

HANSFORD

ECONOMIC CONSULTING LLC

Minden Gardnerville Sanitation District

2023 Rate Study

A graphic of a water splash with bubbles, transitioning from a light blue background to a darker blue background. The splash is centered horizontally and spans most of the width of the page.

August 14, 2023

HEC No. 200321

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 Minden Gardnerville Sanitation 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 reflect 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 and 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 Minden Gardnerville Sanitation District (District or MGSD) provides wastewater collection, treatment, and disposal services to customers within its service territory. The District contracted with Hansford Economic Consulting LLC (HEC) to determine the level of funding required over the next six years to sufficiently fund service provision, and the amounts in fee revenues to be collected from existing and future customers to achieve that level of funding. The wastewater financial model projects revenues and expenses and calculates required monthly user fees and new development fees for the next six years. The Study also updates the District’s administrative fees.

Fee studies are typically conducted every three to five years to ensure revenue sufficiency. The District last adopted wastewater rates in 2012. It has been more than 20 years since user fees were adjusted to reflect actual and projected operating and capital expenses.

The current adopted rate schedule is shown in **Table 1-1**. The District charges fees on an Equivalent Dwelling Unit (EDU) basis. An EDU is a measurement of wastewater flow from a residence (dwelling unit) with year-round occupancy. The District measures one EDU as generating 250 gallons of wastewater per day.

How is an EDU determined? EDUs are assigned by the District at time of application for service, depending on the intended use(s) of the property. The number of EDUs are reviewed with change in ownership and upon application for building alterations with the County.

This report was prepared using the principles established by the Water Environment Federation Manual of Practice No. 27. The wastewater rates are calculated on the projected revenue requirement and facilities improvements cost estimates, taking into account current levels of cash reserves. The following steps outline how wastewater rates are calculated.

- 1. Determine the District’s Current Financial Health and Wastewater Customer Base –** Section 2 provides detail on the current user fee schedule and historical and current financial health of the District. The wastewater customer base, also described in Section 2, includes residential, commercial, industrial, and institutional users.

- 2. Project Revenue Requirement and Calculate Rates to Support It –** 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, debt service, and operating reserve costs.

Non-rate revenue credited against the projected costs include consolidated tax, ad valorem tax, contract fees, and other miscellaneous revenues. Revenue requirement calculations, and the calculation of updated rates, are provided in Section 3 of the Study. A comparison of bills with other Nevada wastewater providers is also provided in Section 3.

**Table 1-1
Current Schedule of User and Development Fees**

MGSD CUSTOMERS		
Service Fees		
Fee per EDU		\$0.46 per day
Billed Quarterly:		
Jan-Mar		\$41.75
Apr-Jun		\$41.75
Jul-Sep		\$42.20
Oct-Dec		\$42.20
Annual Fee per EDU		\$167.90
FEES FOR NEW SERVICE		
Acreage Fee		\$600 per acre
Capacity Fees		
In District Boundary (1978)		\$3,150 per EDU
Current Boundary		\$3,800 per EDU
Connection Fees		
Residential		\$275 per EDU
Commercial		\$300 per EDU
GARDNERVILLE RANCHOS CUSTOMERS		
Service Fees [1]		
Fee per EDU		\$0.62 per day
Billed Monthly		\$18.77
Annual Fee per EDU [2]		\$225.24
Acreage Fee		\$600 per acre
Capacity Fee		\$3,800 per EDU
Connection Fee		\$178.75 per EDU
MGSD Ordinance No 12-001. curr		
[1] GRID service fees equal to 88.63% of a MGSD customer service fee plus annual adjustment for ad valorem revenue.		
[2] GRID service fee:	<u>User Fee</u>	<u>A.V Tax</u>
	\$148.81	\$76.43

Section 4 of this Study describes the updated development fee calculations. Section 5 provides the updated administrative fees calculations.

Appendix A includes support tables for the wastewater rates analysis.

1.2 MAJOR ASSUMPTIONS OF THE STUDY

No Change to the Rate Structure

The District's current rate structure charges user fees on an EDU basis. The EDU basis methodology for collection of fees is a standard methodology that is appropriate for MGSD.

New Debt

The rate study accounts for new debt secured to fund two phases of wastewater treatment plant improvements and to fund collection system improvements. The District will most likely obtain financing from the Nevada Department of Environmental Protection (NDEP) with a State Revolving Fund (SRF) loan. It may apply for other funding and would be eligible for a loan with the United States of Agriculture (USDA). The best funding source would have to be evaluated at the time the loan is needed. For purposes of estimating new debt service, the rate study assumes that the District secures two 20-year loans with NDEP for wastewater treatment plant improvements. In the more immediate timeframe, MGSD has two large interceptor projects to complete. The rate study assumes these projects are funded with District bond sales.

Funding of Other Facilities Improvements

Improvements not funded by issuance of new debt or securing loans with State or Federal low-cost financing programs will be paid for with money collected from developer fees and customer rates. The District has restricted funds from which it will pay for much of the remaining treatment plant improvement costs. Customer rates will fund all remaining facilities improvement costs.

Growth

The District's 2022 Master Plan includes growth of 1% per year. The rate study has included a similar rate of growth through the next 20 years.

Unrestricted Cash Balance

The District has a resolution establishing its restricted reserves, but it does not have a policy for its unrestricted reserves. The rate study is in part based on the District establishing a target of at least 6 months of operating expenses in unrestricted cash. In addition, the rate study accounts for the District establishing a designated fund into which it will place unrestricted cash for future (beyond the six-year timeframe of the study) Repair and Replacement (R&R) capital costs.

Updated Capacity Fee

This fee study includes an update of the District's capacity fee. The current capacity fee pays for expansion of facilities at the treatment plant and disposal sites. The updated capacity fee includes a fee for buy-in to existing assets and a fee for expanded capacity in the collection system, the treatment plant, and disposal facilities. The Gardnerville Ranchos GID (GRGID) customers, whose wastewater is treated and disposed of by MGSD, will only pay for those portions of the updated capacity fee that they benefit from.

New Minimum Service Fee

Currently, if properties are vacant, or property owners have requested seasonal service turn-off, the property is not billed daily user fees. This practice is unusual for a wastewater provider. Most wastewater providers charge all properties that have paid their connection fees and have physically connected to the wastewater system some portion of daily user fees. The new minimum service fee would be charged to developed properties that have wastewater service available to them, whether or not they are currently using the service. Wastewater providers charge a reduced fee to reflect the ability of the provider to serve the property at any time. The wastewater system must always be ready to receive wastewater flow from connected customers, and for that, the customer should pay a fee.

Re-Characterized Acreage Fee - New Capacity Commitment Fee

The District currently charges Acreage Fees, which developing properties pay after annexation into the District's service territory. Payment of the Acreage Fee secures a commitment of capacity at the wastewater treatment plant for treatment and disposal of new sewer flows generated by the development when it builds out. To better describe the purpose of the fee, it has been renamed the Capacity Commitment Fee, and it has been included as an administrative fee to be paid at the time of annexation; previously, it had been characterized as a development fee.

Discontinuation of Connection Fees - New Account Setup Fee

The industry definition of a connection fee is a fee to recover hard and soft costs associated with connecting a customer to the service provider's major infrastructure. The District does not connect new services to the wastewater system. New customers are required to install the necessary facilities to the District's standards and the District inspects new connections. It is recommended that connection fees be discontinued; however, the current connection fee recovers a portion of the administrative costs of new connections, and this must be captured in a fee. A new Account Setup Fee is proposed to pay for the administrative costs associated with adding new customers to the District's administrative and billing software, including mapping programs.

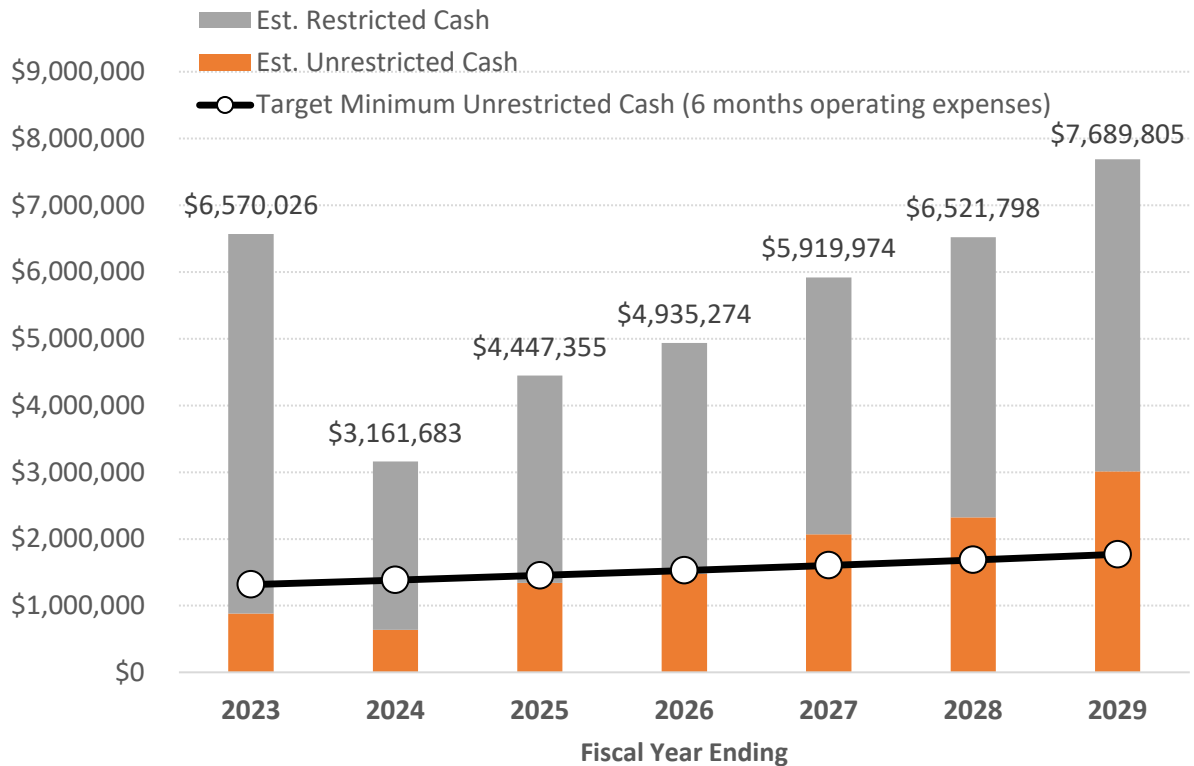
1.3 KEY FINDINGS

Key Findings

This Study makes the following key findings:

- In Fiscal Year 2023, the District budgeted an almost \$200,000 operations funding deficit. User fees need to be raised for the District to become revenue sufficient. The rate study was calculated with new rates starting July 1, 2023; however, with necessary noticing time to customers and administrative time needed to implement the changes, the new rate schedule will be effective January 1, 2024. Thereafter, the rates will increase each July 1 for the following five years.
- It is projected that, with implementation of the calculated rates, revenue sufficiency will be achieved to cover all projected costs in the six-year period and that the District will have at least 6 months of operating expenses available in unrestricted funds by the end of fiscal year 2027, as illustrated in **Figure 1-1**.

**Figure 1-1
Projected District Cash Balances**



- It is further projected that the District will begin to collect money during the next six years for Replacement and Rehabilitation (R&R) of facilities in future years (beyond the six-year period).

Calculated User Fees (Rates)

The calculated wastewater user fees per EDU are shown in **Table 1-2**. The fee schedule shows the daily user fees for MGSD and GRGID customers, which are increased each year as needed for revenue sufficiency, and it includes the new minimum service fee for MGSD customers. Residential dwelling units are counted as one EDU; however, MGSD may adopt a policy to count Accessory Dwelling Units (ADUs) a fraction of an EDU. Should this occur, the fee per EDU will be multiplied by the applicable fraction for the ADU. Non-residential fees are calculated by multiplying the number of EDUs assigned to the non-residential property by the fee per EDU.

1.4 COMPARISON OF CURRENT AND CALCULATED FEES

Figure 1-2 shows the projection of monthly service fees for a home over the next six years. It includes the current and calculated fees. In January 2024, the monthly fee would increase from \$13.99 to \$22.39. At the end of the six-year period the monthly fee would be \$39.03.

**Table 1-2
Current and Calculated Wastewater User Fees**

Customer Type and Fee Type	Current [1]	Jan	July 1				
		2024 (FY2024)	2024 (FY2025)	2025 (FY2026)	2026 (FY2027)	2027 (FY2028)	2028 (FY2029)
Daily User Fees	<i>increase</i>	60.0%	25.0%	15.0%	10.0%	5.0%	5.0%
Service Fee per EDU	\$0.460	\$0.736	\$0.920	\$1.058	\$1.164	\$1.222	\$1.283
Minimum Service Fee per EDU [2]		\$0.352	\$0.441	\$0.507	\$0.557	\$0.585	\$0.614
GRGID Service Fee per EDU [3]	\$0.408	\$0.652	\$0.815	\$0.938	\$1.031	\$1.083	\$1.137
User Fees Billed Quarterly:							
Jan-Mar	\$41.75	\$66.80	\$83.50	\$96.03	\$105.63	\$110.91	\$116.45
Apr-Jun	\$41.75	\$66.80	\$83.50	\$96.03	\$105.63	\$110.91	\$116.45
Jul-Sep	\$42.20	\$67.52	\$84.40	\$97.06	\$106.77	\$112.10	\$117.71
Oct-Dec	\$42.20	\$67.52	\$84.40	\$97.06	\$106.77	\$112.10	\$117.71
Annual Fee per EDU	\$167.90	\$268.64	\$335.80	\$386.17	\$424.79	\$446.03	\$468.33

Source: MGSD and HEC May 2021.

user fees

[1] Fees effective January 2013.

[2] Vacant, seasonally vacant or any other type of property connected not currently generating sewer pay minimum service charges at 48% of the service fee per EDU.

[3] GRGID service fees equal to 88.63% of a MGSD customer service fee.

**Figure 1-2
Projected MGSD Monthly User Fees for a Home**

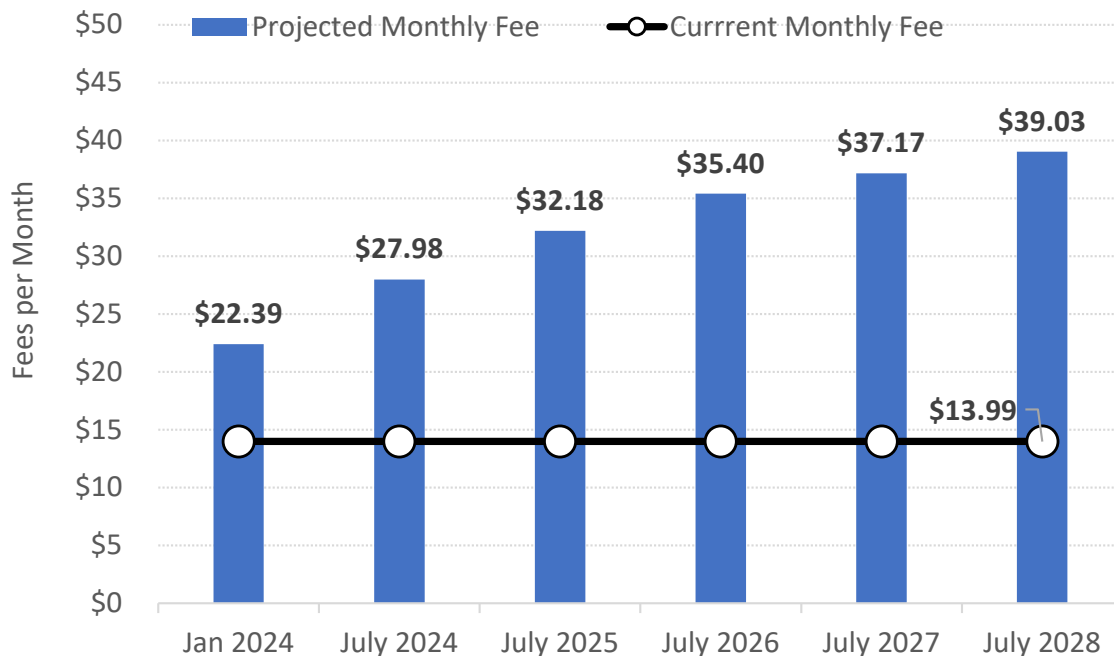


Figure 1-3 compares the monthly service fee with 13 other wastewater providers in Nevada. Currently, MGSD has the lowest service fee. With an increase in the fee to \$22.39 per month, customers would pay the same as in Silver Springs and the City of Las Vegas, which themselves have the second lowest fees in the comparison group. The graph also includes the City of Sacramento, an area from which many new residents are relocating from.

Figure 1-3
Comparison Monthly User Fees for a Home

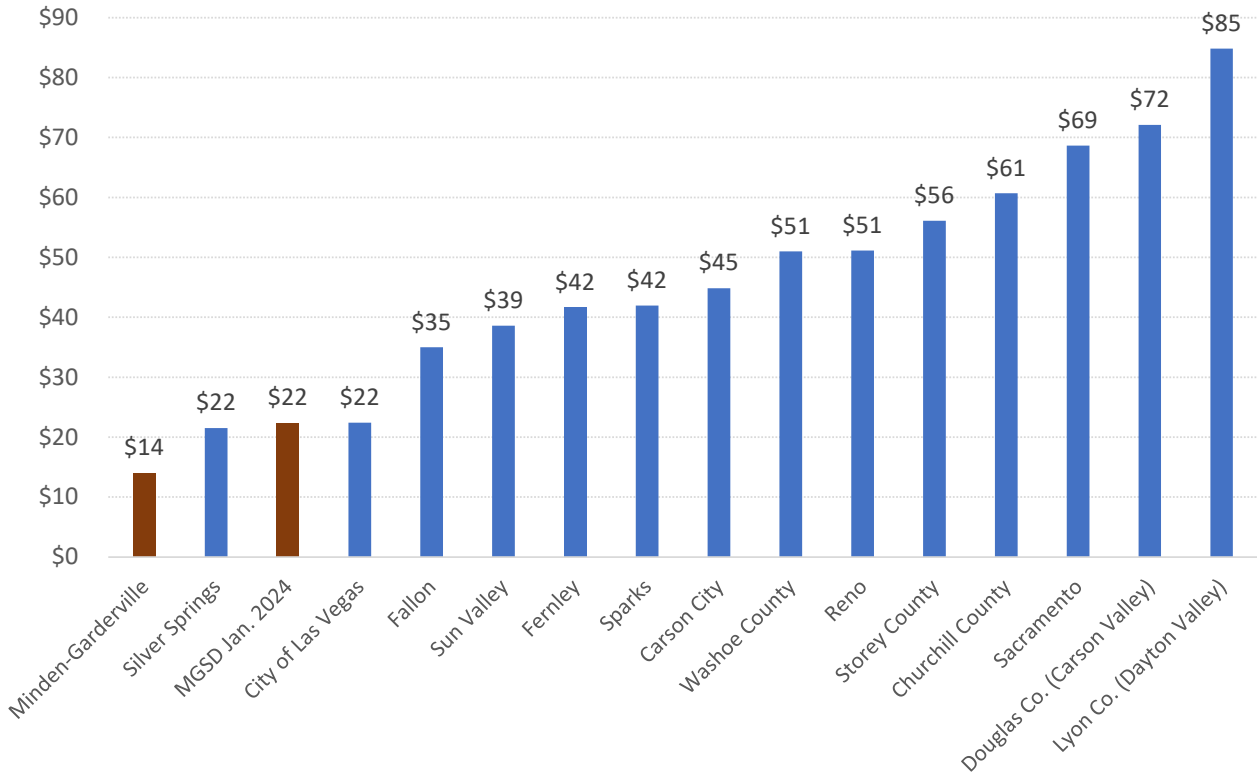


Table 1-3 shows the current and calculated new development fees, and recommended changes to the fees. In addition to the new fee schedule shown in Table 1-3, it is recommended that MGSD establish capacity fees for Accessory Dwelling Units (ADUs) as shown below:

MGSD	\$2.72 per building square foot, excludes garage and covered outdoor areas
GRGID	\$2.29 per building square foot, excludes garage and covered outdoor areas

The capacity fees, including ADU capacity fees, should be increased each fiscal year based on the change in the ENR CCI, 20-Cities Average, from May to May of the prior 12-month period.

Figure 1-4 compares the current and calculated capacity fee for a new home with other communities in Nevada. Even with the calculated increase in the capacity fee, MGSD's fee would remain at the low-end of the comparison fee spectrum.

**Table 1-3
Current and Calculated New Development Fees**

New Development Fees	Last Updated	Current Fee	Calculated 2023/24 Fee
			per EDU
Capacity Fees			
In District Boundary (1978)	2006	\$3,150	\$5,720
All Other MGSD Service Areas [1]	2006	\$3,800	\$5,720
GRGID Service Area			\$4,810
			per EDU
Connection Fees			
Residential	1978	\$275	discontinued
Commercial	1978	\$300	discontinued
GRGID	1990	\$179	discontinued
Total (One EDU) in MGSD Service Areas		\$4,075	\$5,720

Source: MGSD and HEC.

dev fees

[1] Currently, GRGID service area pays the same as all other MGSD service areas.

**Figure 1-4
Comparison Capacity Fees for a New Home**

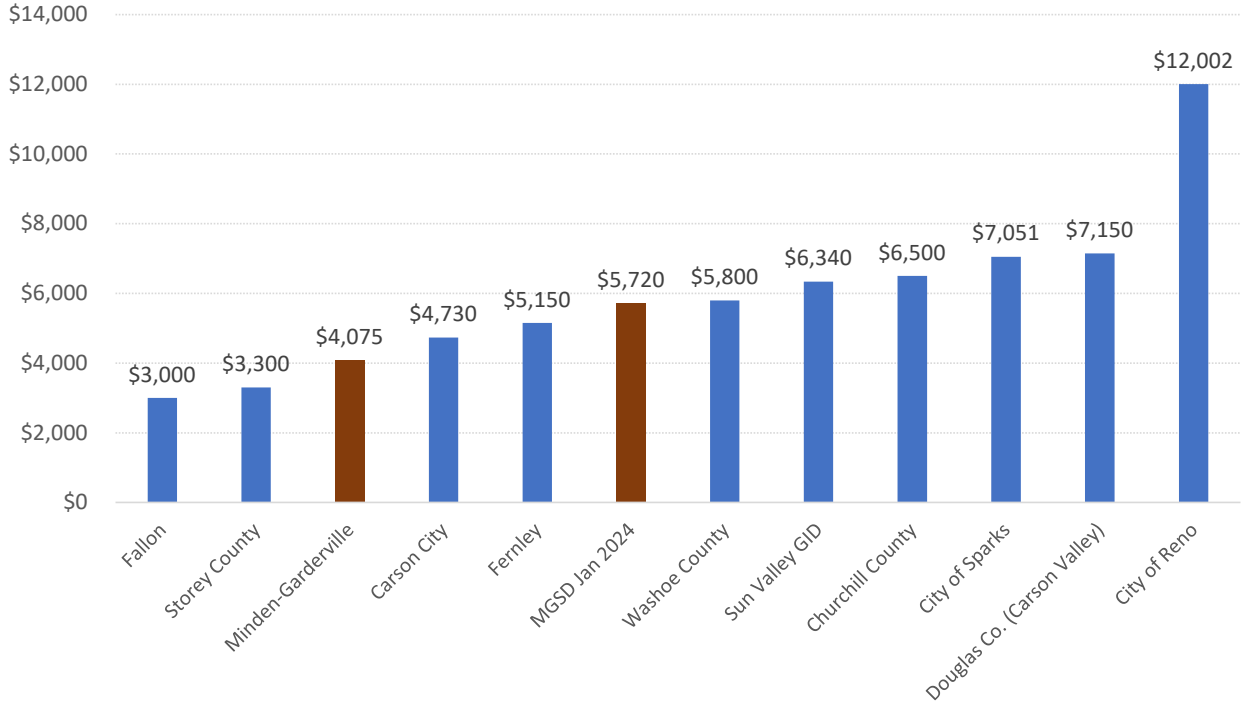


Table 1-4 shows the current and calculated District administrative fees, including a new Capacity Commitment fee, which replaces the Acreage fee), and a new Account Setup fee. The new Capacity Commitment fee increases the old Acreage fee from \$600 per acre to \$755 per acre. The administrative fees should be increased each fiscal year based on the change in the ENR CCI, 20-Cities Average, from May to May of the prior 12-month period.

**Table 1-4
Current and Calculated MGSD Administrative Fees**

Fee Type	Basis	Last Updated	Current Fee	Calculated 2023/24 Fee
Business Fees				
Annexation Fee (deposit)	per application	1978	\$1,000	\$1,285
Capacity Commitment Fee [1]	per acre	new		\$755
Special Meeting Fee (deposit)	per request	1978	\$250	\$561
Account Setup Fee	per account	new		\$55
Lien Fee	per lien	2020	\$110	\$150
Returned Check Fee	per returned check	1978	\$15	\$26
Certified Mail Fee	per mailing	1978	\$10	\$41
Inspection Fees				
Construction Inspection [2]	per hour	unknown	\$55	\$70
TV Inspection [3]	per hour	unknown	\$110	\$142
Vacuum/Jet Lateral Cleaning [4]	per hour	2006	\$400	\$455
Sewer Extension Design Services				
Engineering Fee (deposit)	per request	1978	\$300	\$381
Attorney Fee	per request	1978	actual fee	actual fee
Commercial Plan Check Fee (deposit)*			\$100	\$200
Commercial Plan Review Fee	per application	2012	\$100	\$200
1.1 - 2.5 EDUs			\$125	\$250
2.6 - 5.0 EDUs			\$150	\$300
5.1 - 7.5 EDUs			\$175	\$350
7.6 - 10.0 EDUs			\$200	\$400
10.1 - 15.0 EDUs			\$225	\$450
15.1 - 20.0 EDUs			\$250	\$500
20.1 + EDUs			\$500	\$1,000

Source: MGSD fee schedules.

op sum

[1] Collected at the same time as the annexation fee.

[2] Loaded hourly labor rate for an Inspector, plus markup of 15%.

[3] Loaded hourly labor rate for an Inspector and a Collection worker, plus markup of 15%.

[4] See Table A-18.

* Credited toward plan review fees.

1.5 IMPLEMENTATION OF NEW FEES

Pursuant to the requirements of NRS 271.080, NRS 271.090, and NRS 318.199, a business impact questionnaire was sent to the address on file for all commercial accounts, as well as churches, schools, and government accounts. In addition, all construction contractors doing business within the District - either currently, or in the past, or anticipated, were notified by mail as well as the Carson Valley Chamber of Commerce. In addition, 17 businesses were notified by email.

Mailings were sent out July 5, 2023, with responses due by July 28, 2023. Verbal conversations were held with two local contractors and a small business owner, as well as the Director of the Carson Valley Chamber of Commerce. Residential customers were notified of proposed rate changes with an insert in their July billing statements, which meets the 30-day requirement of NRS 318.199.

Notice for the Rates Workshop on May 18, 2023, was published in the Record Courier on May 13th and May 17th, 2023.

Notice of the rate increase will be published as an advertisement in the Record Courier throughout the month of September in accordance with NRS 318.199.3 in both the Wednesday and Saturday editions – the paper only comes out twice per week.

Notices and all related documents, including this report, are posted on the District's website, www.mgsd.org.

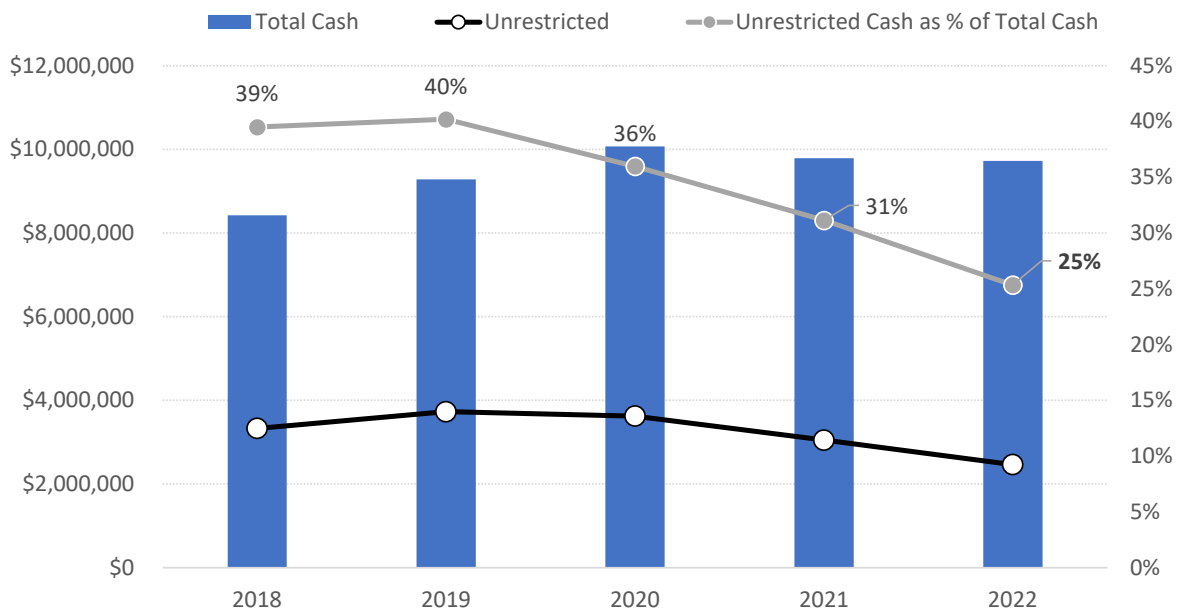
Upon adoption by the MGSD Board October 3rd, 2023, all new fees will be implemented January 2024.

Section 2: DISTRICT FINANCIAL HEALTH AND CUSTOMER BASE

2.1 FINANCIAL HEALTH OF THE DISTRICT

Table 2-1 on the next page summarizes the District’s historical revenues and expenditures for the past six fiscal years. The net change in cash (excluding depreciation) has been negative the past two years, and it is anticipated to be negative in fiscal year 2023. **Figure 2-1** illustrates the decline in unrestricted cash as a percentage of total cash.

Figure 2-1
Historical Cash Balances



The majority of revenues, about 60% of the District’s revenues, are from monthly user fees (rates). The District currently charges \$0.46 per day for wastewater service. By agreement, GRGID customers are charged 88.83% of the rate of a MGSD customer; therefore, the GRGID customers are charged \$0.41 per day.

Ad valorem and consolidated tax revenues comprise about 25% of total operating revenues. Other sources of revenues include contract fees and miscellaneous revenues. The District does not consider interest an operating revenue; it is kept for capital purposes. **Figure 2-2** depicts the District’s operating revenues in fiscal year 2022.

**Table 2-1
Historical Revenues and Expenses**

Revenues and Expenses	Fiscal Year Ending					
	2017	2018	2019	2020	2021	2022
Operating Revenues	<i>audit</i>	<i>audit</i>	<i>audit</i>	<i>audit</i>	<i>audit</i>	<i>audit</i>
User Fees	\$1,729,986	\$1,740,631	\$1,749,444	\$1,797,408	\$1,819,341	\$1,840,593
Gardnerville Ranchos GID Fees [1]	\$294,501	\$350,486	\$382,448	\$328,800	\$360,278	\$366,700
Other	\$60	\$0	\$15	\$0	\$45	\$0
Subtotal Operating Revenues	\$2,024,547	\$2,091,117	\$2,131,907	\$2,126,208	\$2,179,664	\$2,207,293
Operating Expenses						
Salaries and Wages	\$737,102	\$718,380	\$816,691	\$812,731	\$809,596	\$1,127,748
Employee Benefits	\$446,953	\$395,236	\$373,122	\$508,284	\$488,186	\$310,008
Services and Supplies	\$756,813	\$1,101,355	\$919,888	\$816,922	\$1,116,210	\$1,041,726
Subtotal Operating Expenses	\$1,940,868	\$2,214,971	\$2,109,701	\$2,137,937	\$2,413,992	\$2,479,482
Non-Operating Revenues (Expenses)						
Consolidated Tax	\$134,660	\$134,659	\$134,659	\$134,659	\$134,659	\$134,659
Ad Valorem Tax	\$378,502	\$391,752	\$411,165	\$443,768	\$443,768	\$488,518
Interest [2]	\$42,650	\$73,789	\$131,997	\$115,778	\$25,756	(\$13,978)
Miscellaneous	\$3,998	\$14,290	\$8,500	\$6,758	\$96,780	\$29,903
Subtotal Non-Op. Revs (Exps)	\$559,810	\$614,490	\$686,321	\$700,963	\$700,963	\$639,102
Operating Revenues less Expenses	\$643,489	\$490,636	\$708,527	\$689,234	\$466,635	\$366,913
Capacity/Connection/Acreage Fees	\$159,379	\$766,870	\$377,111	\$444,529	\$656,328	\$504,558
Debt Service	(\$77,167)	(\$77,167)	(\$77,167)	(\$77,167)	(\$77,167)	(\$77,167)
Capital-Related Activities	(\$825,214)	\$748,816	(\$151,936)	(\$264,349)	(\$1,326,304)	(\$859,918)
Net Change in Cash	(\$99,513)	\$1,929,155	\$856,535	\$792,247	(\$280,508)	(\$65,614)
Depreciation	\$1,487,764	\$1,472,967	\$1,464,834	\$1,447,272	\$1,430,311	\$1,357,501
Beginning Cash	\$6,592,912	\$6,493,399	\$8,422,554	\$9,279,089	\$10,071,336	\$9,790,828
Ending Cash	\$6,493,399	\$8,422,554	\$9,279,089	\$10,071,336	\$9,790,828	\$9,725,214
Restricted	\$4,493,810	\$5,095,987	\$5,549,757	\$6,448,282	\$6,741,817	\$7,261,315
Non-Restricted	\$1,999,589	\$3,326,567	\$3,729,332	\$3,623,054	\$3,049,011	\$2,463,899
Restricted Cash Allocations						
Plant Expansion	\$3,240,180	\$3,618,004	\$3,856,601	\$4,303,368	\$4,665,659	\$5,084,137
Line Rehabilitation	\$167,707	\$380,990	\$579,132	\$1,016,919	\$943,842	\$1,041,302
Odor Control	\$505,608	\$510,633	\$518,248	\$524,450	\$525,810	\$526,789
Emergency Repair	\$502,177	\$507,168	\$514,732	\$520,892	\$522,243	\$523,215
NDEP Loan (1 year debt service)	\$78,138	\$79,192	\$81,044	\$82,653	\$84,263	\$85,872
Total	\$4,493,810	\$5,095,987	\$5,549,757	\$6,448,282	\$6,741,817	\$7,261,315

Source: MGSD Audited Financial Statements.

[1] Includes the fixed and variable operational costs, per agreement with GRGID.

[2] Interest is kept for restricted capital activities.

Figure 2-2
Fiscal Year 2022 Operating Revenue Sources

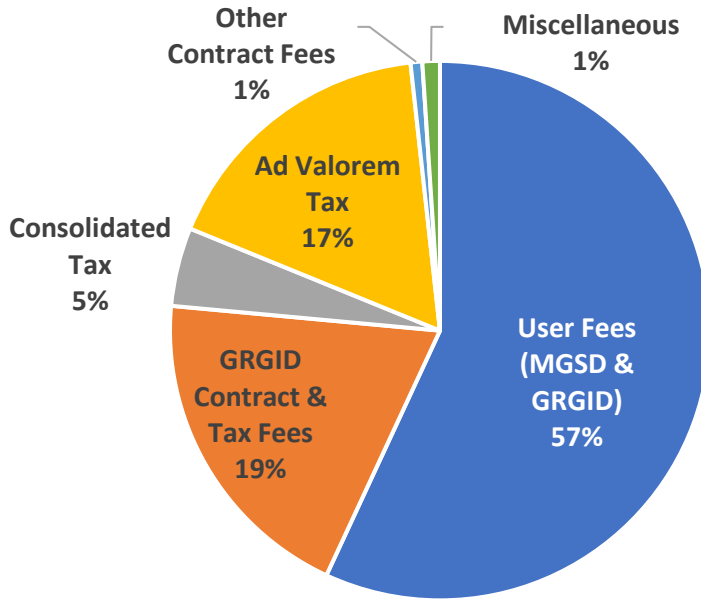
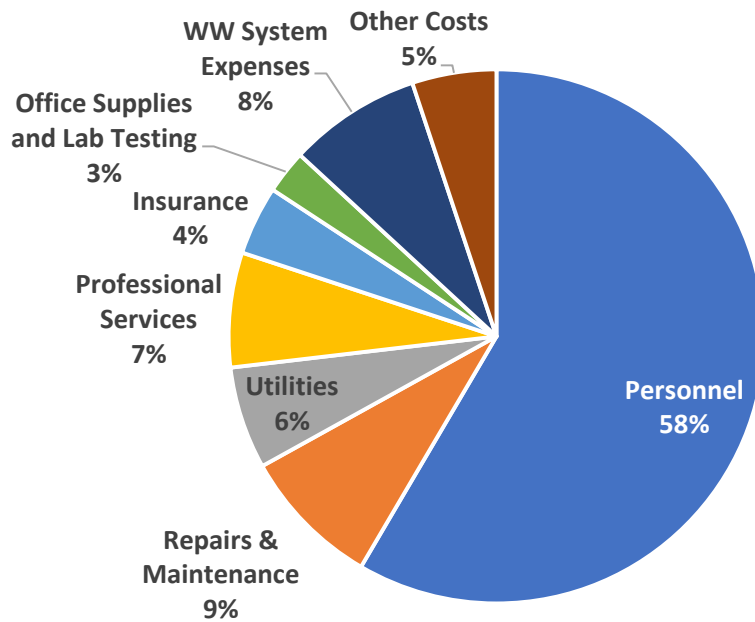


Figure 2-3 provides a breakdown of the District’s operating expenses. The largest share of costs is for personnel at approximately 58% of the total annual costs.

Figure 2-3
Historical Share of Operating Expenses



Reserves

At the beginning of fiscal year 2023, the District had approximately \$2.5 million in unrestricted reserves and \$7.3 million in restricted reserves. The restricted reserves are comprised of funds for emergency repair, the current NDEP loan requirement of one year of debt service, and restricted developer fees for improvements to the treatment plant, collection system, and odor control.

Generally, unrestricted reserves are necessary for several reasons, to:

- 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.”¹

“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.”²

The District has a resolution establishing its restricted cash balances. The District does not have a policy for unrestricted reserves. While each utility needs to assess its risks on an individual basis using knowledge of the current status of infrastructure, regulatory requirements, cash flow “bumps” and so forth, there are some general guidelines to measure what a prudent unrestricted cash reserve would be for the utility. The Government Finance Officers Association (GFOA) best practice is to start with a baseline of 90 days of operating expenses and adjust depending on local circumstance.

For a small utility system, it is most typical to have an amount equal to between 3 and 6 months of operating expenses available in unrestricted cash; however, given the highly intensive capital nature of MGSD’s system, it is recommended the District establish a target of at least 6 months of operating expenses in unrestricted cash.

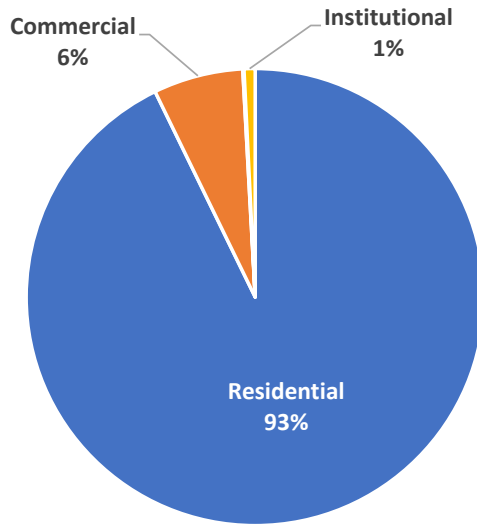
2.2 CUSTOMER BASE

MGSD provides service to almost 6,000 accounts. The vast majority of customer accounts are residential. **Figure 2-4** is a pie chart of customer accounts. MGSD does serve a handful of industrial accounts; these are not shown on the figure because they are such a small number.

¹ Page 35, Financing and Charges for Wastewater Systems, Manual of Practice No. 27.

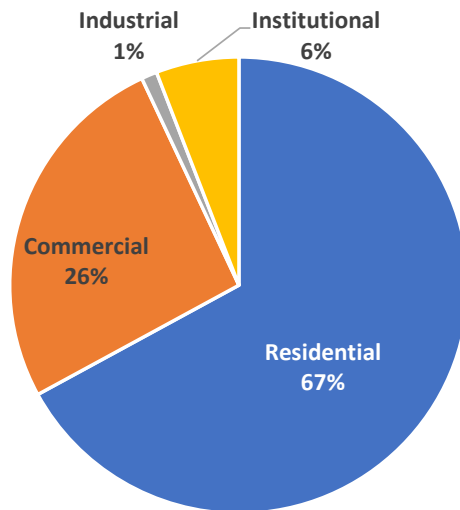
² Page 37, Financing and Charges for Wastewater Systems, Manual of Practice No. 27.

Figure 2-4
MGSD Customer Base



Although residential comprises 93% of the total customer base, it contributes only approximately 67% of the total wastewater flow. **Figure 2-5** shows the flows (as counted by EDUs) to the treatment plant by customer category.

Figure 2-5
Customer Wastewater Flow to the Treatment Plant



The 2022 Master Plan anticipates growth of about 1% per year. The Minden Gardnerville area population has grown about 2% per year since 2000, but growth has been greater in Gardnerville than Minden. **Table A-1** in Appendix A shows historical population growth for the two towns since 2000. **Table A-2** provides the estimate of growth in EDUs by year through the Master Plan time period (2040/41).

Section 3: USER FEE CALCULATIONS

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

Components of the revenue requirement include:

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

Non-wastewater fees revenue projections are credited against projected operations costs. Non-wastewater fee revenues include consolidated tax, ad valorem tax, GRGID and other customer contract fees, and in-lieu tax fees from customers not in the District boundary.

3.1 OPERATING COSTS

Operating expenses are projected based on fiscal year 2023 budgeted expenditures and conversations with District staff. 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, laboratory testing, facilities equipment, tools, subscriptions, and supplies. Operating expenses were budgeted at just over \$2,985,000 in fiscal year 2023.

Appendix A **Table A-3** shows the cost components of total operating expenses for the last nine years, and the 2023 budget. **Table A-4** shows the fully loaded hourly rates for personnel. **Table A-5** shows how District expenses have increased annually, on average, compared with the Engineering News Record Construction Cost Index (ENR CCI) and the West Region Consumer Price Index (CPI). Cost categories that have decreased are shown as “n.a.”. Overall, the District’s annual operating expenses increased 5.2% per year for the last 8 years compared with 3.7% for the ENR CCI and 3.3% for the West Region CPI. It is usual for utility costs to increase at a greater pace than these two indices.

The rate study increases the operating cost categories between 3.5% and 5.5% each year based on the District’s historical expenses. The overall average annual increase is projected at 5.0% per year for the next six years.

3.2 FACILITIES IMPROVEMENTS AND DEBT SERVICE

The District’s 2022 Master Plan details capital projects and provides cost estimates for the projects anticipated to be needed within the next 20 years. Facilities improvements include new facilities needed to upgrade processes at the treatment plant, and to accommodate additional wastewater flows, called “capital improvement projects” and Repair and Rehabilitation (R&R) projects needed at the treatment plant.

Tables A-6 and A-7 in Appendix A summarize the facilities improvement projects and estimated costs, as provided in the Master Plan (for the treatment plant) and as provided by MGSD staff (for the collection system). Those costs have been inflated for the rate study in **Tables A-8 and A-9**. In total, it is estimated that the facilities improvements will cost \$20.09 million. Of this total, \$5.19 million is for capital improvements and \$14.90 million is for R&R.

Table 3-1 summarizes the costs and the funding sources to pay for the identified facility improvements. The District does not have sufficient cash flow to pay for all the identified improvements with reserves. The financing strategy calls for \$6.45 million of the CIP to be funded with loans (assumed to be NDEP loans for the rate study), \$4.11 million to be funded with bond proceeds, \$6.03 million to be funded with new development capacity fees, and \$3.49 million to be funded with unrestricted cash (rate revenue).

Table 3-1
Summary of Facilities Improvements Cost Estimates

Funding Source	Improvement Projects		Total Cost Est.	Percentage of Total
	CIP	Rehabilitation		
<i>Figures in Inflated Dollars</i>				
Treatment Plant Debt	\$0	\$6,455,173	\$6,455,173	32%
Collection System Debt	\$0	\$4,117,838	\$4,117,838	20%
New Development Fees	\$5,186,987	\$843,089	\$6,030,076	30%
Rates (Unrestricted Cash)	\$0	\$3,487,782	\$3,487,782	17%
Total	\$5,186,987	\$14,903,881	\$20,090,868	100%

Source: MGSD Master Plan (2022) and MGSD, January 2023.

cip sum

All the CIP costs are the responsibility of new customers. The R&R costs have been allocated to existing customers in Appendix A **Tables A-10**. **Table A-11** summarizes new development’s cost share of facilities improvements (all of the CIP costs and a portion of R&R costs), and funding sources to pay for their share of improvement costs.

Debt

The estimated debt service payments for the assumed new NDEP loans and bond sales debt financing are shown in **Tables 3-2 and 3-3**.

The District is currently repaying an ARRA loan, also secured through NDEP, which has debt service of just over \$77,000 per year. The loan repayment schedule is provided in Appendix A **Table A-12**. The last payment coincides with the last year in the rate study period, and it will be payable with the one year of debt service held in a restricted account.

Table 3-2
Estimated New Debt for Treatment Plant Improvements

Item	Customer Cost Allocation		
	Existing	Future	Total
	<i>Percentage Share</i>	<i>87%</i>	<i>13%</i>
Treatment Plant Phase 1	\$3,737,236	\$558,438	\$4,295,673
Treatment Plant Phase 2	\$1,878,765	\$280,735	\$2,159,500
Total Estimated Project Cost (Future \$s)	\$5,616,001	\$839,173	\$6,455,173
Est. Interest in Construction Period			
Treatment Plant Phase 1	\$93,431	\$13,961	\$107,392
Treatment Plant Phase 2	\$46,969	\$7,018	\$53,988
Annual Debt Service [1]			
Phase 1 [2]	\$239,772	\$35,828	\$275,600
Phase 2 [3]	\$120,495	\$18,005	\$138,500
Financing Charges			
Treatment Plant Phase 1	\$1,151,635	\$172,083	\$1,323,719
Treatment Plant Phase 2	\$578,104	\$86,383	\$664,487

Source: MGSD and HEC.

srf

[1] Terms assumed: State Revolving Fund
Interest 2.50%
Years 20

[2] Estimated completion by June 2025 with first debt payment due Dec 1, 2025.

[3] Estimated completion by June 2028 with first debt payment due Dec 1, 2028.

**Table 3-3
Collection System (Interceptor) Bond Assumptions**

Item	Assumption	GRGD Interceptor Spring 2024	Hwy 395/88 Spring 2024	TOTAL
Bond Proceeds		\$1,334,025	\$2,783,813	\$4,117,838
Existing Customers	87%	\$1,160,602	\$2,421,917	\$3,582,519
Future Customers	13%	\$173,423	\$361,896	\$535,319
Bond Sizing				
Capitalized Interest	6 months	\$36,700	\$76,600	\$113,300
Issuance Costs	4.0%	\$53,360	\$111,350	\$164,710
Underwriter's Discount	1.0%	\$13,340	\$27,840	\$41,180
Bond Reserve Fund	1 year debt service	\$131,600	\$274,500	\$406,100
Estimated Bond Size		\$1,569,030	\$3,274,100	\$4,843,130
Bond Size Adjusted for Rounding	1.178 bond load	\$1,571,500	\$3,279,300	\$4,850,800
Estimated Annual Debt Service		\$131,600	\$274,500	\$406,100
Total Payments		\$2,632,000	\$5,490,000	\$8,122,000
Principal Repayment		\$1,334,025	\$2,783,813	\$4,117,838
Estimated Financing Charges		\$1,297,975	\$2,706,188	\$4,004,163
Existing Customers	87%	\$1,129,238	\$2,354,383	\$3,483,621
Future Customers	13%	\$168,737	\$351,804	\$520,541
Assumptions:				
Interest	5.50%			
Years	20			

Source: HEC February 2023.

new debt

3.3 SYSTEM REHABILITATION COSTS

Depreciation is used as the basis for 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 without the need for debt financing, or to minimize debt financing.

Table 3-4 shows the estimated cost of depreciation of the wastewater system assets. The estimated cost includes replacement of existing assets as well as assets that are estimated to be constructed during the Study period (see Appendix A **Table A-13**). The amount to be collected in rates to fund depreciation gradually increases each year, as shown at the bottom of the table. The increase over time is to avoid increasing rates further than necessary in the first few years, when many R&R projects are anticipated to be improved.

Table 3-4
Annual Depreciation to be Collected in Rates

Item	2023	2024	2025	2026	2027	2028	2029
Accumulated Depreciation	\$1,358,000	\$1,358,000	\$1,358,000	\$1,358,000	\$1,358,000	\$1,358,000	\$1,358,000
Est. New Facility Acc. Depreciation	\$78,000	\$178,000	\$243,000	\$307,000	\$351,000	\$395,000	\$442,000
Projected Accumulated Depreciation	\$1,436,000	\$1,536,000	\$1,601,000	\$1,665,000	\$1,709,000	\$1,753,000	\$1,800,000
Percent included in Rates	23%	0%	10%	15%	20%	25%	30%
Rate-Funded System Rehab.	\$330,280	\$0	\$160,100	\$249,750	\$341,800	\$438,250	\$540,000

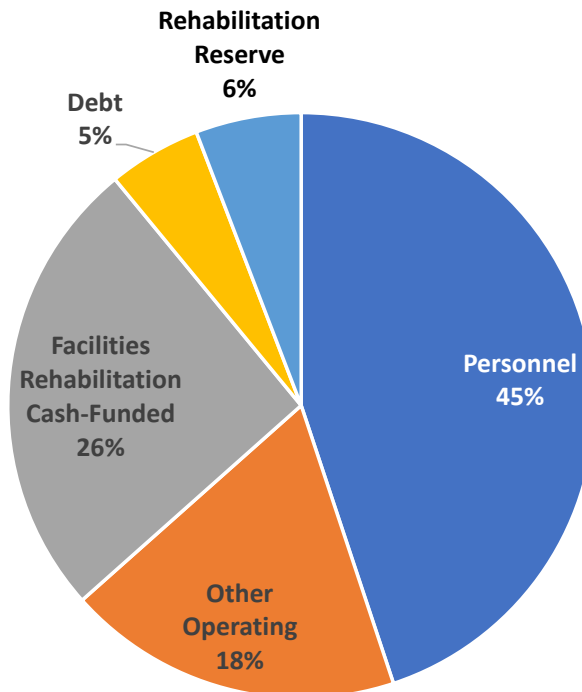
Source: MGSD financial documents and HEC.

depr

3.4 PROJECTED REVENUE REQUIREMENT AND CALCULATED RATES

Table 3-5 estimates the revenue requirement for the next six years. In the first year (fiscal year 2023-24), the revenue requirement is projected to increase from budgeted collection of \$1.81 million in fiscal year 2022-23 to \$1.99 million. By year six, the revenue requirement is projected to be \$4.68 million. While the revenue requirement increases by greater amounts in some years than others, and may decrease from one year to another, it is recommended that the District increase rates gradually. **Figure 3-1** shows the components of revenue requirement over the next 6 years. Comparing Figure 3-1 to historical cost components shown in Figure 2-3, the portion of rates planned to be spent on R&R is much greater going forward.

Figure 3-1
Components of Revenue Requirement (Next 6 Years)



**Table 3-5
Projected Revenue Requirement**

Expenses and Credits	Inflation Factor	Fiscal Year Ending						
		2023	2024	2025	2026	2027	2028	2029
Operating Expenses								
Personnel	5.0%	\$1,868,529	\$1,961,955	\$2,060,053	\$2,163,056	\$2,271,209	\$2,384,769	\$2,504,008
Insurance	5.5%	\$136,059	\$143,542	\$151,437	\$159,766	\$168,553	\$177,824	\$187,604
Utilities	5.5%	\$165,000	\$174,075	\$183,649	\$193,750	\$204,406	\$215,648	\$227,509
Plant & Collection	5.5%	\$132,500	\$139,788	\$147,476	\$155,587	\$164,144	\$173,172	\$182,697
Sludge Removal	5.5%	\$23,000	\$24,265	\$25,600	\$27,008	\$28,493	\$30,060	\$31,713
Lab Testing	3.5%	\$21,500	\$22,253	\$23,031	\$23,837	\$24,672	\$25,535	\$26,429
Office	5.5%	\$147,800	\$155,929	\$164,505	\$173,553	\$183,098	\$193,169	\$203,793
Fees & Permits	3.5%	\$13,800	\$14,283	\$14,783	\$15,300	\$15,836	\$16,390	\$16,964
Professional Services	3.5%	\$105,000	\$108,675	\$112,479	\$116,415	\$120,490	\$124,707	\$129,072
Other	5.5%	\$22,000	\$23,210	\$24,487	\$25,833	\$27,254	\$28,753	\$30,335
Subtotal Operating Expenses		\$2,635,188	\$2,767,975	\$2,907,499	\$3,054,106	\$3,208,155	\$3,370,028	\$3,540,123
Rehabilitation & Capital Expenses								
Repair & Maintenance & Engineering	4.0%	\$350,000	\$364,000	\$378,560	\$393,702	\$409,450	\$425,829	\$442,862
Rehabilitation Reserves	Table 3-4		\$0	\$164,600	\$256,950	\$351,600	\$449,750	\$553,500
Facilities Improvements Cash-Funded	Table A-10		\$65,703	\$110,785	\$658,817	\$771,704	\$1,166,466	\$714,307
Subtotal Rehab. & Capital		\$350,000	\$429,703	\$653,945	\$1,309,469	\$1,532,754	\$2,042,045	\$1,710,669
Debt Service								
ARRA Loan	Table A-12	\$77,166	\$77,166	\$77,166	\$77,166	\$77,166	\$77,166	\$77,166
Collection System	Table 3-3			\$406,100	\$406,100	\$406,100	\$406,100	\$406,100
Treatment Plant Phase 1 (new)	Table 3-2	\$0	\$0	\$107,392	\$275,600	\$275,600	\$275,600	\$275,600
Treatment Plant Phase 2 (new)	Table 3-2	\$0	\$0	\$0	\$0	\$0	\$53,988	\$138,500
Subtotal Debt Service		\$77,166	\$77,166	\$590,658	\$758,866	\$758,866	\$812,854	\$897,366
Total Costs		\$3,062,354	\$3,274,844	\$4,152,102	\$5,122,441	\$5,499,775	\$6,224,926	\$6,148,158
Credits								
Consolidated Tax	constant	\$134,659	\$134,659	\$134,659	\$134,659	\$134,659	\$134,659	\$134,659
Ad Valorem Tax	4.0%	\$525,673	\$546,700	\$568,568	\$591,311	\$614,963	\$639,562	\$665,144
GRGID Contract Payments	2.0%	\$377,000	\$384,540	\$392,231	\$400,075	\$408,077	\$416,238	\$424,563
In-Lieu A.V. Fees and Misc. [2]	2.0%	\$212,729	\$216,984	\$221,323	\$225,750	\$230,265	\$234,870	\$239,567
Total Credits		\$1,250,061	\$1,282,883	\$1,316,781	\$1,351,795	\$1,387,964	\$1,425,329	\$1,463,934
Revenue Requirement		\$1,812,293	\$1,991,962	\$2,835,321	\$3,770,646	\$4,111,812	\$4,799,597	\$4,684,224
Current Collection		\$1,623,471	\$1,623,471	\$1,623,471	\$1,623,471	\$1,623,471	\$1,623,471	\$1,623,471
Funding Adequacy		(\$188,822)	(\$368,491)	(\$1,211,850)	(\$2,147,175)	(\$2,488,341)	(\$3,176,126)	(\$3,060,753)

Source: MGSD and HEC, May 2021.

rev req

[1] The first payment is estimated six months following project completion; the first payment is therefore estimated to be in fiscal year ending 2026; however, interest would likely be due in fiscal year 2025.

[2] Includes in-lieu ad valorem fees for service areas not in original District boundary and contract fees.

Table 3-6 shows the calculated rates to meet the revenue requirement. Due to the nature of the revenue requirement increasing in some years and decreasing in others, it is recommended that the rate increases be smoothed out, as shown in the bottom of the table. The recommended rates, which are based on the calculated rates, include a 60% increase in 2023, followed by a 25% increase, 15% increase, 10% increase, 5% increase, and 5% increase. The District should be in a position at the end of fiscal year 2029 that annual increases can continue to be about 5%.

**Table 3-6
Calculated Daily User Fees (Rates)**

Entity	Fiscal Year Ending							
	2023	2024	2025	2026	2027	2028	2029	
Revenue Requirement	\$1,812,293	\$1,991,962	\$2,835,321	\$3,770,646	\$4,111,812	\$4,799,597	\$4,684,224	
Number of Weighted EDUs								
MGSD [1]	100.00%	7,429	7,507	7,584	7,662	7,739	7,856	
GRGID	88.63%	2,248	2,265	2,283	2,301	2,319	2,354	
PVE	100.00%	0	210	210	210	210	210	
Total Weighted EDUs		9,677	9,982	10,077	10,173	10,268	10,420	
Annual Cost per EDU		\$187.29	\$199.56	\$281.36	\$370.67	\$400.45	\$464.01	\$449.55
MGSD & PVE		\$187.29	\$199.56	\$281.36	\$370.67	\$400.45	\$464.01	\$449.55
GRGID		\$165.99	\$176.87	\$249.37	\$328.52	\$354.92	\$411.25	\$398.44
Cost per Day per EDU	Change -->		18.9%	41.0%	31.7%	8.0%	15.9%	-3.1%
MGSD & PVE		\$0.46	\$0.547	\$0.771	\$1.016	\$1.097	\$1.271	\$1.232
GRGID		\$0.41	\$0.485	\$0.683	\$0.900	\$0.972	\$1.127	\$1.092
Cost per Day per EDU - Smoothed Increases			60.0%	25.0%	15.0%	10.0%	5.0%	5.0%
MGSD & PVE			\$0.736	\$0.920	\$1.058	\$1.164	\$1.222	\$1.283
GRGID			\$0.652	\$0.815	\$0.938	\$1.031	\$1.083	\$1.137

Source: HEC May 2021.

calc

[1] Includes all other small contract service agreement areas, such as Bently Science Park.

The estimate of revenues from the new, smoothed-out, rates is provided in **Table 3-7**.

**Table 3-7
Estimated Revenues Generated from Sewer Use Fees (Rates)**

Item	Fiscal Year Ending						
	2023	2024	2025	2026	2027	2028	2029
Projected EDUs	6 months						
MGSD & PVE EDUs [1]	7,429	7,717	7,794	7,872	7,949	8,008	8,066
GRGID EDUs	2,536	2,556	2,576	2,596	2,616	2,636	2,656
Projected Annual Fee per EDU							
MGSD	\$167.90	\$268.64	\$335.80	\$386.17	\$424.79	\$446.03	\$468.33
GRGID	\$148.81	\$238.10	\$297.62	\$342.26	\$376.49	\$395.31	\$415.08
Projected Fee Revenues	[2]						
MGSD	\$1,247,322	\$1,660,149	\$2,617,278	\$3,039,837	\$3,376,784	\$3,571,582	\$3,777,418
GRGID	\$377,374	\$492,967	\$766,653	\$888,496	\$984,876	\$1,042,026	\$1,102,429
Total Projected Fee Revenue	\$1,624,696	\$2,153,117	\$3,383,931	\$3,928,333	\$4,361,660	\$4,613,608	\$4,879,846

Source: MGSD and HEC.

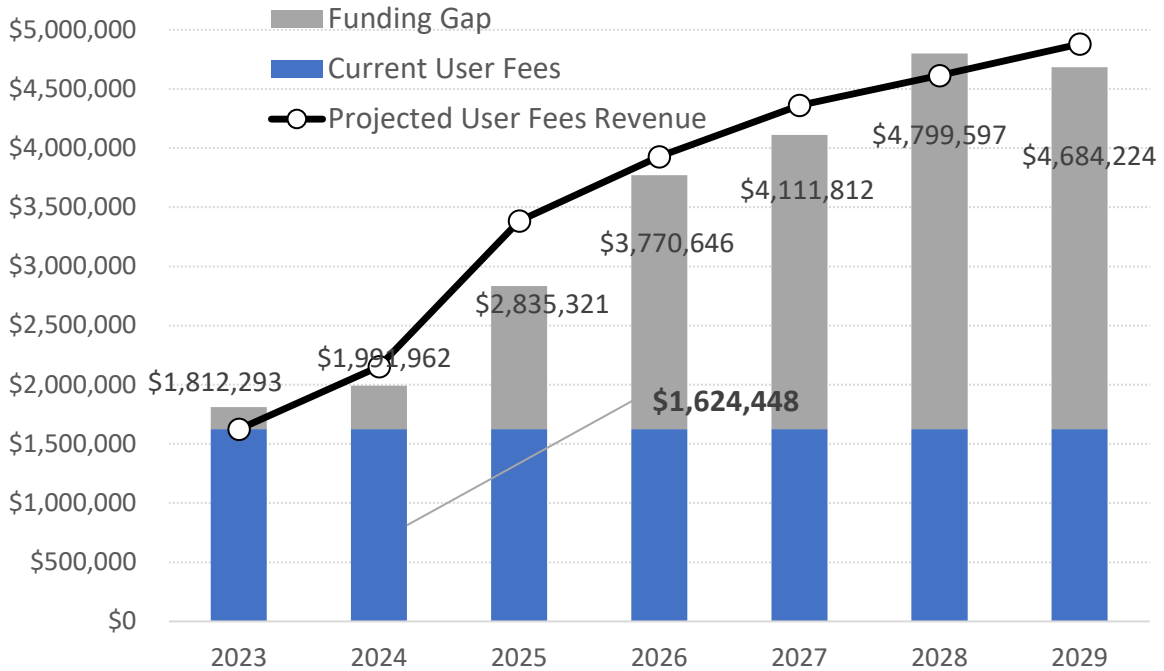
new rates

[1] Assumes 97% of EDUs are billed at any one time. Actual percentage fluctuates.

[2] Six months of current rates and six months of new rates.

Figure 3-2 illustrates the current rate collection, projected revenue requirement, and projected user fee revenues from smoothed-out rate increases.

Figure 3-2
Projected Revenue Requirement and Funding Gap



3.5 NEW MINIMUM SERVICE FEES

Currently, if properties are vacant, or property owners have requested seasonal service turn-off, the property is not billed daily user fees. This practice is unusual for a wastewater provider. Most wastewater providers charge all properties that have paid their connection fees and have physically connected to the wastewater system some portion of daily user fees. The new minimum service fee would be charged to developed properties that have wastewater service available to them, whether or not they are currently using the service. Wastewater providers charge a reduced fee to reflect the ability of the provider to serve the property at any time. The wastewater system must always be ready to receive wastewater flow from connected customers, and for that, the customer should pay a fee.

Table 3-8 shows the calculation of the new minimum service fees. The functional allocation upon which the minimum service fee is based, is presented in Appendix A Table A-14.

**Table 3-8
New Minimum Service Fee Calculation**

Revenue Requirement Component	Sum of Rev. Reqs	Percentage	Weighted
	FY24 - FY29	Allocation [1]	Calculation
Operating Costs net of Credits	\$10,619,200	20%	\$2,123,840
Capital-Related Costs	\$7,678,585	60%	\$4,607,151
Debt Service	\$3,895,775	100%	\$3,895,775
Total Revenue Requirement	\$22,193,561	48%	\$10,626,766

Source: MGSD financial information, and HEC February 2023.

standby

[1] See Table A-14 for functional allocations.

The calculated user fees are summarized in **Table 3-9**. The fee schedule shows the daily user fees for MGSD and GRGID customers, which are increased each year as needed for revenue sufficiency, and it includes the new minimum service fee for MGSD customers. Residential dwelling units are counted as one EDU; however, MGSD may adopt a policy to count Accessory Dwelling Units (ADUs) a fraction of an EDU. Should this occur, the fee per EDU will be multiplied by the applicable fraction for the ADU. Non-residential fees are calculated by multiplying the number of EDUs assigned to the non-residential property by the fee per EDU.

**Table 3-9
Current and Calculated Wastewater User Fees**

Customer Type and Fee Type	Current [1]	Jan	July 1				
		2024 (FY2024)	2024 (FY2025)	2025 (FY2026)	2026 (FY2027)	2027 (FY2028)	2028 (FY2029)
Daily User Fees	<i>increase</i>	60.0%	25.0%	15.0%	10.0%	5.0%	5.0%
Service Fee per EDU	\$0.460	\$0.736	\$0.920	\$1.058	\$1.164	\$1.222	\$1.283
Minimum Service Fee per EDU [2]		\$0.352	\$0.441	\$0.507	\$0.557	\$0.585	\$0.614
GRGID Service Fee per EDU [3]	\$0.408	\$0.652	\$0.815	\$0.938	\$1.031	\$1.083	\$1.137
User Fees Billed Quarterly:							
Jan-Mar	\$41.75	\$66.80	\$83.50	\$96.03	\$105.63	\$110.91	\$116.45
Apr-Jun	\$41.75	\$66.80	\$83.50	\$96.03	\$105.63	\$110.91	\$116.45
Jul-Sep	\$42.20	\$67.52	\$84.40	\$97.06	\$106.77	\$112.10	\$117.71
Oct-Dec	\$42.20	\$67.52	\$84.40	\$97.06	\$106.77	\$112.10	\$117.71
Annual Fee per EDU	\$167.90	\$268.64	\$335.80	\$386.17	\$424.79	\$446.03	\$468.33

Source: MGSD and HEC May 2021.

user fees

[1] Fees effective January 2013.

[2] Vacant, seasonally vacant or any other type of property connected not currently generating sewer pay minimum service charges at 48% of the service fee per EDU.

[3] GRGID service fees equal to 88.63% of a MGSD customer service fee.

3.6 CASH FLOW PROJECTION

The projected cash flow, assuming the calculated fee revenues are collected under the calculated rate schedule, is presented in **Table 3-10**. The cash flow projection includes capital revenue sources and expenses in addition to the operating revenues and expenses. Capital costs included in the fiscal year 2023 budget are detailed in Appendix A **Table A-15**.

Table 3-10
Projected District Cash Flow

Revenues and Expenses	Fiscal Year Ending						
	2023	2024	2025	2026	2027	2028	2029
Revenues	<i>new rates -></i>	<i>6 months</i>	<i>full year</i>	<i>full year</i>	<i>full year</i>	<i>full year</i>	<i>full year</i>
User Fees [1]	\$1,623,471	\$2,153,117	\$3,383,931	\$3,928,333	\$4,361,660	\$4,613,608	\$4,879,846
Consolidated Tax	\$134,659	\$134,659	\$134,659	\$134,659	\$134,659	\$134,659	\$134,659
Ad Valorem Tax	\$525,673	\$546,700	\$568,568	\$591,311	\$614,963	\$639,562	\$665,144
GRGID Contract Payments	\$377,000	\$384,540	\$392,231	\$400,075	\$408,077	\$416,238	\$424,563
In-Lieu A.V. Fees and Misc. [2]	\$212,729	\$216,984	\$221,323	\$225,750	\$230,265	\$234,870	\$239,567
Total Revenues	\$2,873,532	\$3,435,999	\$4,700,712	\$5,280,128	\$5,749,623	\$6,038,937	\$6,343,780
Operating Expenses	\$2,635,188	\$2,767,975	\$2,907,499	\$3,054,106	\$3,208,155	\$3,370,028	\$3,540,123
Revenues less Op. Expenses	\$238,344	\$668,024	\$1,793,213	\$2,226,022	\$2,541,468	\$2,668,909	\$2,803,657
Debt Service	\$77,166	\$77,166	\$590,658	\$758,866	\$758,866	\$812,854	\$897,366
<i>Debt Coverage</i>	<i>3.1</i>	<i>8.7</i>	<i>3.0</i>	<i>2.9</i>	<i>3.3</i>	<i>3.3</i>	<i>3.1</i>
Repairs and Maintenance	\$350,000	\$364,000	\$378,560	\$393,702	\$409,450	\$425,829	\$442,862
Net Operations Revenues	(\$188,822)	\$226,858	\$823,995	\$1,073,454	\$1,373,152	\$1,430,227	\$1,463,430
Beginning Balance	\$9,725,214	\$6,570,026	\$3,161,683	\$4,447,355	\$4,935,274	\$5,919,974	\$6,521,798
Net Operations Revenues	(\$188,822)	\$226,858	\$823,995	\$1,073,454	\$1,373,152	\$1,430,227	\$1,463,430
Developer Fees	\$342,529	\$1,446,225	\$564,600	\$576,200	\$466,400	\$475,600	\$484,800
Capital Funds Interest	\$86,105	\$67,249	\$24,415	\$31,284	\$32,164	\$36,763	\$40,820
Capital Projects Costs	(\$3,395,000)	(\$8,800,155)	(\$3,885,800)	(\$2,070,007)	(\$1,923,994)	(\$1,602,084)	(\$1,808,828)
Financing Sources	\$0	\$3,651,480	\$3,758,461	\$876,988	\$1,036,979	\$261,319	\$987,784
Ending Balance	\$6,570,026	\$3,161,683	\$4,447,355	\$4,935,274	\$5,919,974	\$6,521,798	\$7,689,805
<i>Minimum Unrestricted Cash [2]</i>	<i>\$1,317,594</i>	<i>\$1,383,987</i>	<i>\$1,453,750</i>	<i>\$1,527,053</i>	<i>\$1,604,078</i>	<i>\$1,685,014</i>	<i>\$1,770,061</i>
Unrestricted Funds	\$882,304	\$636,355	\$1,343,677	\$1,476,755	\$2,068,864	\$2,323,175	\$3,014,084
Months of Operating Expenses	4.0	2.8	5.5	5.8	7.7	8.3	10.2
Designated Asset Replacement Fund (New) [3]	\$0	\$0	\$0	\$0	\$464,787	\$638,161	\$1,244,023
Restricted Funds (see Table 3-11)							
Plant Expansion	\$4,426,676	\$858,240	\$1,346,625	\$1,483,497	\$1,889,011	\$2,253,086	\$2,647,129
Collection System	\$114,798	\$351,803	\$425,984	\$423,488	\$391,946	\$356,542	\$371,880
Odor Control	\$533,110	\$288,689	\$292,153	\$224,552	\$227,247	\$229,974	\$232,733
Emergency Repair	\$529,494	\$535,848	\$542,278	\$548,785	\$555,370	\$562,035	\$568,779
NDEP ARRA Loan Reserve [4]	\$83,645	\$84,649	\$85,664	\$86,692	\$87,733	\$88,785	(\$0)
New SRF Loan Reserves [5]	\$0	\$0	\$0	\$275,600	\$278,907	\$282,254	\$424,141
Collection System Bonds	\$0	\$406,100	\$410,973	\$415,905	\$420,896	\$425,946	\$431,058
Total Restricted Funds	\$5,687,722	\$2,525,328	\$3,103,678	\$3,458,519	\$3,851,110	\$4,198,623	\$4,675,720

Source: MGSD and HEC, May 2021.

flow

[1] Includes GRGID user fees (not the fixed and variable costs).

[2] Target minimum unrestricted cash is 6 months of operating expenses.

[3] In years the end of year cash is greater than 6 months of operating expenses, MGSD would place the 'surplus' into an asset replacement fund.

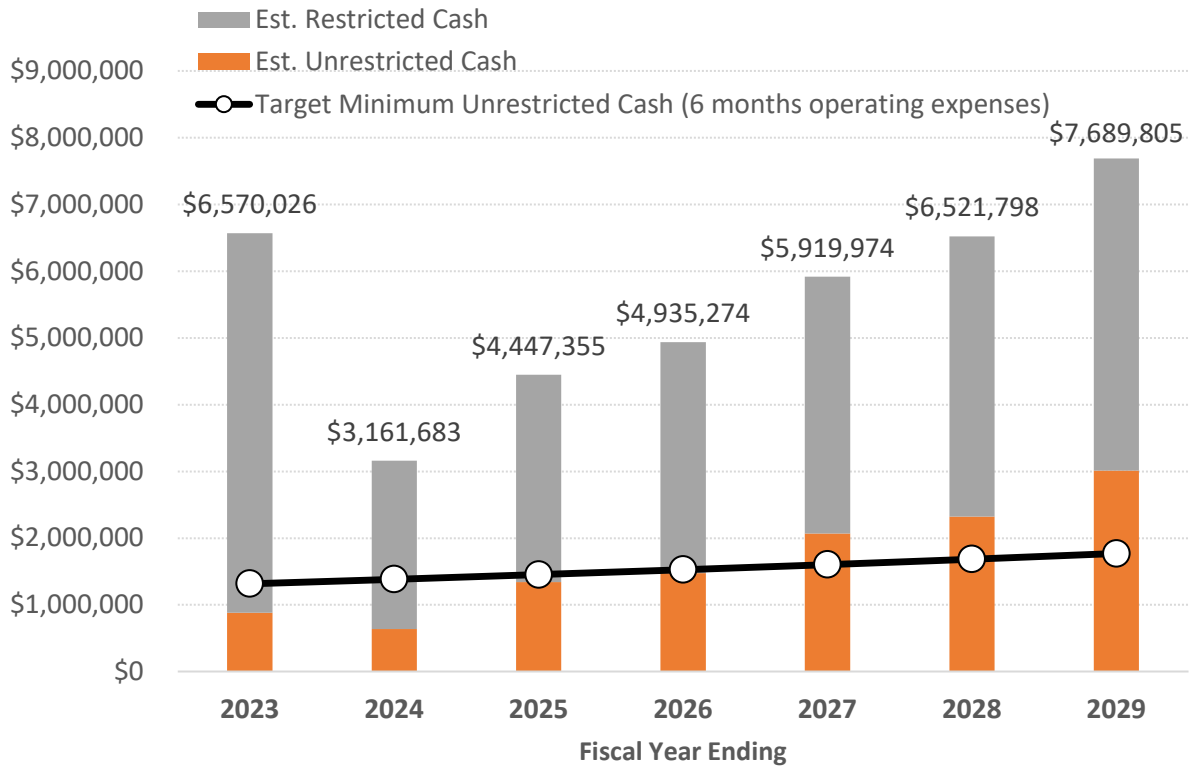
The Asset Replacement fund is Designated (remains a portion of Unrestricted Funds) rather than Restricted to allow for flexibility in funds use; however, it is intended to collect funds for future R&R costs that are the cost responsibility of existing customers.

[4] Increased by estimated interest earnings of 1.2% only.

[5] Estimated one year of debt service for phases 1 and 2 of the projected treatment plant improvements debt-funded.

The estimation of new development fees revenue in the cash flow projection is provided in Appendix A **Table A-16**. The projection of new development fee revenue is based on the projected growth in EDUs and application of new calculated fees presented in Section 4. **Figure 3-3** illustrates the projected ending cash balances from the cash flow analysis.

Figure 3-3
Projected District Cash Balances



The projected District ending cash balances for each of the restricted funds is shown in **Table 3-11**. The allocation of new development fees between treatment plant and collection system is shown in **Table A-17**. The allocation uses the District policy of 85% of capacity fees allocated to the wastewater treatment plant and 15% of capacity fees allocated to the collection system.

**Table 3-11
Projected Restricted Funds Ending Balances**

Revenues and Expenses	Fiscal Year Ending						
	2023	2024	2025	2026	2027	2028	2029
Plant Expansion							
Beginning Cash	\$5,084,137	\$4,426,676	\$858,240	\$1,346,625	\$1,483,497	\$1,889,011	\$2,253,086
Estimated Developer Fees	\$281,529	\$1,210,598	\$494,640	\$504,800	\$411,770	\$419,890	\$428,010
Estimated Interest [1]	\$61,010	\$53,120	\$10,299	\$16,160	\$17,802	\$22,668	\$27,037
Transfer In from Unrestricted Cash	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Estimated CIP Costs [2]	(\$1,000,000)	(\$4,832,153)	(\$16,554)	(\$384,088)	(\$24,058)	(\$78,483)	(\$61,005)
Estimated Ending Cash	\$4,426,676	\$858,240	\$1,346,625	\$1,483,497	\$1,889,011	\$2,253,086	\$2,647,129
Collection System							
Beginning Cash	\$1,041,302	\$114,798	\$351,803	\$425,984	\$423,488	\$391,946	\$356,542
Estimated Developer Fees	\$61,000	\$235,628	\$69,960	\$71,400	\$54,630	\$55,710	\$56,790
Estimated Interest [1]	\$12,496	\$1,378	\$4,222	\$5,112	\$5,082	\$4,703	\$4,279
Transfer In from Unrestricted Cash	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Estimated Project Costs [2]	(\$1,000,000)	\$0	\$0	(\$79,008)	(\$91,254)	(\$95,817)	(\$45,731)
Estimated Ending Cash	\$114,798	\$351,803	\$425,984	\$423,488	\$391,946	\$356,542	\$371,880
Odor Control							
Beginning Cash	\$526,789	\$533,110	\$288,689	\$292,153	\$224,552	\$227,247	\$229,974
Estimated Developer Fees	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Estimated Interest [1]	\$6,321	\$6,397	\$3,464	\$3,506	\$2,695	\$2,727	\$2,760
Estimated Project Costs	\$0	(\$250,819)	\$0	(\$71,107)	\$0	\$0	\$0
Estimated Ending Cash	\$533,110	\$288,689	\$292,153	\$224,552	\$227,247	\$229,974	\$232,733
Emergency Repair							
Beginning Cash	\$523,215	\$529,494	\$535,848	\$542,278	\$548,785	\$555,370	\$562,035
Estimated Interest [1]	\$6,279	\$6,354	\$6,430	\$6,507	\$6,585	\$6,664	\$6,744
Estimated Project Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Estimated Ending Cash	\$529,494	\$535,848	\$542,278	\$548,785	\$555,370	\$562,035	\$568,779
ARRA Loan Reserve							
Beginning Cash	\$82,653	\$83,645	\$84,649	\$85,664	\$86,692	\$87,733	\$88,785
Estimated Interest [1]	\$992	\$1,004	\$1,016	\$1,028	\$1,040	\$1,053	\$1,065
Last Loan Payment	\$0	\$0	\$0	\$0	\$0	\$0	(\$77,166)
Transfer Interest to Unrestricted Cash	\$0	\$0	\$0	\$0	\$0	\$0	(\$12,685)
Estimated Ending Cash	\$83,645	\$84,649	\$85,664	\$86,692	\$87,733	\$88,785	(\$0)
New SRF Loans Reserve							
Beginning Cash	\$0	\$0	\$0	\$0	\$275,600	\$278,907	\$282,254
Transfer In from Unrestricted Cash (pl)	\$0	\$0	\$0	\$275,600	\$0	\$0	\$0
Transfer In from Unrestricted Cash (pl)	\$0	\$0	\$0	\$0	\$0	\$0	\$138,500
Estimated Interest [1]	\$0	\$0	\$0	\$0	\$3,307	\$3,347	\$3,387
Estimated Ending Cash	\$0	\$0	\$0	\$275,600	\$278,907	\$282,254	\$424,141
Collection System Bonds							
Beginning Cash	\$0	\$0	\$406,100	\$410,973	\$415,905	\$420,896	\$425,946
Deposit	\$0	\$406,100	\$0	\$0	\$0	\$0	\$0
Estimated Interest [1]	\$0	\$0	\$4,873	\$4,932	\$4,991	\$5,051	\$5,111
Estimated Ending Cash	\$0	\$406,100	\$410,973	\$415,905	\$420,896	\$425,946	\$431,058

Source: MGSD and HEC, February 2023.

cip flow

Note: December 7, 1982 - Resolution 82-3 established restricted cash balances. April 2, 2013 revised the allocation of user fee allocations for plant expansion, line rehabilitation (collection improvements) and odor control. September 6, 2016 resolution 16-002 established a restricted fund for emergency repairs (started with \$500,000).

[1] Interest earned estimated at 1.2% of the cash balance. [2] New development's share of repair and replacement costs is 13%.

3.7 RESIDENTIAL BILL IMPACTS

The projected monthly bill for a home (one EDU) is shown in **Figure 3-4**.

Figure 3-4
Projected MGSD Monthly User Fee

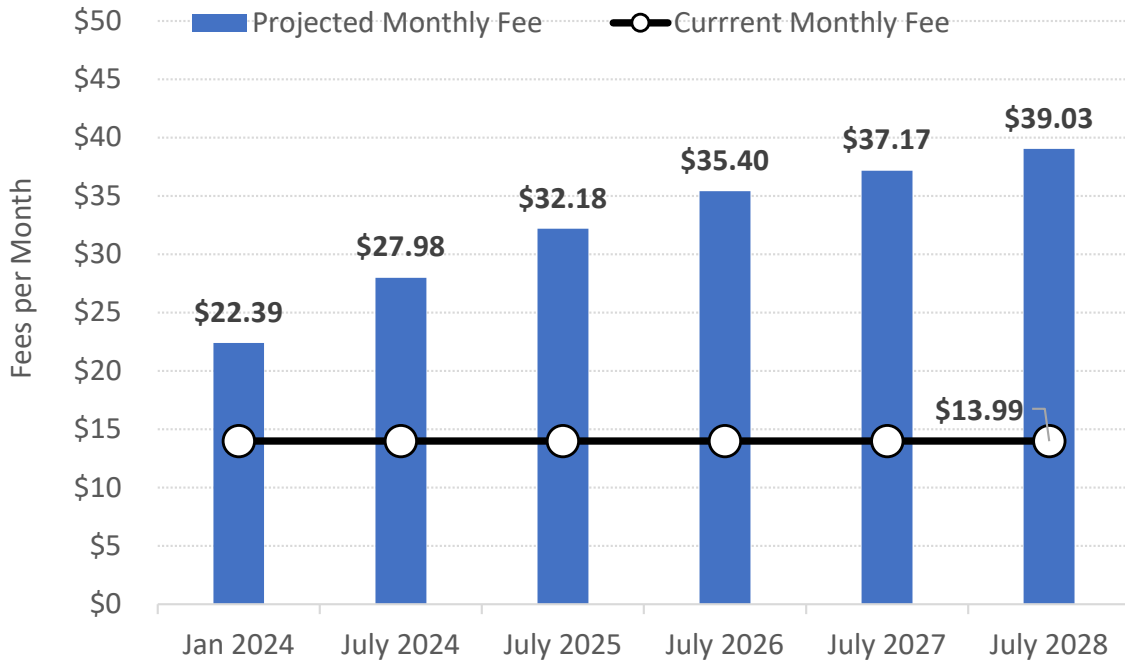
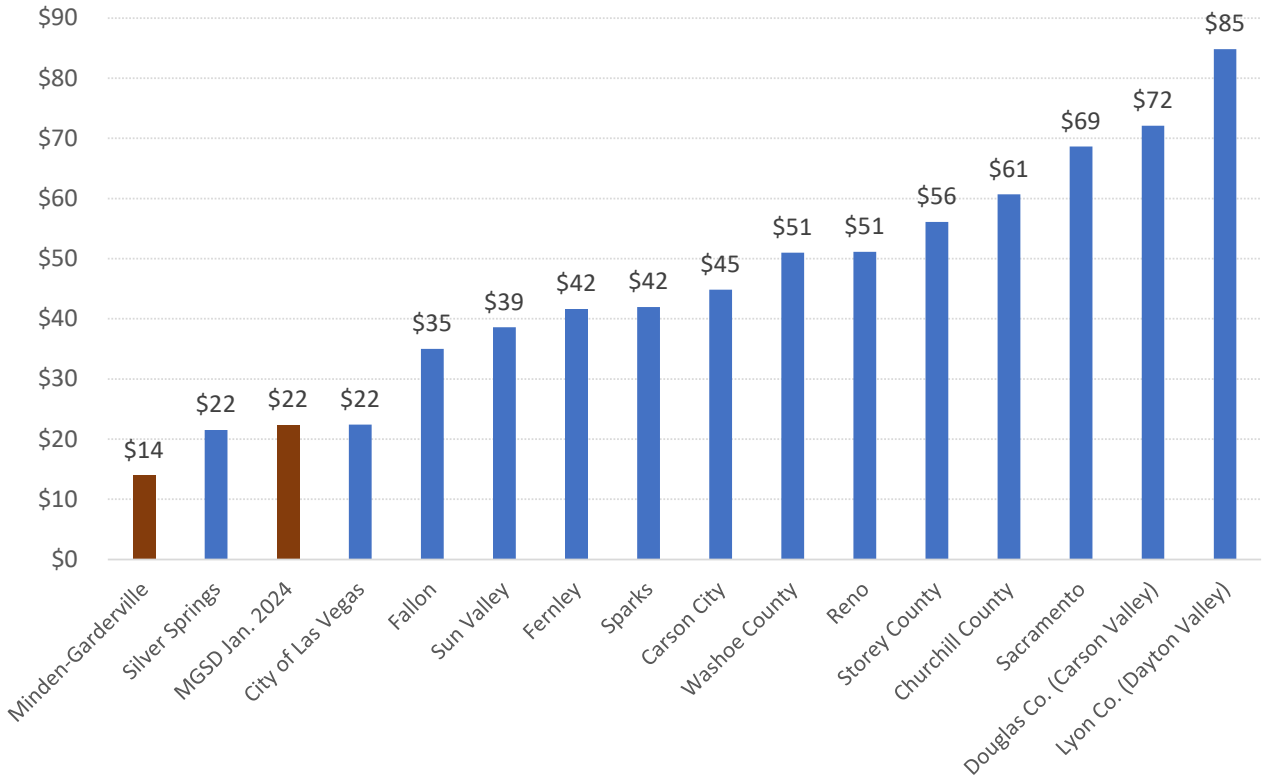


Figure 3-5 compares MGSD’s current and calculated monthly rates for a home with that of 13 other wastewater providers in Nevada. Currently, MGSD has the lowest service fee. With an increase in the fee to \$22.39 per month, customers would pay the same as in Silver Springs and the City of Las Vegas, which themselves have the second lowest fees in the comparison group. The graph also includes the City of Sacramento, an area from which many new residents are relocating from.

**Figure 3-5
Comparison Monthly Sewer Bill for a Home**



SECTION 4: NEW DEVELOPMENT FEE CALCULATIONS

Currently, the District charges new development acreage fees, capacity fees, and connection fees. The new development fees have not been changed for a very long time. The acreage fee (of \$600 per acre) has not been updated since 1978. Residential and commercial connection fees have also not been updated since 1978. Capacity fees were last increased in 2006.

4.1 ACREAGE FEES

The intent of the acreage fee is to charge newly developing areas for securing a commitment with the District for capacity at the treatment plant for treatment and disposal of new sewer flows generated by the development when it builds out. To better describe the purpose of the fee, it has been renamed the Capacity Commitment Fee, and it has been included as an administrative fee to be paid at the time of annexation; previously it had been characterized as a development fee.

4.2 CONNECTION FEES

The industry definition of a connection fee is a fee to recover hard and soft costs associated with connecting a customer to the service provider's major infrastructure. The District does not connect new services to the wastewater system. New customers are required to install the necessary facilities to the District's standards and the District inspects new connections. It is recommended that connection fees be discontinued; however, the current connection fee recovers a portion of the administrative costs of new connections, and this must be captured in a fee. A new Account Setup Fee is proposed to pay for the administrative costs associated with adding new customers to the District's administrative and billing software, including mapping programs.

4.3 CAPACITY FEES

Capacity fees are charged to pay for current and future District facilities that new customers will use. Capacity fees pay for major infrastructure comprising the wastewater collection, treatment, and disposal facilities. Currently, the District's capacity fees are based on a 2005 Board decision (implemented February 2006) that increased the fees from \$3,500 per EDU to \$3,800 per EDU for all customers (including those within GRGID's service area), and that increased the fee for property annexed prior to 1978 from \$2,850 per EDU to \$3,150 per EDU.

It is recommended that the District abandon the distinction in fees between properties in the original District boundary, and properties annexed into the District boundary since 1978. As all properties pay ad valorem taxes, or taxes in-lieu of ad valorem taxes (as calculated and billed by District staff each year) there does not appear to be any rationale remaining to continue having such a fee difference.

The updated calculated capacity fees are comprised of two components: (1) a buy-in fee to pay for the portion of capacity in existing facilities that the new customer will use, and (2) a new facilities fee to pay for estimated costs of new infrastructure and infrastructure upgrades that expand capacity to the benefit of new users. **Table 4-1** shows the calculation of the updated capacity fee.

Buy-In Fee. It is important that new customers pay for capacity that has been made available to them by other customers. Wastewater utilities capture this concept in the form of a “buy-in” fee³ that is typically included in the calculation of a capacity fee. The buy-in fee is based on the net book value of the District’s assets (what the assets are worth today after accounting for depreciation, using the original cost of the assets). Outstanding principal is deducted from the assets value because once the customer pays quarterly rates, they will pay debt service (the customer should not be charged twice). In total, the value of the buy-in is estimated at \$18.40 million. The cost is divided by the number of EDUs estimated at the end of the 20-year planning period (2041) to determine the buy-in fee of \$1,543 per EDU.

New Facilities Fee. The new facilities fee is based on the estimated capital costs attributed to new growth, as shown in Table 4-1. The cost is allocated 100% to new growth if it has been identified as an item needed for additional capacity in the 2022 Master Plan. Other projects are allocated 13% to new growth as new growth represents 13% of the total estimated EDUs at the end of the 20-year planning period. The estimated total new facilities cost is \$7.23 million. Pine View Estates’ contribution of new development fees still to be paid decreases the net new facilities costs to \$6.34 million. The net new facilities cost is divided by the number of new EDUs estimated over the planning period to determine the new facilities fee component of \$4,170 per EDU.

The two fee components are added together to calculate an updated capacity fee of \$5,720 per EDU.

Table 4-2 splits the capacity fee between treatment plant and collection components of the wastewater system. The split is shown so that the District can set up separate funds for each, if desired, and to determine the correct fee to charge GRGID. The GRGID service area does not benefit from the District’s collection system; therefore, it should only be charged the treatment plant component of the capacity fee. Table 4-2 shows that the treatment plant component is 84% of the total fee. The GRGID capacity fee is calculated at \$4,810 per EDU.

The District’s adopting resolution or ordinance should update the Wastewater Capacity Fees annually based on the change in the ENR CCI, 20-Cities Average, from May to May of the prior 12 months period.

³ WEF Manual No. 27, page 206, “The rationale behind the capacity buy-in approach is that new customers should be charged for existing available capacity of the existing system.”

**Table 4-1
Calculated Capacity Fee**

Item		Cost
Buy-In Fee		
Net Book Value of Assets		\$18,866,007
less Outstanding Principal		\$462,996
Buy-In Cost of Existing Facilities		\$18,403,011
Estimated EDUS in 20 Years		11,925
Buy-In Fee per EDU	a	\$1,543
New Facilities Fee		
		<i>Growth-Share Only [1]</i>
Sludge Thickening	100%	\$2,679,000
Aeration Basin No. 4 and 5	100%	\$741,000
Biogas Utilitization Study & Add'l FOG Storage	100%	\$954,000
Additional Office Space	100%	\$300,000
R&R Treatment Plant (includes Gen. Facilities)	13%	\$1,055,626
Financing Costs of R&R Treatment Plant	13%	\$258,467
R&R Collection System	13%	\$721,500
Financing Costs of R&R Collection System	13%	\$520,541
Total New Facilities Costs		\$7,230,134
less PVE Contribution		\$892,425
Net New Facilities Costs		\$6,337,709
Estimated New EDUs		1,520
New Facilities Fee per EDU	b	\$4,170
Subtotal Combined Fee per EDU [2]	c = a+b	\$5,720
Current Fee		\$3,800

Source: MGSD financials, and HEC February 2023.

cap fee

[1] Only the growth-related share of costs is included.

[2] Fee shall be increased each July 1 per the ENR CCI change over the past 12 months (May to May).

Table 4-3 summarizes the current and calculated capacity fees. It is also recommended that MGSD establish a fee for Accessory Dwelling Units (ADUs). ADU capacity fees are usually established as either a per building square foot fee, plumbing unit fixture fee or occupancy fee using an estimate of persons per unit or number of bedrooms in the unit. For ease of computation, and to minimize inaccurate records that can occur when an ADU is not built to its specifications, it is recommended that MGSD establish a building square foot fee.

To establish the fee for ADUs, the fee for a home (one EDU) is divided by the typical size of a new home in the region. The typical size of a new home in MGSD's wastewater system is estimated at

2,100 building square feet based on a survey of new home sales in recent months⁴. The ADU capacity fee would be:

MGSD	\$2.72 per building square foot, excludes garage and covered outdoor areas
GRGID	\$2.29 per building square foot, excludes garage and covered outdoor areas

Table 4-2
Capacity Fee Plant and Collection Components

Fee Item	Plant	Collection	Total
Total Existing Assets Value	\$48,242,856 91%	\$5,031,122 9%	\$53,273,978
Buy-In Fee			
Net Book Value of Assets	\$17,084,327	\$1,781,680	\$18,866,007
less Outstanding Principal	\$462,996	\$0	\$462,996
Buy-In Cost of Existing Facilities	\$16,621,331	\$1,781,680	\$18,403,011
Estimated EDUs in 20 Years	11,925	11,925	11,925
Buy-In Fee per EDU	\$1,394	\$149	\$1,543
New Facilities Fee			
New Facilities Costs	\$5,988,093	\$1,242,041	\$7,230,134
less PVE Contribution	\$808,146	\$84,279	\$892,425
Net New Facilities Costs	\$5,179,947	\$1,157,762	\$6,337,709
Estimated New EDUs	1,520	1,520	1,520
New Facilities Fee per EDU	\$3,408	\$762	\$4,170
Total Capacity Fee per EDU [1]	\$4,810	\$920	\$5,720
Percentage of Fee	84%	16%	

Source: MGSD financials, and HEC February 2023.

capfee split

[1] GRGID capacity fee should only be the plant portion of the fee.

Figure 4-1 shows how MGSD’s current and calculated capacity fee compares with that of 10 other Nevada communities. Even with the calculated increase in the capacity fee, MGSD’s fee would be mid-range of the comparison fee spectrum.

⁴ Survey conducted on Zillow.com, February 2023 for homes built since 2000.

**Table 4-3
Current and Calculated New Development Fees**

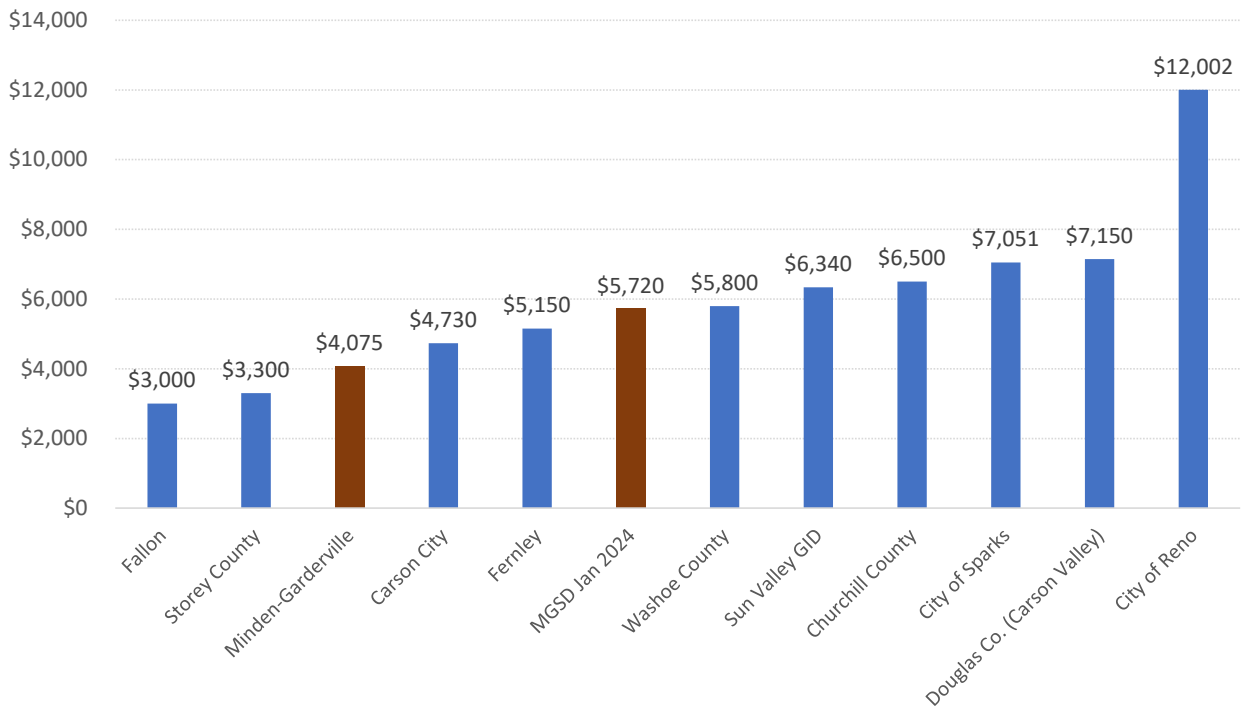
New Development Fees	Last Updated	Current Fee	Calculated 2023/24 Fee
			per EDU
Capacity Fees			
In District Boundary (1978)	2006	\$3,150	\$5,720
All Other MGSD Service Areas [1]	2006	\$3,800	\$5,720
GRGID Service Area			\$4,810
			per EDU
Connection Fees			
Residential	1978	\$275	discontinued
Commercial	1978	\$300	discontinued
GRGID	1990	\$179	discontinued
Total (One EDU) in MGSD Service Areas		\$4,075	\$5,720

Source: MGSD and HEC.

dev fees

[1] Currently, all service areas (including the GRGID service area) outside the 1978 District boundary pay the same capacity fee because the current capacity fee only includes costs associated with capacity at the wastewater treatment plant (no collection costs are included).

**Figure 4-1
Comparison Development Fees for a New Home**



SECTION 5: ADMINISTRATIVE FEE CALCULATIONS

Administrative fees are one-time, non-recurring, fees for providing a specific customer service that is not part of routine operations. The current administrative fees schedule is shown in **Table 5-1**.

Table 5-1
MGSD Administrative Fees

Fee Type	Fee
Annexation Fee (deposit)	\$1,000 per application (refundable if actual fee is less)
Special Meeting Fee (deposit)	\$250 per request
Lien Fee	\$110 per lien
Returned Check Fee	\$15 per returned item
Certified Mail Fee	\$10 per notice per account
Construction Inspection	\$55 per hour
TV Inspection	\$110 per hour
Vacuum/Jet Lateral Cleaning	\$400 per hour for Vactor Truck
Sewer Extension Design Services	
Engineering Fee (deposit)	\$300 applicant pays actual engineering and attorney
Attorney Fee	actual fee fees for design review of extensions
Commercial Plan Check Fee	\$100 (credited towards plan review fee)
Commercial Plan Review Fee	\$100 Up to 1.0 EDUs
	\$125 1.1 - 2.5 EDUs
	\$150 2.6 - 5.0 EDUs
	\$175 5.1 - 7.5 EDUs
	\$200 7.6 - 10.0 EDUs
	\$225 10.1 - 15.0 EDUs
	\$250 15.1 - 20.0 EDUs
	\$500 20.1 + EDUs

Source: MGSD fee schedules.

ad curr

The cost, upon which the administrative fees are based on, includes the time and hourly rate of District employees who perform the services plus any direct expenses incurred (such as equipment rental). Employees performing these services include field inspectors and system operators, management staff, and office staff. The number of hours spent on each type of service by each staff person in this analysis is based on experience with previous services and has been reviewed by District staff. The hourly staff rates that the analysis is based on, which include benefits for all the staff positions included in the fee calculations, are summarized in Appendix A **Table A-4**.

Tables 5-2 and **5-3** provide the calculations updating each administrative fee. The administrative fee for inspections is cost per hour. Employees working on construction inspections include the

field inspector⁵. When TV inspection is required, both the field inspector and collections worker are engaged in the service. The vacuum truck, used for laterals cleaning, has an hourly rate calculated in Appendix A **Table A-18**.

In addition to the fee calculation based on time and hourly rates, a markup factor of 15% is added. The markup factor captures the indirect costs of the services provided.

Some of the fees are deposits. These fees are based on the cost of a typical effort (which includes staff time, direct costs, and materials costs, some of which may be charged by other agencies) knowing that for some applicants an additional fee will be owed and for other applicants the District will provide reimbursement.

Table 5-2
Calculated Facilities Extension Fees

Position	Time (hours)	Hourly Rate (inc. benefits)	Staff Cost	Markup 15%	Total
Engineering (deposit)					
Administration	0.50	\$37	\$19	\$3	\$21
Engineer	2.00	\$180	\$360		\$360
Total Engineering					\$381
Plan Check Review (1.0 EDU)					
General Manager	1.50	\$84	\$126	\$19	\$145
Sr. Exec. Secretary	0.50	\$58	\$29	\$4	\$34
Administration	0.50	\$37	\$19	\$3	\$21
Total Plan Review					\$200

Source: MGSD financial documents and HEC.

fac fee

The new Capacity Commitment and Account Setup fees calculations are shown in Table 5-3. The Capacity Commitment fee is a per acre fee, increasing the old Acreage fee from \$600 per acre to \$755 per acre. A comparison of the current and new administrative fees is provided in **Table 5-4**. As with the capacity fees, the District should update the fee schedule each year to reflect current costs of doing business.

It is recommended that the resolution or ordinance adopting the updated fee schedule include annual updates to the fees using the change in the ENR CCI, 20-Cities Average, from May to May of the prior 12 months period.

⁵ Excludes inspections to determine the current number of EDUs at a property. These costs are considered ordinary operations costs. EDU counts are checked by inspection when structures are remodeled and/or there is a change in ownership and use of a structure.

**Table 5-3
Calculated Miscellaneous Fees**

Position	Time (hours)	Hourly Rate benefits)	Staff Cost	Markup 15%	Total
Annexation (deposit)					
General Manager	1.00	\$84	\$84	\$13	\$97
Controller	2.00	\$70	\$140	\$21	\$161
Administration	4.00	\$37	\$148	\$22	\$170
Attorney	0.50	\$275	\$138		\$138
Engineer	4.00	\$180	\$720		\$720
Total Annexation					\$1,285
Capacity Commitment Fee					
General Manager	0.25	\$84	\$21	\$3	\$24
Sr. Operations Supervisor	0.25	\$64	\$16	\$2	\$19
Engineer	0.25	\$180	\$45	\$7	\$52
Fee per Potential EDU					\$94
Mixed Use Potential EDUs per Acre [1]					8
Total Fee per Acre					\$755
Special Meeting (deposit)					
General Manager	0.50	\$84	\$42	\$6	\$48
Sr. Exec. Secretary	1.00	\$58	\$58	\$9	\$67
Administration	4.00	\$37	\$148	\$22	\$170
Attorney	1.00	\$275	\$275		\$275
Total Special Meeting					\$561
Account Setup Fee					
Sr. Exec. Secretary	0.50	\$58	\$29	\$4	\$34
Administration	0.50	\$37	\$19	\$3	\$21
Total Account Setup Fee					\$55
Lien					
Sr. Exec. Secretary	0.75	\$58	\$44	\$7	\$50
Administration	2.00	\$37	\$74	\$11	\$85
County Fee					\$15
Total Lien					\$150
Returned Check					
Administration	0.50	\$37	\$19	\$3	\$21
Bank Fee					\$5
Total Returned Check					\$26
Certified Mail					
Administration	0.50	\$37	\$19	\$3	\$21
Postal Service					\$20
Total Certified Mail					\$41

Source: MGSD financial documents and HEC.

adm fee

[1] Douglas County Master Plan Land Use Element (November 2017) states the Minden community has a residential density of 5 units per acre. The mixed use commercial zoning district is allowed to develop up to 16 units per acre.

**Table 5-4
Current and Calculated Administrative Fees**

Fee Type	Basis	Last Updated	Current Fee	Calculated 2023/24 Fee
Business Fees				
Annexation Fee (deposit)	per application	1978	\$1,000	\$1,285
Capacity Commitment Fee [1]	per acre	new		\$755
Special Meeting Fee (deposit)	per request	1978	\$250	\$561
Account Setup Fee	per account	new		\$55
Lien Fee	per lien	2020	\$110	\$150
Returned Check Fee	per returned check	1978	\$15	\$26
Certified Mail Fee	per mailing	1978	\$10	\$41
Inspection Fees				
Construction Inspection [2]	per hour	unknown	\$55	\$70
TV Inspection [3]	per hour	unknown	\$110	\$142
Vacuum/Jet Lateral Cleaning [4]	per hour	2006	\$400	\$455
Sewer Extension Design Services				
Engineering Fee (deposit)	per request	1978	\$300	\$381
Attorney Fee	per request	1978	actual fee	actual fee
Commercial Plan Check Fee (deposit)*			\$100	\$200
Commercial Plan Review Fee	per application	2012	\$100	\$200
1.1 - 2.5 EDUs			\$125	\$250
2.6 - 5.0 EDUs			\$150	\$300
5.1 - 7.5 EDUs			\$175	\$350
7.6 - 10.0 EDUs			\$200	\$400
10.1 - 15.0 EDUs			\$225	\$450
15.1 - 20.0 EDUs			\$250	\$500
20.1 + EDUs			\$500	\$1,000

Source: MGSD fee schedules.

op sum

[1] Collected at the same time as the annexation fee.

[2] Loaded hourly labor rate for an Inspector, plus markup of 15%.

[3] Loaded hourly labor rate for an Inspector and a Collection worker, plus markup of 15%.

[4] See Table A-18.

* Credited toward plan review fees.

APPENDIX A

RATE STUDY SUPPORT TABLES

Table A-1
MGSD 2023 Fee Study
Historical Service Area Population Estimates

Year 1-Jul	Population			Change
	Gardnerville	Minden	Total	
2000	3,528	2,818	6,346	
2001	3,851	2,861	6,712	5.8%
2002	4,065	2,830	6,895	2.7%
2003	4,316	2,870	7,186	4.2%
2004	5,067	2,945	8,012	11.5%
2005	5,165	2,983	8,148	1.7%
2006	5,550	3,234	8,784	7.8%
2007	5,394	3,239	8,633	-1.7%
2008	5,412	3,261	8,673	0.5%
2009	5,250	3,229	8,479	-2.2%
2010	5,983	3,213	9,196	8.5%
2011	5,469	2,984	8,453	-8.1%
2012	5,495	3,010	8,505	0.6%
2013	5,541	2,993	8,534	0.3%
2014	5,760	3,072	8,832	3.5%
2015	5,751	3,072	8,823	-0.1%
2016	5,780	3,110	8,890	0.8%
2017	5,693	3,191	8,884	-0.1%
2018	5,874	3,270	9,144	2.9%
2019	6,036	3,293	9,329	2.0%
2020	5,933	3,294	9,227	-1.1%
2021	6,188	3,460	9,648	4.6%
Change	2,660	642	3,302	
Avg. % Change	2.7%	1.0%	2.0%	

Source: Certified Population Estimates from the Nevada State Demographer, NV Dep't of Taxation. pop

Table A-2
MGSD 2023 Fee Study
20-Year Estimated Growth in EDUs

Year	Estimated New EDUs				Estimated Total EDUS			
	MGSD	GRGID	PVE	Total	MGSD	GRGID	PVE	Total
2021					7,489	2,536		10,025
2022	90			90	7,579	2,536		10,115
2023	80			80	7,659	2,536		10,195
2024	80	20	210	310	7,739	2,556	210	10,505
2025	80	20	0	100	7,819	2,576	210	10,605
2026	80	20	0	100	7,899	2,596	210	10,705
2027	80	20	0	100	7,979	2,616	210	10,805
2028	60	20	0	80	8,039	2,636	210	10,885
2029	60	20	0	80	8,099	2,656	210	10,965
2030	60	20	0	80	8,159	2,676	210	11,045
2031	60	20	0	80	8,219	2,696	210	11,125
2032	60	20	0	80	8,279	2,716	210	11,205
2033	60	20	0	80	8,339	2,736	210	11,285
2034	60	20	0	80	8,399	2,756	210	11,365
2035	60	20	0	80	8,459	2,776	210	11,445
2036	60	20	0	80	8,519	2,796	210	11,525
2037	60	20	0	80	8,579	2,816	210	11,605
2038	60	20	0	80	8,639	2,836	210	11,685
2039	60	20	0	80	8,699	2,856	210	11,765
2040	60	20	0	80	8,759	2,876	210	11,845
2041	60	20	0	80	8,819	2,896	210	11,925
Growth 2023-2041					1,160	360	210	1,730
Growth for New Facilities Fee [1]					1,160	360	0	1,520
New Customers Share								13%
Existing Customers Share								87%

Source: MGSD and HEC.

proj

[1] Pine View Estates will pay fees already determined by agreement.

Table A-3
MGSD 2023 Fee Study
Operating Expenses Detail

Operating Expenses	Fiscal Year Ending									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Personnel										budget
Plant & Collection System	\$811,724	\$863,535	\$884,749	\$987,229	\$923,870	\$999,709	\$1,098,437	\$903,736	\$952,355	\$985,251
Administration	\$165,273	\$174,118	\$180,834	\$196,826	\$189,746	\$190,104	\$222,578	\$394,046	\$485,401	\$883,278
Subtotal Personnel	\$976,997	\$1,037,653	\$1,065,583	\$1,184,055	\$1,113,616	\$1,189,813	\$1,321,015	\$1,297,782	\$1,437,756	\$1,868,529
Services & Supplies										
Insurance	\$84,498	\$80,717	\$82,264	\$76,484	\$76,651	\$85,898	\$94,083	\$93,952	\$99,249	\$136,059
Utilities	\$143,431	\$123,044	\$129,638	\$176,487	\$128,436	\$165,755	\$166,086	\$156,647	\$167,032	\$165,000
Supplies	\$42,402	\$63,787	\$48,610	\$63,149	\$55,556	\$67,923	\$71,390	\$298,447	\$98,103	\$7,000
Repairs & Maintenance	\$89,587	\$177,577	\$177,714	\$166,299	\$634,579	\$353,818	\$230,046	\$208,276	\$230,901	\$230,000
Other Plant & Collection Expenses	\$18,253	\$14,347	\$13,894	\$11,317	\$14,226	\$19,407	\$16,309	\$14,190	\$22,261	\$132,500
Office Supplies	\$18,978	\$19,102	\$19,174	\$22,919	\$22,999	\$23,700	\$32,119	\$35,620	\$84,995	\$14,500
Bank Charges	\$7,432	\$6,807	\$8,698	\$8,155	\$10,242	\$10,540	\$12,346	\$14,714	\$16,255	\$5,000
Postage	\$4,140	\$6,632	\$4,788	\$6,268	\$6,025	\$5,807	\$7,403	\$10,470	\$6,990	\$9,000
Telephone	\$11,359	\$10,314	\$11,434	\$11,426	\$12,278	\$12,360	\$16,172	\$15,359	\$17,442	\$15,000
Advertising & Publication	\$658	\$603	\$657	\$309	\$891	\$1,772	\$869	\$4,634	\$4,825	\$3,000
Travel	\$0	\$0	\$3,152	\$1,577	\$3,496	\$1,385	\$3,537	\$0	\$5,423	\$6,000
Other Administration	\$30,860	\$36,782	\$52,945	\$52,016	\$27,558	\$36,423	\$36,897	\$40,198	\$56,258	\$95,300
Filing Fees & Permits	\$14,820	\$18,897	\$19,700	\$14,953	\$12,939	\$13,686	\$13,014	\$9,117	\$7,138	\$13,800
Sludge Removal	\$16,338	\$17,658	\$4,384	\$5,369	\$9,985	\$19,512	\$19,416	\$19,947	\$16,470	\$23,000
Safety Expense	\$3,121	\$1,387	\$0	\$42,500	\$5,758	\$4,263	\$13,950	\$9,783	\$20,006	\$15,000
Laboratory Testing	\$18,933	\$10,849	\$19,836	\$13,178	\$18,284	\$15,262	\$17,761	\$32,854	\$18,062	\$21,500
Legal	\$21,514	\$41,117	\$34,051	\$54,216	\$26,057	\$26,494	\$12,956	\$17,475	\$18,867	\$40,000
Engineering	\$20,391	\$5,676	\$52,469	\$16,672	\$19,313	\$20,866	(\$12,639)	\$21,219	\$105,742	\$120,000
Accounting & Audit & IT	\$13,754	\$12,589	\$16,051	\$13,519	\$16,082	\$35,017	\$65,208	\$113,307	\$45,707	\$65,000
Subtotal Services & Supplies	\$560,469	\$647,885	\$699,459	\$756,813	\$1,101,355	\$919,888	\$816,923	\$1,116,209	\$1,041,726	\$1,116,659
Total Operating Expenses	\$1,537,466	\$1,685,538	\$1,765,042	\$1,940,868	\$2,214,971	\$2,109,701	\$2,137,938	\$2,413,991	\$2,479,482	\$2,985,188

Source: MGSD Audited Financial Statements.

audits detail

Table A-4
MGSD 2023 Fee Study
Estimated Hourly Pay with Benefits by Function / Position

Function	Bi-Weekly Pay	Monthly Pay	Hourly Pay	Benefits	Medical	Hourly Pay
				32%	16%	with Benefits
General Manager	\$4,558	\$9,115	\$57	\$18	\$9	\$84
Controller	\$3,776	\$7,551	\$47	\$15	\$8	\$70
Sr. Exec. Secretary	\$3,152	\$6,303	\$39	\$13	\$6	\$58
Administration	\$1,979	\$3,957	\$25	\$8	\$4	\$37
Lab/Operations	\$3,309	\$6,618	\$41	\$13	\$7	\$61
Sr. Operations						
Supervisor	\$3,486	\$6,972	\$44	\$14	\$7	\$64
Inspector	\$3,309	\$6,618	\$41	\$13	\$7	\$61
Operations	\$1,854	\$3,707	\$23	\$7	\$4	\$34
Operations	\$2,137	\$4,274	\$27	\$8	\$4	\$40
Operations	\$1,879	\$3,757	\$23	\$7	\$4	\$35
Operations	\$1,996	\$3,992	\$25	\$8	\$4	\$37
Collections	\$2,874	\$5,748	\$36	\$11	\$6	\$53
Collections	\$2,137	\$4,274	\$27	\$8	\$4	\$40

Source: MGSD December 2020.

wages

Table A-5
MGSD 2023 Fee Study
Historical Change in Operating Expenses

Operating Expenses	Fiscal Year Ending									Change 2014-2022	Annual % Change
	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Personnel	\$976,997	\$1,037,653	\$1,065,583	\$1,184,055	\$1,113,616	\$1,189,813	\$1,321,015	\$1,297,782	\$1,437,756	\$460,759	4.9%
Insurance	\$84,498	\$80,717	\$82,264	\$76,484	\$76,651	\$85,898	\$94,083	\$93,952	\$99,249	\$14,751	2.0%
Utilities	\$143,431	\$123,044	\$129,638	\$176,487	\$128,436	\$165,755	\$166,086	\$156,647	\$167,032	\$23,601	1.9%
Supplies	\$42,402	\$63,787	\$48,610	\$63,149	\$55,556	\$67,923	\$71,390	\$298,447	\$98,103	\$55,701	11.1%
Other Plant & Collection Expenses	\$18,253	\$14,347	\$13,894	\$11,317	\$14,226	\$19,407	\$16,309	\$14,190	\$22,261	\$4,008	2.5%
Office Supplies	\$18,978	\$19,102	\$19,174	\$22,919	\$22,999	\$23,700	\$32,119	\$35,620	\$84,995	\$66,017	20.6%
Bank Charges	\$7,432	\$6,807	\$8,698	\$8,155	\$10,242	\$10,540	\$12,346	\$14,714	\$16,255	\$8,823	10.3%
Postage	\$4,140	\$6,632	\$4,788	\$6,268	\$6,025	\$5,807	\$7,403	\$10,470	\$6,990	\$2,850	6.8%
Telephone	\$11,359	\$10,314	\$11,434	\$11,426	\$12,278	\$12,360	\$16,172	\$15,359	\$17,442	\$6,083	5.5%
Advertising & Publication	\$658	\$603	\$657	\$309	\$891	\$1,772	\$869	\$4,634	\$4,825	\$4,167	28.3%
Travel	\$0	\$0	\$3,152	\$1,577	\$3,496	\$1,385	\$3,537	\$0	\$5,423	\$5,423	n.a.
Other Administration	\$30,860	\$36,782	\$52,945	\$52,016	\$27,558	\$36,423	\$36,897	\$40,198	\$56,258	\$25,398	7.8%
Filing Fees & Permits	\$14,820	\$18,897	\$19,700	\$14,953	\$12,939	\$13,686	\$13,014	\$9,117	\$7,138	(\$7,682)	-8.7%
Sludge Removal	\$16,338	\$17,658	\$4,384	\$5,369	\$9,985	\$19,512	\$19,416	\$19,947	\$16,470	\$132	0.1%
Safety Expense	\$3,121	\$1,387	\$0	\$42,500	\$5,758	\$4,263	\$13,950	\$9,783	\$20,006	\$16,885	26.1%
Laboratory Testing	\$18,933	\$10,849	\$19,836	\$13,178	\$18,284	\$15,262	\$17,761	\$32,854	\$18,062	(\$871)	-0.6%
Legal	\$21,514	\$41,117	\$34,051	\$54,216	\$26,057	\$26,494	\$12,956	\$17,475	\$18,867	(\$2,647)	-1.6%
Accounting & Audit & IT	\$13,754	\$12,589	\$16,051	\$13,519	\$16,082	\$35,017	\$65,208	\$113,307	\$45,707	\$31,953	16.2%
Total [1]	\$1,427,488	\$1,502,285	\$1,534,859	\$1,757,897	\$1,561,079	\$1,735,017	\$1,920,531	\$2,184,496	\$2,142,839	\$715,351	5.2%
ENR Construction Cost Index 20-City [2]	9,800.0	10,039.0	10,337.1	10,702.8	11,068.6	11,268.5	11,436.0	12,112.0	13,111.0	\$3,311	3.7%
Consumer Price Index - West Region	241.6	244.3	248.2	254.5	263.7	271.0	274.2	288.3	313.5	\$72	3.3%

Source: MGSD, Engineering News Record, and Bureau of Labor Statics.

indices

[1] Excludes Repairs & Maintenance and Engineering costs which are affected by projects.

[2] Engineering News Record (ENR) Consumer Cost Index (CCI) change June 2000 to June 2022:

ENR CCI 2000	6,238	Change	<u>Annual Avg. % Change</u>
ENR CCI 2022	13,111	6,873	3.4%

Table A-6
MGSD 2023 Fee Study
Capital Improvements Plan

Capital Projects	Fiscal Year Ending						2024-2029
	2024	2025	2026	2027	2028	2029	TOTAL
<i>All figures in 2022 Dollars</i>							
Treatment Plant							
Sludge Thickening	\$2,679,000						\$2,679,000
Aeration Basin No. 4 and 5	\$741,000						\$741,000
Biogas Utilitization Study & Add'l FOG Storage	\$954,000						\$954,000
Total Treatment Plant	\$4,374,000	\$0	\$0	\$0	\$0	\$0	\$4,374,000
General Facilities							
Additional Office Space			\$300,000				\$300,000
Total General Facilities	\$0	\$0	\$300,000	\$0	\$0	\$0	\$300,000
Total Capital Improvements	\$4,374,000	\$0	\$300,000	\$0	\$0	\$0	\$4,674,000
New Customers Share	13%						\$607,620
Existing Customers Share	87%						\$4,066,380

Source: MGSD and the 2022 Master Plan, July 2022.

cip

Table A-7
MGSD 2023 Fee Study
Rehabilitation and Replacement Estimated Costs with Contingency

Items	Fiscal Year Ending						TOTAL
	2024	2025	2026	2027	2028	2029	
	Immediate	Immediate	Near-Term	Near-Term	Near-Term	Near-Term	
Treatment Plant	<i>Includes Contingency of 30%</i>						
	<i>All Figures in 2022 Dollars</i>						
Influent Screening and Pumping Station	\$0	\$772,200	\$0	\$0	\$0	\$0	\$772,200
Replace Hollow Metal Doors	\$0	\$0	\$0	\$0	\$0	\$13,000	\$13,000
Electrical Building	\$0	\$0	\$78,000	\$0	\$0	\$0	\$78,000
Grit Removal and Dewatering Building	\$45,500	\$0	\$0	\$0	\$136,500	\$0	\$182,000
Primary Clarifiers and Primary Sludge Pumping Stations	\$0	\$0	\$0	\$812,500	\$84,500	\$0	\$897,000
Odor Control Bed (Biofilter)	\$227,500	\$0	\$58,500	\$0	\$0	\$0	\$286,000
Trickling Filters and Trickling Filter Pump Station Building	\$19,500	\$0	\$0	\$0	\$0	\$702,000	\$721,500
Solids Contact Aeration Basin and Blower Building	\$0	\$0	\$0	\$0	\$169,000	\$0	\$169,000
Secondary Clarifiers #1,2,3, & RAS/WAS Pumping Station	\$0	\$715,000	\$0	\$0	\$97,500	\$0	\$812,500
Sludge Storage Tanks and Sludge Thickening Building	\$143,000	\$0	\$0	\$0	\$13,000	\$0	\$156,000
Anaerobic Digestion and Cogeneration	\$149,500	\$13,000	\$721,500	\$0	\$0	\$0	\$884,000
Disinfection and Non-Potable Water Reuse	\$13,000	\$0	\$0	\$0	\$0	\$175,500	\$188,500
Effluent Pump Stations	\$0	#####	\$0	\$0	\$0	\$0	\$1,046,500
Total Treatment Plant	\$598,000	#####	\$858,000	\$812,500	\$500,500	\$890,500	\$6,206,200
Collection System							
Eddy St. Main Rehab			\$500,000				\$500,000
Oxoby Line Rehab				\$300,000	\$300,000		\$600,000
Hwy 395/88 Interceptor Project	\$2,000,000	\$500,000					\$2,500,000
GRGID Interceptor Lining	\$1,000,000	\$200,000					\$1,200,000
Mains Lining Program				\$250,000	\$250,000	\$250,000	\$750,000
Total Collection System	\$3,000,000	\$700,000	\$500,000	\$550,000	\$550,000	\$250,000	\$5,550,000
General Facilities							
Replace Building Lighting	\$10,000	\$10,000					\$20,000
Replace Furniture and Carpet		\$100,000					\$100,000
Replace Door Frames -- all buildings			\$25,000	\$25,000	\$25,000	\$25,000	\$100,000
Heating Units			\$20,000	\$20,000	\$20,000	\$20,000	\$80,000
Roof Replacements				\$100,000	\$100,000	\$100,000	\$300,000
Total General Facilities	\$10,000	\$110,000	\$45,000	\$145,000	\$145,000	\$145,000	\$600,000
TOTAL Repair and Rehabilitation	\$6,608,000	#####	#####	#####	#####	#####	\$17,906,200

Source: MGSD Master Plan 2022, MGSD staff, and HEC February 2023.

R&R 30%

Table A-8
MGSD 2023 Fee Study
CIP Cost Estimates Inflated and Funding Sources

Capital Projects	Funding Source	Cost Share	Estimated Total	Fiscal Year Ending					
				2024	2025	2026	2027	2028	2029
NEW DEVELOPMENT			<i>Inflation Factor --></i>	<i>1.10</i>	<i>1.16</i>	<i>1.22</i>	<i>1.28</i>	<i>1.34</i>	<i>1.41</i>
Treatment Plant									
Sludge Thickening	Plant Expansion Cash	100%	\$2,953,598	\$2,953,598	\$0	\$0	\$0	\$0	\$0
Aeration Basin No. 4 and 5	Plant Expansion Cash	100%	\$816,953	\$816,953	\$0	\$0	\$0	\$0	\$0
Biogas Utilitization Study & Add'l FOG Storage	Plant Expansion Cash	100%	\$1,051,785	\$1,051,785	\$0	\$0	\$0	\$0	\$0
Additional Office Space	Plant Expansion Cash	100%	\$364,652	\$0	\$0	\$364,652	\$0	\$0	\$0
Total Treatment Plant			\$5,186,987	\$4,822,335	\$0	\$364,652	\$0	\$0	\$0

Source: MGSD Master Plan 2022 and HEC February 2023.

inf cip

Table A-9
MGSD 2023 Fee Study
R&R Estimated Costs Inflated and Funding Sources

Items	Cost Share	Estimated Total	Fiscal Year Ending					
			2024	2025	2026	2027	2028	2029
Treatment Plant		<i>Inflation Factor --></i>	<i>1.10</i>	<i>1.16</i>	<i>1.22</i>	<i>1.28</i>	<i>1.34</i>	<i>1.41</i>
Influent Screening and Pumping Station	New Debt (Ph.1)	\$893,918	\$0	\$893,918	\$0	\$0	\$0	\$0
Replace Hollow Metal Doors	Rates & Dev't Fees	\$18,292	\$0	\$0	\$0	\$0	\$0	\$18,292
Electrical Building	Rates & Dev't Fees	\$94,809	\$0	\$0	\$94,809	\$0	\$0	\$0
Grit Removal and Dewatering Building	Rates & Dev't Fees	\$233,087	\$50,164	\$0	\$0	\$0	\$182,923	\$0
Primary Clarifiers and Primary Sludge Pumping Stations	New Debt (Ph.2)	\$1,150,217	\$0	\$0	\$0	\$1,036,979	\$113,238	\$0
Odor Control Bed (Biofilter)	Odor Control Cash	\$321,926	\$250,819	\$0	\$71,107	\$0	\$0	\$0
Trickling Filters and Trickling Filter Pump Station Building	New Debt (Ph.2)	\$1,009,283	\$21,499	\$0	\$0	\$0	\$0	\$987,784
Solids Contact Aeration Basin and Blower Building	Rates & Dev't Fees	\$226,476	\$0	\$0	\$0	\$0	\$226,476	\$0
Secondary Clarifiers #1,2,3, & RAS/WAS Pumping Station	New Debt (Ph.1)	\$958,361	\$0	\$827,702	\$0	\$0	\$130,659	\$0
Sludge Storage Tanks and Sludge Thickening Building	New Debt (Ph.1)	\$175,079	\$157,658	\$0	\$0	\$0	\$17,421	\$0
Anaerobic Digestion and Cogeneration	New Debt (Ph.1)	\$1,056,861	\$164,824	\$15,049	\$876,988	\$0	\$0	\$0
Disinfection and Non-Potable Water Reuse	Rates & Dev't Fees	\$261,279	\$14,333	\$0	\$0	\$0	\$0	\$246,946
Effluent Pump Stations	New Debt (Ph.1)	\$1,211,455	\$0	\$1,211,455	\$0	\$0	\$0	\$0
Total Treatment Plant		\$7,611,043	\$659,295	\$2,948,124	\$1,042,904	\$1,036,979	\$670,718	\$1,253,023
Collection System								
Eddy St. Main Rehab	Rates & Dev't Fees	\$607,753	\$0	\$0	\$607,753	\$0	\$0	\$0
Oxoby Line Rehab	Rates & Dev't Fees	\$784,913	\$0	\$0	\$0	\$382,884	\$402,029	\$0
Hwy 395/88 Interceptor Project	New Debt	\$2,783,813	\$2,205,000	\$578,813	\$0	\$0	\$0	\$0
GRGD Interceptor Lining	New Debt	\$1,334,025	\$1,102,500	\$231,525	\$0	\$0	\$0	\$0
Mains Lining Program	Rates & Dev't Fees	\$1,005,869	\$0	\$0	\$0	\$319,070	\$335,024	\$351,775
Total Collection System		\$6,516,373	\$3,307,500	\$810,338	\$607,753	\$701,955	\$737,053	\$351,775
General Facilities								
Replace Building Lighting	Rates & Dev't Fees	\$22,601	\$11,025	\$11,576	\$0	\$0	\$0	\$0
Replace Furniture and Carpet	Rates & Dev't Fees	\$115,763	\$0	\$115,763	\$0	\$0	\$0	\$0
Replace Door Frames -- all buildings	Rates & Dev't Fees	\$130,975	\$0	\$0	\$30,388	\$31,907	\$33,502	\$35,178
Heating Units	Rates & Dev't Fees	\$104,780	\$0	\$0	\$24,310	\$25,526	\$26,802	\$28,142
Roof Replacements	Rates & Dev't Fees	\$402,348	\$0	\$0	\$0	\$127,628	\$134,010	\$140,710
Total General Facilities		\$776,466	\$11,025	\$127,339	\$54,698	\$185,061	\$194,314	\$204,030
TOTAL Repair and Rehabilitation		\$14,903,881	\$3,977,820	\$3,885,800	\$1,705,355	\$1,923,994	\$1,602,084	\$1,808,828
Cash Funded		\$4,330,871	\$326,340	\$127,339	\$828,368	\$887,016	\$1,340,766	\$821,043
Debt-Funded		\$10,573,011	\$3,651,480	\$3,758,461	\$876,988	\$1,036,979	\$261,319	\$987,784

Source: MGSD Master Plan 2022, MGSD staff, and HEC February 2023.

R&R inf

Table A-10
MGSD 2023 Fee Study
Existing Customers Share of R&R Costs

Facility Type	Funding Source	Cost Share	Estimated Total	Fiscal Year Ending					
				2024	2025	2026	2027	2028	2029
Treatment Plant									
Influent Screening and Pumping Station	New Debt (Ph.1)	87%	\$777,709	\$0	\$777,709	\$0	\$0	\$0	\$0
Replace Hollow Metal Doors	Rates	87%	\$15,914	\$0	\$0	\$0	\$0	\$0	\$15,914
Electrical Building	Rates	87%	\$82,484	\$0	\$0	\$82,484	\$0	\$0	\$0
Grit Removal and Dewatering Building	Rates	87%	\$202,786	\$43,642	\$0	\$0	\$0	\$159,143	\$0
Primary Clarifiers and Primary Sludge Pumping Stations	New Debt (Ph.2)	87%	\$1,000,689	\$0	\$0	\$0	\$902,172	\$98,517	\$0
Odor Control Bed (Biofilter)	Odor Control Cash	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Trickling Filters and Trickling Filter Pump Station Building	New Debt (Ph.2)	87%	\$878,076	\$18,704	\$0	\$0	\$0	\$0	\$859,373
Solids Contact Aeration Basin and Blower Building	Rates	87%	\$197,034	\$0	\$0	\$0	\$0	\$197,034	\$0
Secondary Clarifiers #1,2,3, & RAS/WAS Pumping Station	New Debt (Ph.1)	87%	\$833,774	\$0	\$720,101	\$0	\$0	\$113,674	\$0
Sludge Storage Tanks and Sludge Thickening Building	New Debt (Ph.1)	87%	\$152,319	\$137,162	\$0	\$0	\$0	\$15,156	\$0
Anaerobic Digestion and Cogeneration	New Debt (Ph.1)	87%	\$919,469	\$143,397	\$13,093	\$762,979	\$0	\$0	\$0
Disinfection and Non-Potable Water Reuse	Rates	87%	\$227,312	\$12,469	\$0	\$0	\$0	\$0	\$214,843
Effluent Pump Stations	New Debt (Ph.1)	87%	\$1,053,965	\$0	\$1,053,965	\$0	\$0	\$0	\$0
Total Treatment Plant			\$6,341,531	\$355,374	\$2,564,868	\$845,464	\$902,172	\$583,525	\$1,090,130
Collection System									
Eddy St. Main Rehab	Rates	87%	\$528,745	\$0	\$0	\$528,745	\$0	\$0	\$0
Oxoby Line Rehab	Rates	87%	\$682,874	\$0	\$0	\$0	\$333,109	\$349,765	\$0
Hwy 395/88 Interceptor Project	New Debt	87%	\$2,421,917	\$1,918,350	\$503,567	\$0	\$0	\$0	\$0
GRGID Interceptor Lining	New Debt	87%	\$1,160,602	\$959,175	\$201,427	\$0	\$0	\$0	\$0
Mains Lining Program	Rates	87%	\$875,106	\$0	\$0	\$0	\$277,591	\$291,471	\$306,044
Total Collection System			\$5,669,245	\$2,877,525	\$704,994	\$528,745	\$610,701	\$641,236	\$306,044
General Facilities									
Replace Building Lighting	Rates	87%	\$19,663	\$9,592	\$10,071	\$0	\$0	\$0	\$0
Replace Furniture and Carpet	Rates	87%	\$100,713	\$0	\$100,713	\$0	\$0	\$0	\$0
Replace Door Frames -- all buildings	Rates	87%	\$113,948	\$0	\$0	\$26,437	\$27,759	\$29,147	\$30,604
Heating Units	Rates	87%	\$91,158	\$0	\$0	\$21,150	\$22,207	\$23,318	\$24,484
Roof Replacements	Rates	87%	\$350,043	\$0	\$0	\$0	\$111,036	\$116,588	\$122,418
Total General Facilities			\$675,525	\$9,592	\$110,785	\$47,587	\$161,003	\$169,053	\$177,506
TOTAL Repair and Rehabilitation (Existing Customers Share)			\$12,686,301	\$3,242,491	\$3,380,646	\$1,421,796	\$1,673,875	\$1,393,813	\$1,573,680
Funding Sources									
New Debt - Treatment Plant			\$5,616,001	\$299,263	\$2,564,868	\$762,979	\$902,172	\$227,347	\$859,373
New Debt - Collection System			\$3,582,519	\$2,877,525	\$704,994	\$0	\$0	\$0	\$0
Rates (Unrestricted Cash)			\$3,487,782	\$65,703	\$110,785	\$658,817	\$771,704	\$1,166,466	\$714,307
Total Funding Sources			\$12,686,301	\$3,242,491	\$3,380,646	\$1,421,796	\$1,673,875	\$1,393,813	\$1,573,680

Source: MGSD Master Plan 2022, MGSD staff, and HEC February 2023.

exist share

Table A-11
MGSD 2023 Fee Study
New Development Cost Share

Facilities Type	Total	Fiscal Year Ending					
		2024	2025	2026	2027	2028	2029
Treatment Plant CIP	\$5,186,987	\$4,822,335	\$0	\$364,652	\$0	\$0	\$0
Treatment Plant R&R	\$1,370,452	\$305,354	\$399,810	\$204,551	\$158,865	\$112,454	\$189,417
Collection System R&R	\$847,129	\$429,975	\$105,344	\$79,008	\$91,254	\$95,817	\$45,731
Total New Dev't Costs	\$7,404,567	\$5,557,664	\$505,154	\$648,211	\$250,119	\$208,271	\$235,148
Funding Source							
Plant Expansion Cash	\$5,396,340	\$4,832,153	\$16,554	\$384,088	\$24,058	\$78,483	\$61,005
Treatment Plant Debt	\$839,173	\$44,717	\$383,256	\$114,008	\$134,807	\$33,971	\$128,412
Collection System Cash	\$311,810	\$0	\$0	\$79,008	\$91,254	\$95,817	\$45,731
Collection System Debt	\$535,319	\$429,975	\$105,344	\$0	\$0	\$0	\$0
Odor Control Cash	\$321,926	\$250,819	\$0	\$71,107	\$0	\$0	\$0
Total Funding Sources	\$7,404,567	\$5,557,664	\$505,154	\$648,211	\$250,119	\$208,271	\$235,148

Source: MGSD Master Plan 2022, MGSD staff, and HEC February 2023.

new share

Table A-12
MGSD 2023 Fee Study
Grease Digestion and Cogeneration Project Loan

Fiscal Year	Annual Payment	Remaining Principal
Principal	<i>Interest Free</i>	\$1,543,320
2010	\$77,166	\$1,466,154
2011	\$77,166	\$1,388,988
2012	\$77,166	\$1,311,822
2013	\$77,166	\$1,234,656
2014	\$77,166	\$1,157,490
2015	\$77,166	\$1,080,324
2016	\$77,166	\$1,003,158
2017	\$77,166	\$925,992
2018	\$77,166	\$848,826
2019	\$77,166	\$771,660
2020	\$77,166	\$694,494
2021	\$77,166	\$617,328
2022	\$77,166	\$540,162
2023	\$77,166	\$462,996
2024	\$77,166	\$385,830
2025	\$77,166	\$308,664
2026	\$77,166	\$231,498
2027	\$77,166	\$154,332
2028	\$77,166	\$77,166
2029	\$77,166	\$0

Source: MGSD, loan documents.

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Table A-13
MGSD 2023 Fee Study
Estimated New Depreciation

New Facilities	Useful Life (years)	Fiscal Year Ending						
		2023	2024	2025	2026	2027	2028	2029
Treatment Plant								
New Facilities Costs		\$1,885,000	\$5,481,630	\$2,948,124	\$1,042,904	\$1,036,979	\$670,718	\$1,253,023
New Depreciation	60	\$31,417	\$122,777	\$171,913	\$189,294	\$206,577	\$217,756	\$238,640
Collection System								
New Facilities Costs		\$1,200,000	\$3,307,500	\$810,338	\$607,753	\$701,955	\$737,053	\$351,775
New Depreciation	75	\$16,000	\$60,100	\$70,905	\$79,008	\$88,367	\$98,195	\$102,885
General								
New Facilities Costs		\$310,000	\$11,025	\$127,339	\$419,350	\$185,061	\$194,314	\$204,030
New Depreciation	10	\$31,000	\$32,103	\$44,836	\$86,771	\$105,277	\$124,709	\$145,112
Total New Depreciation		\$78,417	\$214,980	\$287,653	\$355,074	\$400,222	\$440,659	\$486,636

Source: MGSD and HEC.

new dep

Table A-14
MGSD 2023 Fee Study
Functional Allocation of Wastewater Costs

Expenditures	ACTUAL FY 2021-22	Allocation Basis	Customer- Related	Capacity- Related	Flow- Related	Unclassified
PERSONNEL						
Personnel (Plant & Collection)	\$952,355	Plant in Service	0%	80%	20%	0%
Personnel (Administration)	\$485,401	Customers	100%	0%	0%	0%
PLANT EXPENSES						
Safety	\$20,017	Utilities	0%	10%	90%	0%
Plant Supplies	\$95,142	Plant in Service	0%	80%	20%	0%
Utilities	\$129,094	Utilities	0%	10%	90%	0%
Repairs/Maintenance	\$195,785	Avg. of Classified	0%	0%	0%	100%
Other Plant Expenses	\$5,771	Customers	100%	0%	0%	0%
Sludge Removal	\$16,470	Plant in Service	0%	80%	20%	0%
Education	\$22,258	Customers	100%	0%	0%	0%
COLLECTION EXPENSES						
Collection Supplies	\$625	Plant in Service	0%	80%	20%	0%
Cleaning/TV/Repair	\$19,061	Plant in Service	0%	80%	20%	0%
Fuels	\$15,219	Plant in Service	0%	80%	20%	0%
Other Collection Expense	\$645	Avg. of Classified	0%	0%	0%	100%
LAB EXPENSES						
Lab Supplies	\$3,877	Utilities	0%	10%	90%	0%
Testing	\$11,367	Utilities	0%	10%	90%	0%
Permitting	\$1,600	Customers	100%	0%	0%	0%
Repairs/Maintenance	\$1,387	Plant in Service	0%	80%	20%	0%
RESERVOIR / EFFLUENT EXPENSES						
Repairs/Maintenance	\$22,680	Plant in Service	0%	80%	20%	0%
Utilities	\$28,269	Utilities	0%	10%	90%	0%
GENERAL & ADMINISTRATIVE EXPENSES						
Office Supplies	\$15,393	Customers	100%	0%	0%	0%
Bank Charges	\$145	Customers	100%	0%	0%	0%
Telephone	\$17,700	Customers	100%	0%	0%	0%
Postage	\$6,990	Customers	100%	0%	0%	0%
Advertising/Publication	\$5,022	Customers	100%	0%	0%	0%
Travel & Per Diem	\$6,149	Avg. of Classified	0%	0%	0%	100%
A/R Collection Expense	\$400	Customers	100%	0%	0%	0%
Insurance/Bonding	\$99,250	Avg. of Classified	0%	0%	0%	100%
Other Admin Expense	\$3,522	Avg. of Classified	0%	0%	0%	100%
Filing Fees/Permits	\$1,438	Plant in Service	0%	80%	20%	0%
Office Equipment	\$69,464	Customers	100%	0%	0%	0%
PROFESSIONAL FEES						
Legal	\$14,175	Avg. of Classified	0%	0%	0%	100%
Engineering	\$101,665	Plant in Service	0%	80%	20%	0%
Accounting/Audit	\$50,957	Avg. of Classified	0%	0%	0%	100%
Total Operating Costs FY 2022	\$2,419,294		\$630,144	\$1,000,098	\$418,571	\$370,482
Reallocation of Unclassified			\$113,947	\$180,845	\$75,689	
Allocation of Operating Expenses	\$2,419,294		\$744,091	\$1,180,943	\$494,260	
Depreciation	\$1,357,501	Plant in Service	0%	80%	20%	
			\$0	\$1,086,001	\$271,500	
TOTAL ALLOCATED EXPENSES	\$3,776,795		\$744,091	\$2,266,944	\$765,760	
Percentage of Allocation			20%	60%	20%	

Source: MGSD financials and HEC February 2023.

func alloc

Table A-15
MGSD 2023 Fee Study
Facility Improvements Fiscal Year 2023

Facilities Improvements	Cost Estimate in FY23 Budget	Funding Source
Belt Press Addition	\$1,000,000	Plant Expansion Cash
Collection System Rehabilitation (portion)	\$1,000,000	Collection System Cash
Collection System Rehabilitation (portion)	\$200,000	Unrestricted Cash
Camera Truck	\$310,000	Unrestricted Cash
Boiler Replacements	\$220,000	Unrestricted Cash
Pista Grit #1 Retrofit/Replace	\$375,000	Unrestricted Cash
Clarifier 1 & 2 Concrete	\$50,000	Unrestricted Cash
Digester 1 Concrete	\$240,000	Unrestricted Cash
Total Facilities Improvements Cost Est. for FY2023	\$3,395,000	

Source: MGCD FY2023 Budget.

23imps

Table A-16
MGSD 2023 Fee Study
Estimated New Development Fees with New Capacity Fee

Item	Estimated Inflator	Fiscal Year Ending					
		2024	2025	2026	2027	2028	2029
Capacity Fee							
MGSD	2.0%	\$5,720	\$5,830	\$5,950	\$6,070	\$6,190	\$6,310
GRGID	2.0%	\$4,810	\$4,910	\$5,010	\$5,110	\$5,210	\$5,310
Estimated New EDUs							
MGSD		80	80	80	60	60	60
GRGID		20	20	20	20	20	20
New Development Fee Revenue							
MGSD	[1]	\$1,350,025	\$466,400	\$476,000	\$364,200	\$371,400	\$378,600
GRGID		\$96,200	\$98,200	\$100,200	\$102,200	\$104,200	\$106,200
Estimated Fee Revenue		\$1,446,225	\$564,600	\$576,200	\$466,400	\$475,600	\$484,800

Source: MGSD and HEC February 2023.

cap rev

[1] In 2024, includes PVE connection and capacity fees, already determined by agreement.

Table A-17
MGSD 2023 Fee Study
Allocation of New Development Fees to Treatment Plant and Collection System

Item		Fiscal Year Ending					
		2024	2025	2026	2027	2028	2029
MGSD							
Treatment Plant	85%	\$388,960	\$396,440	\$404,600	\$309,570	\$315,690	\$321,810
Collection System	15%	\$68,640	\$69,960	\$71,400	\$54,630	\$55,710	\$56,790
Total MGSD		\$457,600	\$466,400	\$476,000	\$364,200	\$371,400	\$378,600
PVE							
Connection Fees							
Treatment Plant	30%	\$18,068					
Collection System	70%	\$42,158					
Subtotal Connection Fees		\$60,225	\$0	\$0	\$0	\$0	\$0
Capacity Fees							
Treatment Plant	85%	\$707,370					
Collection System	15%	\$124,830					
Subtotal Capacity Fees		\$832,200	\$0	\$0	\$0	\$0	\$0
Total PVE		\$892,425	\$0	\$0	\$0	\$0	\$0
GRGID							
Treatment Plant	100%	\$96,200	\$98,200	\$100,200	\$102,200	\$104,200	\$106,200
Total GRGID		\$96,200	\$98,200	\$100,200	\$102,200	\$104,200	\$106,200
Total Fees							
Treatment Plant		\$1,210,598	\$494,640	\$504,800	\$411,770	\$419,890	\$428,010
Collection System		\$235,628	\$69,960	\$71,400	\$54,630	\$55,710	\$56,790
TOTAL Estimated Fees		\$1,446,225	\$564,600	\$576,200	\$466,400	\$475,600	\$484,800

Source: HEC February 2023.

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Table A-18
MGSD 2023 Fee Study
Estimated Cost of Equipment per Hour

Equipment	Purchase Cost	Life	Cost per Year	Hours Used	Cost per Hour	Fuel, Maint. Costs	Insurance, Other Costs	Total Cost per Hour
		years				50%	80%	rounded
District Truck	\$23,000	10	\$2,300	1,040	\$2.21	\$1.11	\$1.77	\$5
Backhoe	\$86,000	10	\$8,600	520	\$16.54	\$8.27	\$13.23	\$40
Dump Truck	\$115,000	10	\$11,500	520	\$22.12	\$11.06	\$17.69	\$50
Vactor Truck	\$516,000	10	\$51,600	260	\$198.46	\$99.23	\$158.77	\$455

Source: HEC February 2023.

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