

Memorandum



CITY OF DALLAS

DATE February 10, 2012

TO Honorable Mayor and Members of the City Council

SUBJECT Residential Rate Structure Analysis - Dallas Water Utilities – Water Utilities Department

Attached is the Residential Rate Structure Analysis – Dallas Water Utilities Briefing to be presented by the Water Utilities Department at the February 15, 2012 meeting of the Dallas City Council.

If you have questions or need additional information, please let me know.

A handwritten signature in black ink, appearing to read 'Forest E. Turner'.

Forest E. Turner
Assistant City Manager

Attachment

cc: Mary K. Suhm, City Manager
Rosa A. Rios, Acting City Secretary
Thomas P. Perkins, Jr., City Attorney
Craig D. Kinton, City Auditor
Judge C. Victor Lander, Administrative Judge
A.C. Gonzalez, First Assistant City Manager
Ryan S. Evans, Assistant City Manager
Jill A. Jordan, P.E., Assistant City Manager
Joey Zapata, Assistant City Manager
Jeanne Chipperfield, Chief Financial Officer
Frank Libro, Public Information Officer
Stephanie Pegues-Cooper, Assistant to the City Manager – Council Office

Residential Rate Structure Analysis - Dallas Water Utilities

City Council Briefing
February 15, 2012



Purpose

- Provide a menu of options to review potential changes to residential water rate structure

Outline

- Background
- 2012 Residential Rate Structure Review
- Alternative Rate Structures
- Summary
- Appendix

Background

Background - Rate Structure Basics

- Water rate structures are a schedule of fees designed to recover a utility's cost
- Rates for service can vary greatly based on:
 - Source of water supply
 - Debt service requirements
 - Distance for transporting the water
 - Treatment and distribution costs
- Rate structures include the following elements:
 - Customer categories - wholesale and retail (residential, general service/commercial and industrial)
 - Frequency of billing
 - Schedule of charges for each customer category

Background - Rate Structure Basics

- Typical billing for utilities include:
 - Customer Charge
 - Recovers fixed costs including :
 - Meter reading; billing / collection
 - Capital costs for meter replacements
 - Volume Charges
 - Recovers costs for supply, treatment & distribution
 - Pricing structures vary by customer category

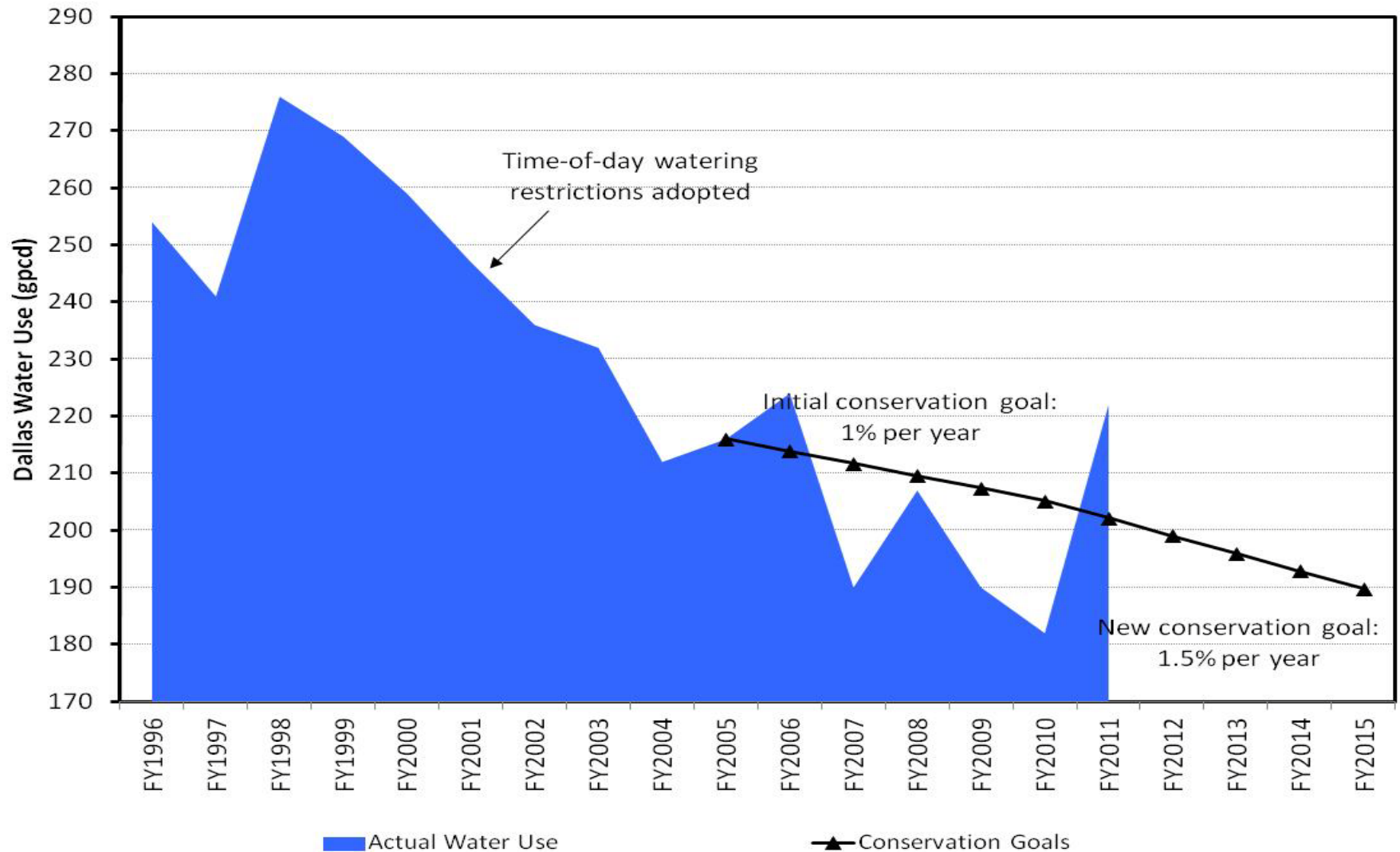
Background - Rate Structure Basics

- Typical goals and objectives common to many utilities and their customers include:
 - Revenue stability
 - Revenue sufficiency
 - Measure of affordability
 - Conservation price signal for customers to use less water
 - Customer understanding/ Complexity of structure

Background - Dallas' Residential Water Rate Structure

- Dallas has an increasing tier rate structure designed to increase water conservation
- In 2001, along with “time of day” watering, a fourth tier for water use over 15,000 gallons was added to increase conservation and reduce peak demands
- Current rate structure last reviewed in 2002 with the following results:
 - Promotes peak demand reduction
 - Same or similar end tier to other cities
 - Allows for up to 2.2 times an average customer's normal indoor domestic use without moving into the fourth tier

Background - Water Consumption Trend



Background: Review of Residential Water Rate Structure

- In September 2011, Council requested review of existing rate structure and alternative structures such as an additional rate tier
- Black & Veatch was hired to:
 - Review existing rate structure
 - Review additional rate structure options, including
 - A complete redesign of existing residential rate structure
 - Seasonal rate structure
 - Addition of one or more rate tiers to existing rate structure
 - Benchmark against rate structures for other utilities
 - Make a recommendation based on evaluation

2012 Residential Rate Structure Analysis

Review of Current Residential Rate Structure

- Customer Charge based on meter size
- Volume Charge per 1,000 gallons water use
 - Tier 1 – 0 to 4,000 gallons \$1.68
 - Tier 2 – 4,001 to 10,000 gallons \$3.35
 - Tier 3 – 10,001 to 15,000 gallons \$4.63
 - Tier 4 – Above 15,000 gallons \$6.25

Black & Veatch's Findings on Current Residential Rate Structure

- Good overall at meeting goals & objectives
 - Provides sufficient and relatively stable revenues
 - Customer familiarity with structure
 - Measure of affordability with first tier (0-4,000 gallons)
 - Within 2% US EPA affordability guidelines
 - Increasing four tier rate structure encourages conservation
- Review of rates included comparisons to other Texas cities

Black & Veatch's Findings on Current Residential Rate Structure

- Survey of water rate tiers for 16 Texas Cities resulted in:
 - Ten cities have four rate tiers or less
 - Dallas has the ninth lowest first tier (0 to 4,000 gallons)
 - Five cities have five tiers
 - Two cities have more than five tiers
 - Upper (end) tiers vary greatly from 12,000 gallons to over 100,000 gallons
 - Dallas has the second lowest upper (end) tier (above 15,000 gallons)
 - Variations in tiers is generally based on individual community goals and pre-existing rate structures

Volume Revenues Under Existing Residential Customer Class Rate Structure

	Rate per 1,000 gals.	Consumption (in gallons)	Residential Accounts	Percent Accounts	Percentage of Use	Volumes by Block (1,000 gals)	Volumetric Revenues
First Tier	\$1.68	0 – 4,000	67,726	28.7%	35.20%	9,954,894	\$16,724,222
Second Tier	\$3.35	4,001 – 10,000	94,567	40.1%	27.88%	7,884,728	\$26,413,839
Third Tier	\$4.63	10,001 – 15,000	29,510	12.5%	10.70%	3,026,061	\$14,010,662
End Tier	\$6.25	15,001+	<u>44,102</u>	<u>18.7%</u>	<u>26.22%</u>	<u>7,415,265</u>	<u>\$46,345,406</u>
			235,905	100.0%	100.00%	28,280,948	<u>\$103,494,129</u>

Based on an analysis of monthly billing data from Fiscal Years 2006 – 2011 and current residential rates

Alternative Rate Structures

Alternative Rate Structure Review

- Two options were developed by Black and Veatch and are centered around a fifth tier
- Alternative rate structures designed to
 - Have at least 10% water use in each rate tier for revenue stability
 - Meet goals and objectives

Alternative Rate Structures Option #1

	Rate per 1,000 gals.	Consumption (in gallons)	Residential Accounts	Percent Accounts	Percentage of Use	Volumes by Block (1,000 gals)	Volumetric Revenues
First Tier	\$1.68	0 – 4,000	67,726	28.7%	35.20%	9,954,894	\$16,724,222
Second Tier	\$3.35	4,001 – 10,000	94,567	40.1%	27.88%	7,884,728	\$26,413,839
Third Tier	\$4.63	10,001 – 15,000	29,510	12.5%	10.70%	3,026,061	\$14,010,662
Fourth Tier	\$6.25	15,001 - 30,000	29,136	12.4%	13.54%	3,829,240	\$23,932,750
End Tier	\$7.81	30,001 +	<u>14,966</u>	<u>6.3%</u>	<u>12.68%</u>	<u>3,406,723</u>	<u>\$26,606,505</u>
			235,905	100%	100.00%	28,101,646	<u>\$107,687,978</u>

End Tier Volume reduced by 5% due to potential impact from rate change

Alternative Rate Structures Option #2

	Rate per 1,000 gals.	Consumption (in gallons)	Residential Accounts	Percent Accounts	Percentage of Use	Volumes by Block (1,000 gals)	Volumetric Revenues
First Tier	\$1.68	0 – 4,000	67,726	28.7%	35.20%	9,954,894	\$16,724,222
Second Tier	\$3.35	4,001 – 10,000	94,567	40.1%	27.88%	7,884,728	\$26,413,839
Third Tier	\$4.63	10,001 – 15,000	29,510	12.5%	10.70%	3,026,061	\$14,010,662
Fourth Tier	\$6.25	15,001 - 25,000	23,458	9.9%	10.55%	2,983,640	\$18,647,750
End Tier	\$7.81	25,001 +	<u>20,644</u>	<u>8.8%</u>	<u>15.67%</u>	<u>4,210,044</u>	<u>\$32,880,442</u>
			235,905	100.0%	100.00%	28,059,367	<u>\$108,676,915</u>

End Tier Volume reduced by 5% due to potential impact from rate change

Comparison of Rate Structures

- Current structure contains 19% of residential accounts and 7.4 BG of water use in the fourth (or end) rate tier
- Option #1 would
 - Cap the fourth tier at 30,000 gallons
 - Creates a fifth tier for water use over 30,000 gallons
 - Higher rate would impact approximately 6.3% of residential accounts
- Option #2 would
 - Cap the fourth tier at 25,000 gallons
 - Creates a fifth tier for water use over 25,000 gallons
 - Higher rate would impact approximately 8.8% of residential accounts

Considerations if Changing Rate Structure to Options #1 or #2

- May reduce overall retail water consumption by 0.22 BG or 0.3%
- Sends stronger conservation pricing
- Requires additional costs to revise rate structure in billing system
- Could result in increased customer call volume and customer billing complaints
- Will require a few years to determine actual customer usage patterns

Summary

Summary

- Black and Veatch 2012 review concluded:
 - Existing four tier rate structure functions well
 - Consider additional tier to residential rate if choice is to promote an even stronger conservation price
- Requires additional costs to revise rate structure in billing system
- Effective date of any rate structure changes would be October 1, 2012

Council Feedback Requested

- Conservation considerations –
 - Add a fifth residential rate tier
 - Savings of 0.3% retail water consumption
 - Move forward with permanent maximum twice weekly watering policy for the City of Dallas
 - Savings of 5.0% retail water consumption

Appendix

Rate Design Survey and Review

Rate Design Survey and Review

- Surveys were conducted with 16 comparable cities and utilities
- Summarized results of the survey including Dallas are as follows:
 - 10 cities had three or four rate tiers
 - 5 cities had 5 rate tiers
 - 2 cities had more than 5 rate tiers
 - End tiers vary greatly from 12,000 gallons to over 100,000 gallons
 - This variation is generally based on individual community goals and pre-existing rate structures

Residential Customer Class Rate Structure Survey (selected cities)

	Fort Worth (Gallons*)	Houston (Gallons)	Austin (Gallons)	San Antonio (Gallons)
Tier 1	0 - 5,985	0 - 2,000	0 - 2,000	0 - 5,985
Tier 2	5,986 - 14,962	2,001 - 3,000	2,001 - 9,000	5,986 - 12,717
Tier 3	14,963 - 22,443	3,001 - 4,000	9,001 - 15,000	12,718 - 17,205
Tier 4	22,443+	4,001 - 5,000	15,001 - 25,000	17,206+
Tier 5		5,001 - 6,000	25,001+	
Tier 6		6,001 - 12,000		
Tier 7		12,001+		
	Round Rock (Gallons)	Brownsville (Gallons)	Grand Prairie (Gallons)	Carrollton (Gallons)
Tier 1	0 - 10,000	0 - 3,000	0 - 3,000	0 - 2,000 (**)
Tier 2	10,000 - 20,000	3,001 - 9,000	3,001 - 20,000	2,001 - 10,000
Tier 3	20,000 - 30,000	9,001 - 16,000	20,001+	10,001 - 25,000
Tier 4	30,000 +	16,001+		25,001+

(Gallons *) - Converted From 100 Cubic Feet

(**) - Gallons Included in Monthly Charge

Round Rock currently proposed

Residential Customer Class Rate Structure Survey (selected cities)

	Arlington (Gallons)	Amarillo (Gallons)	Denton (Gallons)	Corpus Christi (Gallons)
Tier 1	0 - 2,000	0 - 3,000 (**)	0 - 15,000	0 - 2,000 (**)
Tier 2	2,001 - 10,000	3,001 - 10,000	15,001 - 30,000	2,001 - 6,000
Tier 3	10,001 - 15,000	10,001 - 30,000	30,001 - 50,000	6,001 - 10,000
Tier 4	15,001 - 29,000	30,001 - 50,000	50,001+	10,001 - 15,000
Tier 5	29,001+	50,001+		15,001 - 50,000
				50,001 - 100,000
				100,001+
	College Station (Gallons)	Midland (Gallons)	Plano (Gallons)	Richardson (Gallons)
Tier 1	0 - 10,000	0 - 2,000 (**)	0 - 1,000 (**)	0 - 11,000
Tier 2	10,001 - 15,000	2,001 - 10,000	1,001 - 5,000	11,001 - 20,000
Tier 3	15,001 - 20,000	10,001 - 35,000	5,001 - 20,000	20,001 - 40,000
Tier 4	20,001 - 25,000	35,001+	20,001+	40,001 - 60,000
Tier 5	25,001+			60,001+
Tier 6				
Tier 7				

(**) - Gallons Included in Monthly Charge

Dallas Current Retail Rates and Customer Cities Comparison

Retail Water and Wastewater Rates

Effective October 1, 2011

Customer Charge		Water	Sewer	Combined
5/8	Inch Meter	\$4.20	\$4.10	\$8.30
3/4	Inch Meter	5.79	5.25	\$11.04
1	Inch Meter	8.40	7.61	\$16.01
1 1/2	Inch Meter	15.81	14.36	\$30.17
2	Inch Meter	24.67	22.41	\$47.08
3	Inch Meter	59.18	53.79	\$112.97
4	Inch Meter	98.63	89.62	\$188.25
6	Inch Meter	197.22	179.25	\$376.47
8	Inch Meter	330.20	300.24	\$630.44
10	Inch Meter or larger	504.93	457.08	\$962.01

Usage Charge per 1,000 gallons*

Residential

Up to 4,000 gallons	1.68	4.60
4,001 to 10,000 gallons	3.35	4.60
10,001 to 15,000 gallons	4.63	4.60
Above 15,000 gallons	6.25	4.60

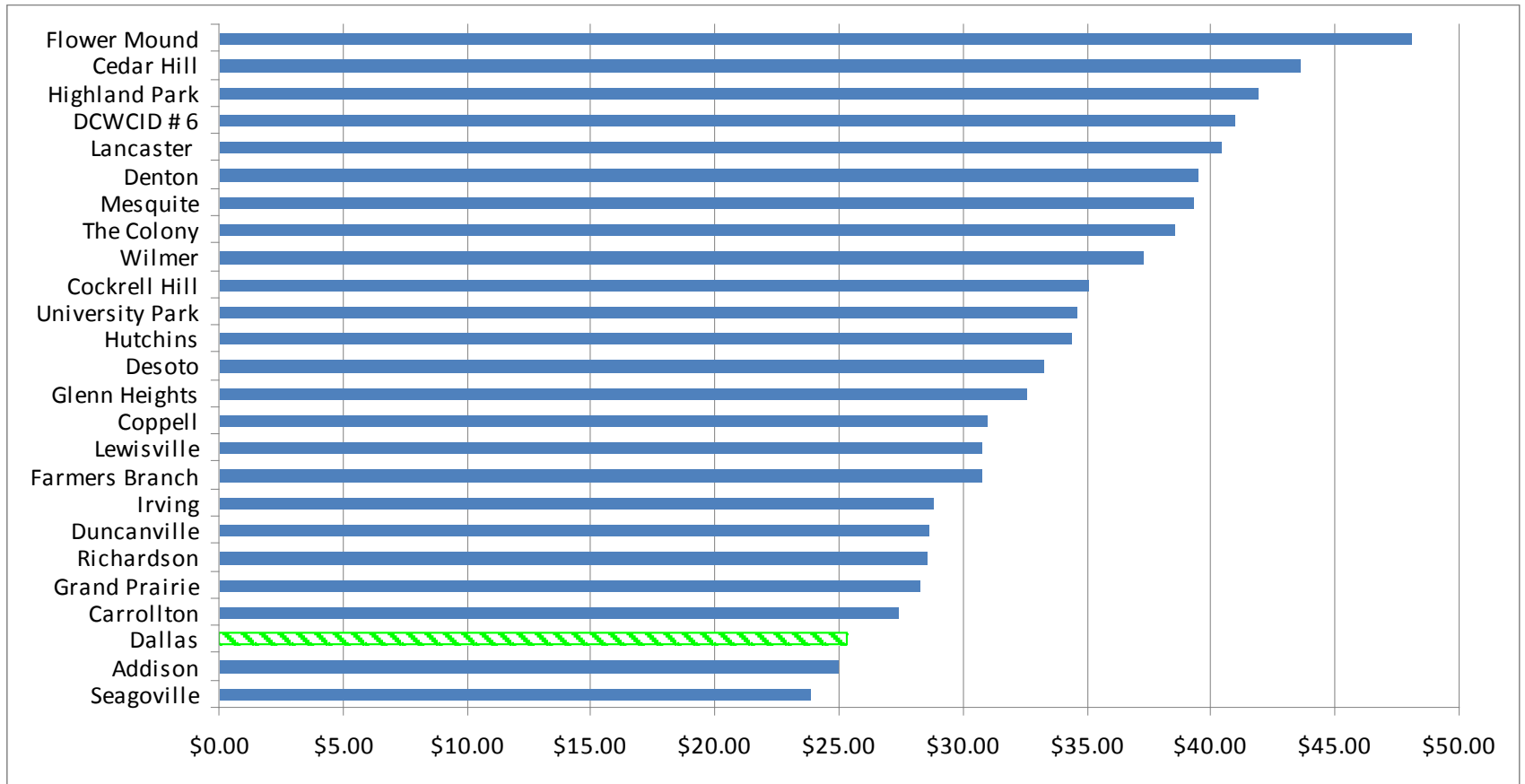
General Services

Up to 10,000 gallons	2.35	3.04
Above 10,000 gallons	2.85	3.04
Above 10,000 gallons & 1.4 times annual average monthly usage	4.12	3.04

Optional General Services

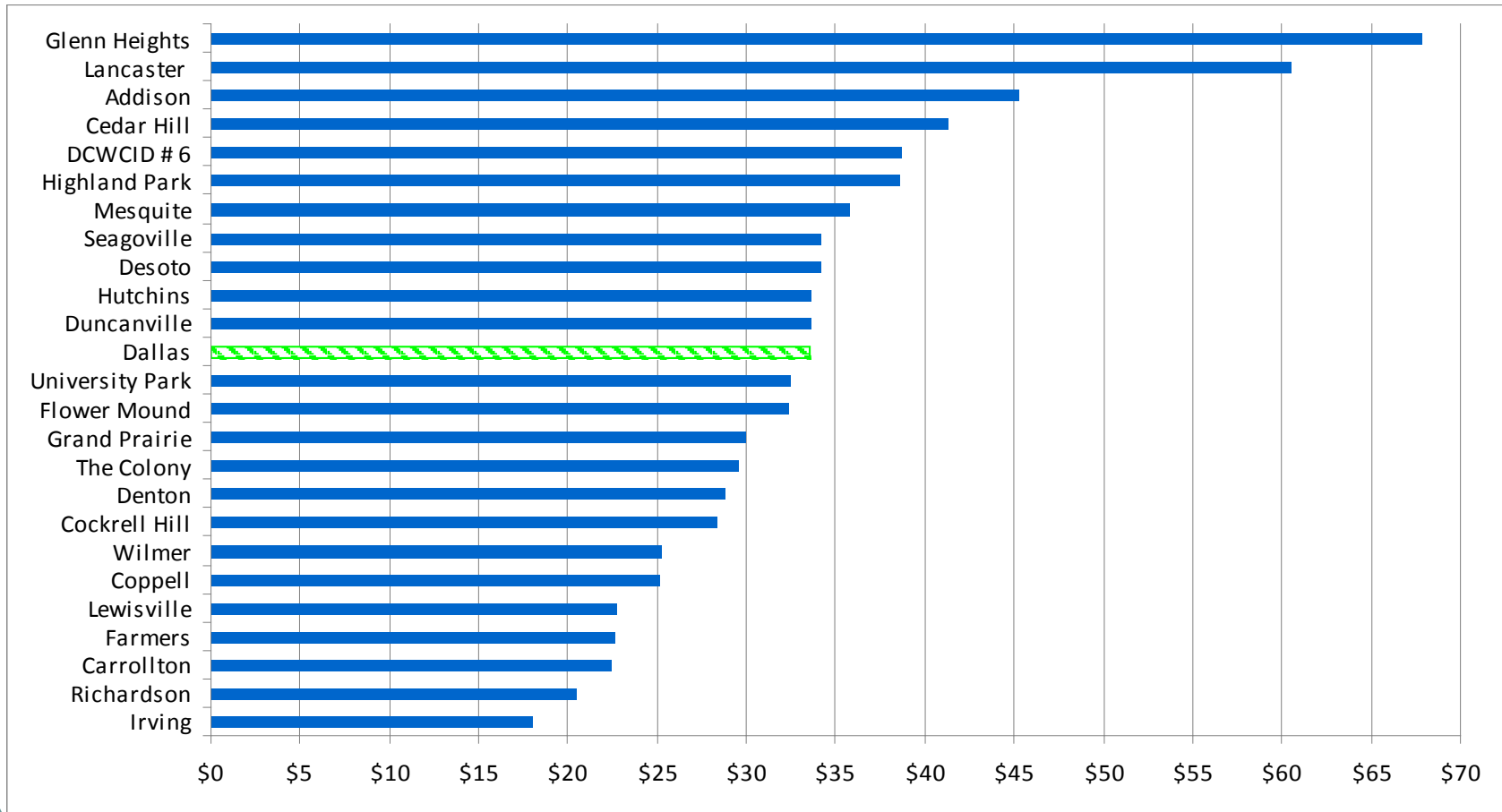
1st million gallons or less (minimum)	1,753.79	2.92
Above 1 million gallons (per 1,000 gallons)	2.29	2.92

Comparison of Customer Cities Typical Monthly Residential Water Bills



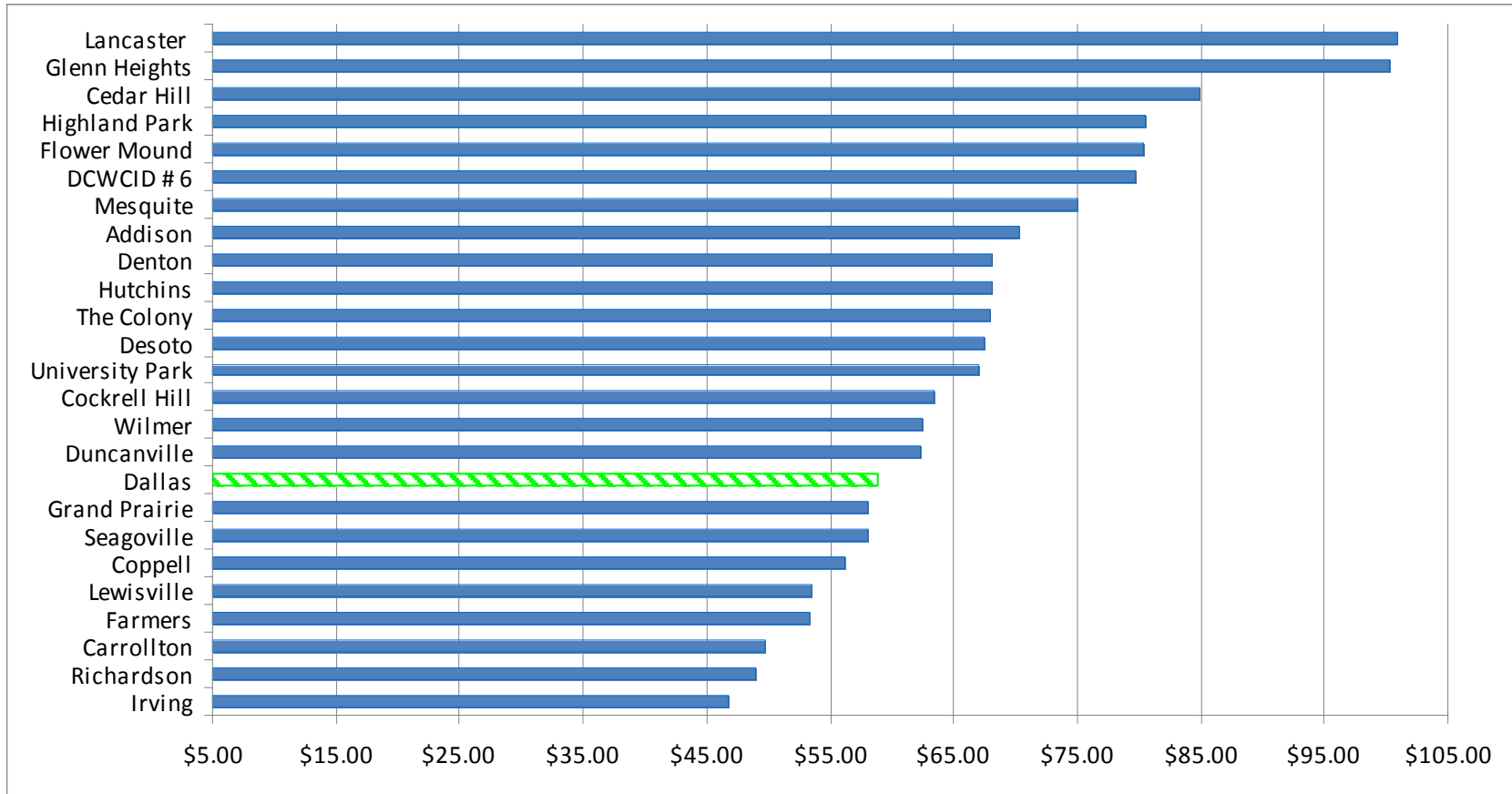
Note: Bill comparison based on annual average of 8,300 gallons per month on 5/8" meter

Comparison of Customer Cities Typical Monthly Residential Wastewater Bills



Note: Bill comparison based on 6,400 gallons for winter months average where applicable

Comparison of Customer Cities Typical Monthly Residential Water and Wastewater Bills

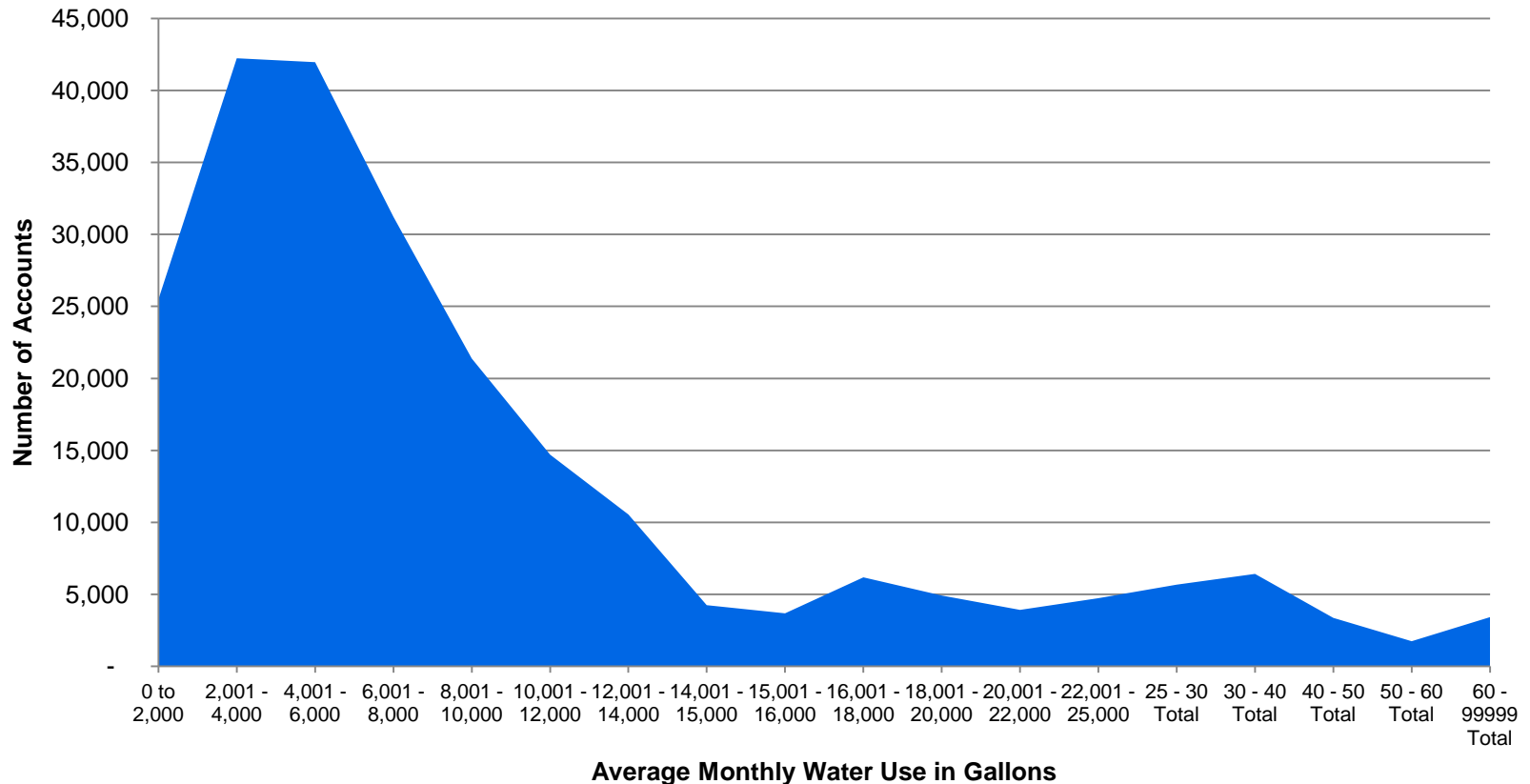


Bill comparison based on annual average of 8,300 gallons per month on 5/8" meter, 6400 gallons used for winter months average where applicable.

Residential Accounts by Rate Tier for Calendar Year 2011

Gallons per Month Usage	Residential Accounts	Percent of Households	Percent Households per Tier	Residential Rate Tier
0 to 2,000	25,493	10.8%		
2,001 - 4,000	42,233	17.9%	28.7%	Tier 1
4,001 - 6,000	41,961	17.8%		
6,001 - 8,000	31,223	13.2%		
8,001 - 10,000	21,383	9.1%	40.1%	Tier 2
10,001 - 12,000	14,708	6.2%		
12,001 - 14,000	10,550	4.5%		
14,001 - 15,000	4,252	1.8%	12.5%	Tier 3
15,001 - 16,000	3,686	1.6%		
16,001 - 18,000	6,186	2.6%		
18,001 - 20,000	4,924	2.1%		
20,001 - 22,000	3,925	1.7%		
22,001 - 25,000	4,738	2.0%		
25,001 - 30,000	5,677	2.4%		
More than 30,000	14,966	6.3%	18.7%	Tier 4
TOTALS	235,905	100.0%	100.0%	

Number of Residential Accounts by Monthly Water Use



Note: Data is for January 2011 through December 2011

FY12 Budgeted Retail Volume Revenue by Customer Class

RESIDENTIAL	Rate per 1,000 gals.	Consumption (in gallons)	Volumes (billion gals)	Percentage of Use	Volume Revenues (in million \$)
First Block	\$1.68	0 – 4,000	11.6	41.1%	\$19.5
Second Block	\$3.35	4,001 – 10,000	8.3	29.4%	\$27.9
Third Block	\$4.63	10,001 – 15,000	2.7	9.7%	\$12.7
End Block	\$6.25	15,001+	<u>5.6</u>	<u>19.8%</u>	<u>\$35.0</u>
			28.3	100.0%	<u>\$95.1</u>

GENERAL SERVICE	Rate per 1,000 gals.	Consumption (in gallons)	Volumes (billion gals)	Percentage of Use	Volume Revenues (in million \$)
First Block	\$2.35	0 – 10,000	4.3	11.4%	\$10.1
Second Block	\$2.85	10,001+	31.3	83.0%	\$89.2
Third Block	\$4.12	10,001+ & 1.4	<u>2.1</u>	<u>5.6%</u>	<u>\$8.7</u>
			37.7	100.0%	<u>\$108.0</u>

MUNICIPAL	Rate per 1,000 gals.	Consumption (in gallons)	Volumes (billion gals)	Percentage of Use	Volume Revenues (in million \$)
First Block	\$2.10	All volumes	1.1	100.0%	<u>\$2.2</u>

OPTIONAL GENERAL SERVICE	Rate per 1,000 gals.	Consumption (in gallons)	Volumes (billion gals)	Percentage of Use	Volume Revenues (in million \$)
First Block	\$1,753.79	First MG	0.6	11.1%	\$1.1
Second Block	\$2.29	All volumes above 1 MG	<u>4.8</u>	<u>88.9%</u>	<u>\$11.0</u>
			5.4	100.0%	<u>\$12.1</u>