

Hazen *Technical Memorandum*

December 20, 2022

To: Ken Lykens, Meridian Metropolitan District

From: Roger Austin PE, Hazen and Sawyer
Tim Devine PE, Hazen and Sawyer
Jasmine Gamboa, Hazen and Sawyer
Alex Gerling, Hazen and Sawyer

Meridian Metropolitan District 2023 Water and Wastewater Rate Recommendation

Table of Contents

1. Executive Summary 4
2. Background 5
3. Historical Water Use and Key Assumptions 6
4. Expense Analysis 8
5. 2023 Water and Wastewater Rate Adjustment Recommendations 11
5.1 Existing Rate Structure 11
5.2 Proposed Rate Structure 11
5.2.1 Water Rates 11
5.2.2 Wastewater Rates 12
5.2.3 Historical Rate Adjustment Comparison 12
5.3 Projected Revenue 14
6. 2023 Monthly Allotment Recommendations 14
6.1 Single-Family Customer Usage Comparison 15
7. Projected Customer Impacts 17
7.1 Residential Impacts 17
7.2 Commercial User Rate Impacts 17
8. Benchmarking Survey 20

Table of Figures

Figure 3-1: Historical Annual Billed Water Usage by Customer Class 7
Figure 3-2: Historical Average Monthly Billed Water Usage by Customer Class Per Account 7
Figure 3-3: Historical Average Monthly Billed Water per Account for Irrigation 8
Figure 4-1: FY22 Budget Fixed and Variable Expenses 9
Figure 4-2: FY22 Budgeted Expenses by Service Type 9
Figure 4-3: FY22 Budget Fixed and Variable Expenses by Service Type 10
Figure 6-1: Single-Family Customer Usage Percentiles and Monthly Water Budget 16
Figure 7-1: Projected Monthly Water and Wastewater Expenses for Single-Family Residential Accounts Under the Existing and Proposed Rate Structures 17
Figure 7-2: Historical Water and Wastewater Charges and Projected 2022 Charges with Recommended Rate Adjustments for Office Building 18
Figure 7-3: Historical Water and Wastewater Charges and Projected 2022 Charges with Recommended Rate Adjustments for Satellite Provider 19
Figure 7-4: Historical Water and Wastewater Charges and Projected 2022 Charges with Recommended Rate Adjustments for Restaurant 19

Figure 7-5: Historical Water and Wastewater Charges and Projected 2022 Charges with Recommended Rate Adjustments for Hotel 20

Figure 8-1: Monthly Water Charges for Single-Family Accounts with Water Usage of 8,000 gallons for Meridian and Neighboring Communities 21

Figure 8-2: Monthly Wastewater Charges for Single-Family Accounts with 4,000 gallons of Indoor Water Usage for Meridian and Neighboring Communities 22

Figure 8-3: Combined Water and Wastewater Charges for Single-Family Accounts with 8,000 gallons of Water Use and 4,000 gallons of Indoor Water Use for Meridian and Neighboring Communities 23

Table of Tables

Table 1-1: Existing (2022) and Proposed Water and Wastewater Rates 4

Table 1-2: Summary of Proposed Monthly Water Budget 5

Table 3-1: Existing and Projected Number of Accounts by Customer Class 8

Table 4-1: 2022 Projected Revenue and Budgeted Expenses by Service Type..... 10

Table 5-1: Existing (2022) and Proposed Water and Wastewater Rates 12

Table 5-2: Historical Rate Increases 2014-2023 13

Table 5-3: Projected Revenue under Existing and Proposed Rates with Projected 2023 Accounts 14

Table 6-1: Summary of Proposed Monthly Water Budget 15

Table 6-2 Existing Annual Allotment Surcharge Structure 16

Table 6-3 Proposed Monthly Water Budget Surcharge Structure 16

1. Executive Summary

Hazen and Sawyer (Hazen) was hired to perform a water and wastewater rate analysis in advance of Meridian Metropolitan District’s (Meridian) 2023 rate establishment process. Hazen conducted a review of Meridian’s historic operating, maintenance, and capital expense data as well as historic revenue and billing data to assess the projected revenue requirements and projected operating revenues associated with Meridian’s water and wastewater utility service.

Hazen recommends modifying Meridian’s existing water rate structure such that the service charge includes the first 2,000 gallons rather than the first 3,000 gallons for single-family customers. Similarly, the recommended service charge will include first 4,000 gallons for multifamily and most commercial customers rather than the first 8,000 gallons. The proposed water rate structure for single-family customers includes a monthly service charge of \$15 and a volumetric rate of \$7.39/kgal (**Table 1-1**). Multifamily and commercial customers will have the same volumetric rate as single-family customers, but a higher service charge (\$54.00/kgal) as these accounts have larger taps and higher usage. Additionally, a 5% increase is proposed for irrigation and hydrant volumetric rates. The proposed volumetric rates are \$6.97 (irrigation) and \$15.53 (hydrants) (**Table 1-1**). For wastewater, Hazen recommends a 5% increase in the service charge and the volumetric rate for single-family, multifamily, and commercial customers (**Table 1-1**).

These recommendations follow the principles of rate setting, where service charges are associated with recovery of the fixed portion of operations and maintenance costs. Similarly, the volumetric rates are associated with the recovery of variable costs (such as chemical costs and electricity) for providing water or wastewater service.

Table 1-1: Existing (2022) and Proposed Water and Wastewater Rates

Rate Type	Customer Class	Existing Service Charge	Existing Gallons Included in Service Charge	Existing Volumetric Rate	Proposed Service Charge	Proposed Gallons Included in Service Charge	Proposed Volumetric Rate
		(\$/month)	(gal/month)	(\$/kgal use)	(\$/month)	(gal/month)	(\$/kgal use)
Water	Single-Family	\$15.00	3,000	\$7.39	\$15.00	2,000	\$7.39
	Multifamily	\$54.00	8,000	\$7.39	\$54.00	4,000	\$7.39
	Commercial						
	1"	\$30.00	4,000	\$7.39	\$30.00	2,000	\$7.39
	1.5"	\$54.00	8,000	\$7.39	\$54.00	4,000	\$7.39
	2"	\$78.00	12,000	\$7.39	\$78.00	6,000	\$7.39
	3"	\$162.00	24,000	\$7.39	\$162.00	12,000	\$7.39
	4"	\$318.00	48,000	\$7.39	\$318.00	24,000	\$7.39
	Irrigation	N/A	N/A	\$6.64	N/A	N/A	\$6.97
Hydrants	N/A	N/A	\$14.79	N/A	N/A	\$15.53	
Wastewater	Single-Family	\$16.00	N/A	\$6.89 ¹	\$16.80	N/A	\$7.23
	Multifamily	\$16.00	N/A	\$6.89	\$16.80	N/A	\$7.23
	Commercial – all meter sizes	\$16.00	N/A	\$6.89	\$16.80	N/A	\$7.23

¹ Based on average winter consumption (January through March)

In addition, Hazen proposes adjusting the single-family residential allocation system from an annual allotment to a monthly water budget. The proposed monthly water budget is based on the 75th percentile water usage from 2018 to 2021 for single-family customers. The indoor water usage for a single-family residence was estimated to be 4,000 gallons per month, based on winter usage (January through March) as those are months where irrigation is not anticipated. A 1,000-gallon buffer was added to the 4,000 gallon per month usage for a total monthly indoor water budget of 5,000 gallons. The proposed monthly outdoor, indoor, and total water budget is summarized in **Table 1-2**.

Table 1-2: Summary of Proposed Monthly Water Budget

Month	Monthly Outdoor Budget (gallons)	Monthly Indoor Budget (gallons)	Total Monthly Water Budget
January	-	5,000	5,000
February	-	5,000	5,000
March	-	5,000	5,000
April	3,000	5,000	8,000
May	6,000	5,000	11,000
June	11,000	5,000	16,000
July	12,000	5,000	17,000
August	12,000	5,000	17,000
September	11,000	5,000	16,000
October	5,000	5,000	10,000
November	-	5,000	5,000
December	-	5,000	5,000
Total	60,000	60,000	120,000

2. Background

Hazen and Sawyer (Hazen) was hired to perform a water and wastewater rate analysis in advance of Meridian Metropolitan District’s (Meridian) 2023 rate establishment process. Hazen has conducted a review of Meridian’s historic operating, maintenance, and capital expense data as well as historic revenue and billing data to assess the projected revenue requirements and projected operating revenues associated with Meridian’s water and wastewater utility service. The purpose of this memorandum is to:

- Summarize the findings of this evaluation regarding the adequacy of current water and wastewater user rates,
- Describe the methodology and key assumptions of the analysis, and
- Identify recommended adjustments to the current rate schedule in order to meet the system’s projected financial near- and long-term needs.

Financial and rate planning is a dynamic process used by utilities to ensure that both short-term and long-term strategic and operational goals are being met. A dynamic rate analysis is an integral component of sustainable utility planning, allowing decision makers to ascertain whether the existing rate structures and rate levels are sustainable to meet utility objectives and remain affordable for ratepayers. This analysis of utility financial health facilitates an evaluation of the current rate structure and its ability to meet

established and best practice objectives. The following goals were used to guide the analysis of Meridian water and wastewater service rates:

- Generate sufficient revenue to meet operating, maintenance, and repair costs, and capital program needs, while maintaining adequate reserves consistent with financial management goals,
- Reflect the true cost of providing service to customers,
- Conform to Federal and State regulations and guidelines and be based on sound utility rate setting principles,
- Recommend a rate structure that is consistent with industry norms and is equitable for all of Meridian’s ratepayers.

3. Historical Water Use and Key Assumptions

A key component in the evaluation of water and wastewater rates is an understanding of the current and historical water use and wastewater demand in the service area. An analysis of historic use in the Meridian service area, in addition to planned growth, were used to inform projections of near-term water usage. A review of billed water usage from the past four complete years (2018 to 2021) was completed to assess total water usage by customer category (i.e., Single-Family Residential, Multifamily Residential, Commercial), total number of customer accounts by category, average annual use per account, and to identify seasonal trends in demand.

One insight derived from this historical data review was the variability in usage based on climate conditions in the Meridian service area. Usage, especially irrigation usage, varies greatly from years that have higher levels of precipitation and cooler temperatures compared to hot dry years. As shown in **Figure 3-1** and **Figure 3-3**, the irrigation seasons of 2018, 2020, and 2021 are higher than those of the relatively wet year in 2019. This is further supported by the average water use by customer class per account showing a similar trend in **Figure 3-2**. Single-family average use per account decreased by 7% from 2020 to 2021, while multifamily average use per account did not change. On the contrary, average commercial water use increased by 3% between 2020 and 2021.

These variations in usage have led to combined billed water and wastewater revenues (not including water surcharge fees) ranging from \$5.0 million to \$6.2 million in the same four-year period. Historically, the Enterprise Fund balance has been used to account for any shortfalls in revenue projections due to reduced water consumption due to climate conditions.

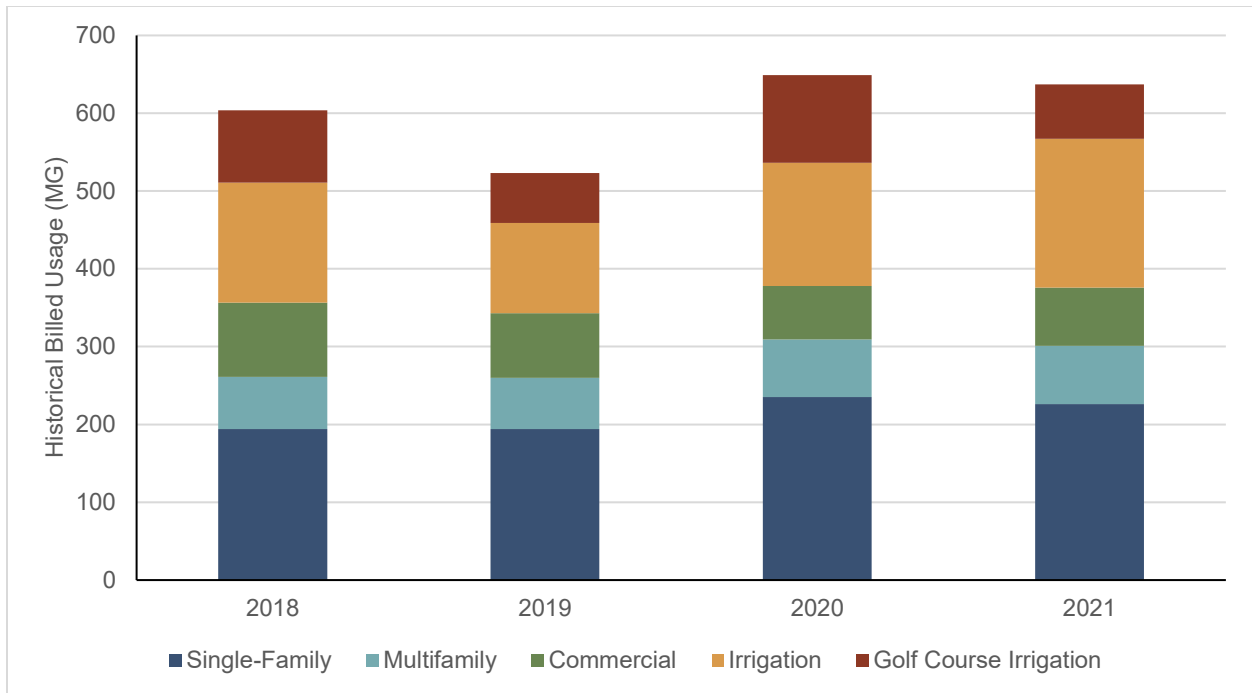


Figure 3-1: Historical Annual Billed Water Usage by Customer Class

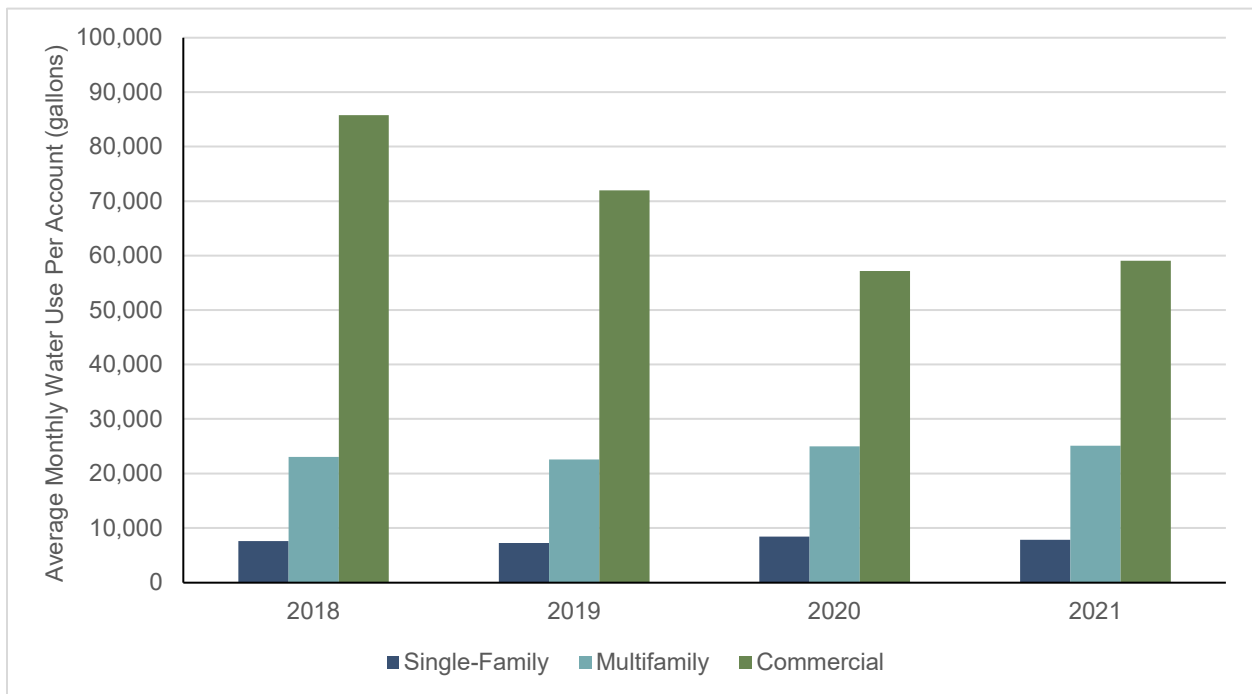


Figure 3-2: Historical Average Monthly Billed Water Usage by Customer Class Per Account²

² Golf course irrigation was omitted from Figure 3-2 due to scale. Average monthly water use per account for golf course irrigation was 7.7 MG, 5.3 MG, 9.4 MG, 5.9 MG for 2018, 2019, 2020, and 2021 respectively.

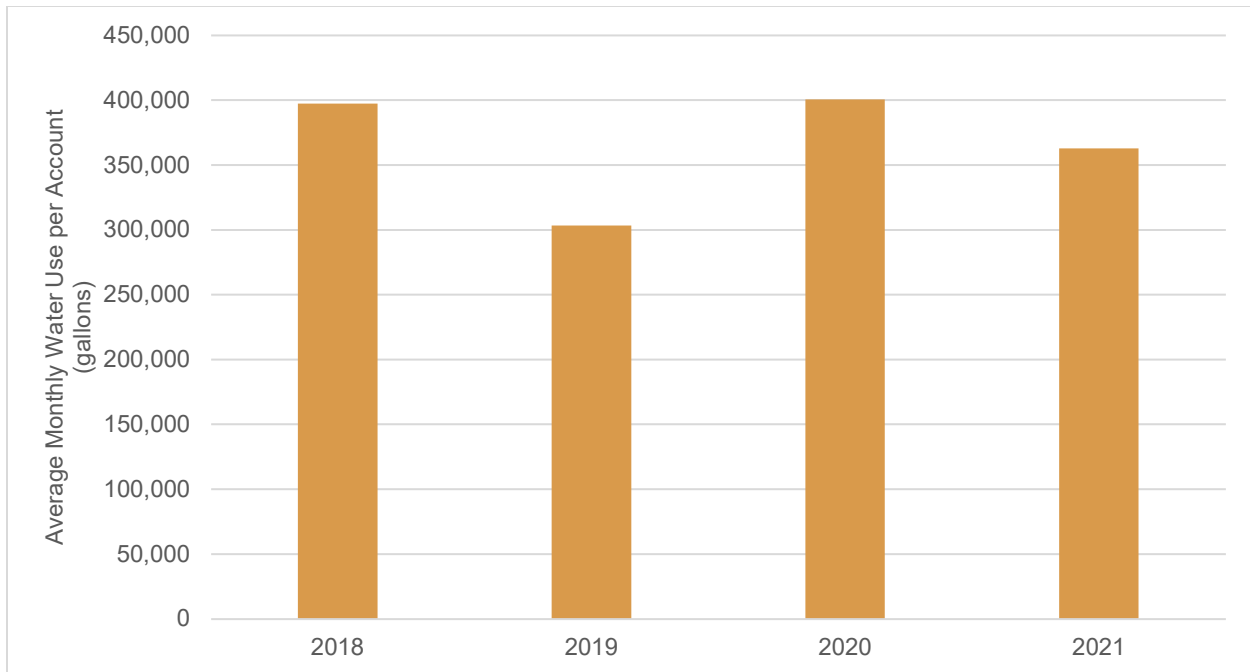


Figure 3-3: Historical Average Monthly Billed Water per Account for Irrigation

The number of accounts by customer class from the most recent available historical year (2021) and the projection for 2023 are detailed in **Table 3-1**. Single-family accounts are projected to increase by 140 accounts in 2023 while multifamily accounts increase by 57% with more modest growth in the other customer categories. The 2023 projected number of accounts represents the account numbers that were used to evaluate changing rate structures and revenue projections.

Table 3-1: Existing and Projected Number of Accounts by Customer Class

Customer Class	Accounts from Most Recent Complete Historical Year (2021)	2023 Projected Number of Accounts
Single-Family	2,411	2,551
Multifamily	252	395
Commercial	106	109
Irrigation	145	145
Golf Course Irrigation	1	1
Potable Irrigation	2	2

4. Expense Analysis

Meridian’s FY2022 budgeted expenses were analyzed and the costs to provide water, wastewater, and reclaimed service were allocated to the customer classification level. From the FY22 Enterprise Fund budget, the total expenses are approximately \$9.9 million, and were allocated as fixed or variable costs as well as by service (**Figure 4-1** and **Figure 4-2**). Fixed expenses remain generally consistent from month to month (e.g., accounting, insurance, legal, office overhead, water acquisition, etc.) and are not dependent on the volume of water produced or volume of wastewater treated, whereas variable costs

change based on the volume of water or wastewater treated (e.g., treatment chemicals, electric and gas, repairs, etc.). The primary expense categories were allocated in **Table 4-1**.

Table 4-1: Allocation of FY2022 Budgeted Expenses by Category

Expense Category	Water	Wastewater	Reclaimed	Fiber	Total
Administration	\$0.86M	\$0.77M	\$0.30M	\$0.17M	\$4.21M
Cost of Services	\$2.36M	\$1.77M	\$0.56M	\$0.001M	\$9.38M
Capital Projects	\$2.23M	-	\$0.12M	\$0.15M	\$5.00M
WISE Projects	\$0.61M	-	-	-	\$1.21M
Total	\$6.06M	\$2.54M	\$0.98M	\$0.32M	\$9.90M

A complete list of the FY2022 budgeted expenses and allocation are detailed in **Appendix A**.

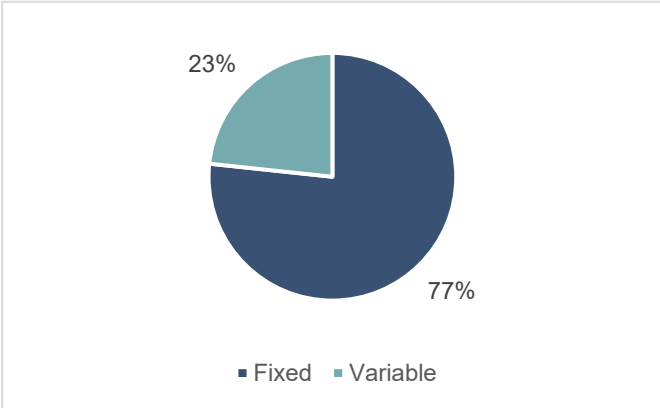


Figure 4-1: FY22 Budget Fixed and Variable Expenses

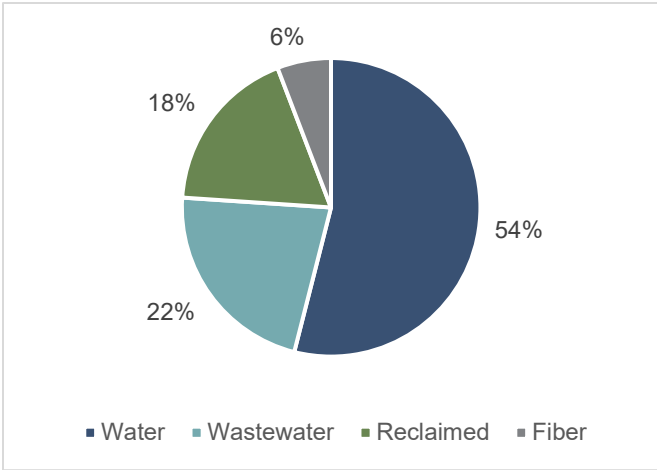


Figure 4-2: FY22 Budgeted Expenses by Service Type

The results of the expense allocation analysis showed that water expenses were the largest expense category in FY 2022 due to major capital projects, WISE water purchasing, and the water rights lease. The expense categories, in decreasing order, were then wastewater, reclaimed and fiber (**Figure 4-3**).

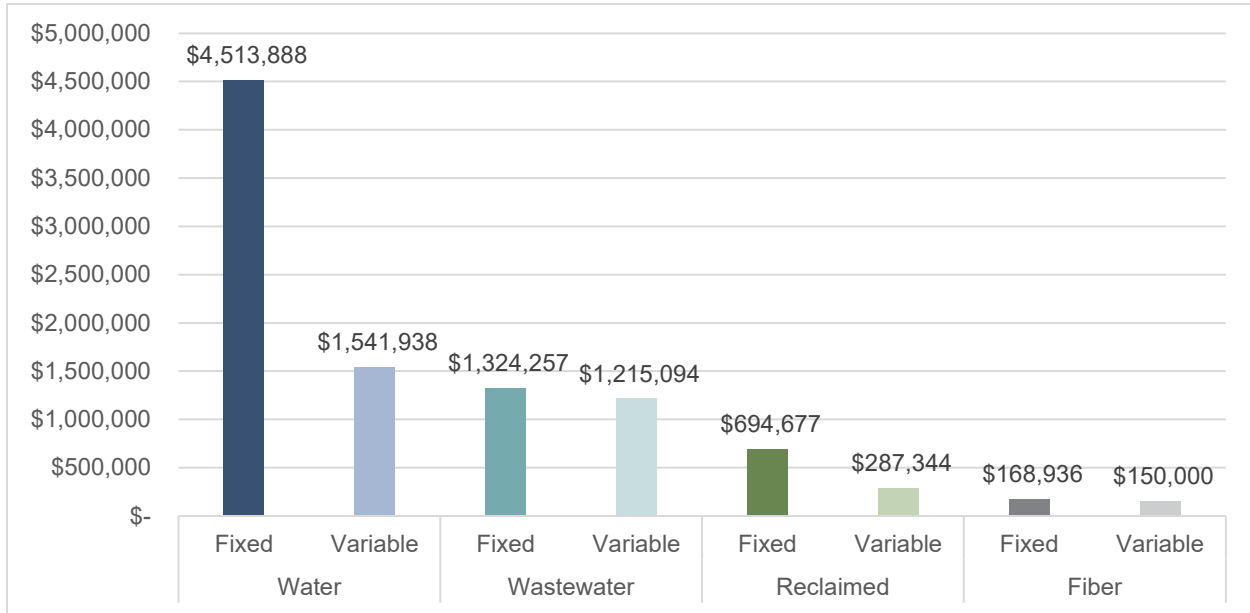


Figure 4-3: FY22 Budget Fixed and Variable Expenses by Service Type

Further, the 2022 projected revenues and expenses were split between water, wastewater, and reclaimed. The capital costs include related projects to each service type in both the Enterprise Fund (EF) and Capital Projects Reserve Fund (CPRF). The Capital projects currently funded out of the Enterprise fund are:

- Chloramines conversion,
- Conduit expansion,
- New wells (Meridian Village)
- Reclaim meters,
- Valve rehab, and
- Well rehab.

Under the current rate structure, a multiyear phased approach would be recommended to meet revenue requirements for each of the service types through enterprise fund based charges for service as opposed to a reliance on mill levy transfers (see **Table 4-2**).

Table 4-2: 2022 Projected Revenue and Budgeted Expenses by Service Type

Service	2022 Projected Revenue	2022 Budgeted Expenses	2022 Capital Costs	Projected Net Revenue
Water	\$2.9M	\$3.8M	\$6.0M	(\$6.9M)
Wastewater	\$2.6M	\$2.5M	\$0.6M	(\$0.5M)
Reclaimed	\$0.89M	\$0.86M	\$1.3M	(\$1.27M)

5. 2023 Water and Wastewater Rate Adjustment Recommendations

5.1 Existing Rate Structure

Meridian's existing water rate structure for single-family customers includes a monthly service charge of \$15 and monthly volumetric rate starting at \$7.39/kgal (**Table 5-1**). Currently the existing service charge includes the first 3,000 gallons of usage and therefore the volumetric rate is for every 1,000 gallons of usage above 3,000 gallons. Multifamily and commercial customers follow a similar rate structure, and the service charge and volumetric allowance increase with meter size (**Table 5-1**). In addition, there are tiered allotments for each customer class for usages in excess of the annual allotments.

Similarly, Meridian's existing wastewater rate structure for single-family, multifamily, and commercial customers includes a monthly service charge of \$16 and volumetric rate of \$6.89/kgal (**Table 5-1**). Likewise, multifamily and commercial customers currently pay a monthly volumetric rate of \$6.56/kgal (**Table 5-1**). The volumetric rate for single family customers is based on indoor water use. Indoor water use is defined as the average water consumption during winter months (January through March) when irrigation is not likely.

5.2 Proposed Rate Structure

5.2.1 Water Rates

Hazen recommends modifying Meridian's water rate structure such that the service charge includes the first 2,000 gallons rather than the first 3,000 gallons for single-family customers. Similarly, the service charge would include the first 4,000 gallons rather than the first 8,000 gallons for multifamily and most commercial customers. Removing some gallons from the service charge incentivizes conservation efforts and more accurately reflects individual account water use for efficient water users. Changing the volume provided with the service charge does not increase bills for low water use customers and facilitates usage-based cost recovery for higher use customers. Service charges are typically associated with recovery of the portion of operations and maintenance costs that are fixed and would be encumbered even without any water served to an individual user.

Hazen's proposed water rate structure for single-family customers includes a monthly service charge of \$15 and no changes to the current volumetric rate of \$7.39/kgal (**Table 5-1**). However, the gallons included in the service charge of \$15 decreases from 3,000 to 2,000 gallons. For multifamily and commercial customers, Hazen proposes no changes to the service charge or volumetric rate (\$54 and \$7.39/kgal, respectively) and a reduction in the gallons included in the service charge from 8,000 gallons to 4,000 gallons. Additionally, a 5% increase is proposed for irrigation and hydrant customers to assist in covering forecasted expenses. (**Table 5-1**). The proposed volumetric rates are \$6.97 (irrigation) and \$15.53 (hydrants).

5.2.2 Wastewater Rates

Currently, Meridian’s wastewater rate structure for single-family customers is a service charge with a volumetric rate based on indoor water use. Similarly, multifamily and commercial customers have a service charge and volumetric rate (**Table 5-1**).

Hazen proposes a uniform service charge of \$16.80 and volumetric rate of \$7.23, a 5% increase to the existing base rate and volumetric rate, respectively, for single-family, multifamily and commercial customers (**Table 5-1**). The 5% increase to the volumetric rates ensures adequate revenue to cover anticipated operating and forecasted capital expenses.

5.2.3 Historical Rate Adjustment Comparison

The historical rates and annual increases are detailed in **Table 5-2**. From 2014 through 2022, the annual average rate increase for potable water was 4%, with some years incurring a 0% increases and other years incurring up to a 11% increase (2015). Incremental annual rate increases prevent large increases in a single-year and large bill impacts for customers. In addition, annual rate increases account for an escalation of costs to provide wastewater and water services including inflation.

Table 5-1: Existing (2022) and Proposed Water and Wastewater Rates

Rate Type	Customer Class	Existing Service Charge (\$/month)	Existing Gallons Included in Service Charge (gal/month)	Existing Volumetric Rate (\$/kgal use)	Proposed Service Charge (\$/month)	Proposed Gallons Included in Service Charge (gal/month)	Proposed Volumetric Rate (\$/kgal use)
Water	Single-Family	\$15.00	3,000	\$7.39	\$15.00	2,000	\$7.39
	Multifamily	\$54.00	8,000	\$7.39	\$54.00	4,000	\$7.39
	Commercial						
	1"	\$30.00	4,000	\$7.39	\$30.00	2,000	\$7.39
	1.5"	\$54.00	8,000	\$7.39	\$54.00	4,000	\$7.39
	2"	\$78.00	12,000	\$7.39	\$78.00	6,000	\$7.39
	3"	\$162.00	24,000	\$7.39	\$162.00	12,000	\$7.39
	4"	\$318.00	48,000	\$7.39	\$318.00	24,000	\$7.39
	Irrigation	N/A	N/A	\$6.64	N/A	N/A	\$6.97
Hydrants	N/A	N/A	\$14.79	N/A	N/A	\$15.53	
Wastewater	Single-Family	\$16.00	N/A	\$6.89 ³	\$16.80	N/A	\$7.23
	Multifamily	\$16.00	N/A	\$6.89	\$16.80	N/A	\$7.23
	Commercial – all meter sizes	\$16.00	N/A	\$6.89	\$16.80	N/A	\$7.23

³ Based on average winter consumption (January through March)



Table 5-2: Historical Rate Increases 2014-2023⁴

Type	2014		2015		2016		2017		2018	
	Rate ⁵	Increase	Rate ⁴	Increase	Rate ⁴	Increase	Rate ⁴	Increase	Rate ⁴	Increase
Hydrants	\$10.56	0%	\$11.70	11%	\$11.70	0%	\$11.70	0%	\$12.52	7%
Potable	\$5.28	0%	\$5.85	11%	\$5.85	0%	\$5.85	0%	\$6.26	7%
Irrigation	\$4.95	0%	\$5.20	5%	\$5.20	0%	\$5.46	5%	\$5.68	4%
Wastewater										
Commercial	\$4.95	0%	\$4.95		\$4.95	0%	\$5.45	10%	\$5.67	4%
Single-Family			\$45.00 ⁶							

Type	2019		2020		2021		2022		2023 Proposed	
	Rate ⁴	Increase	Rate ⁴	Increase	Rate ⁴	Increase	Rate ⁴	Increase	Rate ⁴	Increase
Hydrants	\$12.90	3%	\$13.55	5%	\$14.09	4%	\$14.79	5%	\$15.53	5%
Potable	\$6.45	3%	\$6.77	5%	\$7.04	4%	\$7.39	5%	\$7.39	0%
Irrigation	\$5.96	5%	\$6.14	3%	\$6.32	3%	\$6.64	5%	\$6.97	5%
Wastewater										
Commercial	\$5.95	5%	\$6.31	6%	\$6.56	4%	\$16.00 + \$6.89	5%	\$16.80 + \$7.23	5%
Single-Family			\$47.70 ⁵		\$47.70 ⁵	0%	\$16.00 + \$6.89 ⁷	-	\$16.80 + \$7.23 ⁸	5%

⁴ Average annual water and wastewater rates increased by 5.09% and 5.64% respectively from 2014 to 2018, according to the 2019 AWWA Biennial Water and Sewer Rates Survey.

⁵ Rate per 1,000 gallons of consumption

⁶ Flat Rate

⁷ The Single-Family wastewater monthly rate includes a base charge of \$16.00 plus a volumetric rate of \$6.89 per 1,000 gallons based on average winter consumption (January through March)

⁸ The Single-Family wastewater monthly rate includes a base charge of \$16.80 plus a volumetric rate of \$7.23 per 1,000 gallons based on average winter consumption (January through March)



5.3 Projected Revenue

Based on the existing and projected customer accounts (Table 3-1) and the proposed rate recommendations (Table 5-3), the 2022 projected revenue is detailed in Table 5-3. The revenue was projected based off volumes during a wet year as a conservative estimate. Overall, total water and wastewater revenues are projected to increase by 9.8% with the proposed rates⁹.

Table 5-3: Projected Revenue under Existing and Proposed Rates with Projected 2023 Accounts

Customer Class	Projected Revenue under Existing Rates with Projected 2023 Accounts	Projected Revenue under Proposed Rates with Projected 2023 Accounts	Difference (\$)	Difference (%)
Water Sales - Potable				
Single-Family	\$1,546,075	\$1,772,387		
Multifamily	\$853,330	\$993,445		
Commercial	\$571,360	\$610,025		
Hydrants	\$136,970	\$136,970		
Potable Irrigation	\$45,471	\$45,471		
Total	\$3,153,207	\$3,558,297	\$405,090	12.8%
Water Sales - Irrigation				
Golf Course Irrigation	\$159,833	\$167,825		
Irrigation	\$1,225,963	\$1,287,261		
Total	\$1,385,796	\$1,455,086	\$69,290	5.0%
Wastewater Sales				
Single-Family	\$1,333,981	\$1,400,681		
Multifamily	\$818,222	\$938,765		
Commercial	\$530,752	\$579,263		
Total	\$2,682,954	\$2,918,709	\$235,754	8.8%
Total Sales	\$7,221,957	\$7,932,091	\$710,134	9.8%

6. 2023 Monthly Allotment Recommendations

The existing annual water allocation system includes 170,000 gallons for single-family customers. The proposed allocation system parses the annual allotment to gallons per month based on the 75th percentile water usage of single-family customers. The indoor water usage for a single-family residence was estimated to be 4,000 gallons per month, based on winter usage (January through March) as those are months where irrigation is not anticipated. A 1,000-gallon buffer was added to the 4,000 gallon per month usage for a total monthly indoor water budget of 5,000 gallons. The monthly outdoor, indoor, and total water budget is summarized in Table 6-1.

⁹ Revenue estimates for commercial customers are based on rates for 1.5” meter size.

Table 6-1: Summary of Proposed Monthly Water Budget

Month	Monthly Outdoor Budget (gallons)	Monthly Indoor Budget (gallons)	Total Monthly Water Budget
January	-	5,000	5,000
February	-	5,000	5,000
March	-	5,000	5,000
April	3,000	5,000	8,000
May	6,000	5,000	11,000
June	11,000	5,000	16,000
July	12,000	5,000	17,000
August	12,000	5,000	17,000
September	11,000	5,000	16,000
October	5,000	5,000	10,000
November	-	5,000	5,000
December	-	5,000	5,000
Total	60,000	60,000	120,000

6.1 Single-Family Customer Usage Comparison

The proposed monthly water budget was compared to single-family customer water usage from 2018 – 2021 billing data (**Figure 6-1**). With the proposed monthly water budget, a new surcharge structure was developed. Customer usage was categorized into three tiers: Tier 1 was up to 100% of the monthly allotment, Tier 2 was 101 – 150% of the monthly allotment and Tier 3 was 151%+ of the monthly allotment. If a customer exceeds the monthly water budget, the exceeding volume of water would be charged a higher rate which increases at the third tier as well. The existing surcharge structure for exceeding the current annual allotment is shown in **Table 6-2**. The proposed monthly surcharge structure is shown in **Table 6-3**. Based on the proposed surcharge structure and 2021 usage and billing data, the estimated single-family surcharges would increase from \$34k to \$62k. The majority of the surcharges would be on the top 15% of single-family water users while the average single-family customers would not exceed the monthly water budgets.

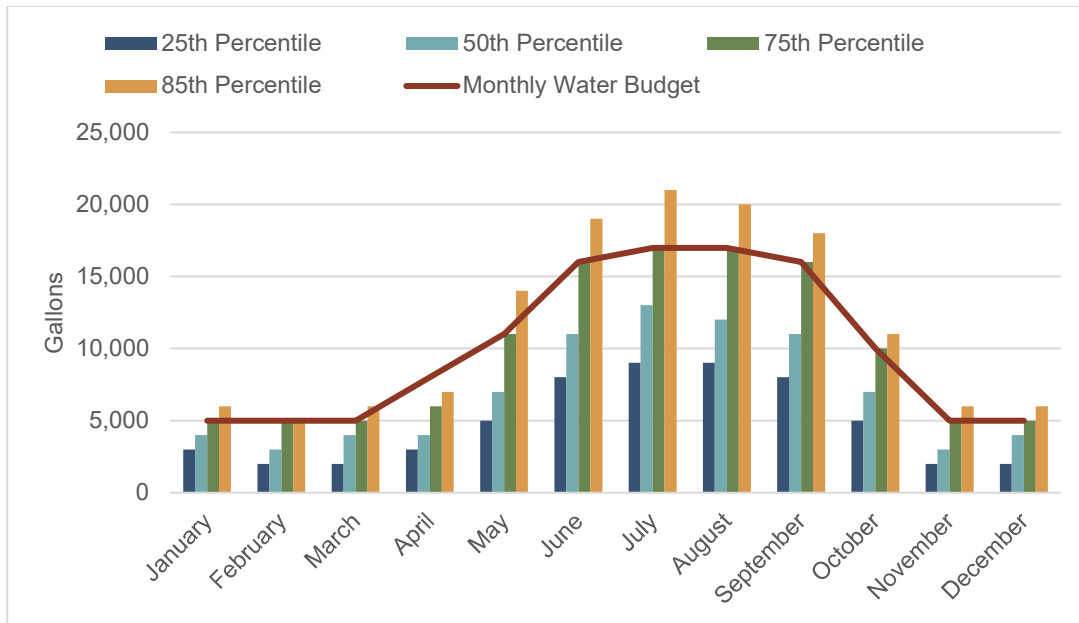


Figure 6-1: Single-Family Customer Usage Percentiles and Monthly Water Budget

Table 6-2: Existing Annual Allotment Surcharge Structure

Customer Tiers	Percent of <u>Annual</u> Allotment	Rate Multiplier	Volumetric Rate
Tier 1	Usage ≤ 100%	1	\$7.39
Tier 2	100% < Usage ≤ 150%	2	\$14.78
Tier 3	Usage > 150%	3	\$22.17

Table 6-3: Proposed Monthly Water Budget Surcharge Structure

Customer Tiers	Percent of <u>Monthly</u> Water Budget	Rate Multiplier	Volumetric Rate
Tier 1	Usage ≤ 100%	1	\$7.39
Tier 2	100% < Usage ≤ 150%	1.25	\$9.24
Tier 3	Usage > 150%	1.50	\$11.09

7. Projected Customer Impacts

7.1 Residential Impacts

An analysis on the projected changes to the annual water and wastewater costs for typical residential users was performed to evaluate the financial impact of the proposed rate structure changes. The existing and proposed water, wastewater, and total rates for the average single-family customer are shown in **Figure 7-1**. The average water bill will increase by \$7.39, and the average wastewater bill will increase by \$2.16. Overall, the total water and wastewater bill will increase by \$9.55. **Figure 7-1** assumes 8,000 gallons of monthly water use and 4,000 gallons of indoor water use to calculate the average rates. (The actual rate changes will vary by average indoor (winter) usage and the total water usage for each residential user.)

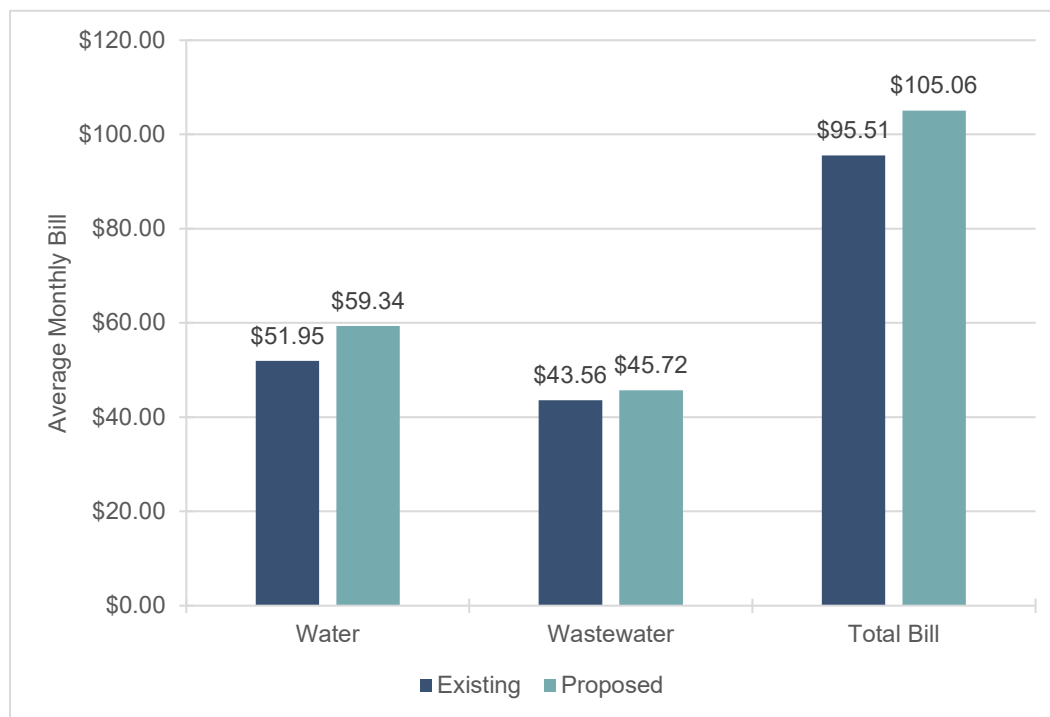


Figure 7-1: Projected Monthly Water and Wastewater Expenses for Single-Family Residential Accounts Under the Existing and Proposed Rate Structures

7.2 Commercial User Rate Impacts

An analysis of the impacts of the proposed change in rate structure for commercial users was also performed to evaluate changes in typical commercial account charges for water and wastewater service. The annual commercial impacts for an office building, a satellite provider, a restaurant, and a hotel were used as examples of typical commercial users and are detailed in **Figure 7-2** through **Figure 7-5**.

The annual water and wastewater billing impacts for these commercial accounts were projected for 2023 based on billing data from 2018-2021, though there was variation in usage over these 4 years due to the pandemic and climate patterns. Usage was calculated by averaging historic water and wastewater usage from 2018-2021 and projected 2023 charges were calculated using the proposed rate structure (**Table 5-1**). The largest increase in total charges will be for a restaurant account with an increase of 41% from 2021 charges. Comparatively, an office building is projected to experience a 2.9% increase from 2021 to 2023, and the projected change for a satellite provider and hotel are 17% increase and 14% decrease, respectively. In particular, the example restaurant account will likely see the largest percent increase in 2023 because it was at low capacity for the majority of 2021. To further illustrate this, the difference in the projected 2023 billing and historic 2018 billings are +15% for the office building, +6% for the satellite provider, -6% for the restaurant, and -37% for the hotel. This demonstrates that the change in billing structure has a much more modest impact on anticipated commercial billings when compared to changes in usage.

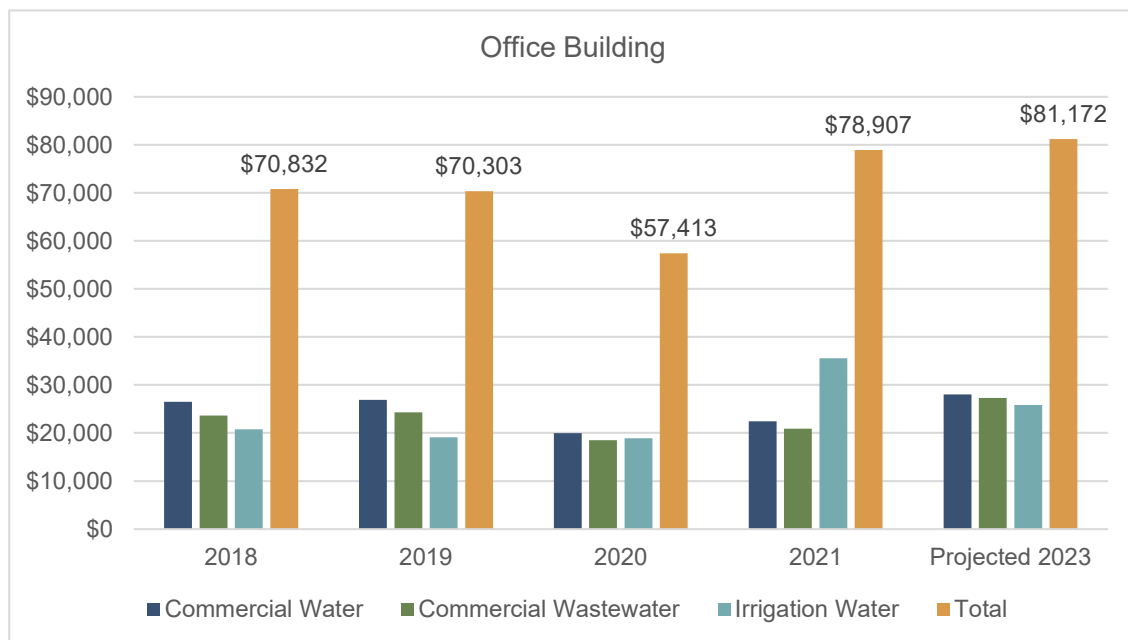


Figure 7-2: Historical Water and Wastewater Charges and Projected 2022 Charges with Recommended Rate Adjustments for Office Building

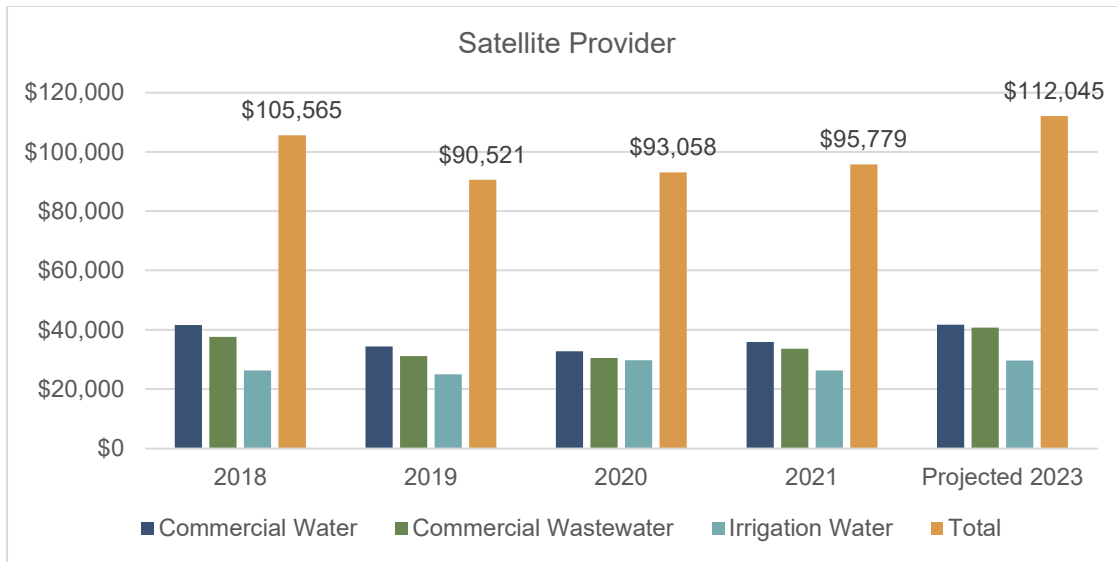


Figure 7-3: Historical Water and Wastewater Charges and Projected 2022 Charges with Recommended Rate Adjustments for Satellite Provider

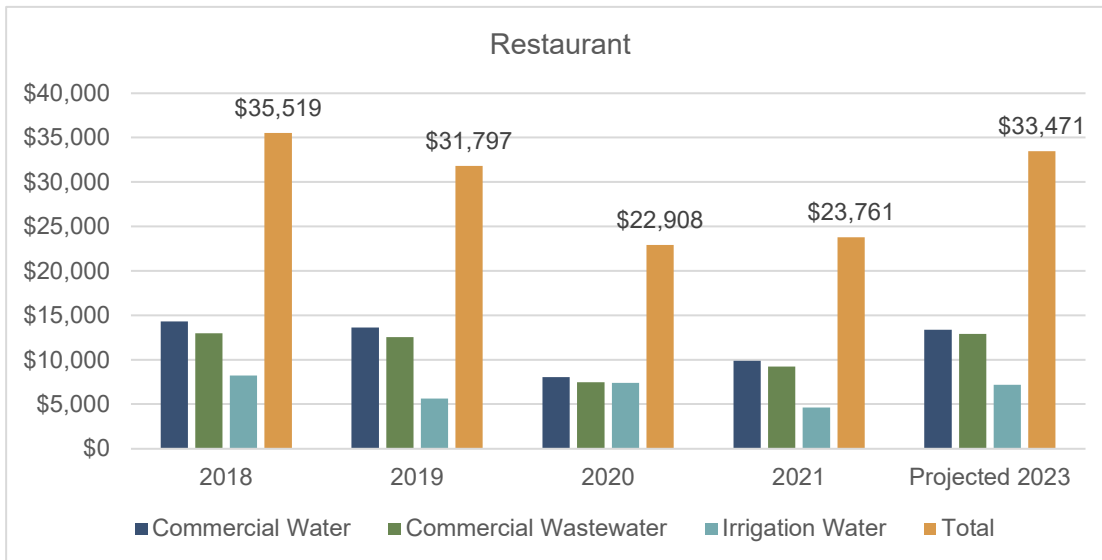


Figure 7-4: Historical Water and Wastewater Charges and Projected 2022 Charges with Recommended Rate Adjustments for Restaurant

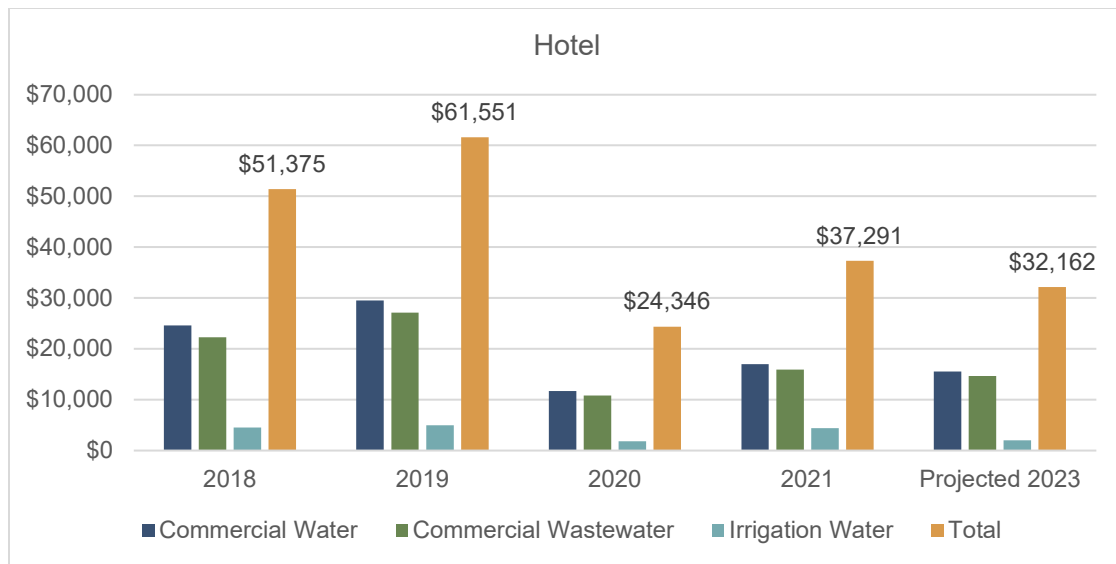


Figure 7-5: Historical Water and Wastewater Charges and Projected 2022 Charges with Recommended Rate Adjustments for Hotel

8. Benchmarking Survey

A benchmarking survey was conducted to compare Meridian’s existing and proposed water and wastewater rates to several neighboring communities. The survey compares 2022 water and wastewater rates of nearby communities to the current rates and the proposed 2023 water and wastewater rates for Meridian. It is likely that many of the communities will also increase their water and wastewater rates in 2023, however those rates are not yet publicly available.

The survey is based on 8,000 gallons of monthly drinking water use, which is representative of Meridian’s average single-family monthly water use from 2018-2021. To compare monthly wastewater rates, an average of 4,000 gallons was used for indoor water use or winter quarter average; 8,000 gallons was used for communities that bill wastewater for water usage year-round (of the surveyed communities, Castle Pines North Metro District and Inverness Water and Sanitation District are the only communities that bill wastewater based on actual water usage year-round). Meridian’s current single-family residential monthly water charge is the second lowest of all nearby communities; the proposed monthly water bill would bring Meridian’s monthly water bill about \$9 above Centennial Water District’s but would still be the fourth lowest of the surrounding districts (**Figure 8-1**).

For monthly wastewater rates, Meridian currently has the sixth highest rate of surrounding communities (**Figure 8-2**). The proposed monthly wastewater bill keeps Meridian in the same position relative to surrounding communities with approximately a \$2 increase. With water and wastewater rates combined, Meridian’s current rates are the second lowest of all utilities analyzed. The proposed rates would increase rates by \$10 to the fourth lowest, with rates higher than Centennial Water and Sanitation District, the Pinery Water and Wastewater District, and Castle Rock Water (**Figure 8-3**).

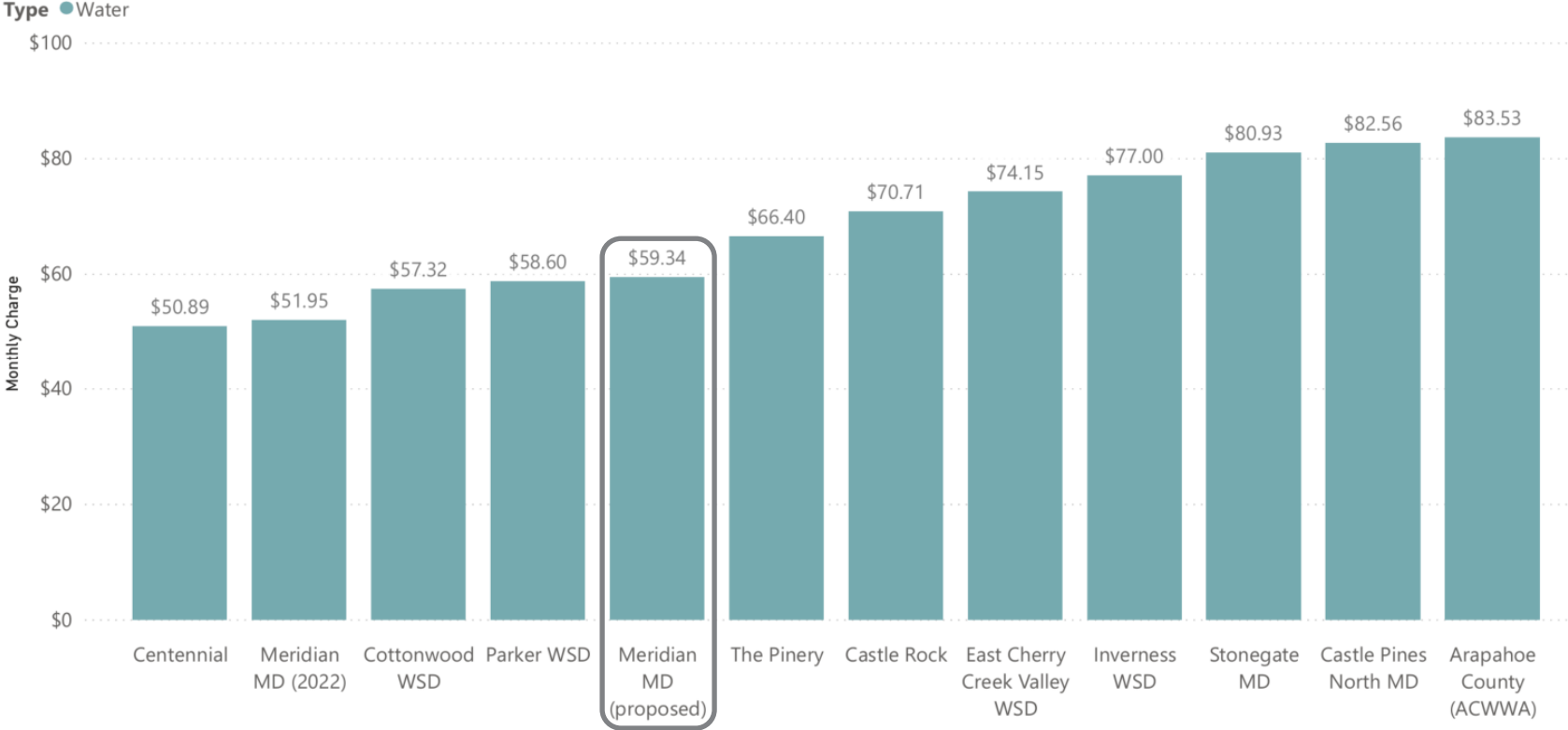


Figure 8-1: Monthly Water Charges for Single-Family Accounts with Water Usage of 8,000 gallons for Meridian and Neighboring Communities

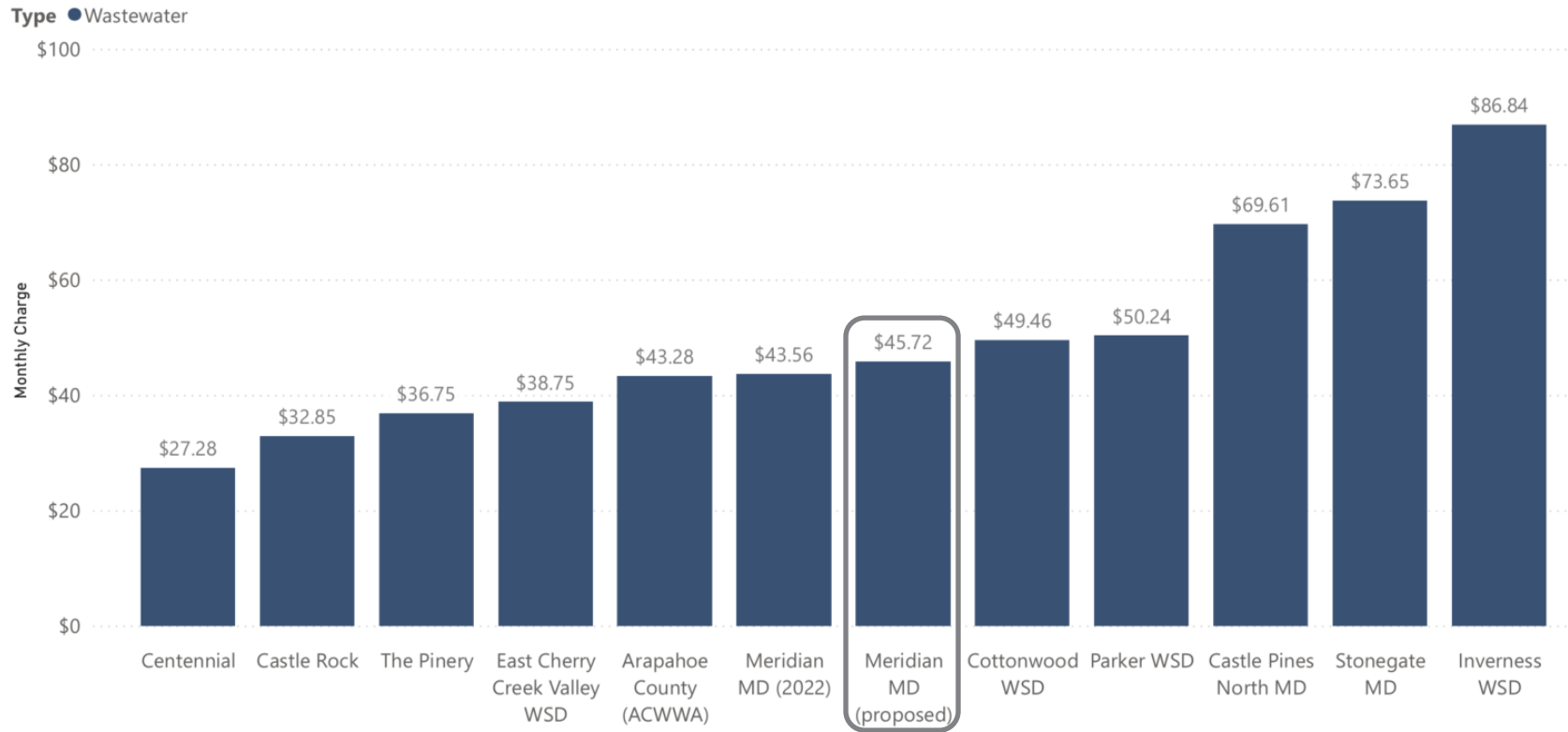


Figure 8-2: Monthly Wastewater Charges for Single-Family Accounts with 4,000 gallons of Indoor Water Usage for Meridian and Neighboring Communities

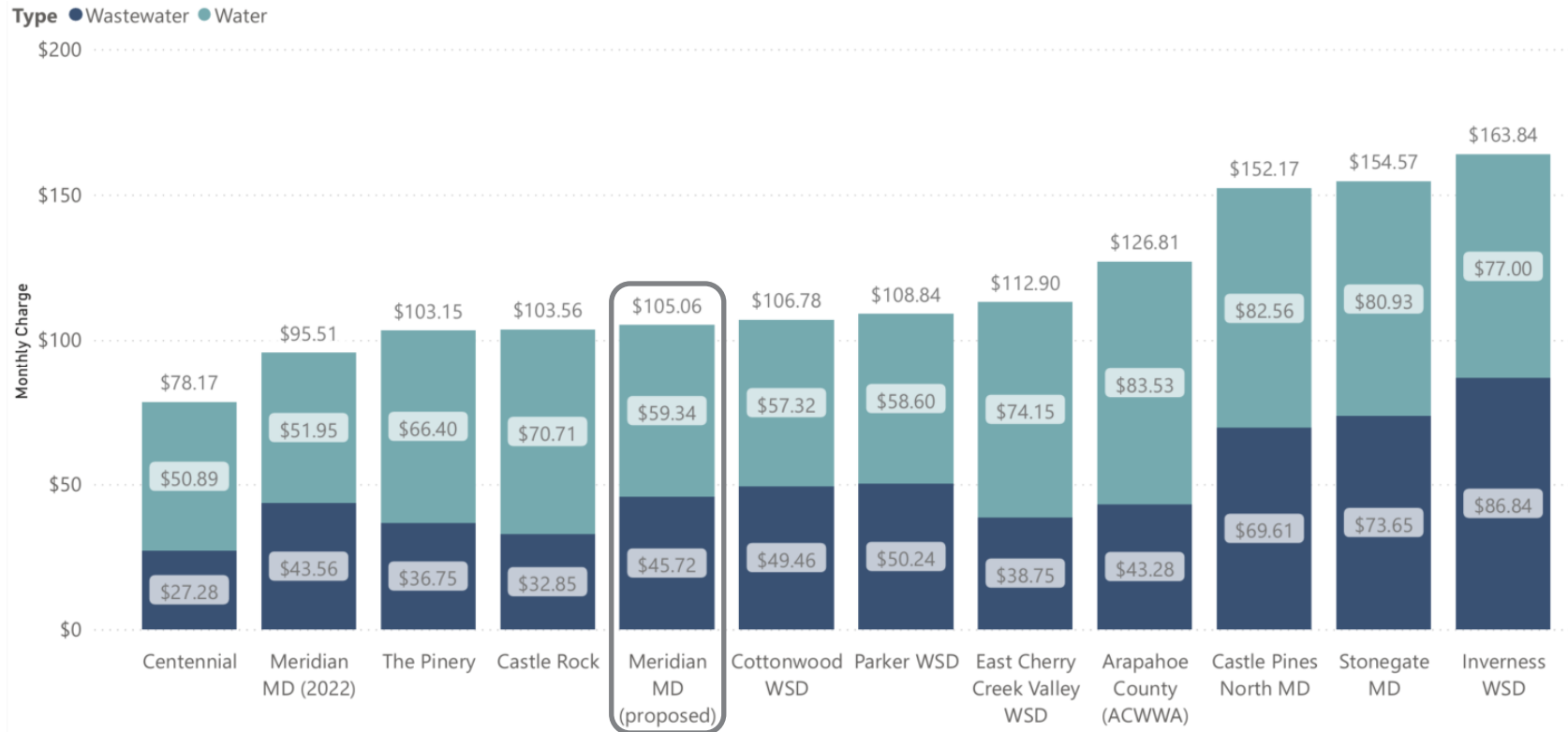


Figure 8-3: Combined Water and Wastewater Charges for Single-Family Accounts with 8,000 gallons of Water Use and 4,000 gallons of Indoor Water Use for Meridian and Neighboring Communities

Appendix A

	Budget 2022	Water %	Wastewater %	Reclaimed %	Fiber %	Fixed %	Variable %
Administration							
Accounting	\$67,463	33%	33%	33%	1%	100%	0%
Audit	\$9,500	33%	33%	33%	1%	100%	0%
Conduit maintenance	\$100,000	0%	0%	0%	100%	100%	0%
Dues and memberships	\$13,350	100%	0%	0%	0%	100%	0%
Engineering	\$900,000	40%	40%	15%	5%	100%	0%
Insurance	\$50,000	40%	40%	15%	5%	100%	0%
Legal	\$110,000	40%	40%	15%	5%	100%	0%
Building maintenance	\$50,000	40%	40%	15%	5%	100%	0%
Miscellaneous	\$30,000	40%	40%	15%	5%	100%	0%
MXU units	\$50,000	75%	0%	25%	0%	100%	0%
Treatment chemicals	\$400,000	50%	40%	10%	0%	25%	75%
Water, sewer, irrigation	\$130,000	40%	40%	20%	0%	50%	50%
Custodial	\$6,500	40%	40%	15%	5%	100%	0%
Supplies	\$12,000	40%	40%	15%	5%	100%	0%
Telephone	\$6,500	40%	40%	15%	5%	100%	0%
Utilities	\$6,500	40%	40%	15%	5%	100%	0%
Support management	\$161,819	40%	40%	15%	5%	100%	0%
Cost of services							
Electric and gas - irrigation	\$100,000	0%	0%	100%	0%	15%	85%
Electric and gas - sewer	\$250,000	0%	100%	0%	0%	15%	85%
Electric and gas - water	\$500,000	100%	0%	0%	0%	15%	85%
Fish restock/pond maintenance	\$15,000	0%	0%	100%	0%	100%	0%
General repairs	\$30,000	40%	40%	15%	5%	100%	0%
Irrigation repairs	\$120,000	0%	0%	100%	0%	50%	50%
SCADA upgrades	\$40,000	40%	40%	20%	0%	50%	50%
Sewer jetting	\$100,000	0%	100%	0%	0%	60%	40%
Sewer repairs/sludge hauling	\$800,000	0%	100%	0%	0%	10%	90%
Testing	\$70,000	50%	0%	50%	0%	100%	0%
Water system repairs	\$800,000	100%	0%	0%	0%	50%	50%
Well/distribution	\$200,000	100%	0%	0%	0%	50%	50%
Tech Center Mtc labor	\$1,312,500	34%	45%	21%	0%	85%	15%
Water purchase/lease	\$350,000	100%	0%	0%	0%	0%	100%
Capital projects							
Chloramines conversion	\$1,100,000	100%	0%	0%	0%	100%	0%
Conduit expansion	\$150,000	0%	0%	0%	100%	0%	100%
New wells (Meridian Village)	\$750,000	100%	0%	0%	0%	100%	0%
Reclaim meters	\$100,000	0%	0%	100%	0%	50%	50%
Valve rehab	\$100,000	80%	0%	20%	0%	80%	20%
Water acquisition	\$0	100%	0%	0%	0%	100%	0%
Well rehab	\$300,000	100%	0%	0%	0%	100%	0%
WISE Projects							
Additional WISE water/capacity	\$0	100%	0%	0%	0%	85%	15%
DIA subscription fee	\$0	100%	0%	0%	0%	100%	0%
Infrastructure operations	\$0	100%	0%	0%	0%	85%	15%
SM WISE project participation Dues	\$80,000	100%	0%	0%	0%	100%	0%
WISE infrastructure	\$25,000	100%	0%	0%	0%	100%	0%
WISE water purchase	\$500,000	100%	0%	0%	0%	100%	0%
Total Expenses	\$9,896,132	\$6,055,825	\$2,539,350	\$982,021	\$318,936	\$6,701,757	\$3,194,375