	7,618	13,059	13,059		
<b>High Strength</b>														
Restaurants	26.0	business unit	100	900	600	0.00	19.52	13.01	0.95	7,123	4,749	4,749		
<b>Total</b>									<b>49.82</b>	<b>107,482</b>	<b>110,837</b>	<b>110,837</b>		

Source: Murphys SD, and HEC February 2025.

[1] Complex includes tasting room, restaurant, and shop. Housing on the estate is billed separately under residential.

char

**Table A-11**  
**FY26 Annual Cost per Thousand Gallons**

Wastewater Strength	Flow MG	BOD Lbs/Year	SS Lbs/Year	FY 2026 Cost per Unit			Yr 1 Cost	Cost per 1,000 Galls
				MG	Lbs/Year	Lbs/Year		
				<b>\$13,882.86</b>	<b>\$1.25</b>	<b>\$1.21</b>		
<b>Residential and Institutional</b>								
Residential	36.8	72,180	72,180	\$511,285	\$90,087	\$87,361	\$688,733	\$18.70
Hotel/Motel	2.5	6,477	2,507	\$34,782	\$8,084	\$3,035	\$45,901	\$18.32
Churches	0.4	670	670	\$5,574	\$836	\$811	\$7,220	\$17.98
School	0.3	361	277	\$4,618	\$450	\$336	\$5,404	\$16.25
<b>Commercial Individual</b>								
Car Wash	0.8	135	1,014	\$11,249	\$169	\$1,227	\$12,645	\$15.61
Grocery Store	0.2	1,559	1,559	\$3,243	\$1,945	\$1,886	\$7,075	\$30.29
Ironstone Vineyards	1.7	4,848	8,310	\$23,056	\$6,050	\$10,058	\$39,165	\$23.58
<b>Commercial Groups</b>								
Low Strength	2.9	4,913.2	4,913.2	\$40,893	\$6,132	\$5,946	\$52,971	\$17.98
Medium Strength	0.5	1,598.2	1,598.2	\$7,601	\$1,995	\$1,934	\$11,530	\$21.06
Medium/High Strength	2.6	7,617.9	13,059.2	\$36,231	\$9,508	\$15,806	\$61,544	\$23.58
High Strength	0.9	7,123.2	4,748.8	\$13,175	\$8,890	\$5,748	\$27,813	\$29.31
<b>Total</b>	<b>49.8</b>	<b>107,482</b>	<b>110,837</b>				<b>\$960,000</b>	<b>\$19.27</b>

Source: Murphys SD, and HEC February 2025.

edu cost

**Table A-12**  
**Calculated Cost by Customer Category by Year**

Customer Category	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
<b>Residential and Institutional</b>					
Residential	\$688,733	\$771,381	\$863,947	\$967,620	\$1,083,735
Hotel/Motel	\$45,901	\$51,409	\$57,578	\$64,487	\$72,225
Churches	\$7,220	\$8,087	\$9,057	\$10,144	\$11,361
School	\$5,404	\$6,052	\$6,779	\$7,592	\$8,503
<b>Commercial Individual</b>					
Car Wash	\$12,645	\$14,162	\$15,862	\$17,765	\$19,897
Grocery Store	\$7,075	\$7,924	\$8,874	\$9,939	\$11,132
Ironstone Vineyards	\$39,165	\$43,864	\$49,128	\$55,023	\$61,626
<b>Commercial Groups</b>					
Low Strength	\$52,971	\$59,328	\$66,447	\$74,421	\$83,351
Medium Strength	\$11,530	\$12,913	\$14,463	\$16,199	\$18,142
Medium/High Strength	\$61,544	\$68,930	\$77,201	\$86,465	\$96,841
High Strength	\$27,813	\$31,150	\$34,888	\$39,075	\$43,764
<b>Total</b>	<b>\$960,000</b>	<b>\$1,075,200</b>	<b>\$1,204,224</b>	<b>\$1,348,731</b>	<b>\$1,510,579</b>

Source: Murphys SD, and HEC February 2025.