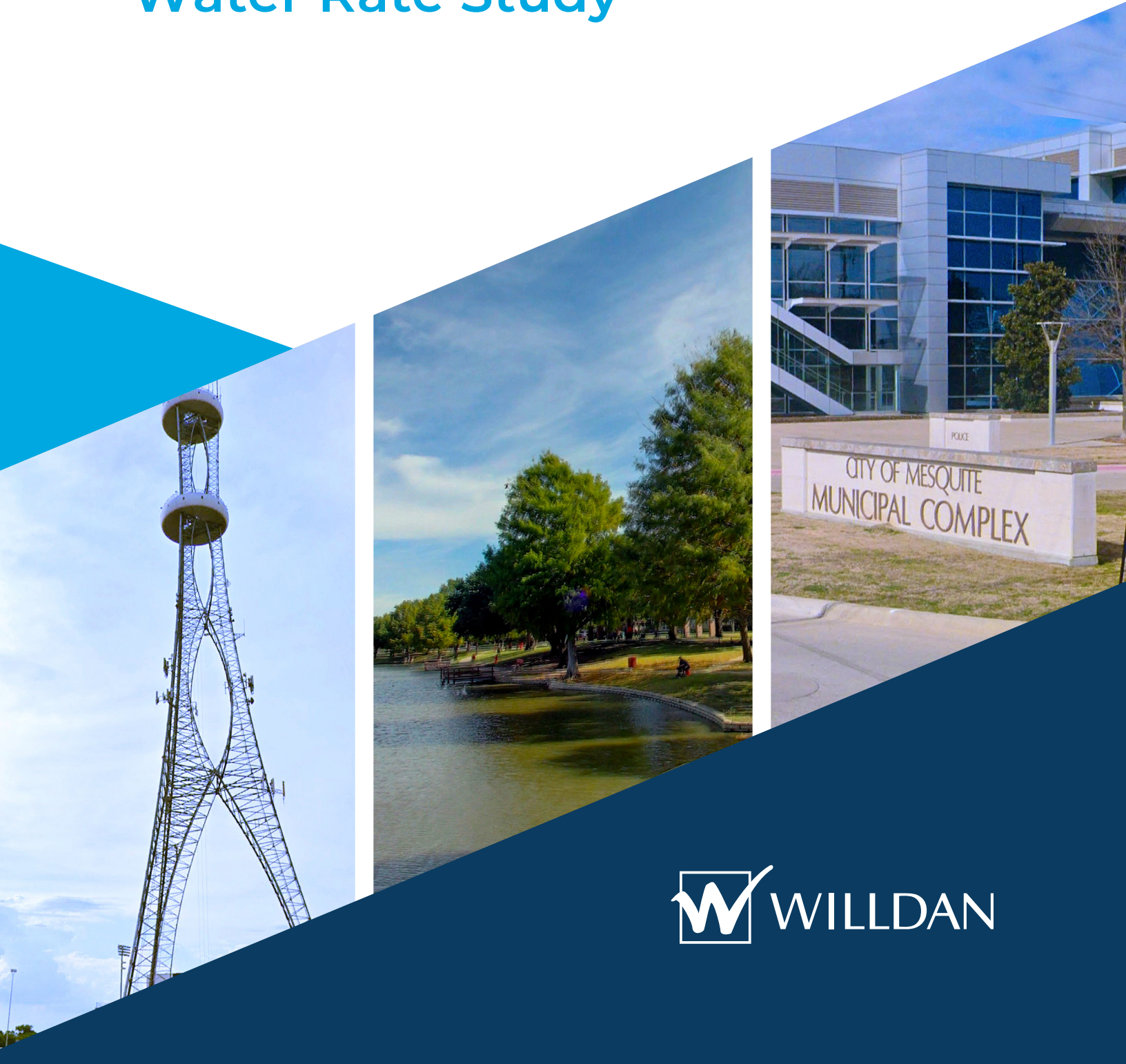


# City of Mesquite, TX

## Heartland Wholesale Water Rate Study



# Acknowledgments

During this wholesale rate study, several City of Mesquite officials expended considerable time and effort in assisting the project team. These officials included the project team named below and many others who helped in the support, documentation, meeting planning, and data gathering that are not named on the project team. The project team owes a debt of gratitude to these individuals' hard work, dedication, and professionalism, without whom this project would not have been successfully completed.

## Project Team | City of Mesquite

Cliff Keheley, City Manager  
Mark Kerby, Special Projects Director  
Cindy Smith, Director of Finance  
Curt Cassidy, Director of Public Works  
Justin Stoker, Asst. Director of Public Works  
Tim Abbott, Manager of Utilities

## Project Team | Willdan Financial Services

Dan Jackson, Senior Vice President  
Jason Gray, Managing Principal  
Dennis Goral, Senior Analyst

The project team has relied upon the extensive data supplied by the City of Mesquite for this analysis. Thus, the integrity of the study is largely dependent upon the accuracy of this data. The project team has made every effort to validate and confirm the information contained herein before preparing the final study documents. **This report presents no assurance or guarantees that the forecast contained herein will be consistent with actual results or performances.** This report represents forecasts based on assumptions about future behavior and is not guaranteed. Any changes in assumptions or actual events may result in significant revisions to the forecast and its conclusions. The projections and calculations are not intended to present overall financial positions, results of operations, or specific cash flows for the periods indicated, which conforms with guidelines for presenting a forecast established by the American Institute of Certified Public Accountants.

# Wholesale Water Rate Report | Heartland

## Background



In 2021, the City of Mesquite, Texas (the "City") engaged **Willdan Financial Services** to conduct a wholesale water rate analysis to assist in establishing the City's wholesale water rate to be charged to Heartland. The City was interested in developing a wholesale rate plan for FY2022 and beyond. The objective of this study is to develop a long-term wholesale rate plan that will enable the City to recover sufficient funds to

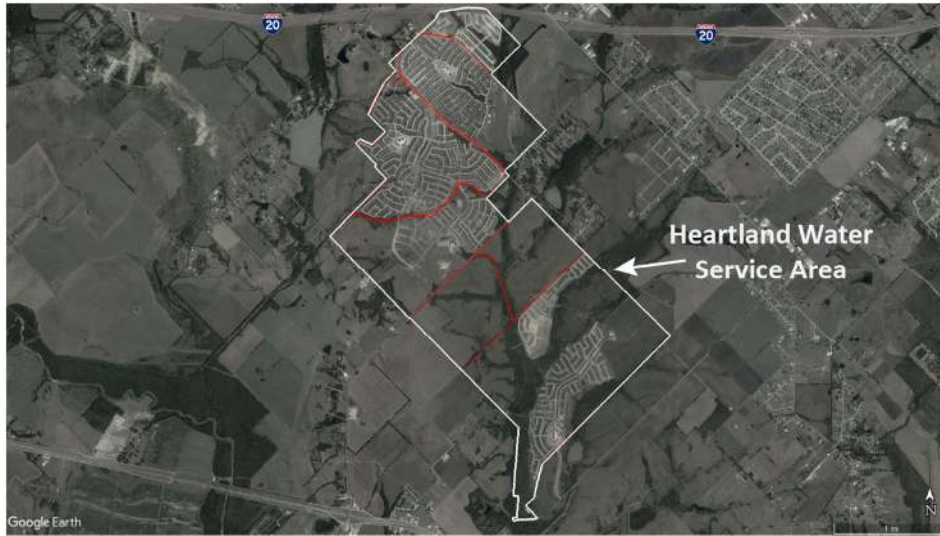
meet its operating expenses, capital outlays, debt service, and coverage requirements associated with providing potable water to Heartland. At the same time, we endeavor to minimize the financial impact of any adjustments on ratepayers to the best extent possible.

Providing wholesale service to customers outside of the City limits requires analysis of various components. Our methodology follows that outlined in the American Water Works Association's (AWWA) M1 Manual "Principles of Water Rates, Fees, and Charges" and includes but is not limited to the following:

- Type of wholesale service to be provided, that is, is the City providing raw water, potable (finished) water, transmission-only (wheeling), an emergency-only connection, or some combination of these services.
- Type and terms of capitalization of the assets to be used in providing the services
- Contracted terms of providing the wholesale services
- Rate provision and structure
- Service reliability
- Recovery of incremental costs

The methodology used for this study considers these and other factors to arrive at a recommended wholesale water rate that we believe to be fair, just, and reasonable.

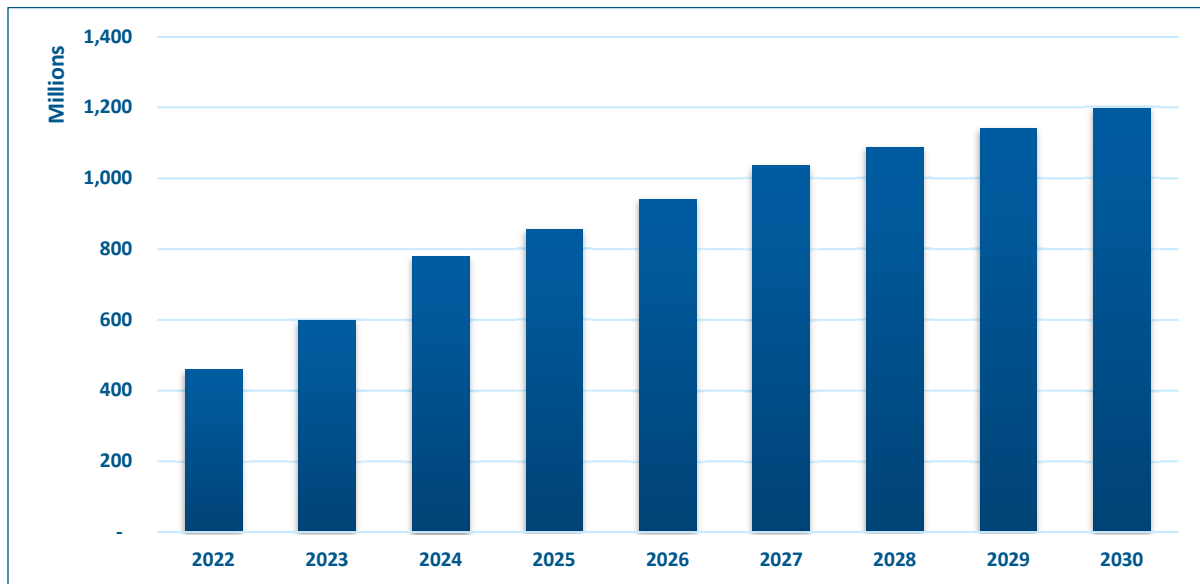
EXHIBIT 1 | Heartland Water Service Area<sup>1</sup>



### Forecast Purchases

Exhibit 2 presents total forecast water purchases by Heartland throughout the study period. As you can see in the above aerial depiction, Heartland is not fully developed. Based on the expected development growth within the area served by Heartland, the purchased volume is forecast to nearly triple in the next ten years, from 418 million gallons in 2021 to just under 1.2 billion gallons in 2030. Over the forecast period, the compound annual growth rate<sup>2</sup> is 12.4%

EXHIBIT 2 | Forecast Usage



<sup>1</sup> This aerial depiction is not to scale and is provided for illustrative purposes only. Do not rely on this depiction for legal, engineering, or other technical uses.

<sup>2</sup> The compound annual growth rate (CAGR) is a calculation of the average rate of change over the entire forecast period. This is slightly different from the average of the annual rates of change and is used to mitigate the impact of outliers in the data.

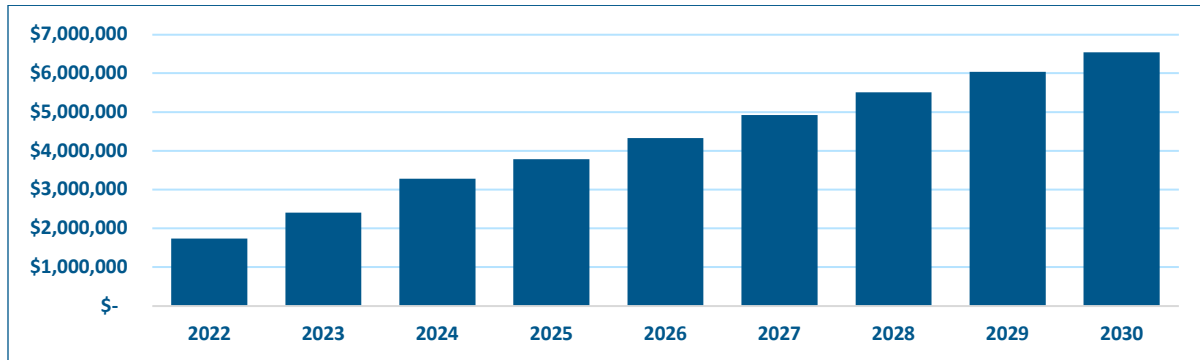
## Heartland Cost of Service

The cost of service represents the City's calculated cost of providing wholesale water service to Heartland. The Heartland cost of service is comprised of the City's cost of purchasing water from North Texas Municipal Water District (NTMWD) and the City's cost to deliver that water to Heartland. Details behind these calculations can be found in the rate model contained in **Appendix A**. This forecast is based on the following set of assumptions:

- The forecast volume rate for NTMWD water purchases used in this model was provided by NTMWD to the City in the summer of 2021. The NTMWD volume rate charged to the City is expected to increase from \$2.99/kgal in 2021 to \$4.37/kgal in 2030.
- Heartland utilizes approximately 21,950 linear feet of the City's transmission and distribution lines, accounting for about 2.3% of the City's total transmission and distribution system. This transmission and distribution system use percentage is not expected to change within the forecast period.
- Where the City's delivery of water to Heartland utilizes just 2.3% of the transmission and distribution lines of the City, the volume of water sold to Heartland currently accounts for nearly 8.3% of the City's total billed water volumes.
- When considering peak loads and contractual terms, Heartland is currently responsible for approximately 8.5% of the City's total available capacity. Heartland's use of the City's total available capacity is forecast to grow to 11.9% within the study period as Heartland's service population is expected to grow more rapidly than the City's as a whole.
- The City of Mesquite cost of service model established in the City's comprehensive water rate study determines the basis for calculating Heartland's relative costs associated with its use of the total system capacity. City staff provided guidance on inflation factors that were then applied within the rate model to escalate expenses into the future for the study period.

**EXHIBIT 3** reveals that the total cost of service to Heartland is expected to increase from **\$1,737,394** in FY 2022 to **\$6,542,381** in FY 2030. Note that the City's cost of purchasing water from NTMWD accounts for approximately **80%** of the Heartland cost of service. As such, the City has little direct control over the vast majority of the Heartland cost of service.

EXHIBIT 3 | Forecast Cost of Service



### Heartland Wholesale Water Rate Recommendation

The calculated wholesale water rate is a function of the City's cost to purchase NTMWD water, the City's total systemwide cost of service, Heartland's relative use of the City's water system, and the volume of water contracted for and provided to Heartland. The calculated wholesale water rate ranges from **\$3.77/kgal in 2022** to **\$4.75/kgal in 2027**, which corresponds to a five-year average of +25.4% over the rate charged by NTMWD to the City. Based on this calculation and the reality that approximately 80% of the Heartland cost of service is in the City's cost of water, **we recommend the Heartland wholesale water rate to be set at 25% above the then-current volume rate charged to the City by NTMWD.**

Of course, the City could elect to charge either a flat rate for all Heartland water purchases or a transmission fee on top of the current NTMWD volume rate. However, because the City's cost of water makes up such a large portion of the total Heartland cost of service, we recommend a percentage surcharge structure to ensure that the City's expenses are reasonably covered throughout the contract term.

EXHIBIT 4 | Calculated Wholesale Water Rate

	2021	2022	2023	2024	2025
<b>Heartland -- Forecast Cost of Service*</b>					
Total Cost of Service	\$ 1,580,216	\$ 1,737,394	\$ 2,405,498	\$ 3,276,014	\$ 3,781,977
<b>Heartland -- Forecast Rate/1,000 Gallons</b>					
NTMWD Rate	\$ 2.99	\$ 2.99	\$ 3.21	\$ 3.37	\$ 3.55
City Costs	\$ 0.78	\$ 0.78	\$ 0.81	\$ 0.84	\$ 0.87
<b>Total</b>	<b>\$ 3.77</b>	<b>\$ 3.77</b>	<b>\$ 4.02</b>	<b>\$ 4.21</b>	<b>\$ 4.42</b>
<b>Percent over NTMWD Rate</b>	<b>26.3%</b>	<b>26.2%</b>	<b>25.2%</b>	<b>24.9%</b>	<b>24.5%</b>
<b>5 Year Average</b>	<b>25.4%</b>				

*\* Cost of Service includes NTMWD pass-through costs*

## Notes on Rate Recommendations

The forecast and recommendations presented in this study represent a combination of the best information available from the City of Mesquite and the project team's expertise. However, this forecast relies partly on assumptions about future events and events beyond the project team's control. The forecast and recommendations contained in this study may be subject to revision if any of the following, or other, material events occur:

- Actual growth in purchased volumes is significantly different than forecast.
- Infrastructure needs that are currently unanticipated arise which would be required to adequately provide water to Heartland, capital improvement plan funding costs increase significantly due to the rising cost of labor, materials, or other factors.
- An unforeseen event impacts the City, such as an extended recession, natural catastrophe, global pandemic, or terrorist attack.
- Significant and long-lasting changes in weather patterns.
- Increases or decreases in interest rates, coverage requirements, or reserve requirements for long-term debt.
- The City's budget levels or priorities change significantly from those forecasted in this study and the accompanying comprehensive rate study performed for the City.

It should be noted that none of these events are foreseen by the project team or the City at this time.

**If any of these events occur, the City may be compelled to consider further adjustments to its wholesale water rates.**

This report summarizes the complete wholesale water rate study and does not include all of the information used to calculate the recommended wholesale water rate. The accompanying **Appendix A** and the City's Comprehensive Water Rate Study are integral parts of this study and should be referenced whenever possible for additional information not included in this summary report.

**CITY OF MESQUITE  
WATER/WASTEWATER COST OF SERVICE MODEL**

Current      2021      2022      2023      2024      2025      2026      2027      2028      2029      2030

**Forecast Summary**

**Scenario: 2021 08 11 -- Mesquite Rates Analysis**

**1 Water and Wastewater Rates**

**Water Rates -- Residential**

**Monthly Minimum Charge --5/8"**      \$      15.16      \$      15.16      \$      15.16      \$      15.77      \$      16.40      \$      17.05      \$      17.56      \$      18.09      \$      18.63      \$      19.19      \$      19.77

**Volume Rate Per 1,000 Gal**

1,001	5,000	6.58	6.58	6.58	6.84	7.12	7.40	7.62	7.85	8.09	8.33	8.58
5,001	10,000	7.08	7.08	7.08	7.36	7.66	7.96	8.20	8.45	8.70	8.96	9.23
10,001	50,000	7.43	7.43	7.43	7.73	8.04	8.36	8.61	8.87	9.13	9.41	9.69
50,001	70,000	7.78	7.78	7.78	8.09	8.41	8.75	9.01	9.28	9.56	9.85	10.15
70,001	500,000	8.14	8.14	8.14	8.47	8.80	9.16	9.43	9.71	10.01	10.31	10.61
500,001	Above	6.73	6.73	6.73	7.00	7.28	7.57	7.80	8.03	8.27	8.52	8.78

**Water Rates -- Commercial**

**Monthly Minimum Charge --2"**      \$      35.06      \$      35.06      \$      35.06      \$      36.46      \$      37.92      \$      39.44      \$      40.62      \$      41.84      \$      43.09      \$      44.39      \$      45.72

**Volume Rate Per 1,000 Gal**

1,001	5,000	6.58	6.58	6.58	6.84	7.12	7.40	7.62	7.85	8.09	8.33	8.58
5,001	10,000	7.08	7.08	7.08	7.36	7.66	7.96	8.20	8.45	8.70	8.96	9.23
10,001	50,000	7.43	7.43	7.43	7.73	8.04	8.36	8.61	8.87	9.13	9.41	9.69
50,001	70,000	7.78	7.78	7.78	8.09	8.41	8.75	9.01	9.28	9.56	9.85	10.15
70,001	500,000	8.14	8.14	8.14	8.47	8.80	9.16	9.43	9.71	10.01	10.31	10.61
500,001	Above	6.73	6.73	6.73	7.00	7.28	7.57	7.80	8.03	8.27	8.52	8.78

**Wastewater Rates - Residential**

Monthly Minimum Charge      \$      16.39      \$      16.39      \$      16.39      \$      16.72      \$      17.05      \$      17.39      \$      17.91      \$      18.45      \$      18.82      \$      19.20  
 Volume Rate/1,000 Gal      6.44      6.44      6.44      6.44      6.57      6.70      6.83      7.04      7.25      7.40      7.54

**Wastewater Rates - Commercial**

Monthly Minimum Charge      \$      16.39      \$      16.39      \$      16.39      \$      16.72      \$      17.05      \$      17.39      \$      17.91      \$      18.45      \$      18.82      \$      19.20  
 Volume Rate/1,000 Gal      6.44      6.44      6.44      6.44      6.57      6.70      6.83      7.04      7.25      7.40      7.54

**2 Residential Standard Monthly Bill**

5,000 Gal	Total	5/5	\$      83.63	\$      83.63	\$      83.63	\$      85.29	\$      87.86	\$      90.51	\$      92.79	\$      95.57	\$      98.44	\$      100.92	\$      103.46
Water & WW	Increase -- \$		-	-	1.66	2.57	2.65	2.28	2.78	2.87	2.48	2.54	
	Increase -- %		0.0%	0.0%	2.0%	3.0%	3.0%	2.5%	3.0%	3.0%	2.5%	2.5%	
10,000 Gal	Total	7/5	138.35	138.35	138.35	141.43	145.85	150.43	154.31	158.94	163.70	167.92	172.25
Water; 8K WW	Increase -- \$		-	-	3.08	4.43	4.58	3.87	4.63	4.77	4.22	4.33	
	Increase -- %		0.0%	0.0%	2.2%	3.1%	3.1%	2.6%	3.0%	3.0%	2.6%	2.6%	
20,000 Gal	Total	15/10	212.65	212.65	212.65	218.70	226.22	234.01	240.39	247.60	255.03	261.99	269.14
Water; 10K WW	Increase -- \$		-	-	6.05	7.52	7.79	6.38	7.21	7.43	6.96	7.15	
	Increase -- %		0.0%	0.0%	2.8%	3.4%	3.4%	2.7%	3.0%	3.0%	2.7%	2.7%	

**Commercial Monthly Bill -- All Meters**

40,000 Gal	Total	\$      587.23	\$      587.23	\$      587.23	\$      600.02	\$      618.67	\$      637.96	\$      654.31	\$      673.94	\$      694.16	\$      711.97	\$      730.26
Water & WW	Increase -- \$	-	-	12.79	18.65	19.29	16.36	19.63	20.22	17.81	18.29	
	Increase -- %	0.0%	0.0%	2.2%	3.1%	3.1%	2.6%	3.0%	3.0%	2.6%	2.6%	

Appendix A | Page 1

**CITY OF MESQUITE  
WATER/WASTEWATER COST OF SERVICE MODEL**

**Current      2021      2022      2023      2024      2025      2026      2027      2028      2029      2030**

**Forecast Summary**  
**Scenario:      2021 08 11 -- Mesquite Rates Analysis**

<b>3 Fund Balance, Revenues and Expenses</b>											
Beginning of TY Fund Balance	\$	11,467,805									
TY Transfer/Use		-									
<b>Revised Beginning Fund Balance</b>	<b>\$</b>	<b>11,467,805</b>	<b>\$ 16,134,707</b>	<b>\$ 19,149,246</b>	<b>\$ 21,296,256</b>	<b>\$ 23,480,514</b>	<b>\$ 25,702,773</b>	<b>\$ 27,143,700</b>	<b>\$ 28,970,678</b>	<b>\$ 29,640,521</b>	<b>\$ 29,915,480</b>
<b>Revenues and Expenses</b>											
Water Rate Revenues		39,480,101	40,852,046	42,968,540	46,100,855	49,117,470	51,737,802	54,421,466	57,154,925	59,814,935	62,494,227
WW Rate Revenues		30,371,543	30,660,050	31,077,714	32,025,606	33,120,402	34,128,667	35,470,046	36,852,955	37,865,405	38,854,473
Water Reserve Fees		-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues		2,110,870	2,112,458	2,114,063	2,115,684	2,117,320	2,118,974	2,120,643	2,122,330	2,124,033	2,125,753
<b>Total Revenues</b>		<b>71,962,514</b>	<b>73,624,555</b>	<b>76,160,316</b>	<b>80,242,144</b>	<b>84,355,193</b>	<b>87,985,442</b>	<b>92,012,155</b>	<b>96,130,210</b>	<b>99,804,373</b>	<b>103,474,453</b>
Operating Expenses	49,116,357	49,116,357	50,703,552	52,928,622	55,256,150	58,280,389	61,350,071	64,035,948	68,208,910	71,194,404	73,649,592
<b>Net Revenues for Transfers, Capital Outlays and Debt Serv</b>		<b>22,846,158</b>	<b>22,921,003</b>	<b>23,231,695</b>	<b>24,985,994</b>	<b>26,074,803</b>	<b>26,635,371</b>	<b>27,976,206</b>	<b>27,921,300</b>	<b>28,609,968</b>	<b>29,824,861</b>
Capital Outlays		589,540	589,540	589,540	589,540	589,540	589,540	589,540	589,540	589,540	589,540
Total Operating Expense/Capital Outlays		49,705,897	51,293,092	53,518,162	55,845,690	58,869,930	61,939,611	64,625,489	68,798,451	71,783,944	74,239,133
Net Revenues Available for Debt Service/Transfers		22,256,617	22,331,463	22,642,155	24,396,453	25,485,263	26,045,831	27,386,666	27,331,759	28,020,428	29,235,321
Current Debt Service		10,671,715	10,296,391	9,770,506	9,770,044	9,212,256	8,930,756	8,262,231	7,731,034	7,175,925	6,598,369
Future Debt Service		-	1,894,993	3,385,333	4,882,666	6,264,478	7,654,291	9,037,003	10,422,616	11,806,028	13,192,141
<b>Total Debt Service</b>		<b>10,671,715</b>	<b>12,191,384</b>	<b>13,155,839</b>	<b>14,652,710</b>	<b>15,476,734</b>	<b>16,585,046</b>	<b>17,299,234</b>	<b>18,153,649</b>	<b>18,981,954</b>	<b>19,790,510</b>
<b>Transfers</b>											
Budgeted Transfers - Water		3,459,000	3,562,770	3,669,653	3,779,743	3,893,135	4,009,929	4,130,227	4,254,134	4,381,758	4,513,210
Budgeted Transfers - Wastewater		3,459,000	3,562,770	3,669,653	3,779,743	3,893,135	4,009,929	4,130,227	4,254,134	4,381,758	4,513,210
<b>Total Contingencies &amp; Transfers</b>		<b>6,918,000</b>	<b>7,125,540</b>	<b>7,339,306</b>	<b>7,559,485</b>	<b>7,786,270</b>	<b>8,019,858</b>	<b>8,260,454</b>	<b>8,508,267</b>	<b>8,763,515</b>	<b>9,026,421</b>
<b>Total Cost of Service</b>		<b>67,295,612</b>	<b>70,610,016</b>	<b>74,013,307</b>	<b>78,057,886</b>	<b>82,132,934</b>	<b>86,544,516</b>	<b>90,185,176</b>	<b>95,460,368</b>	<b>99,529,413</b>	<b>103,056,063</b>
<b>Net Revenues</b>		<b>4,666,902</b>	<b>3,014,539</b>	<b>2,147,010</b>	<b>2,184,258</b>	<b>2,222,259</b>	<b>1,440,927</b>	<b>1,826,978</b>	<b>669,843</b>	<b>274,959</b>	<b>418,390</b>
Percent of COS		6.9%	4.3%	2.9%	2.8%	2.7%	1.7%	2.0%	0.7%	0.3%	0.4%
<b>Direct Fund Balance Drawdown for CIP</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Ending Water &amp; Sewer Combined Fund Balance</b>	<b>\$</b>	<b>16,134,707</b>	<b>\$ 19,149,246</b>	<b>\$ 21,296,256</b>	<b>\$ 23,480,514</b>	<b>\$ 25,702,773</b>	<b>\$ 27,143,700</b>	<b>\$ 28,970,678</b>	<b>\$ 29,640,521</b>	<b>\$ 29,915,480</b>	<b>\$ 30,333,870</b>
<b>Revenue Adequacy Tests</b>											
Total Exp (Budgetary Basis)		60,377,612	63,484,476	66,674,000	70,498,401	74,346,664	78,524,658	81,924,723	86,952,100	90,765,898	94,029,642
Expenses per Day		165,418	173,930	182,668	193,146	203,689	215,136	224,451	238,225	248,674	257,615
FB as % of Operating (Goal is 25%)		107%	121%	128%	133%	138%	138%	141%	136%	132%	129%
Number of Working Capital Days		98	110	117	122	126	126	129	124	120	118
Debt Coverage (excludes Capital Outlays and G/F Transfers)		2.14	1.88	1.77	1.71	1.68	1.61	1.62	1.54	1.51	1.51
<b>Portion of FB available for Annual Repair /Repl Fund</b>	<b>\$</b>	<b>11,999,255</b>	<b>\$ 14,800,995</b>	<b>\$ 16,729,544</b>	<b>\$ 18,651,857</b>	<b>\$ 20,610,536</b>	<b>\$ 21,765,299</b>	<b>\$ 23,359,396</b>	<b>\$ 23,684,898</b>	<b>\$ 23,698,638</b>	<b>\$ 23,893,484</b>

Appendix A | Page 2

**CITY OF MESQUITE  
WATER/WASTEWATER COST OF SERVICE MODEL**

**Current      2021      2022      2023      2024      2025      2026      2027      2028      2029      2030**

**Forecast Summary**

**Scenario:      2021 08 11 -- Mesquite Rates Analysis**

**5      Total Accounts**

**Water Accounts**

Total Accounts	51,623	53,048	53,195	53,931	54,860	55,565	56,254	56,877	57,397	57,917
New Accounts	-	-	-	1	-	-	-	-	-	-
Avg. Annual Growth Rate		2.76%	0.28%	1.38%	1.72%	1.29%	1.24%	1.11%	0.91%	0.91%

**Wastewater Accounts**

Total Accounts	51,053	51,383	51,939	52,624	53,503	54,158	54,797	55,370	55,840	56,310
New Accounts	-	330	556	535	529	305	289	223	120	120
Avg. Annual Growth Rate		0.65%	1.08%	1.32%	1.67%	1.22%	1.18%	1.05%	0.85%	0.84%

**6      Annual Volume**

**Water Volume**

W1 Residential	2,547,965,700	2,569,240,496	2,606,025,306	2,641,368,919	2,676,300,762	2,695,859,849	2,714,320,882	2,728,252,443	2,735,115,280	2,741,978,118
W2 Commercial	470,156,658	475,852,075	481,547,492	487,242,908	492,938,325	498,633,742	504,329,159	510,024,576	515,719,993	521,415,409
W3 Apartments	746,196,900	746,196,900	746,196,900	746,196,900	746,196,900	746,196,900	746,196,900	746,196,900	746,196,900	746,196,900
W4 Industrial	232,510,000	232,510,000	232,510,000	232,510,000	232,510,000	232,510,000	232,510,000	232,510,000	232,510,000	232,510,000
W5 Institutional	126,350,500	126,350,500	126,350,500	126,350,500	126,350,500	126,350,500	126,350,500	126,350,500	126,350,500	126,350,500
W6 City	221,732,250	221,732,250	221,732,250	221,732,250	221,732,250	221,732,250	221,732,250	221,732,250	221,732,250	221,732,250
W7 Irrigation	271,198,100	271,198,100	271,198,100	271,198,100	271,198,100	271,198,100	271,198,100	271,198,100	271,198,100	271,198,100
W8 Fire Hydrant	29,270,300	29,270,300	29,270,300	29,270,300	29,270,300	29,270,300	29,270,300	29,270,300	29,270,300	29,270,300
W9 Class W9	-	108,786,450	68,152,972	88,022,644	127,761,986	167,501,328	207,240,671	246,980,013	286,719,356	326,458,698
W10 Outside 2	-	-	-	-	-	-	-	-	-	-
W 11 Outside 3	-	-	-	-	-	-	-	-	-	-
W12 Class W12	418,611,600	460,472,760	598,614,588	778,198,964	856,018,861	941,620,747	1,035,782,822	1,087,571,963	1,141,950,561	1,199,048,089
W13 Class W13	-	-	-	91,250,000	182,500,000	273,750,000	365,000,000	456,250,000	547,500,000	638,750,000
W14 Wholesale 3	-	-	-	-	-	-	-	-	-	-
<b>Total System</b>	<b>5,063,992,008</b>	<b>5,241,609,831</b>	<b>5,381,598,408</b>	<b>5,713,341,486</b>	<b>5,962,777,984</b>	<b>6,204,623,717</b>	<b>6,453,931,584</b>	<b>6,656,337,044</b>	<b>6,854,263,239</b>	<b>7,054,908,364</b>

**Wastewater Billing Units**

WW1 Residential	2,129,969,940	2,150,855,756	2,184,824,104	2,214,620,053	2,244,068,864	2,260,557,885	2,276,121,205	2,287,866,016	2,293,651,637	2,299,437,259
WW2 Commercial	543,928,900	560,206,971	576,601,477	583,511,021	590,420,565	597,330,110	604,239,654	611,149,198	618,058,743	624,968,287
WW3 Apartment	716,867,528	716,867,528	716,867,528	716,867,528	716,867,528	716,867,528	716,867,528	716,867,528	716,867,528	716,867,528
WW4 Industrial	62,374,390	62,374,390	62,374,390	62,374,390	62,374,390	62,374,390	62,374,390	62,374,390	62,374,390	62,374,390
WW5 Institutional	79,648,900	79,648,900	79,648,900	79,648,900	79,648,900	79,648,900	79,648,900	79,648,900	79,648,900	79,648,900
WW6 City	55,315,600	55,315,600	55,315,600	55,315,600	55,315,600	55,315,600	55,315,600	55,315,600	55,315,600	55,315,600
WW7 Class WW7	87,864,150	87,864,150	87,864,150	87,864,150	87,864,150	87,864,150	87,864,150	87,864,150	87,864,150	87,864,150
WW8 Class WW8	170,975,355	170,975,355	170,975,355	170,975,355	170,975,355	170,975,355	170,975,355	170,975,355	170,975,355	170,975,355
WW9 Class WW9	-	-	-	9,279,000	30,930,000	52,581,000	74,232,000	95,883,000	117,534,000	139,185,000
WW10 Other	-	-	-	-	-	-	-	-	-	-
<b>Total System</b>	<b>3,846,944,763</b>	<b>3,884,108,651</b>	<b>3,934,471,504</b>	<b>3,980,455,997</b>	<b>4,038,465,353</b>	<b>4,083,514,917</b>	<b>4,127,638,783</b>	<b>4,167,944,138</b>	<b>4,202,290,303</b>	<b>4,236,636,469</b>

Appendix A | Page 3

**CITY OF MESQUITE  
WATER/WASTEWATER COST OF SERVICE MODEL**

**Current      2021      2022      2023      2024      2025      2026      2027      2028      2029      2030**

**Revenue and Expense Summary**  
**Scen:            2021 08 11 -- Mesquite Rates Analysis**

**TOTAL Revenues and Expenses -- CASH BASIS**

**Revenues**

Rate Revenue

Water Rate Revenue	\$	39,480,101	\$	40,852,046	\$	42,968,540	\$	46,100,855	\$	49,117,470	\$	51,737,802	\$	54,421,466	\$	57,154,925	\$	59,814,935	\$	62,494,227
Wastewater Rate Revenue		30,371,543		30,660,050		31,077,714		32,025,606		33,120,402		34,128,667		35,470,046		36,852,955		37,865,405		38,854,473
		69,851,645		71,512,096		74,046,253		78,126,460		82,237,872		85,866,469		89,891,511		94,007,880		97,680,340		101,348,700

Water Reserve Fees

		-		-		-		-		-		-		-		-		-		-
--	--	---	--	---	--	---	--	---	--	---	--	---	--	---	--	---	--	---	--	---

Non-Rate Revenues

		2,110,870		2,112,458		2,114,063		2,115,684		2,117,320		2,118,974		2,120,643		2,122,330		2,124,033		2,125,753
--	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------

<b>Total Revenues</b>		<b>71,962,514</b>		<b>73,624,555</b>		<b>76,160,316</b>		<b>80,242,144</b>		<b>84,355,193</b>		<b>87,985,442</b>		<b>92,012,155</b>		<b>96,130,210</b>		<b>99,804,373</b>		<b>103,474,453</b>
-----------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	--------------------

**Cost of Service**

Department Code

F	Finance	\$	2,527,440	\$	2,621,319	\$	2,712,344	\$	2,809,756	\$	2,911,843	\$	3,016,552	\$	3,125,100	\$	3,237,343	\$	3,353,187	\$	3,473,380
PW	Public Works		9,407,110		9,843,917		10,296,531		10,791,347		11,298,521		11,828,427		12,384,135		12,959,552		13,561,244		14,191,474
ND	Non-Departmental		955,000		983,650		1,013,160		1,043,554		1,074,861		1,107,107		1,140,320		1,174,530		1,209,765		1,246,058
NTMWD	North Texas Municipal Water District		36,226,807		35,999,652		38,391,061		40,372,765		42,745,843		44,838,275		46,851,682		50,149,525		52,483,785		54,120,517
MA	W9 and Annexation		-		1,255,014		515,526		238,728		249,321		559,710		534,712		687,961		586,422		618,163
	Total Operating Expenses		49,116,357		50,703,552		52,928,622		55,256,150		58,280,389		61,350,071		64,035,948		68,208,910		71,194,404		73,649,592

<b>Net Revenues for Transfers, Capital Outlays and Debt Service</b>		<b>22,846,158</b>		<b>22,921,003</b>		<b>23,231,695</b>		<b>24,985,994</b>		<b>26,074,803</b>		<b>26,635,371</b>		<b>27,976,206</b>		<b>27,921,300</b>		<b>28,609,968</b>		<b>29,824,861</b>
---	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------

Capital Outlays		589,540		589,540		589,540		589,540		589,540		589,540		589,540		589,540		589,540		589,540
-----------------	--	---------	--	---------	--	---------	--	---------	--	---------	--	---------	--	---------	--	---------	--	---------	--	---------

Debt Service

Debt Service -- Current		10,671,715		10,296,391		9,770,506		9,770,044		9,212,256		8,930,756		8,262,231		7,731,034		7,175,925		6,598,369
-------------------------	--	------------	--	------------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------

Debt Service -- Future		-		1,894,993		3,385,333		4,882,666		6,264,478		7,654,291		9,037,003		10,422,616		11,806,028		13,192,141
------------------------	--	---	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	------------	--	------------	--	------------

<b>Total Debt Service</b>		<b>10,671,715</b>		<b>12,191,384</b>		<b>13,155,839</b>		<b>14,652,710</b>		<b>15,476,734</b>		<b>16,585,046</b>		<b>17,299,234</b>		<b>18,153,649</b>		<b>18,981,954</b>		<b>19,790,510</b>
---------------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------

Transfers

Total Transfers		6,918,000		7,125,540		7,339,306		7,559,485		7,786,270		8,019,858		8,260,454		8,508,267		8,763,515		9,026,421
-----------------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------

<b>Total Cost of Service</b>		<b>67,295,612</b>		<b>70,610,016</b>		<b>74,013,307</b>		<b>78,057,886</b>		<b>82,132,934</b>		<b>86,544,516</b>		<b>90,185,176</b>		<b>95,460,368</b>		<b>99,529,413</b>		<b>103,056,063</b>
------------------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	-------------------	--	--------------------

<b>Net Revenues</b>		<b>4,666,902</b>		<b>3,014,539</b>		<b>2,147,010</b>		<b>2,184,258</b>		<b>2,222,259</b>		<b>1,440,927</b>		<b>1,826,978</b>		<b>669,843</b>		<b>274,959</b>		<b>418,390</b>
---------------------	--	------------------	--	------------------	--	------------------	--	------------------	--	------------------	--	------------------	--	------------------	--	----------------	--	----------------	--	----------------

Percent of COS		6.5%		4.1%		2.8%		2.7%		2.6%		1.6%		2.0%		0.7%		0.3%		0.4%
----------------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------

<b>Debt Coverage</b>		<b>2.14</b>		<b>1.88</b>		<b>1.77</b>		<b>1.71</b>		<b>1.68</b>		<b>1.61</b>		<b>1.62</b>		<b>1.54</b>		<b>1.51</b>		<b>1.51</b>
----------------------	--	-------------	--	-------------	--	-------------	--	-------------	--	-------------	--	-------------	--	-------------	--	-------------	--	-------------	--	-------------

(excludes Capital Outlays, G/F Transfers)

**CITY OF MESQUITE  
WATER/WASTEWATER COST OF SERVICE MODEL**

**Current      2021      2022      2023      2024      2025      2026      2027      2028      2029      2030**

**Revenue and Expense Summary**  
**Scen:            2021 08 11 -- Mesquite Rates Analysis**

**WATER Revenues and Expenses -- CASH BASIS**

**Water Revenues**

Water Rate Revenue

W1	Residential	\$ 21,291,232	\$ 21,469,008	\$ 22,574,855	\$ 23,796,262	\$ 25,075,404	\$ 26,036,726	\$ 27,001,474	\$ 27,954,264	\$ 28,865,319	\$ 29,805,880
W2	Commercial	3,863,927	3,910,734	4,102,651	4,317,221	4,542,393	4,736,416	4,934,231	5,139,652	5,352,957	5,574,436
W3	Apartments	6,610,931	6,610,931	6,853,332	7,127,466	7,412,564	7,640,900	7,870,127	8,106,230	8,349,417	8,599,900
W4	Industrial	1,658,946	1,658,946	1,719,774	1,788,565	1,860,107	1,917,406	1,974,928	2,034,176	2,095,201	2,158,057
W5	Institutional	1,026,239	1,026,239	1,063,867	1,106,422	1,150,679	1,186,124	1,221,708	1,258,359	1,296,110	1,334,993
W6	City	759,526	759,526	807,469	847,918	891,456	928,437	958,883	1,016,912	1,059,591	1,090,744
W7	Irrigation	2,286,167	2,286,167	2,369,993	2,464,793	2,563,384	2,642,346	2,721,617	2,803,265	2,887,363	2,973,984
W8	Fire Hydrant	230,826	230,826	240,059	249,661	259,648	267,437	275,460	283,724	292,236	301,003
W9	Class W9	-	972,131	561,730	745,530	1,125,398	1,520,893	1,938,173	2,379,121	2,844,782	3,336,242
W10	Outside 2	-	-	-	-	-	-	-	-	-	-
W11	Outside 3	-	-	-	-	-	-	-	-	-	-
W12	Class W12	1,752,308	1,927,539	2,674,810	3,657,016	4,236,437	4,861,117	5,524,866	6,179,221	6,771,957	7,318,990
W13	Class W13	-	-	-	-	-	-	-	-	-	-
W14	Wholesale 3	-	-	-	-	-	-	-	-	-	-
		39,480,101	40,852,046	42,968,540	46,100,855	49,117,470	51,737,802	54,421,466	57,154,925	59,814,935	62,494,227
	Water Reserve Fees	-	-	-	-	-	-	-	-	-	-
	Non-Rate Revenues	958,500	958,500	958,500	958,500	958,500	958,500	958,500	958,500	958,500	958,500
	<b>Total Revenues</b>	<b>40,438,601</b>	<b>41,810,546</b>	<b>43,927,040</b>	<b>47,059,355</b>	<b>50,075,970</b>	<b>52,696,302</b>	<b>55,379,966</b>	<b>58,113,425</b>	<b>60,773,435</b>	<b>63,452,727</b>

**Water Cost of Service**

Department Code

F	Finance	\$ 1,263,720	\$ 1,310,659	\$ 1,356,172	\$ 1,404,878	\$ 1,455,922	\$ 1,508,276	\$ 1,562,550	\$ 1,618,672	\$ 1,676,594	\$ 1,736,690
PW	Public Works	6,581,555	6,890,215	7,208,756	7,563,164	7,923,305	8,299,289	8,693,829	9,100,489	9,525,476	9,970,654
ND	Non-Departmental	477,500	491,825	506,580	521,777	537,430	553,553	570,160	587,265	604,883	623,029
NTMWD	North Texas Municipal Water District	24,810,021	24,178,345	25,635,145	26,578,839	27,650,935	28,461,551	29,019,877	30,801,128	32,448,622	33,910,719
MA	W9 and Annexation	-	1,255,014	515,526	238,728	249,321	559,710	534,712	687,961	586,422	618,163
	<b>Total</b>	<b>33,132,796</b>	<b>34,126,059</b>	<b>35,222,180</b>	<b>36,307,386</b>	<b>37,816,913</b>	<b>39,382,379</b>	<b>40,381,127</b>	<b>42,795,515</b>	<b>44,841,997</b>	<b>46,859,256</b>
	<b>Total Operating Expenses</b>	<b>33,132,796</b>	<b>34,126,059</b>	<b>35,222,180</b>	<b>36,307,386</b>	<b>37,816,913</b>	<b>39,382,379</b>	<b>40,381,127</b>	<b>42,795,515</b>	<b>44,841,997</b>	<b>46,859,256</b>
	<b>Net Revenues for Transfers, Capital Outlays and Debt Service</b>	<b>7,305,805</b>	<b>7,684,487</b>	<b>8,704,860</b>	<b>10,751,969</b>	<b>12,259,057</b>	<b>13,313,922</b>	<b>14,998,839</b>	<b>15,317,911</b>	<b>15,931,438</b>	<b>16,593,471</b>
	Capital Outlays	390,605	390,605	390,605	390,605	390,605	390,605	390,605	390,605	390,605	390,605
	<b>Debt Service</b>	<b>5,335,858</b>	<b>5,148,195</b>	<b>4,885,253</b>	<b>4,885,022</b>	<b>4,606,128</b>	<b>4,465,378</b>	<b>4,131,115</b>	<b>3,865,517</b>	<b>3,587,963</b>	<b>3,299,185</b>
	Debt Service -- Current	5,335,858	5,148,195	4,885,253	4,885,022	4,606,128	4,465,378	4,131,115	3,865,517	3,587,963	3,299,185
	Debt Service -- Future	-	1,340,500	2,492,335	3,649,117	4,352,958	5,062,458	5,766,936	6,473,464	7,178,437	7,885,320
	<b>Total Debt Service</b>	<b>5,335,858</b>	<b>6,488,696</b>	<b>7,377,588</b>	<b>8,534,139</b>	<b>8,959,086</b>	<b>9,527,836</b>	<b>9,898,051</b>	<b>10,338,981</b>	<b>10,766,400</b>	<b>11,184,504</b>
	<b>Transfers</b>	<b>3,459,000</b>	<b>3,562,770</b>	<b>3,669,653</b>	<b>3,779,743</b>	<b>3,893,135</b>	<b>4,009,929</b>	<b>4,130,227</b>	<b>4,254,134</b>	<b>4,381,758</b>	<b>4,513,210</b>
	<b>Total Cost of Service</b>	<b>42,318,259</b>	<b>44,568,129</b>	<b>46,660,026</b>	<b>49,011,873</b>	<b>51,059,739</b>	<b>53,310,749</b>	<b>54,800,010</b>	<b>57,779,235</b>	<b>60,380,759</b>	<b>62,947,576</b>

<b>Net Revenues</b>	<b>(1,879,658)</b>	<b>(2,757,584)</b>	<b>(2,732,986)</b>	<b>(1,952,518)</b>	<b>(983,769)</b>	<b>(614,448)</b>	<b>579,956</b>	<b>334,190</b>	<b>392,675</b>	<b>505,151</b>
Percent of COS	-4.6%	-6.6%	-6.2%	-4.1%	-2.0%	-1.2%	1.0%	0.6%	0.6%	0.8%
<b>Debt Coverage</b> (excludes Capital Outlays, G/F Transfers)	<b>1.37</b>	<b>1.18</b>	<b>1.18</b>	<b>1.26</b>	<b>1.37</b>	<b>1.40</b>	<b>1.52</b>	<b>1.48</b>	<b>1.48</b>	<b>1.48</b>

Appendix A | Page 5

**CITY OF MESQUITE  
WATER/WASTEWATER COST OF SERVICE MODEL**

**Current      2021      2022      2023      2024      2025      2026      2027      2028      2029      2030**

**Revenue and Expense Summary**  
**Scen: 2021 08 11 -- Mesquite Rates Analysis**

**5 Revenues and Expenses -- CASH BASIS**

**Wastewater Revenues**

Wastewater Rate Revenue

WW1	Residential	\$	18,124,896	\$	18,296,415	\$	18,579,169	\$	19,177,810	\$	19,821,482	\$	20,366,470	\$	21,105,106	\$	21,850,429	\$	22,361,565	\$	22,866,331
WW2	Commercial		3,697,405		3,804,623		3,912,592		4,032,068		4,161,409		4,294,311		4,470,750		4,657,530		4,808,211		4,959,203
WW5	Apartment		5,990,443		5,990,443		5,990,443		6,100,268		6,222,273		6,346,719		6,531,927		6,727,885		6,867,899		7,005,257
WW6	Industrial		403,960		403,960		403,960		411,366		419,593		427,985		440,474		453,688		463,130		472,393
WW5	Institutional		532,162		532,162		532,162		541,919		552,757		563,812		580,265		597,673		610,111		622,313
WW6	City		140,310		143,314		151,598		161,547		173,614		185,867		199,738		214,267		220,724		221,441
WW7	Class WW7		290,303		297,069		315,725		337,662		364,314		391,376		421,821		453,701		467,642		468,667
WW8	Class WW8		1,192,064		1,192,064		1,192,064		1,213,919		1,238,197		1,262,961		1,299,816		1,338,811		1,366,673		1,394,006
WW9	Class WW9		-		-		-		49,048		166,762		289,166		420,147		558,971		699,450		844,862
WW10	Other		-		-		-		-		-		-		-		-		-		-
			30,371,543		30,660,050		31,077,714		32,025,606		33,120,402		34,128,667		35,470,046		36,852,955		37,865,405		38,854,473
	Non-Rate Revenues		1,152,370		1,153,958		1,155,563		1,157,184		1,158,820		1,160,474		1,162,143		1,163,830		1,165,533		1,167,253
	<b>Total Revenues</b>		<b>31,523,913</b>		<b>31,814,009</b>		<b>32,233,277</b>		<b>33,182,789</b>		<b>34,279,223</b>		<b>35,289,141</b>		<b>36,632,189</b>		<b>38,016,785</b>		<b>39,030,938</b>		<b>40,021,726</b>

**Wastewater Cost of Service**

Department Code

F	Finance	\$	1,263,720	\$	1,310,659	\$	1,356,172	\$	1,404,878	\$	1,455,922	\$	1,508,276	\$	1,562,550	\$	1,618,672	\$	1,676,594	\$	1,736,690
PW	Public Works		2,825,555		2,953,702		3,087,775		3,228,183		3,375,217		3,529,138		3,690,306		3,859,063		4,035,768		4,220,819
ND	Non-Departmental		477,500		491,825		506,580		521,777		537,430		553,553		570,160		587,265		604,883		623,029
NTMWD	North Texas Municipal Water District		11,416,785		11,821,307		12,755,916		13,793,926		15,094,908		16,376,725		17,831,805		19,348,397		20,035,163		20,209,798
MA	W9 and Annexation		-		-		-		-		-		-		-		-		-		-
	<b>Total</b>		<b>15,983,560</b>		<b>16,577,493</b>		<b>17,706,442</b>		<b>18,948,765</b>		<b>20,463,477</b>		<b>21,967,692</b>		<b>23,654,821</b>		<b>25,413,396</b>		<b>26,352,407</b>		<b>26,790,337</b>
	Total Operating Expenses		15,983,560		16,577,493		17,706,442		18,948,765		20,463,477		21,967,692		23,654,821		25,413,396		26,352,407		26,790,337
	<b>Net Revenues for Transfers, Capital Outlays and Debt Service</b>		<b>15,540,353</b>		<b>15,236,516</b>		<b>14,526,835</b>		<b>14,234,025</b>		<b>13,815,746</b>		<b>13,321,449</b>		<b>12,977,368</b>		<b>12,603,389</b>		<b>12,678,531</b>		<b>13,231,389</b>
	Capital Outlays		198,935		198,935		198,935		198,935		198,935		198,935		198,935		198,935		198,935		198,935
	<b>Debt Service</b>																				
	Debt Service -- Current		5,335,858		5,148,195		4,885,253		4,885,022		4,606,128		4,465,378		4,131,115		3,865,517		3,587,963		3,299,185
	Debt Service -- Future		-		554,493		892,998		1,233,549		1,911,520		2,591,833		3,270,068		3,949,151		4,627,591		5,306,821
	Total Debt Service		5,335,858		5,702,688		5,778,250		6,118,571		6,517,648		7,057,211		7,401,183		7,814,668		8,215,554		8,606,005
	<b>Net Revenues for Contingencies &amp; Transfers</b>		<b>10,005,560</b>		<b>9,334,892</b>		<b>8,549,649</b>		<b>7,916,519</b>		<b>7,099,163</b>		<b>6,065,303</b>		<b>5,377,249</b>		<b>4,589,786</b>		<b>4,264,042</b>		<b>4,426,449</b>
	<b>Transfers</b>																				
	Total Transfers		3,459,000		3,562,770		3,669,653		3,779,743		3,893,135		4,009,929		4,130,227		4,254,134		4,381,758		4,513,210
	<b>Total Cost of Service</b>		<b>24,977,353</b>		<b>26,041,886</b>		<b>27,353,281</b>		<b>29,046,013</b>		<b>31,073,195</b>		<b>33,233,767</b>		<b>35,385,167</b>		<b>37,681,133</b>		<b>39,148,654</b>		<b>40,108,488</b>
	<b>Net Revenues</b>		<b>6,546,560</b>		<b>5,772,122</b>		<b>4,879,996</b>		<b>4,136,776</b>		<b>3,206,028</b>		<b>2,055,374</b>		<b>1,247,022</b>		<b>335,652</b>		<b>(117,716)</b>		<b>(86,761)</b>
	Percent of COS		20.8%		18.1%		15.1%		12.5%		9.4%		5.8%		3.4%		0.9%		-0.3%		-0.2%
	<b>Debt Coverage</b>		<b>2.91</b>		<b>2.67</b>		<b>2.51</b>		<b>2.33</b>		<b>2.12</b>		<b>1.89</b>		<b>1.75</b>		<b>1.61</b>		<b>1.54</b>		<b>1.54</b>

Appendix A | Page 6

<b>10 Year Forecast 2021-2030</b>	<b>CITY OF MESQUITE WATER/WASTEWATER COST OF SERVICE MODEL</b>										
	Reference	Test Year 2021	Forecast 2022	2023	2024	2025	2026	2027	2028	2029	2030

**Forecast W 8.0 -- WATER Wholesale Cost of Service -- Class W12**  
**Scenario: 2021 08 11 -- Mesquite Rates Analysis**

**CASH Basis**

**Total Systemwide Cost of Service**

**Operating Expenses**

NTMWD	North Texas Municipal Water District	\$ 24,810,021	\$ 24,178,345	\$ 25,635,145	\$ 26,578,839	\$ 27,650,935	\$ 28,461,551	\$ 29,019,877	\$ 30,801,128	\$ 32,448,622	\$ 33,910,719
F	Finance	1,263,720	1,310,659	1,356,172	1,404,878	1,455,922	1,508,276	1,562,550	1,618,672	1,676,594	1,736,690
PW	Public Works	6,581,555	6,890,215	7,208,756	7,563,164	7,923,305	8,299,289	8,693,829	9,100,489	9,525,476	9,970,654
ND	Non-Departmental	477,500	491,825	506,580	521,777	537,430	553,553	570,160	587,265	604,883	623,029
MA	W9 and Annexation	-	1,255,014	515,526	238,728	249,321	559,710	534,712	687,961	586,422	618,163
		33,132,796	34,126,059	35,222,180	36,307,386	37,816,913	39,382,379	40,381,127	42,795,515	44,841,997	46,859,256

**Capital Outlays**

	Treatment -- NTMWD	-	-	-	-	-	-	-	-	-	-
	Treatment -- Other	-	-	-	-	-	-	-	-	-	-
	Distribution	178,660	178,660	178,660	178,660	178,660	178,660	178,660	178,660	178,660	178,660
	Administration	20,275	20,275	20,275	20,275	20,275	20,275	20,275	20,275	20,275	20,275
	Customer	191,670	191,670	191,670	191,670	191,670	191,670	191,670	191,670	191,670	191,670
	Supply	-	-	-	-	-	-	-	-	-	-
	Total	390,605	390,605	390,605	390,605	390,605	390,605	390,605	390,605	390,605	390,605

**Transfers**

	Treatment -- NTMWD	-	-	-	-	-	-	-	-	-	-
	Treatment -- Other	-	-	-	-	-	-	-	-	-	-
	Distribution	-	-	-	-	-	-	-	-	-	-
	Administration	3,459,000	3,562,770	3,669,653	3,779,743	3,893,135	4,009,929	4,130,227	4,254,134	4,381,758	4,513,210
	Customer	-	-	-	-	-	-	-	-	-	-
	Supply	-	-	-	-	-	-	-	-	-	-
	Total	3,459,000	3,562,770	3,669,653	3,779,743	3,893,135	4,009,929	4,130,227	4,254,134	4,381,758	4,513,210

**Current Debt Service**

	Treatment -- NTMWD	-	-	-	-	-	-	-	-	-	-
	Treatment -- Other	-	-	-	-	-	-	-	-	-	-
	Distribution	5,335,858	5,148,195	4,885,253	4,885,022	4,606,128	4,465,378	4,131,115	3,865,517	3,587,963	3,299,185
	Administration	-	-	-	-	-	-	-	-	-	-
	Customer	-	-	-	-	-	-	-	-	-	-
	Supply	-	-	-	-	-	-	-	-	-	-
	Total	5,335,858	5,148,195	4,885,253	4,885,022	4,606,128	4,465,378	4,131,115	3,865,517	3,587,963	3,299,185

**Future Debt Service**

	Treatment -- NTMWD	-	-	-	-	-	-	-	-	-	-
	Treatment -- Other	-	-	-	-	-	-	-	-	-	-
	Distribution	-	554,493	960,886	1,369,325	2,074,451	2,781,919	3,487,309	4,193,548	4,899,142	5,605,527
	Administration	-	-	-	-	-	-	-	-	-	-
	Customer	-	786,008	1,531,450	2,279,792	2,278,507	2,280,539	2,279,627	2,279,917	2,279,295	2,279,792
	Supply	-	-	-	-	-	-	-	-	-	-
	Total	-	1,340,500	2,492,335	3,649,117	4,352,958	5,062,458	5,766,936	6,473,464	7,178,437	7,885,320

10 Year Forecast 2021-2030		CITY OF MESQUITE WATER/WASTEWATER COST OF SERVICE MODEL									
		Reference	Test Year 2021	Forecast 2022	2023	2024	2025	2026	2027	2028	2029

**Forecast W 8.0 -- WATER Wholesale Cost of Service -- Class W12**  
**Scenario: 2021 08 11 -- Mesquite Rates Analysis**

<b>Total Cost of Service</b>		42,318,259	44,568,129	46,660,026	49,011,873	51,059,739	53,310,749	54,800,010	57,779,235	60,380,759	62,947,576
		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

<b>10 Year Forecast 2021-2030</b>	<b>CITY OF MESQUITE WATER/WASTEWATER COST OF SERVICE MODEL</b>										
	Reference	Test Year 2021	Forecast 2022	2023	2024	2025	2026	2027	2028	2029	2030

**Forecast W 8.0 -- WATER Wholesale Cost of Service -- Class W12**  
**Scenario: 2021 08 11 -- Mesquite Rates Analysis**

**Class W12 Allocation Factors**

<b>1</b>	<b>Monthly Bills</b>										
	Class W12	12	12	12	12	12	12	12	12	12	12
	Others	619,464	636,564	638,328	647,160	658,308	666,768	675,036	682,512	688,752	694,992
	<b>Total</b>	<u>619,476</u>	<u>636,576</u>	<u>638,340</u>	<u>647,172</u>	<u>658,320</u>	<u>666,780</u>	<u>675,048</u>	<u>682,524</u>	<u>688,764</u>	<u>695,004</u>
	<b>Percent Class W12</b>	<b>0.002%</b>	<b>0.002%</b>	<b>0.002%</b>	<b>0.002%</b>	<b>0.002%</b>	<b>0.002%</b>	<b>0.002%</b>	<b>0.002%</b>	<b>0.002%</b>	<b>0.002%</b>
<b>2</b>	<b>Billed Volumes</b>										
	Class W12	418,611,600	460,472,760	598,614,588	778,198,964	856,018,861	941,620,747	1,035,782,822	1,087,571,963	1,141,950,561	1,199,048,089
	Others	4,645,380,408	4,781,137,071	4,782,983,820	4,935,142,521	5,106,759,124	5,263,002,970	5,418,148,762	5,568,765,082	5,712,312,679	5,855,860,275
	<b>Total</b>	<u>5,063,992,008</u>	<u>5,241,609,831</u>	<u>5,381,598,408</u>	<u>5,713,341,486</u>	<u>5,962,777,984</u>	<u>6,204,623,717</u>	<u>6,453,931,584</u>	<u>6,656,337,044</u>	<u>6,854,263,239</u>	<u>7,054,908,364</u>
	<b>Percent Class W12</b>	<b>8.266%</b>	<b>8.785%</b>	<b>11.123%</b>	<b>13.621%</b>	<b>14.356%</b>	<b>15.176%</b>	<b>16.049%</b>	<b>16.339%</b>	<b>16.660%</b>	<b>16.996%</b>
<b>3</b>	<b>Distribution Lines Used and Useful</b>										
	<b>Percent of System Used and Useful to Class W12</b>	<b>2.322%</b>	<b>2.322%</b>	<b>2.322%</b>	<b>2.322%</b>	<b>2.322%</b>	<b>2.322%</b>	<b>2.322%</b>	<b>2.322%</b>	<b>2.322%</b>	<b>2.322%</b>
<b>4</b>	<b>Percent of Total System Capacity</b>										
	Class W12	3.60	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
	Others	38.40	37.00	37.00	37.00	37.00	37.00	37.00	37.00	37.00	37.00
	<b>Total</b>	<u>42.00</u>	<u>42.00</u>	<u>42.00</u>	<u>42.00</u>	<u>42.00</u>	<u>42.00</u>	<u>42.00</u>	<u>42.00</u>	<u>42.00</u>	<u>42.00</u>
	<b>Percent Class W12</b>	<b>8.571%</b>	<b>11.905%</b>	<b>11.905%</b>	<b>11.905%</b>	<b>11.905%</b>	<b>11.905%</b>	<b>11.905%</b>	<b>11.905%</b>	<b>11.905%</b>	<b>11.905%</b>

Appendix A | Page 9

<b>10 Year Forecast 2021-2030</b>	<b>CITY OF MESQUITE WATER/WASTEWATER COST OF SERVICE MODEL</b>										
Reference	Test Year 2021	Forecast 2022	2023	2024	2025	2026	2027	2028	2029	2030	

**Forecast W 8.0 -- WATER Wholesale Cost of Service -- Class W12**  
**Scenario: 2021 08 11 -- Mesquite Rates Analysis**

**Application of Allocation Factors to Systemwide COS**

**Operating Expenses**

NTMWD	North Texas Municipal Water Distric	NA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
F	Finance	1	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%
PW	Public Works	4	8.571%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%
ND	Non-Departmental	4	8.571%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%
MA	W9 and Annexation	NA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%

**Capital Outlays**

Treatment -- NTMWD		NA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Treatment -- Other		2	8.266%	8.785%	11.123%	13.621%	14.356%	15.176%	16.049%	16.339%	16.660%	16.996%
Distribution		3	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%
Administration		4	8.571%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%
Customer		1	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%
Supply		NA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%

**Transfers**

Treatment -- NTMWD		NA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Treatment -- Other		2	8.266%	8.785%	11.123%	13.621%	14.356%	15.176%	16.049%	16.339%	16.660%	16.996%
Distribution		3	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%
Administration		4	8.571%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%
Customer		1	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%
Supply		NA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%

**Current Debt Service**

Treatment -- NTMWD		NA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Treatment -- Other		2	8.266%	8.785%	11.123%	13.621%	14.356%	15.176%	16.049%	16.339%	16.660%	16.996%
Distribution		3	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%	2.322%
Administration		4	8.571%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%
Customer		1	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%
Supply		NA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%

**Future Debt Service**

Treatment -- NTMWD		NA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Treatment -- Other		2	8.266%	8.785%	11.123%	13.621%	14.356%	15.176%	16.049%	16.339%	16.660%	16.996%
Distribution		NA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Administration		4	8.571%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%	11.905%
Customer		1	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%
Supply		NA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%

Appendix A | Page 10

<p><b>10 Year Forecast 2021-2030</b></p>	<p><b>CITY OF MESQUITE WATER/WASTEWATER COST OF SERVICE MODEL</b></p>									
Reference	Test Year 2021	Forecast 2022	2023	2024	2025	2026	2027	2028	2029	2030

**Forecast W 8.0 -- WATER Wholesale Cost of Service -- Class W12**  
**Scenario: 2021 08 11 -- Mesquite Rates Analysis**

**City Cost of Service -- Class W12**

**Operating Expenses**

NTMWD North Texas Municipal Water District	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
F Finance	24	25	25	26	27	27	28	28	29	30	
PW Public Works	564,133	820,264	858,185	900,377	943,251	988,011	1,034,980	1,083,392	1,133,985	1,186,983	
ND Non-Departmental	40,929	58,551	60,307	62,116	63,980	65,899	67,876	69,912	72,010	74,170	
MA W9 and Annexation	-	-	-	-	-	-	-	-	-	-	
<b>Total</b>	<b>605,086</b>	<b>878,839</b>	<b>918,518</b>	<b>962,519</b>	<b>1,007,257</b>	<b>1,053,937</b>	<b>1,102,884</b>	<b>1,153,333</b>	<b>1,206,024</b>	<b>1,261,183</b>	

**Capital Outlays**

Treatment -- NTMWD	-	-	-	-	-	-	-	-	-	-
Treatment -- Other	-	-	-	-	-	-	-	-	-	-
Distribution	4,148	4,148	4,148	4,148	4,148	4,148	4,148	4,148	4,148	4,148
Administration	1,738	2,414	2,414	2,414	2,414	2,414	2,414	2,414	2,414	2,414
Customer	4	4	4	4	3	3	3	3	3	3
Supply	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>5,890</b>	<b>6,566</b>	<b>6,566</b>	<b>6,566</b>	<b>6,566</b>	<b>6,565</b>	<b>6,565</b>	<b>6,565</b>	<b>6,565</b>	<b>6,565</b>

**Transfers**

Treatment -- NTMWD	-	-	-	-	-	-	-	-	-	-
Treatment -- Other	-	-	-	-	-	-	-	-	-	-
Distribution	-	-	-	-	-	-	-	-	-	-
Administration	296,486	424,139	436,863	449,969	463,468	477,373	491,694	506,444	521,638	537,287
Customer	-	-	-	-	-	-	-	-	-	-
Supply	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>296,486</b>	<b>424,139</b>	<b>436,863</b>	<b>449,969</b>	<b>463,468</b>	<b>477,373</b>	<b>491,694</b>	<b>506,444</b>	<b>521,638</b>	<b>537,287</b>

**Current Debt Service**

Treatment -- NTMWD	-	-	-	-	-	-	-	-	-	-
Treatment -- Other	-	-	-	-	-	-	-	-	-	-
Distribution	123,895	119,537	113,432	113,427	106,951	103,683	95,921	89,754	83,310	76,605
Administration	-	-	-	-	-	-	-	-	-	-
Customer	-	-	-	-	-	-	-	-	-	-
Supply	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>123,895</b>	<b>119,537</b>	<b>113,432</b>	<b>113,427</b>	<b>106,951</b>	<b>103,683</b>	<b>95,921</b>	<b>89,754</b>	<b>83,310</b>	<b>76,605</b>

**Future Debt Service**

Treatment -- NTMWD	-	-	-	-	-	-	-	-	-	-
Treatment -- Other	-	-	-	-	-	-	-	-	-	-
Distribution	-	-	-	-	-	-	-	-	-	-
Administration	-	-	-	-	-	-	-	-	-	-
Customer	-	15	29	42	42	41	41	40	40	39
Supply	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>-</b>	<b>15</b>	<b>29</b>	<b>42</b>	<b>42</b>	<b>41</b>	<b>41</b>	<b>40</b>	<b>40</b>	<b>39</b>

Appendix A | Page 11

<b>10 Year Forecast 2021-2030</b>	<b>CITY OF MESQUITE WATER/WASTEWATER COST OF SERVICE MODEL</b>									
Reference	Test Year 2021	Forecast 2022	2023	2024	2025	2026	2027	2028	2029	2030

**Forecast W 8.0 -- WATER Wholesale Cost of Service -- Class W12**  
**Scenario: 2021 08 11 -- Mesquite Rates Analysis**

Total City Cost -- Class W12	1,031,357	1,429,096	1,475,408	1,532,523	1,584,283	1,641,599	1,697,105	1,756,137	1,817,577	1,881,679
Contracted Capacity -- Class W12										
Gallons	1,314,000,000	1,825,000,000	1,825,000,000	1,825,000,000	1,825,000,000	1,825,000,000	1,825,000,000	1,825,000,000	1,825,000,000	1,825,000,000
MGD	3.60	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
City Cost per 1,000 Gallons	\$ 0.78	\$ 0.78	\$ 0.81	\$ 0.84	\$ 0.87	\$ 0.90	\$ 0.93	\$ 0.96	\$ 1.00	\$ 1.03

<b>10 Year Forecast 2021-2030</b>	<b>CITY OF MESQUITE WATER/WASTEWATER COST OF SERVICE MODEL</b>									
Reference	Test Year 2021	Forecast 2022	2023	2024	2025	2026	2027	2028	2029	2030

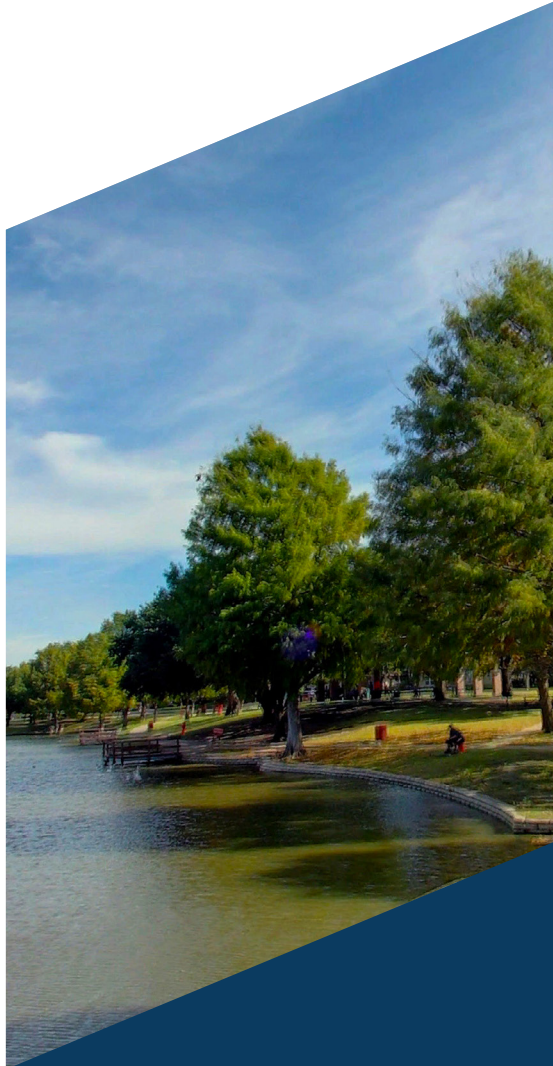
**Forecast W 8.0 -- WATER Wholesale Cost of Service -- Class W12**  
**Scenario: 2021 08 11 -- Mesquite Rates Analysis**

**Class W12 Total Cost of Service Calculation**

NTMWD Rate	\$ 2.99	\$ 2.99	\$ 3.21	\$ 3.37	\$ 3.55	\$ 3.70	\$ 3.82	\$ 4.11	\$ 4.29	\$ 4.43
City Costs	<u>0.78</u>	<u>0.78</u>	<u>0.81</u>	<u>0.84</u>	<u>0.87</u>	<u>0.90</u>	<u>0.93</u>	<u>0.96</u>	<u>1.00</u>	<u>1.03</u>
Calculated Rate	\$ 3.77	\$ 3.77	\$ 4.02	\$ 4.21	\$ 4.42	\$ 4.60	\$ 4.75	\$ 5.07	\$ 5.29	\$ 5.46
Forecast Consumed Volume	418,611,600	460,472,760	598,614,588	778,198,964	856,018,861	941,620,747	1,035,782,822	1,087,571,963	1,141,950,561	1,199,048,089
<b>Total Cost of Service</b>	<b>\$ 1,580,216</b>	<b>\$ 1,737,394</b>	<b>\$ 2,405,498</b>	<b>\$ 3,276,014</b>	<b>\$ 3,781,977</b>	<b>\$ 4,330,990</b>	<b>\$ 4,919,886</b>	<b>\$ 5,511,489</b>	<b>\$ 6,038,981</b>	<b>\$ 6,542,381</b>

**Class W12 Rate Calculation**

NTMWD Rate	\$ 2.99	\$ 2.99	\$ 3.21	\$ 3.37	\$ 3.55	\$ 3.70	\$ 3.82	\$ 4.11	\$ 4.29	\$ 4.43
City Costs	<u>0.78</u>	<u>0.78</u>	<u>0.81</u>	<u>0.84</u>	<u>0.87</u>	<u>0.90</u>	<u>0.93</u>	<u>0.96</u>	<u>1.00</u>	<u>1.03</u>
<b>Total</b>	<b>3.77</b>	<b>3.77</b>	<b>4.02</b>	<b>4.21</b>	<b>4.42</b>	<b>4.60</b>	<b>4.75</b>	<b>5.07</b>	<b>5.29</b>	<b>5.46</b>
<b>Percent over NTMWD Rate</b>	<b>26.3%</b>	<b>26.2%</b>	<b>25.2%</b>	<b>24.9%</b>	<b>24.5%</b>	<b>24.3%</b>	<b>24.3%</b>	<b>23.4%</b>	<b>23.2%</b>	<b>23.3%</b>
<b>5 Year Average</b>	<b>25.4%</b>									
<b>10 Year Average</b>	<b>24.4%</b>									



5500 Democracy Drive, Suite 130  
Plano, TX 75024  
972.378.6588  
[www.willdan.com](http://www.willdan.com)