



City of Glendale

Water and Wastewater Rates

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1. Executive Summary

1.1. Introduction

The City of Glendale, Arizona (City) provides water and wastewater service to approximately 59,600 customer accounts. The City's water and wastewater utilities are funded primarily from water and wastewater rates.

The City authorized Red Oak Consulting (Red Oak) to review the utilities' financial status and recommend rate adjustments, as necessary, to assure their continuing financial viability. This study includes:

- Development of water and wastewater financial plans for the 10-year study period, fiscal years 2010 through 2019;
- Analysis of customer class cost of service for fiscal year 2011; and
- Design of water and wastewater rates for fiscal year 2011.

1.2. Definitions

References made to a year or fiscal year mean the year ending June 30. Existing rates mean water and wastewater rates in effect October 1, 2009.

1.3. Study Assumptions

This rate study is based on numerous assumptions. Changes in these assumptions could have a material effect on study findings. Red Oak incorporated the following key assumptions into the study:

- Based on recent historical trends, the number of accounts will decrease by 0.5% in 2010, remain unchanged in 2011, and increase by 0.4% per year thereafter during the study period.
- Utilities will strive to maintain the following reserve levels:
 - ◆ Ninety days of water operation and maintenance expense (O&M) and 60 days of wastewater O&M as working capital reserve in operating funds
 - ◆ Six months of main replacement expense in water and wastewater non-growth capital funds
 - ◆ One year of projected development impact fee revenue at 0.5% annual growth in water and wastewater growth capital funds

1.4. Water Rates

Principal findings of the water rate study are as follows:

- Utility staff has developed a \$278.0 million water capital improvement program for the 10-year study period.
- Water sales revenue under existing rates is inadequate to meet projected revenue requirements during the study period. The financial plan indicates that rate adjustments are needed during the study period to increase annual water sales revenue as follows:

<u>Fiscal Year</u>	<u>Water Sales Revenue Increase</u>	<u>Fiscal Year</u>	<u>Water Sales Revenue Increase</u>
2011	12%	2016	6%
2012	6%	2017	6%
2013	6%	2018	5%
2014	6%	2019	1%
2015	6%		

- Red Oak recommends the water utility financial plan be updated annually to reflect changes in revenue, O&M, capital improvement needs, and capital financing requirements.
- Red Oak conducted a comprehensive water utility cost of service analysis in accordance with standard methods supported by the American Water Works Association. This analysis determined the cost of providing water service to residential, commercial, and sprinkler customers for the 2011 test year. Table 1-1 summarizes the findings of the cost of service analysis.
- Sprinkler accounts were previously included in both the residential and commercial classes. Because of their unique water demand characteristics, sprinkler customers are a separate customer classification.

**Table 1-1:
Comparison of Water Cost of Service with
Revenue Under Existing Rates
Test Year 2011**

Line No.	Customer Class	Cost of Service	Revenue under Existing Rates	Indicated Revenue Adjustment
	Inside City			
1	Residential	\$ 27,795,004	\$ 24,499,176	13.5%
2	Commercial	12,891,288	11,407,457	13.0%
3	Sprinkler	<u>7,139,855</u>	<u>6,772,891</u>	5.4%
4	Total Inside City	\$ 47,826,147	\$ 42,679,524	12.1%
	Outside City			
5	Residential	535,282	476,015	12.5%
6	Commercial	336,860	321,459	4.8%
7	Sprinkler	<u>32,540</u>	<u>32,671</u>	(0.4%)
8	Total Outside City	\$ 904,682	\$ 830,145	9.0%
9	Total Cost of Service	\$ 48,730,829	\$ 43,509,669	12.0%

- Existing water rates have been in effect since October 2009 and have the following structure:
 - ◆ Base charges vary by meter size.
 - ◆ Volume charges for residential customers use a 4-block increasing rate structure.
 - ◆ Volume charges for commercial customers use a 2-block increasing rate structure. The first block rate is applicable to all water use during November through April (winter period) and to average winter monthly water use during May through October. The second block rate is applicable to water use in excess of average winter monthly use during May through October.

- Red Oak developed the proposed 2011 water rates to increase annual water sales revenue by 12% and equitably recover class cost of service. The proposed rates include monthly base charges and volume charges.
 - ◆ The proposed 2011 base charges use the existing rate structure and vary by meter size. Table 1-2 compares existing and proposed 2011 monthly base charges.

**Table 1-2:
Comparison of Existing and Proposed
Monthly Water Base Charges⁽¹⁾**

Meter Size	Existing Rates	Proposed Rates
<i>(inch)</i>	<i>(per bill)</i>	<i>(per bill)</i>
5/8	\$ 9.10	\$ 9.70
3/4	11.50	12.30
1	16.40	17.40
1 ½	33.20	35.30
2	58.70	62.90
3	99.50	106.00
4	178.00	189.00
6	355.00	376.00
8	525.00	557.00
10	-	896.00
12	-	1,326.00

(1) Inside City rates are shown. Outside City rates are 1.3 times greater than inside City rates, in accordance with City policy.

- ◆ The proposed 2011 residential volume charges use the existing four-block increasing rate structure. Table 1-3 compares existing and proposed 2011 residential water volume charges.

**Table 1-3:
Comparison of Existing and Proposed
Residential Water Volume Charges⁽¹⁾**

Monthly Usage	Existing Rates	Proposed Rates
<i>(Kgal)</i>	<i>(per Kgal)</i>	<i>(per Kgal)</i>
First 6	\$ 1.84	\$ 2.14
Next 9	2.30	2.68
Next 15	3.22	3.76
Over 30	4.51	5.27

(1) Inside City rates are shown. Outside City rates are 1.3 times greater than inside City rates, in accordance with City policy.

- ◆ Table 1-4 compares typical monthly residential water bills under existing and proposed 2011 rates. The monthly bill for the median residential customer (9,000 gallons) would increase \$3.54, from \$27.04 under existing rates to \$30.58 under proposed rates.

**Table 1-4:
Monthly Residential Water Bills⁽¹⁾
5/8-inch Meter**

Monthly Usage	Percent of Total Bills	Cumulative Percent	Existing Rates	Proposed Rates	Change
<i>(gallons)</i>					
0	2.9%	2.9%	\$ 9.10	\$ 9.70	\$ 0.60
1,000	2.1%	5.0%	10.94	11.84	0.90
2,000	3.6%	8.6%	12.78	13.98	1.20
3,000	4.9%	13.5%	14.62	16.12	1.50
4,000	6.2%	19.7%	16.46	18.26	1.80
5,000	6.8%	26.5%	18.30	20.40	2.10
6,000	6.9%	33.4%	20.14	22.54	2.40
7,000	6.8%	40.2%	22.44	25.22	2.78
8,000	6.4%	46.6%	24.74	27.90	3.16
9,000	5.9%	52.5%	27.04	30.58	3.54
10,000	5.3%	57.8%	29.34	33.26	3.92
11,000	4.8%	62.6%	31.64	35.94	4.30
12,000	4.2%	66.8%	33.94	38.62	4.68
13,000	3.8%	70.6%	36.24	41.30	5.06
14,000	3.3%	73.9%	38.54	43.98	5.44
15,000	3.0%	76.9%	40.84	46.66	5.82
16,000	2.6%	79.5%	44.06	50.42	6.36
17,000	2.3%	81.8%	47.28	54.18	6.90
18,000	2.0%	83.8%	50.50	57.94	7.44
19,000	1.8%	85.6%	53.72	61.70	7.98
20,000	1.5%	87.1%	56.94	65.46	8.52
21,000	1.4%	88.5%	60.16	69.22	9.06
22,000	1.3%	89.8%	63.38	72.98	9.60
23,000	1.1%	90.9%	66.60	76.74	10.14
24,000	0.9%	91.8%	69.82	80.50	10.68
25,000	0.9%	92.7%	73.04	84.26	11.22
26,000	0.7%	93.4%	76.26	88.02	11.76
27,000	0.7%	94.1%	79.48	91.78	12.30
28,000	0.6%	94.7%	82.70	95.54	12.84
29,000	0.5%	95.2%	85.92	99.30	13.38
30,000	0.5%	95.7%	89.14	103.06	13.92

(1) Bills shown are based on inside City rates.

- ◆ The proposed 2011 commercial and sprinkler volume charges use a seasonal water rate structure. In this structure winter rates are applied to water use during the months of November through April, and summer rates are applied to all water use during the months of May through October. Tables 1-5 and 1-6 compare existing and proposed 2011 commercial and sprinkler water volume charges, respectively.

**Table 1-5:
Comparison of Existing and Proposed
Commercial Water Volume Charges⁽¹⁾**

Block	Existing Rates <i>(per Kgal)</i>	Proposed Rates <i>(per Kgal)</i>
Standard ⁽²⁾	\$ 2.01	NA
Summer Excess ⁽³⁾	3.52	NA
Winter ⁽⁴⁾	NA	\$ 2.28
Summer ⁽⁵⁾	NA	2.85
<p>(1) Inside City rates are shown. Outside City rates are 1.3 times greater than inside City rates, in accordance with City policy.</p> <p>(2) Standard rates are applied to all water use for months November through April (winter period) and to average winter monthly water use for months May through October.</p> <p>(3) Summer excess rates are applied to water use in excess of average winter monthly use for months May through October.</p> <p>(4) Winter rates apply to water use during the months of November through April.</p> <p>(5) Summer rates apply to all water use during the months of May through October.</p>		

**Table 1-6:
Comparison of Existing and Proposed
Sprinkler Water Volume Charges⁽¹⁾**

Block	Existing Rates <i>(per Kgal)</i>	Proposed Rates <i>(per Kgal)</i>
Standard ⁽²⁾	\$ 2.01	NA
Summer Excess ⁽³⁾	3.52	NA
Winter ⁽⁴⁾	NA	\$ 2.58
Summer ⁽⁵⁾	NA	3.23
<p>(1) Inside City rates are shown. Outside City rates are 1.3 times greater than inside City rates, in accordance with City policy.</p> <p>(2) Standard rates are applied to all water use for months November through April (winter period) and to average winter monthly water use for months May through October.</p> <p>(3) Summer excess rates are applied to water use in excess of average winter monthly use for months May through October.</p> <p>(4) Winter rates apply to water use during the months of November through April.</p> <p>(5) Summer rates apply to all water use during the months of May through October.</p>		

1.5. Wastewater Rates

Principal findings of the wastewater rate study are as follows:

- Utility staff has developed a \$211.0 million wastewater capital improvement program for the 10-year study period.
- Wastewater service revenue under existing rates is inadequate to meet projected revenue requirements during the study period. The financial plan indicates that rate adjustments are needed during the study period to increase annual wastewater service revenue as follows:

<u>Fiscal Year</u>	<u>Wastewater Service Revenue Increase</u>	<u>Fiscal Year</u>	<u>Wastewater Service Revenue Increase</u>
2011	12%	2016	8%
2012	11%	2017	5%
2013	10%	2018	2%
2014	10%	2019	1%
2015	9%		

- Red Oak recommends the wastewater utility financial plan be updated annually to reflect changes in revenue, O&M, capital improvement needs, and capital financing requirements.
- Red Oak conducted a comprehensive wastewater utility cost of service analysis in accordance with standard methods supported by the Water Environment Federation. This analysis determined the cost of providing wastewater service to residential and commercial customers for the 2011 test year. Table 1-7 summarizes findings of the cost of service analysis.

**Table 1-7:
Comparison of Wastewater Cost of Service with
Revenue under Existing Rates
Test Year 2011**

Line No.	Customer Class	Cost of Service	Revenue Under Existing Rates	Indicated Adjustment
1	Inside City			
	Residential	\$ 26,284,456	\$ 23,372,915	12.5%
2	Commercial			
	Group 2	38,108	34,789	9.5%
	Group 3	895,365	816,429	9.7%
	Group 4	481,721	438,879	9.8%
	Group 5	751,250	684,888	9.7%
	Group 6	187,337	170,859	9.6%
	Group 7	26,839	24,485	9.6%
	Group 9	58,957	53,822	9.5%
	Group 10	456,256	416,495	9.5%
	Group 11	<u>2,087,989</u>	<u>1,904,618</u>	9.6%
	11	Total Inside City	\$ 31,268,278	\$ 27,918,179
12	Outside City	<u>14,681</u>	<u>13,034</u>	12.6%
13	Total Cost of Service	\$ 31,282,959	\$ 27,931,213	12.0%

- Existing wastewater rates have been in effect since October 2009 and include a monthly base charge for all customers and volume charges that vary by customer class.
- Red Oak developed proposed 2011 rates using the existing rate structure to increase annual wastewater service charge revenue by 12% and equitably recover class cost of service. Tables 1-8 and 1-9 compare existing and proposed 2011 wastewater monthly base charges and volume charges, respectively.

**Table 1-8:
Comparison of Existing and Proposed
Monthly Wastewater Base Charges⁽¹⁾**

Customer Class	Existing Rates	Proposed Rates
	<i>(per bill)</i>	<i>(per bill)</i>
All Customers	\$ 8.40	\$ 9.20
(1) Inside City rates are shown. Outside City rates are 1.3 times greater than inside City rates, in accordance with City policy.		

**Table 1-9:
Comparison of Existing and Proposed
Wastewater Volume Charges⁽¹⁾**

Customer Class	Existing Rates	Proposed Rates
	<i>(Per Kgal)</i>	<i>(Per Kgal)</i>
Residential	\$ 3.14	\$ 3.56
Commercial		
Group 2	2.18	2.39
Group 3	2.57	2.82
Group 4	2.73	3.00
Group 5	2.66	2.92
Group 6	2.97	3.26
Group 7	3.27	3.59
Group 8	5.89	6.46
Group 9	3.24	3.55
Group 10	6.36	6.98
Group 11	6.40	7.03
Group 12	9.57	10.50
(1) Inside City rates are shown. Outside City rates are 1.3 times greater than inside City rates, in accordance with City policy.		

- Table 1-10 compares typical monthly residential wastewater bills under existing and proposed 2011 rates. The monthly bill for the median residential customer (6,000 gallons) would increase \$3.32, from \$27.24 to \$30.56 under the proposed rates.

**Table 1-10:
Monthly Residential Wastewater Bills⁽¹⁾**

Billable Monthly Usage	Existing Rates	Proposed Rates	Change
<i>(gallons)</i>			
0	\$ 8.40	\$ 9.20	\$ 0.80
1,000	11.54	12.76	1.22
2,000	14.68	16.32	1.64
3,000	17.82	19.88	2.06
4,000	20.96	23.44	2.48
5,000	24.10	27.00	2.90
6,000	27.24	30.56	3.32
7,000	30.38	34.12	3.74
8,000	33.52	37.68	4.16
9,000	36.66	41.24	4.58
10,000	39.80	44.80	5.00
11,000	42.94	48.36	5.42
12,000	46.08	51.92	5.84
13,000	49.22	55.48	6.26
14,000	52.36	59.04	6.68
15,000	55.50	62.60	7.10
(1) Bills shown are based on inside City rates.			