Eagle Mountain City

2022 Utility Rate Study

Prepared by Eagle Mountain City Administration
Last Revision: May 10, 2022

For questions regarding this study, please contact Evan Berrett at 801-789-6645

EAGLE MOUNTAIN

Introduction

I. Brief History of Eagle Mountain Utility Rates

Eagle Mountain residents have enjoyed very low utility rates for approximately two decades. Despite having no access to above-ground natural water sources which limits our ability to provide a secondary (irrigation) water system, managing our own water treatment facility, and having one of geographically largest cities in the state of Utah with a rapidly growing population, our utility rates have remained much lower than many cities along the Wasatch Front. Our water rates have remained low enough to match the irrigation rates of several other cities in Utah and even with an adjustment, will continue to remain low.

Our ability to keep rates low has been both circumstantial and due to certain policy decisions. Because Eagle Mountain City is so young, we have relatively new infrastructure which requires less maintenance. A new city also benefits from learning from the experiences of other cities. The Eagle Mountain City elected officials and employees have also long held a culture of frugality, aiming to keep costs as low as possible for residents for as long as possible. Through creative problem solving, maximizing efficiency, retaining highly-skilled employees, and other strategies, we have been able to successfully keep costs very low for residents for a very long time.

In 2002, Eagle Mountain City modified its water rates to what we see today with limited changes in 2010 to reintroduce tiered rates, a requirement of the State of Utah for all cities. Our rates have remained essentially unchanged for the past twenty years. In early 2020, it was becoming evident that maintaining these rates would no longer be feasible after exhausting all other possible solutions.

II. Utilities Managed by Eagle Mountain City

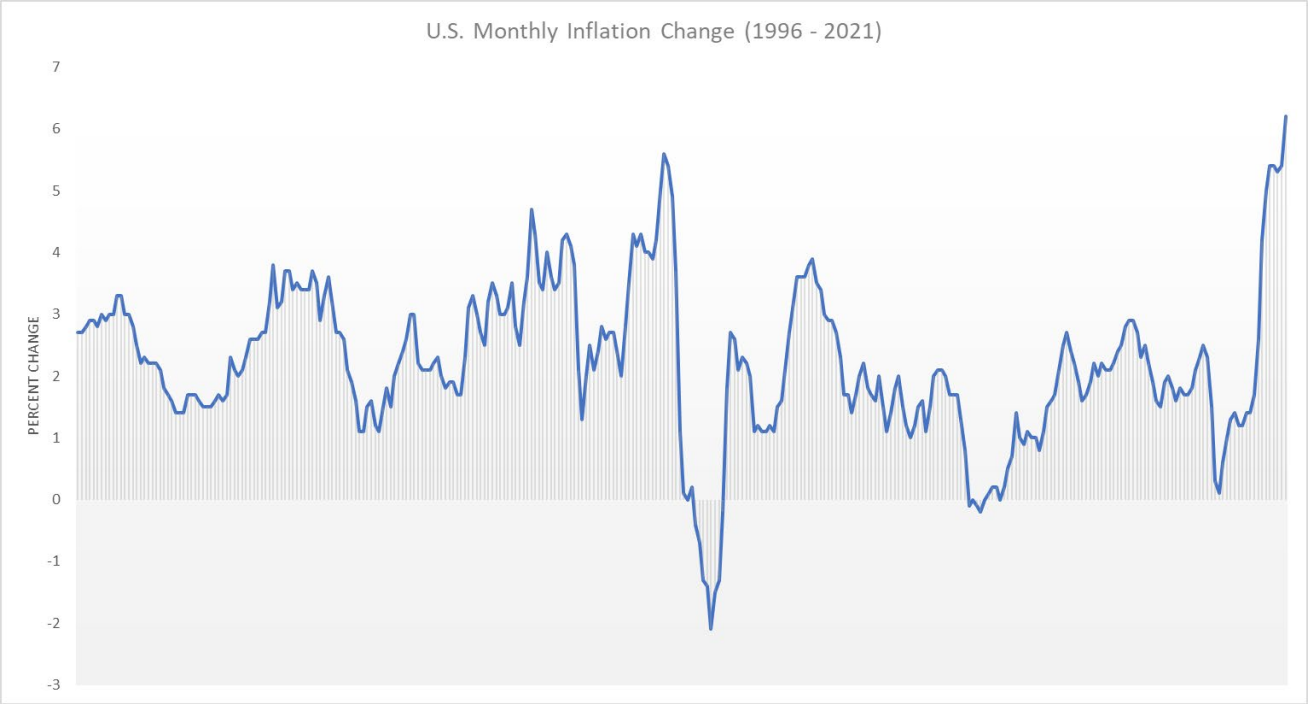
The City manages the water, sewer, and storm water utilities. Residents also pay for their solid waste (garbage) service to the City which maintains the contract with Ace Disposal. Power and Gas utilities are provided by Rocky Mountain Power and Dominion Energy respectively. Eagle Mountain City does not provide internet or other communications services to residents.

III. Contributing Factors

Several factors contributed to the need for a rate change. Each of these factors Eagle Mountain City attempted to resolve in other ways or were out of the control of the City’s elected officials or employees.

Inflation

Regardless of the record high inflation being experienced by everyone currently, Eagle Mountain City's utility rates have not been accounting for average annual inflation for twenty years. Inflation increases the costs of goods and services needed to maintain and repair utility infrastructure, pay employee wages, and more. Inflation alone was a major cause for expenses to begin exceeding revenues even with rapid population growth.



Cost of Water

Water is a precious commodity that is regulated in Utah by a system of water rights and water shares that dates back to the early days of settlement in Utah. Water rights and shares limit the annual use of water and can be owned by property owners. Each home in Eagle Mountain has a water share equal to 0.9 acre-feet of annual use. Before development can begin, water rights and/or shares must be allocated. Water rights available for purchase are becoming scarcer and consequently the costs of those water rights are going up.

Eagle Mountain City also does not have the capacity to provide all of the water its resident's need from our sourcing facilities here in the Cedar Valley. Although Eagle Mountain has several wells, those wells do not produce enough for the whole city, particularly during the summer months when residents irrigate lawns. Therefore, the City must purchase water from Central Utah Water Conservancy District (CUWCD) and have it pumped in to ensure sufficient supply. That water comes with an upfront cost and

ongoing maintenance costs that continue to rise. Eagle Mountain City has not adequately adjusted rates to account for these increasing costs.

System Aging

Although much of Eagle Mountain's utility infrastructure is relatively new compared to other cities in Utah, we now have infrastructure old enough to need increased maintenance and potential replacement. This maintenance is essential to avoid water main breaks, water quality emergencies, and to reduce much higher costs down the road. Our current rates also do not provide enough revenues to hire enough staff and provide the resources necessary to perform adequate preventative maintenance to reduce the need for more expensive infrastructure replacements.

Health of Utility Funds

Eagle Mountain's rapid growth has placed an incredible amount of pressure on city infrastructure and resources. We have had little time to build up a healthy reserve balance for any of our utility funds which has been a major concern when emergency repairs and investments in new infrastructure are needed. With our expenses exceeding our revenues currently, our reserve balances continue to decline, and with no changes, we would be negative by fiscal year 2024 which begins July 1, 2023.

The health of these reserve funds is essential for Eagle Mountain to provide stable utilities for its residents. Furthermore, the City would potentially experience problems seeking funding assistance from State and Federal resources if our utilities are not fiscally stable. Given Eagle Mountain's rapid growth, we are aiming for a strong reserve balance of 50% of our annual operational costs (or a 6-month reserve).

IV. How Utility Rates Work

We use industry-standard best practices for rate studies (such as direction from the American Water Works Association or AWWA) and adhere to State of Utah requirements for establishing rate structures. However, there are some unique qualities for each city and each utility of that city. Eagle Mountain, for example, has no secondary (irrigation) water system whereas many other cities in Utah do. Eagle Mountain also has its own water treatment facilities which several cities in Utah do not. There are also several methods used for billing that are up to the utility to determine which is best for their case. The City has entertained concepts for modifying how we bill for use, but at this time we have opted to continue the same methodology and only change the rates.

Water

Water rates are split into two parts: the base rate, which is paid every month regardless of how much water is used; and the consumption or volume rate, which depends on your water use. The base rate covers the expenses to the City that do not rise with increased water use such as personnel costs, debt

service costs, and so forth. The consumption rate covers the expenses that rise with increased consumption including equipment maintenance, meter installations and replacements.

Eagle Mountain City bills all water users in the city such as homeowners, businesses, industrial users, churches, schools, and so forth. The Utah State Legislature passed a law in 2016 that required water utilities to implement tiered pricing structures to encourage water conservation. Eagle Mountain City already had a tiered pricing structure as of 2010.

Each customer class (residential, commercial, institutional, industrial, etc.) is billed with their own sets of tiers meant to coincide with the water they use. Generally, these tiers are established on a basis of thousands of gallons.

Sewer

In contrast to water rates, sewer rates are billed at a flat rate based on ERU or Equivalent Residential Unit. Water coming from the system to a home is far simpler to monitor and bill simply on volume. Sewer systems, on the other hand, are far less predictable and vary greatly from customer to customer. Some water is diverted, some water is depleted, some water is combined with various organisms, chemicals, or other substances, and it can be quite surprising to see the things that end up in the sewer system.

If everyone was billed on their actual impact on the system and what is required to treat the water that is returned, pricing would be incredibly variable. An ERU simplifies this and creates an average expected impact. Generally, every residential property is valued at 1 ERU, whereas businesses, industrial sites, schools, etc. are assigned ERU values that coincide with how much calculated impact they will have on the system compared to homes. For example, a church is much larger than a home, but may not actually see much activity or unusual sewage, and therefore could be equivalent to 3 ERUs or the impact of 3 homes. Alternatively, a sit-down restaurant open seven days a week would have a lot more activity and potentially result in much more waste water and other material entering the sewer system, resulting in the impact of that facility being equal to the impact of 20 ERUs or 20 homes. Customers are billed monthly the flat fee per ERU, therefore, the restaurant would be billed the rate multiplied by its ERUs.

Eagle Mountain City’s sewer rates were previously slightly different depending on what part of the city your property is in. The sewer system was divided up into a North, South, and West service area, with the North mostly comprised of what is known as the Ranches, the South including what is known as City Center, and the West covering the White Hills area. These areas were divided in an attempt to distribute costs of the system based on what it takes to service the area. The new rates are doing away with this division of service areas.

Storm Water

Similar to sewer rates, storm water rates are a flat monthly cost per ERU. These rates cover the cost of ongoing maintenance of the storm water system and the prevention and protection activities that are necessary to ensure that contaminants do not enter bodies of water such as the Jordan River or Utah Lake.

Solid Waste (Garbage)

Garbage rates are set based on costs to the city related to contractual obligations to the waste disposal company. Our current solid waste provider, Ace Disposal, charges the city for its services and those charges do increase to adjust for inflation, growth, etc. Residents are billed flat fees based on the number and type of garbage cans at their property.

Analysis of Need for Rate Changes

I. Water Utility

The City has spent the past two years evaluating the rates and has used all of its resources to ensure the change was as fair and effective as possible. The City also consulted with various experts and partners including Utah State University who used Eagle Mountain City as one of two test cities for a new analysis tool under development called WaterMAPS. This experimental tool was able to help the City better understand how water is being used around the city and consider alternative billing methods should they be beneficial to the residents while still maintaining the integrity of the water utility finances. Best practices developed by the American Water Works Association and various state resources were also implemented.

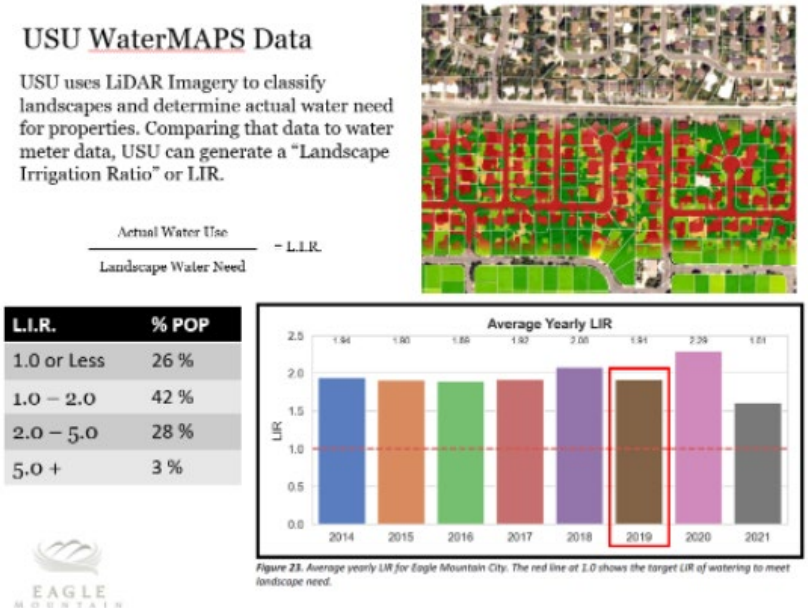


Figure 23. Average yearly LIR for Eagle Mountain City. The red line at 1.0 shows the target LIR of watering to meet landscape need.

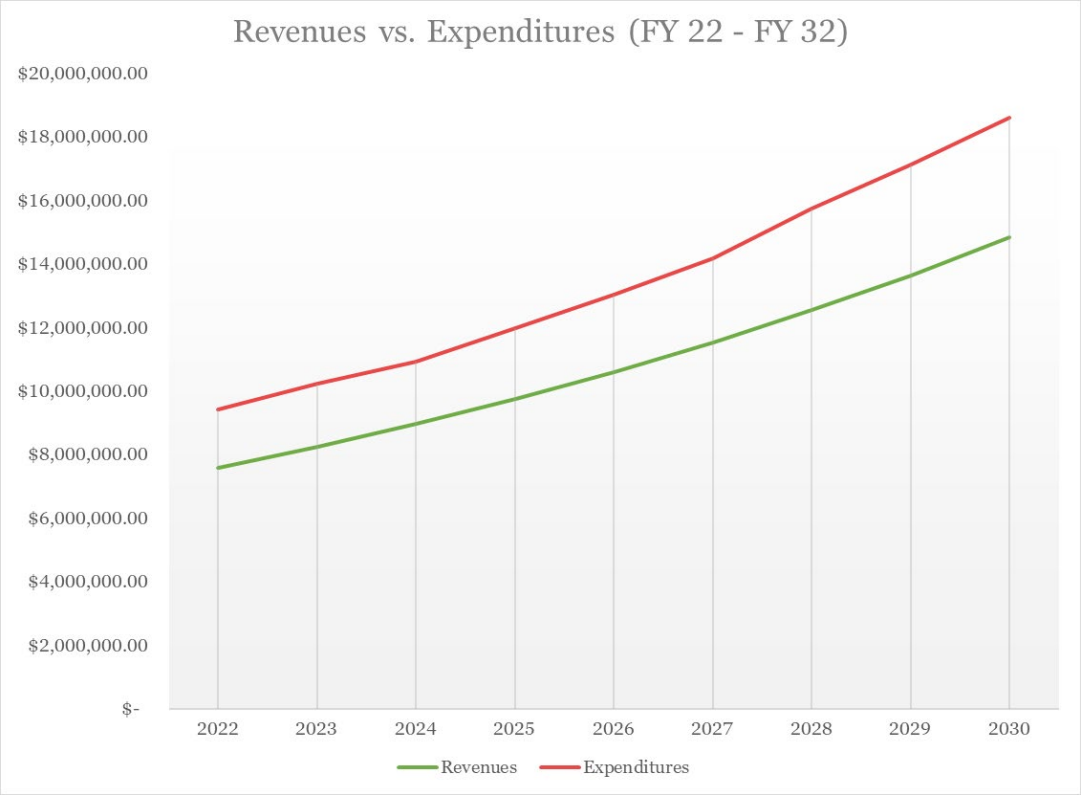
After applying the information and lessons learned from external resources, City staff performed a comprehensive review of water use data. Water use data is based on 2019 water use to prevent the observed abnormal aspects of water use in 2020 (higher than normal due to COVID) and 2021 (lower than normal due to extreme drought) to influence the water rates which must work longer-term.

	Tiers	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5
Current	0-65-115-165	1,396,298	52,920	4,176	1,226	-
		96%	4%	0%	0%	0%
Past Proposed	0-20-40-60	981,235	402,723	57,070	13,593	-
		67%	28%	4%	1%	0%
New Proposed	0-30-60-90	1,173,945	253,950	21,322	5,402	-
		81%	17%	1%	0%	0%
w/ Lifeline	0-3-30-60-90	272,141	941,630	216,140	19,833	4,876.35
		19%	65%	15%	1%	0%

	Tiers	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5
Current	0-120-170-230	381,546.27	28,825.65	1,269.65	-	-
		93%	7%	0%	0%	0%
Past Proposed	0-60-100-140	301,251.73	97,550.35	11,743.60	1,095.89	-
		73%	24%	3%	0%	0%
New Proposed	0-80-120-160	340,293.49	66,050.58	4,897.41	400.09	-
		83%	16%	1%	0%	0%
w/ Lifeline	0-6-80-120-160	66,540.53	282,500.18	57,900.26	4,348.51	352.09
		16%	69%	14%	1%	0%

Staff found that actual water use was low enough to make the current tiers less-effective at promoting conservation, a practice commonly used by water utilities around the nation. Several different tier possibilities were evaluated by taking actual water use data and running that water use through the test tiers to see how much of the water would be billed at each tier. This was done until tiers were developed for smaller and larger properties that had a majority of billing at the first tier with exponential decline until the fourth tier which only has a small percentage. The Eagle Mountain City Council opted to keep the tiers the same at this time with the expectation that the increase in rates alone will be sufficient for encouraging conservation.

The balance of this page intentionally left blank



Evaluation of the rates under the existing tier structure shows that a change is necessary. Expenditures currently significantly exceed revenues and will continue to do so for the foreseeable future. Our fund balance, which is projected to be just over $3.5 million by the end of the current fiscal year (2022), will be depleted entirely by fiscal year 2024 if no changes were made. Analysis was also completed to test for class subsidization, or in other words, to make sure that each type of customer (residential, commercial, industrial, etc.) are all paying their fair share. Our analysis showed that we currently do not see a significant imbalance.

All of this analysis, including forecasting for ten years of additional growth, factoring in expenditures and other burdens that were previously not accounted for, and so forth, staff determined that the new rates should be set based on what is needed for the water utility to become financially stable. Financial stability means that our revenues meet or slightly exceed our expenditures, and we are able to build and maintain a sufficient reserve of funds in case of emergency.

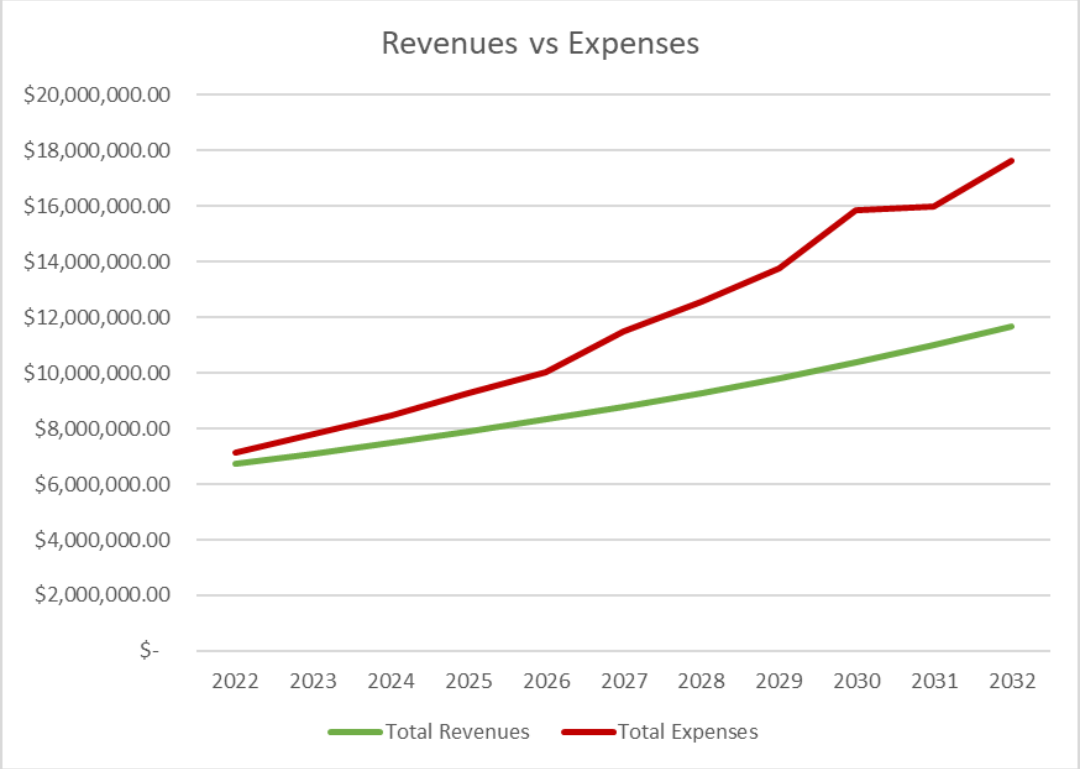
II. Sewer Utility

The sewer or wastewater utility received some special scrutiny due to the potential for changes in billing methodology. Billing by ERU as Eagle Mountain City does is not a very common practice, and the division of the city into the three service areas (NSA, WSA, and SSA) complicates things further, resulting in the potential for an imbalance of the distribution of costs. Additionally, new kinds of users

never seen in Eagle Mountain warranted additional review to ensure billing practices were fair across customer classes and not detrimental to future economic development growth.

The rates also required further scrutiny due to the need to balance the costs of maintaining our own wastewater treatment facility that is undergoing major expansion, and the costs of contracting with the Timpanogos Special Service District (TSSD) for the remaining wastewater (mostly from the Ranches area) that we cannot process locally.

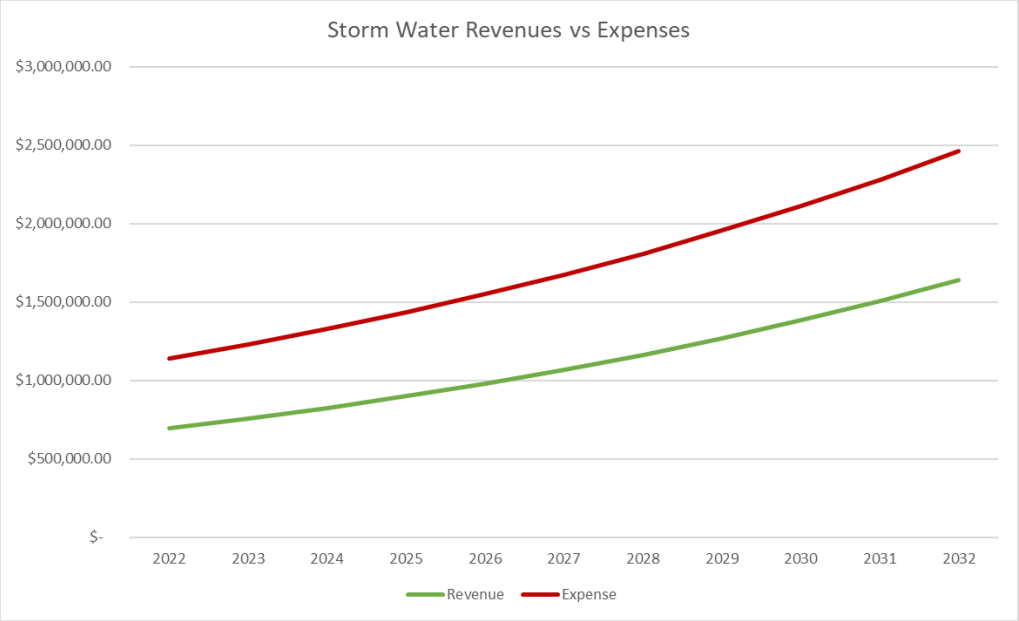
Like the water utility, sewer rates are set only so high as to cover expenses and provide for a 6-month fund balance reserve. Expenses include personnel, equipment maintenance and replacement, costs of chemicals, electricity for the treatment plant, contracts for services, and debt payments. The sewer rates were determined based on two primary goals: 1) treat the system as a unified utility and eliminate the different costs by service area, and 2) stabilizing the sewer fund and ensuring its long-term integrity.



III. Storm Water Utility

The storm water system throughout the city requires regular maintenance and monitoring. The costs to service an aging and growing storm water system continues to grow, and like the water rates, our storm water rates have not adjusted for inflation for several years. Our current storm water rate is $5.00 per ERU paid monthly. This flat cost ensures that storm drain maintenance is kept up so that flooding risk is

mitigated, and monitoring can continue to reduce the likelihood of contaminants making their way to protected bodies of water.

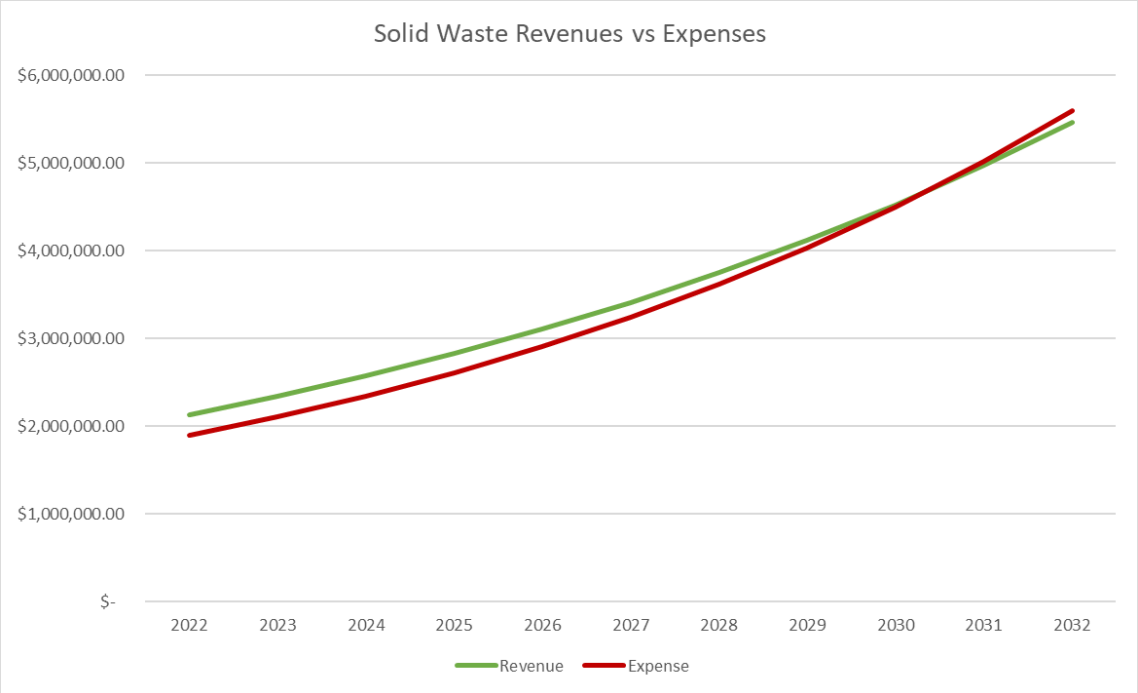


The current rates have been insufficient to generate the revenue needed to cover expenses for a few years now. Eagle Mountain City has used every tool at its disposal to cover growing costs without raising rates, but those tools have now been exhausted.

The storm water utility expenses were analyzed and conservatively forecast for 10 years of growth. In contrast to the water and sewer rates, City staff did not propose annual increases to the storm water rates due to forecasts showing that city growth will provide sufficient revenues for growing expenses. The new rate allows the fund balance reserve to grow slowly toward the 6-month reserve goal.

IV. Solid Waste (Garbage)

Garbage rates were also analyzed to ensure that we as a city are sufficiently meeting our contractual obligations to Ace Disposal as they adjust for their rising costs. Our analysis was compared revenues to expenses and the current fund balance and found that no changes were needed. We also compared our rates to other cities to ascertain the burden upon our residents and found that on average our rates are very reasonable.



Rate Changes

The following rates were calculated to ensure respective utilities are able to remain stable in years to come, covering only necessary operations costs, debt obligations, and to provide a sufficient reserve balance per industry best practices.

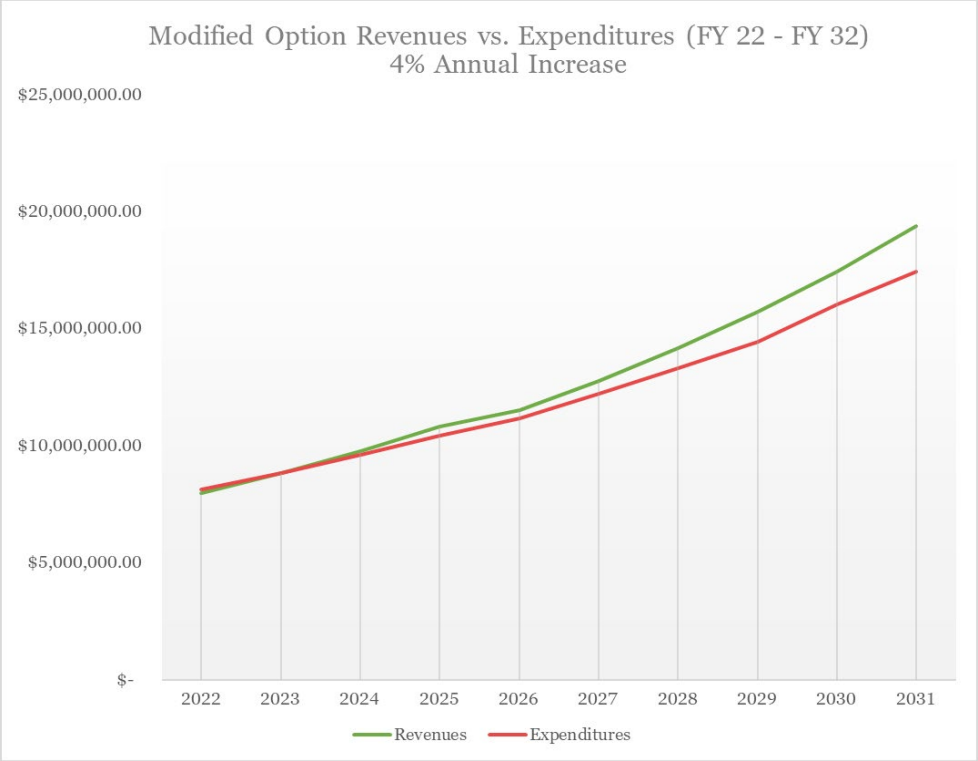
I. Water Rate Changes

The new rates are as shown below. Tiers were not modified in this rate change, only the cost per thousand gallons was modified. A new industrial customer class will be created using an aggressive uniform rate that starts at the tier 4 rate for residential. Rates are forecasted to increase annually by 4% but the first scheduled increase will not take place until July 2023. Eagle Mountain City staff will monitor revenues and revisit the rates every 2-3 years to ensure we are not over or under charging.

Water Rates per Month			
Residential (<0.5 Acres)	**Tiers Range (In Kgal)**	**Former Rate (per Kgal)**	**New Rate (per Kgal)**
Tier 1	0 to 65	$0.80	$1.08
Tier 2	65 - 115	$0.85	$1.14
Tier 3	115 - 165	$0.90	$1.19
Tier 4	over 165	$0.95	$1.24
Large Res. (>0.5 Acres)	**Tiers Range (In Kgal)**		**Rate (per 1,000 gallons)**
Tier 1	0 - 120	$0.80	$1.08
Tier 2	120 - 170	$0.85	$1.14
Tier 3	170 - 230	$0.90	$1.19
Tier 4	over 230	$0.95	$1.24
Commercial	**Tiers Range (In Kgal)**		**Rate (per 1,000 gallons)**
Tier 1	0 - 170	$0.80	$1.08
Tier 2	170 - 220	$0.85	$1.14
Tier 3	over 220	$0.90	$1.19
Institutional	**Tiers Range (In Kgal)**		**Rate (per 1,000 gallons)**
Tier 1	0 - 500	$0.80	$1.08
Tier 2	500 - 750	$0.85	$1.14
Tier 3	over 750	$0.90	$1.19
Industrial	**Tiers Range (In Kgal)**		**Rate (per 1,000 gallons)**
Uniform Rate	N/A	N/A	$1.24
Other	**Tiers Range (In Kgal)**		**Rate (per 1,000 gallons)**
Uniform Rate	N/A	$0.80	$1.08
BASE RATE = $25.50/Month for all Classes			

The changes in water rates will help our water fund push revenues just over expenditures and begin to gradually increase our fund balance reserve. Even with the rate increase, our water rates are still far lower than any Utah city that has no secondary water system, and still also competes with those that do.

The balance of this page intentionally left blank



II. Sewer Rate Changes

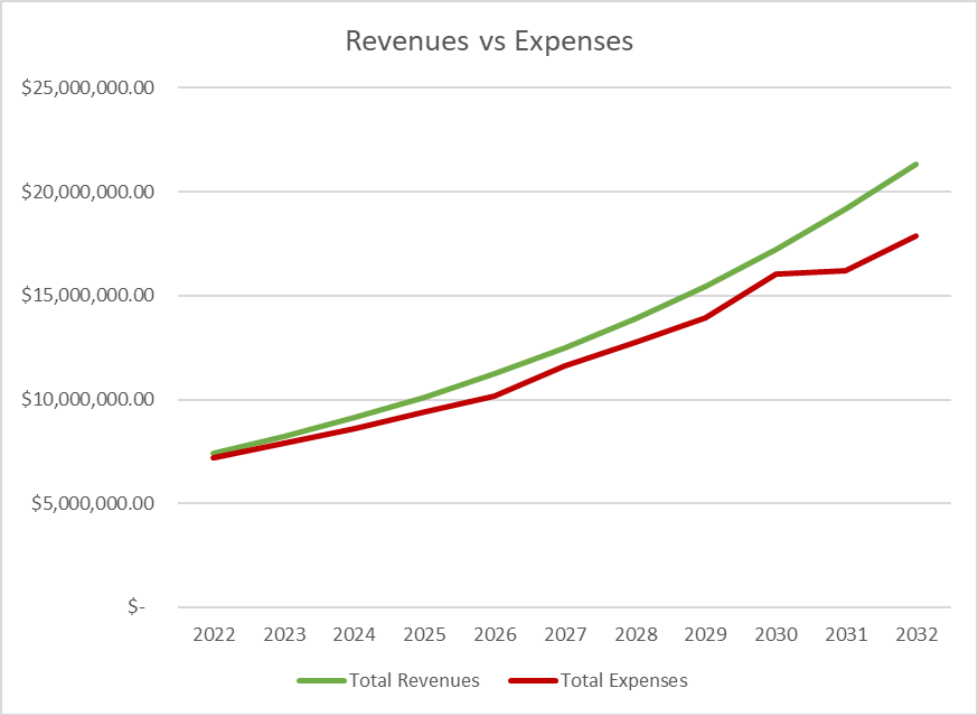
Like the water rates, Eagle Mountain City staff is recommending annual increases to the sewer rates to maintain integrity of the fund for the long-term. These increases will be minimal and prevent a future large increase in rates. The rate change will do away with the different rates for the different service areas, treating the sewer system as a shared utility or service just as storm drains, roads, and other infrastructure.

Residential rates were determined based on the overall expected ERUs for the City, conservatively forecasting growth, and evaluating the appropriate amount of revenue based on expected sewer discharges or the overall impact upon the system. Commercial and Institutional (schools, churches, etc.) rates were addressed similarly. Industrial rates were evaluated differently given the way they impact the wastewater utility is very different.

Data centers handle large volumes of water, but the wastewater is generally clean and does not create a substantial burden on treatment facilities. On the other hand, processing and manufacturing facilities have the potential to produce large volumes of wastewater that needs additional processing. Consequently, Eagle Mountain City evaluated whether industrial customers should be billed for discharge volumes with additional surcharges for discharge that requires extra treatment.

The sewer utility is also very complex to manage and requires the efforts of staff from several departments across the city including Engineering, Building, Planning, Administration, Finance, Recorders Office, and more. The work of these other departments in support of the sewer utility are accounted for in the city budgets. Accounting for the work of the other departments in support of the sewer utility comes to over 30% of the sewer utility budget as administrative overhead, with nearly all of that overhead related to the residential growth of the City. Large industrial customers require very little administrative overhead. These factors led to a deeper analysis which resulted in the creation of a separate industrial rate that is lower than the residential rate.

The rate will be initially set at $45.75/ERU for all residential, commercial, and institutional customers. Staff are recommending to City Council that the sewer rate increase by 2.5% each year. Industrial customers will be charged $32.03/ERU with an annual rate increase of 2.5% as well.



*Note, the dip in expenses in FY 2030 is due to a bond being paid off at that time. There is a strong possibility that a new bond would be necessary at that time for continued infrastructure development.

III. Storm Water Rate Changes

The rate for Storm Water will now be $8.25 per ERU per month. This is approximately a 65% increase, but a one-time increase of $3.25/ERU/month. No annual increases were proposed for the storm water utility.

IV. Solid Waste (Garbage) Rate Changes

The City's analysis of this fund found that no changes were necessary for the foreseeable future.

Expected Impacts

Catching up on 20 years of inflation and other causes for increased expenditures has unfortunately led to the need for a larger-than-hoped initial increase in some of the rates. The following charts show examples of what could be expected in various scenarios to try and assist the average resident with anticipating increases in monthly bills. For most utilities, such as sewer, storm water, and solid waste, the changes are very straightforward. In the case of the water rates, the bill is affected much more by use and the use cost depends on volume. Therefore, most of the charts will be related to the water utility.

V. Water Billing

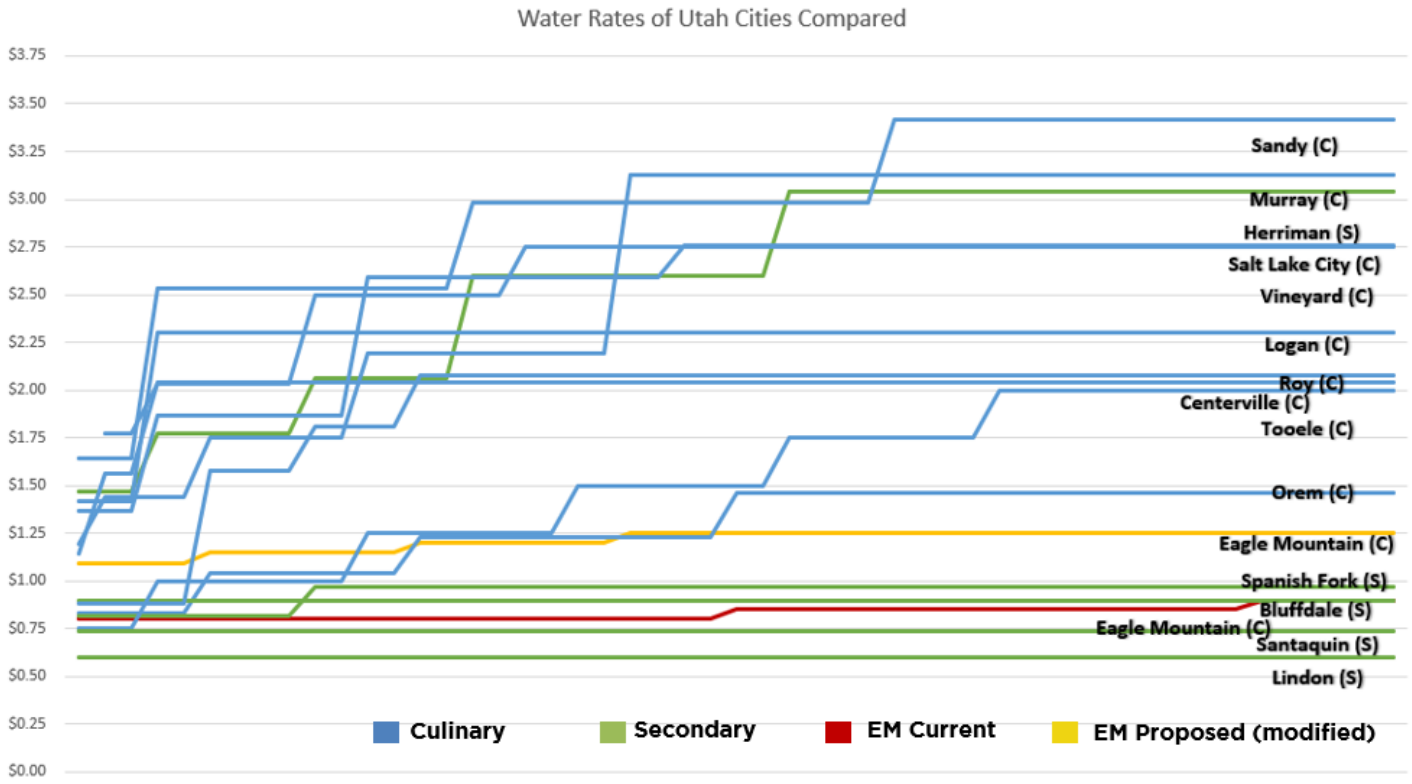
Monthly Bill Example By Year (SIMPLE)				
	25 Kgal	50 Kgal	100 Kgal	200 Kgal
Current	40.00	60.00	101.75	192.75
2022	52.54	79.58	135.55	255.61
2023	53.62	81.74	139.95	264.81
2024	54.75	83.99	144.53	274.39
2025	55.92	86.33	149.29	284.34
2026	55.13	86.77	152.25	292.70
2027	56.40	89.30	157.40	303.46
2028	57.71	91.93	162.75	314.66
2029	59.08	94.67	168.32	326.31
2030	60.51	97.51	174.11	338.42
2031	61.99	100.47	180.14	351.02
2032	63.53	103.55	186.41	364.12

*Note: This chart shows the monthly cost for water only. Typical Eagle Mountain homeowners use about 35,000 gallons per month on average during the summer months when water is used for irrigation. The light-yellow banded row indicates the year that a $2.00/month decrease in the base rate may be possible.

Percent actual bill increases per year with built-in annual rate increases. Columns represent low water user and high water user. The dip in FY 2026 is due to a projected potential for a drop in the base rate in that year.

	25Kgal	200Kgal
2022	31.4%	32.6%
2023	2.1%	3.6%
2024	2.1%	3.6%
2025	2.1%	3.6%
2026	-1.4%	2.9%
2027	2.3%	3.7%
2028	2.3%	3.7%
2029	2.4%	3.7%
2030	2.4%	3.7%
2031	2.4%	3.7%
2032	2.5%	3.7%

Eagle Mountain Water Rates Compared



*Note: the rates shown as EM Proposed are the new rates that were passed by City Council. Note that our rates still fall far below many other cities. Cities showing culinary water only have either no secondary system available or have portions of their system with no secondary service.

Monthly Bill Change Example – **Smaller** Lots **WINTER USE**

Status Quo			Proposal 1			Proposal 2			Proposal 3		
Number KGal		5	Number KGal		5	Number KGal		5	Number KGal		5
Consumption	$	4.00	Consumption	$	5.41	Consumption	$	5.57	Consumption	$	2.27
Base	$	20.00	Base	$	25.50	Base	$	25.50	Base	$	27.00
Monthly Bill	$	24.00	Monthly Bill	$	30.91	Monthly Bill	$	31.07	Monthly Bill	$	29.27

Monthly Bill Change Example – **Smaller** Lots **SUMMER USE**

Status Quo			Proposal 1			Proposal 2			Proposal 3		
Number KGal		35	Number KGal		35	Number KGal		35	Number KGal		35
Consumption	$	28.00	Consumption	$	37.86	Consumption	$	39.26	Consumption	$	36.61
Base	$	20.00	Base	$	25.50	Base	$	25.50	Base	$	27.00
Monthly Bill	$	48.00	Monthly Bill	$	63.36	Monthly Bill	$	64.76	Monthly Bill	$	63.61

Monthly Bill Change Example – **Large** Lots
WINTER USE

Status Quo			Proposal 1			Proposal 2			Proposal 3		
Number KGal		10	**Number KGal**		10	**Number KGal**		10	**Number KGal**		10
Consumption	$	8.00	**Consumption**	$	10.82	**Consumption**	$	11.14	**Consumption**	$	4.54
Base	$	20.00	**Base**	$	25.50	**Base**	$	25.50	**Base**	$	27.00
Monthly Bill	$	28.00	**Monthly Bill**	$	36.32	**Monthly Bill**	$	36.64	**Monthly Bill**	$	31.54

Monthly Bill Change Example – **Large** Lots
SUMMER USE

Status Quo			Proposal 1			Proposal 2			Proposal 3		
Number KGal		75	Number KGal		75	Number KGal		75	Number KGal		75
Consumption	$	60.00	Consumption	$	81.12	Consumption	$	83.55	Consumption	$	78.36
Base	$	20.00	Base	$	25.50	Base	$	25.50	Base	$	27.00
Monthly Bill	$	80.00	Monthly Bill	$	106.62	Monthly Bill	$	109.05	Monthly Bill	$	105.36

VI. Sewer Billing

	2023	2024	2025	2026
General	$45.75	$46.89	$48.07	$49.27
Industrial	$32.03	$32.83	$33.65	$34.49

*Note: Chart assumes annual 2.5% increase. Rate is for the entire city and no longer different based on service areas. Also Note for Industrial: because costs to service industrial are over 30% lower, their per ERU cost is reduced. It's important to keep in mind that these customers are equivalent to many ERUs, one case being nearly 1,200 ERUs which are a multiplier of the rate shown (about $40,000/month for the largest customer).

VII. Combined Impact Scenarios

Scenario	Water	Sewer	Storm	S. Waste	TOTAL	
Current Low	$40.00	$41.14	$5.00	$9.50	$95.64	
New Low	$51.98	$45.75	$8.25	$9.50	$115.48	+ $19.84
Current Mid	$60.00	$43.00	$5.00	$14.50	$122.50	
New Mid	$79.58	$45.75	$8.25	$14.50	$148.35	+ $25.85
Current High	$101.75	$45.05	$5.00	$20.75	$172.55	
New High	$135.55	$45.75	$8.25	$20.75	$210.30	+ $37.75

Low, implies 25Kga water use, NSA, single garbage can.
Mid, implies 50Kga water use, SSA, single garbage can + recycling can
High, implies 100Kga water use, WSA, two garbage cans + recycling can
**All scenarios assume a property less than 0.5 acres and use of modified water tier rates*