

Trophy Club MUD 1
Water and Wastewater Cost of Service and Rate Design Model
Projected Water Revenue Under Scenario 2 - Lifetime Meter Charge, Adjust all out of District rates (Excluding PID) to 1.15x
FY 2016

Rates	MUD 1		Commercial (Solana)	Apartments	Summit Median	Master District Commercial		Out of District Water Sales		PID Residential	Total
	Residential	Commercial				Commercial	Commercial	Water Sales	PID Residential		
Meter Charge											
3/4" - 5/8"	\$ 12.71	\$ 12.71	\$ 12.71	\$ 12.71	\$ 12.71	\$ 12.71	\$ 14.62	\$ 12.71	\$ 14.62	\$ 12.71	
1"	19.04	19.04	19.04	19.04	19.04	19.04	21.90	19.04	21.90	19.04	
1 1/2"	19.04	19.04	19.04	19.04	19.04	19.04	21.90	19.04	21.90	19.04	
2"	19.04	19.04	19.04	19.04	19.04	19.04	21.90	19.04	21.90	19.04	
3"	19.04	19.04	19.04	19.04	19.04	19.04	21.90	19.04	21.90	19.04	
4"	19.04	19.04	19.04	19.04	19.04	19.04	21.90	19.04	21.90	19.04	
6"	19.04	19.04	19.04	19.04	19.04	19.04	21.90	19.04	21.90	19.04	
Volumetric Charge (per 1,000 gallons)											
0-6,000	\$ 2.70	\$ 2.70	\$ 2.70	\$ 2.70	\$ 2.70	\$ 3.83	\$ 3.11	\$ 2.70	\$ 3.11	\$ 2.70	
6,001-17,000	3.14	3.14	3.14	3.14	3.14	3.83	3.61	3.14	3.61	3.14	
17,001-25,000	3.64	3.64	3.64	3.64	3.64	3.83	4.19	3.64	4.19	3.64	
25,001-50,000	4.23	4.23	4.23	4.23	4.23	3.83	4.87	4.23	4.87	4.23	
50,001+	4.91	4.91	4.91	4.91	4.91	3.83	5.65	4.91	5.65	4.91	
Billing Determinants											
Annual # of Meters											
3/4" - 5/8"	32,546	348	24	2,436	-	36	-	-	36	-	35,390
1"	4,631	324	12	-	12	12	36	12,039	12	13	17,066
1 1/2"	13	84	-	-	-	-	-	-	-	-	110
2"	40	612	180	-	-	24	36	918	24	26	918
3"	-	36	120	-	-	-	-	156	-	-	156
4"	-	108	36	-	-	-	-	144	-	-	144
6"	-	12	-	-	-	-	-	12	-	-	12
8"	-	-	-	-	-	-	-	-	-	-	-
Total	37,229	1,524	372	2,436	12	72	72	12,079	72	12,079	53,796
Volume (000, gallons)											
0-6,000	195,742	6,734	2,075	12,139	35	647	106	55,988	106	55,988	273,466
6,001-17,000	199,073	9,437	3,466	1,176	15	438	104	68,348	104	68,348	282,058
17,001-25,000	73,979	5,779	2,417	1,516	-	273	44	27,035	44	27,035	111,043
25,001-50,000	80,120	13,934	7,157	-	-	578	29	31,471	29	31,471	133,288
50,001+	28,228	86,518	90,261	-	-	4,007	-	20,587	-	20,587	229,602
Total	577,143	122,401	105,376	14,831	50	5,944	284	203,429	284	203,429	1,029,457
Total Volumes (000, gallons)	577,143	122,401	105,376	14,831	50	5,944	284	203,429	284	203,429	1,029,457

Trophy Club MUD 1
Water and Wastewater Cost of Service and Rate Design Model
Projected Water Revenue Under Scenario 2 - Lifetime Meter Charge; Adjust all out of District rates (Excluding PID) to 1.15x
FY 2016

	MUD 1		Summit Median	Master District Commercial		Out of District Water Sales		PID Residential	Total
	Residential	Commercial (Solana)		Commercial	Apartments	Commercial	Commercial		
Projected Revenue									
Meter Charge Total									
3/4" - 5/8"	\$ 413,657	\$ 4,423	\$ -	\$ 30,962	\$ 458	\$ -	\$ 788	\$ -	\$ 449,804
1"	88,165	6,169	228	-	228	-	-	229,228	325,036
1.5"	252	1,599	-	-	-	-	-	252	2,103
2"	756	11,652	-	-	457	-	788	504	17,584
3"	-	685	-	-	-	-	-	-	2,970
4"	-	2,056	-	-	-	-	-	-	2,742
6"	-	228	-	-	-	-	-	-	228
8"	-	-	-	-	-	-	-	-	-
Total	\$ 502,829	\$ 26,814	\$ 228	\$ 30,962	\$ 1,143	\$ 1,577	\$ 229,984	\$ 800,468	
Volumetric Revenue									
0-6,000	\$ 528,503	\$ 18,182	\$ 95	\$ 32,774	\$ 2,481	\$ 330	\$ 151,167	\$ 739,134	
6,001-17,000	624,288	29,595	46	3,689	1,681	375	214,337	884,879	
17,001-25,000	269,457	21,048	-	5,521	1,047	185	98,470	404,532	
25,001-50,000	338,943	58,946	-	-	2,214	143	133,136	563,660	
50,001+	138,700	425,107	-	-	15,364	-	101,156	1,123,829	
Total	\$ 1,899,891	\$ 552,878	\$ 140	\$ 41,984	\$ 22,788	\$ 1,033	\$ 698,266	\$ 3,716,034	
Meter Charge Revenue	\$ 502,829	\$ 26,814	\$ 228	\$ 30,962	\$ 1,143	\$ 1,577	\$ 229,984	\$ 800,468	
Volumetric Revenue	1,899,891	552,878	140	41,984	22,788	1,033	698,266	3,716,034	
Total Revenue	\$ 2,402,721	\$ 579,692	\$ 369	\$ 72,945	\$ 23,931	\$ 2,609	\$ 928,250	\$ 4,516,502	
Revenue Requirement									
Over/(Under) Recovery (\$)									\$ 4,516,381
Over/(Under) Recovery (%)									121
									0%

Trophy Club MUD 1
Water and Wastewater Cost of Service and Rate Design Model
Projected Water Revenue Under Scenario 3 - Alt Rate Design Escalating Meter Charge; Adjust all out of District rates (Excluding PID) to 1.15x
FY 2016

Rates	MUD 1		Commercial (Solana)	Apartments	Summit Median	Master District Commercial	Out of District		PID Residential	Total
	Residential	Commercial					Water Sales	Residential		
Meter Charge										
3/4" - 5/8"	\$ 12.71	\$ 12.71	\$ 12.71	\$ 12.71	\$ 12.71	\$ 12.71	\$ 14.62	\$ 12.71		
1"	16.71	16.71	16.71	16.71	16.71	16.71	19.22	16.71		
1.5"	26.42	26.42	26.42	26.42	26.42	26.42	30.38	26.42		
2"	38.06	38.06	38.06	38.06	38.06	38.06	43.77	38.06		
3"	65.23	65.23	65.23	65.23	65.23	65.23	75.01	75.01		
4"	104.04	104.04	104.04	104.04	104.04	104.04	119.65	104.04		
6"	201.06	201.06	201.06	201.06	201.06	201.06	231.22	201.06		
Volumetric Charge (per 1,000 gallons)										
0-6,000	\$ 2.70	\$ 2.70	\$ 2.70	\$ 2.70	\$ 2.70	\$ 3.83	\$ 3.11	\$ 2.70		
6,001-17,000	3.14	3.14	3.14	3.14	3.14	3.83	3.61	3.14		
17,001-25,000	3.64	3.64	3.64	3.64	3.64	3.83	4.19	3.64		
25,001-50,000	4.23	4.23	4.23	4.23	4.23	3.83	4.87	4.23		
50,001+	4.91	4.91	4.91	4.91	4.91	3.83	5.65	4.91		
Billing Determinants										
Annual # of Meters										
3/4" - 5/8"	32,546	348	24	2,436	-	36	-	-	35,390	
1"	4,631	324	12	-	12	12	36	12,039	17,066	
1.5"	13	84	-	-	-	-	-	13	110	
2"	40	612	180	-	-	24	36	26	918	
3"	-	36	120	-	-	-	-	-	156	
4"	-	108	36	-	-	-	-	-	144	
6"	-	12	-	-	-	-	-	-	12	
8"	-	-	-	-	-	-	-	-	-	
Total	37,229	1,524	372	2,436	12	72	72	12,079	53,796	
Volume (000, gallons)										
0-6,000	195,742	6,734	2,075	12,139	35	647	106	55,988	273,466	
6,001-17,000	199,073	9,437	3,466	1,176	15	438	104	68,348	282,058	
17,001-25,000	73,979	5,779	2,417	1,516	-	273	44	27,035	111,043	
25,001-50,000	80,120	13,934	7,157	-	-	578	29	31,471	133,288	
50,001+	28,228	86,518	90,261	-	-	4,007	-	20,587	229,602	
Total	577,143	122,401	105,376	14,831	50	5,944	284	203,429	1,029,457	
Total Volumes (000, gallons)	577,143	122,401	105,376	14,831	50	5,944	284	203,429	1,029,457	

Trophy Club MUD 1
Water and Wastewater Cost of Service and Rate Design Model
Projected Water Revenue Under Scenario 3 - Alt Rate Design Escalating Meter Charges, Adjust all out of District rates (Excluding PID) to 1.15x
FY 2016

	MUD 1		Commercial (Solana)	Apartments	Summit Median	Master District Commercial		Out of District Water Sales		PID Residential	Total
	Residential	Commercial				Commercial	Residential	Commercial	Residential		
Projected Revenue											
Meter Charge Total											
3/4" - 5/8"	\$ 413,657	\$ 4,423	\$ 305	\$ 30,962	\$ -	\$ 458	\$ -	\$ 692	\$ -	\$ -	\$ 449,804
1"	77,376	5,414	201	-	201	201	-	-	201,177	-	285,260
1.5"	350	2,219	-	-	-	-	-	-	350	-	2,918
2"	1,511	23,293	6,851	-	-	913	-	1,576	1,007	-	35,150
3"	-	2,348	7,828	-	-	-	-	-	-	-	10,176
4"	-	11,236	3,745	-	-	-	-	-	-	-	14,982
6"	-	2,413	-	-	-	-	-	-	-	-	2,413
8"	-	-	-	-	-	-	-	-	-	-	-
Total	\$ 492,893	\$ 51,346	\$ 18,929	\$ 30,962	\$ 201	\$ 1,572	\$ 2,267	\$ 2,267	\$ 202,533	\$ -	\$ 800,703
Volumetric Revenue											
0-6,000	\$ 528,503	\$ 18,182	\$ 5,602	\$ 32,774	\$ 95	\$ 2,481	\$ 330	\$ 375	\$ 151,167	\$ -	\$ 739,134
6,001-17,000	624,288	29,595	10,868	3,689	46	1,681	185	185	214,337	-	884,879
17,001-25,000	269,457	21,048	8,804	5,521	-	1,047	143	143	98,470	-	404,532
25,001-50,000	338,943	58,946	30,278	-	-	2,214	-	-	133,136	-	563,660
50,001+	138,700	425,107	443,502	-	-	15,364	-	-	101,156	-	1,123,829
Total	\$ 1,899,891	\$ 552,878	\$ 499,054	\$ 41,984	\$ 140	\$ 22,788	\$ 1,033	\$ 1,033	\$ 698,266	\$ -	\$ 3,716,034
Meter Charge Revenue	\$ 492,893	\$ 51,346	\$ 18,929	\$ 30,962	\$ 201	\$ 1,572	\$ 2,267	\$ 2,267	\$ 202,533	\$ -	\$ 800,703
Volumetric Revenue	1,899,891	552,878	499,054	41,984	140	22,788	1,033	1,033	698,266	-	3,716,034
Total Revenue	\$ 2,392,784	\$ 604,225	\$ 517,983	\$ 72,945	\$ 341	\$ 24,359	\$ 3,300	\$ 3,300	\$ 900,799	\$ 4,516,737	
Revenue Requirement											
Over/(Under) Recovery (\$)											\$ - 4,516,381
Over/(Under) Recovery (%)											\$ 356
											0%

Trophy Club MUD No. 1 Water and Wastewater Cost of Service and Rate Design Model Projected Sewer Revenue Under Scenario 1 - Adjust all out of District Rates (Excluding PID) to 1.15x 12K Cap Residential FY 2016													
Rates	MUD 1 Residential			Commercial (Solana)			Apartments		Apartments		Quorum		Total
	Residential	Commercial	Commercial	Commercial	12	13	Apartments	Apartments	Out of District Sales (Metered)	Out of District Sales	Out of District Sales	PID Residential	
Meter Charge	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 16.77	\$ 16.77	\$ 14.58	
All Meter Sizes	2,888	-	-	-	-	-	2,888	3,520	3,810	3,320	4,050	2,888	
Volumetric Charge (per 1,000 gallons)													
0-6,000	2,888	-	-	-	-	-	2,888	3,520	3,810	3,320	4,050	2,888	
6,001-12,000	-	-	-	-	-	-	-	-	-	-	-	-	2,888
12,001-25,000	-	-	-	-	-	-	-	-	-	-	-	-	-
25,001-50,000	-	-	-	-	-	-	-	-	-	-	-	-	-
50,001+	-	-	-	-	-	-	-	-	-	-	-	-	-
0-6,000	-	2,888	2,888	2,888	2,888	2,888	2,888	2,888	-	3,320	4,050	-	
6,001-17,000	-	3,520	3,520	3,520	3,520	3,520	3,520	3,520	-	4,050	4,338	-	
17,001-25,000	-	3,810	3,810	3,810	3,810	3,810	3,810	3,810	-	4,338	4,510	-	
25,001-50,000	-	3,920	3,920	3,920	3,920	3,920	3,920	3,920	-	4,510	4,640	-	
50,001+	-	4,040	4,040	4,040	4,040	4,040	4,040	4,040	-	4,640	4,640	-	
Billing Determinants													
Annual # of Meters	36,991	552	180	1,008	1,008	624	804	804	12	36	8,428	8,428	48,635
Billed Flow (Gallons)													
0-6,000	197,650	-	-	-	-	288	528	384	72	-	46,761	46,761	244,771
6,001-12,000	130,263	-	-	-	-	528	384	96	132	-	36,554	36,554	167,477
12,001-25,000	151,762	-	-	-	-	1,200	2,392	300	300	-	44,984	44,984	197,226
25,001-50,000	82,843	-	-	-	-	2,392	4,792	1,680	1,680	-	23,547	23,547	107,890
50,001+	20,473	-	-	-	-	4,792	-	2,280	2,280	-	6,962	6,962	31,507
0-6,000	-	2,594	1,050	504	504	-	72	72	-	-	-	-	4,220
6,001-17,000	-	3,580	1,817	924	924	-	132	132	-	-	-	-	6,453
17,001-25,000	-	2,130	1,273	672	672	-	96	96	-	-	-	-	4,171
25,001-50,000	-	4,898	3,657	1,974	1,974	-	300	300	-	-	-	-	10,829
50,001+	-	14,738	33,470	2,769	2,769	-	2,514	2,514	-	-	-	-	53,491
Total Volume (000, gallons)	582,990	27,939	41,267	6,843	6,843	4,792	3,114	3,114	2,280	-	158,809	158,809	828,034

Trophy Club MUD No. 1 Water and Wastewater Cost of Service and Rate Design Model Projected Sewer Revenue Under Scenario 1 - Adjust all out of District Rates (Excluding PID) to 1.15x 12K Cap Residential FY 2016										
Projected Revenue	MUD 1		Commercial (Solana)		Apartments		Quorum		PID	
	Residential	Commercial	12	13	13	Apartments	Out of District Sales (Metered)	Out of District Sales	Residential	Total
Meter Charge Total	\$ 539,471	\$ 8,050	\$ 2,625	\$ 14,700	\$ 9,100	\$ 11,725	\$ 201	\$ 604	\$ 122,905	\$ 709,383
Volumetric Revenue	\$ 569,929	\$ -	\$ -	\$ 830	\$ -	\$ -	\$ 239	\$ -	\$ 134,837	\$ 705,835
0-6,000	375,616	-	-	1,857	-	-	534	-	105,405	483,412
6,001-12,000	-	-	-	1,462	-	-	420	-	-	1,882
12,001-25,000	-	-	-	4,706	-	-	1,353	-	-	6,059
25,001-50,000	-	-	-	9,656	-	-	7,799	-	-	17,456
50,001+	\$ 945,545	\$ -	\$ -	\$ 18,512	\$ -	\$ -	\$ 10,345	\$ -	\$ 240,243	\$ 1,214,644
Volumetric Revenue	\$ -	\$ 7,479	\$ 3,028	\$ 1,453	\$ -	\$ 208	\$ -	\$ -	\$ -	\$ 12,167
0-6,000	-	12,594	6,392	3,251	-	381	-	-	-	22,617
6,001-17,000	-	8,108	4,845	2,558	-	277	-	-	-	15,788
17,001-25,000	-	19,207	14,341	7,741	-	865	-	-	-	42,155
25,001-50,000	-	59,495	135,116	11,178	-	7,249	-	-	-	213,039
50,001+	\$ -	\$ 106,882	\$ 163,723	\$ 26,181	\$ -	\$ 8,979	\$ -	\$ -	\$ -	\$ 305,766
Meter Charge Revenue	\$ 539,471	\$ 8,050	\$ 2,625	\$ 14,700	\$ 9,100	\$ 11,725	\$ 201	\$ 604	\$ 122,905	\$ 709,383
Volumetric Revenue	945,545	106,882	163,723	26,181	18,512	8,979	10,345	-	240,243	1,520,410
Total Revenue	\$ 1,485,016	\$ 114,933	\$ 166,348	\$ 40,882	\$ 27,612	\$ 20,705	\$ 10,547	\$ 604	\$ 363,148	\$ 2,229,793

Revenue Requirement	\$ 2,229,793
Over/(Under) Recovery (\$)	\$ -
Over/(Under) Recovery (%)	0%

Trophy Club MUD No. 1 Water and Wastewater Cost of Service and Rate Design Model Projected Sewer Revenue Under Scenario 2 - Adjust all out of District Rates (Excluding PID) 1.15% Raise Residential Cap to 18K FY 2016																					
Rates	MUD 1 Residential			Commercial (Solana)			Apartments		13 Apartments		Quorum		Out of District Sales (Metered)		Out of District Sales		PID Residential		Total		
Meter Charge	\$	13.00	\$	13.00	\$	13.00	\$	13.00	\$	13.00	\$	13.00	\$	14.95	\$	14.95	\$	13.00			
All Meter Sizes																					
Volumetric Charge (per 1,000 gallons)	\$	2.50	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	2.50	
0-6,000		2.50																		2.50	
6,001-18,000																					
18,001-25,000																					
25,001-50,000																					
50,001+																					
0-6,000	\$	-	\$	-	\$	-	\$	2.50	\$	-	\$	2.88	\$	-	\$	-	\$	-			
6,001-12,000								3.05				3.51									
12,001-25,000								3.30				3.80									
25,001-50,000								3.40				3.91									
50,001+								3.50				4.03									
0-6,000	\$	-	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88
6,001-17,000			3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51
17,001-25,000			3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.80	3.80	3.80	3.80	3.80	3.80	3.80	3.80
25,001-50,000			3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91
50,001+			3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03
Billing Determinants																					
Annual # of Meters		36,991	552	180	1,008	624	804	12	36	8,428	48,635										
Billed Flow (Gallons)		197,650	217,315	64,709	82,843	20,365	582,882														
0-6,000																					
6,001-18,000																					
18,001-25,000																					
25,001-50,000																					
50,001+																					
Billed Flow (Gallons)																					
0-6,000																					
6,001-12,000																					
12,001-25,000																					
25,001-50,000																					
50,001+																					

Trophy Club MUD No. 1 Water and Wastewater Cost of Service and Rate Design Model Projected Sewer Revenue Under Scenario 2 - Adjust all out of District Rates (Excluding PID) 1.15x; Raise Residential Cap to 18K FY 2016										
Billed Flow (Gallons)	MUD 1			Quorum			Out of District		PID Residential	Total
	Residential	Commercial	Commercial (Solana)	12	13	Apartments	Out of District Sales (Metered)	Out of District Sales		
0-6,000	-	2,594	1,050	504	-	-	72	-	-	4,220
6,001-17,000	-	3,580	1,817	924	-	-	132	-	-	6,453
17,001-25,000	-	2,130	1,273	672	-	-	96	-	-	4,171
25,001-50,000	-	4,898	3,657	1,974	-	-	300	-	-	10,829
50,001+	-	14,738	33,470	2,769	-	-	2,514	-	-	53,491
	-	27,939	41,267	6,843	-	-	3,114	-	-	79,163
Total Volumes	582,882	27,939	41,267	6,843	4,792	3,114	2,280	-	158,809	827,926
Projected Revenue										
Meter Charge Total	\$ 480,884	\$ 7,176	\$ 2,340	\$ 13,104	\$ 8,112	\$ 10,452	\$ 179	\$ 538	\$ 109,558	\$ 632,343
Volumetric Revenue	\$ 494,125	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,903	\$ 611,028
0-6,000	543,289	-	-	-	-	-	-	-	156,014	699,303
6,001-18,000	-	-	-	-	-	-	-	-	-	-
18,001-25,000	-	-	-	-	-	-	-	-	-	-
25,001-50,000	-	-	-	-	-	-	-	-	-	-
50,001+	-	-	-	-	-	-	-	-	-	-
	\$ 1,037,413	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 272,917	\$ 1,310,330
Volumetric Revenue	\$ -	\$ -	\$ -	\$ -	\$ 720	\$ -	\$ 207	\$ -	\$ -	\$ 927
0-6,000	-	-	-	-	1,610	-	463	-	-	2,073
6,001-12,000	-	-	-	-	1,267	-	364	-	-	1,632
12,001-25,000	-	-	-	-	4,080	-	1,173	-	-	5,253
25,001-50,000	-	-	-	-	8,372	-	6,762	-	-	15,134
50,001+	-	-	-	-	16,050	-	8,969	-	-	25,019
	\$ -	\$ -	\$ -	\$ -	\$ 16,050	\$ -	\$ 8,969	\$ -	\$ -	\$ 25,019
Volumetric Revenue	\$ -	\$ 6,484	\$ 2,625	\$ 1,260	\$ -	\$ 180	\$ -	\$ -	\$ -	\$ 10,549
0-6,000	-	10,919	5,542	2,818	-	330	-	-	-	19,609
6,001-17,000	-	7,030	4,201	2,218	-	240	-	-	-	13,688
17,001-25,000	-	16,652	12,434	6,712	-	750	-	-	-	36,548
25,001-50,000	-	51,582	117,145	9,692	-	6,285	-	-	-	184,703
50,001+	-	92,666	141,947	22,699	-	7,785	-	-	-	265,097
	\$ 480,884	\$ 7,176	\$ 2,340	\$ 13,104	\$ 8,112	\$ 10,452	\$ 179	\$ 538	\$ 109,558	\$ 632,343
Meter Charge Revenue	1,037,413	92,666	141,947	22,699	16,050	7,785	8,969	-	272,917	1,600,446
Volumetric Revenue	\$ 1,518,297	\$ 99,842	\$ 144,287	\$ 35,803	\$ 24,162	\$ 18,237	\$ 9,149	\$ 538	\$ 382,475	\$ 2,232,789
Total Revenue										
Revenue Requirement										\$ 2,229,793
Over/(Under) Recovery (\$)										\$ 2,996
Over/(Under) Recovery (%)										0%

Trophy Club MUD, No. 1 Water and Wastewater Cost of Service and Rate Design Model Projected Sewer Revenue Under Scenario 3 - Adjust all out of District Rates (Excluding PID) to 1.15x Residential 12K Cap; No Blocks PY 2016										
	Commercial (Solana)			Apartments		Quorum		Out of District		PID Residential
	Residential	Commercial	Commercial	12	13	Apartments	Quorum	Sales (Metered)	Sales	
Rates										
Meter Charge										
All Meter Sizes	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 16.77	\$ 16.77	\$ 14.58
Volumetric Charge (per 1,000 gallons)	\$ 3.05	\$ 3.05	\$ 3.05	\$ 3.05	\$ 3.05	\$ 3.05	\$ 3.05	\$ 3.51	\$ 3.51	\$ 3.05
Billing Determinants										
Annual # of Meters	36,991	552	180	1,008	624	804	804	12	36	8,428
Billed Flow (000, gallons)	327,912	27,939	41,267	6,843	4,792	3,114	3,114	2,280	-	83,315
Projected Revenue										
Meter Charge Revenue	\$ 539,471	\$ 8,050	\$ 2,625	\$ 14,700	\$ 9,100	\$ 11,725	\$ 11,725	\$ 201	\$ 604	\$ 122,905
Volumetric Revenue	1,001,519	85,332	126,039	20,900	14,636	9,511	9,511	8,008	-	254,464
Total Revenue	\$ 1,540,991	\$ 93,382	\$ 128,664	\$ 35,601	\$ 23,736	\$ 21,236	\$ 21,236	\$ 8,209	\$ 604	\$ 377,370
Revenue Requirement										\$ 2,229,793
Over/(Under) Recovery (\$)										\$ -
Over/(Under) Recovery (%)										0%

Trophy Club MUD No. 1 Water and Wastewater Cost of Service and Rate Design Model Projected Sewer Revenue Under Scenario 4 - Adjust all out of District rates (Excluding PID) to 1.15x Residential 18K Cap; No Blocks FY 2016											
	MUD 1			Commercial (Solana)		Apartments		Quorum Apartments		PID Residential	
	Residential	Commercial	Commercial (Solana)	12	13	Apartments	Quorum Apartments	Out of District Sales (Metered)	Out of District Sales	Residential	Total
Rates											
Meter Charge											
All Meter Sizes	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 14.58	\$ 16.77	\$ 16.77	\$ 14.58	
Volumetric Charge (per 1,000 gallons)	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.50	\$ 2.88	\$ 2.88	\$ 2.50	
Billing Determinants											
Annual # of Meters	36,991	552	180	1,008	624	804	804	12	36	8,428	48,635
Billed Flow (000, gallons)	414,965	27,939	41,267	6,843	4,792	3,114	3,114	2,280	-	109,167	610,367
Projected Revenue											
Meter Charge Revenue	\$ 539,471	\$ 8,050	\$ 2,625	\$ 14,700	\$ 9,100	\$ 11,725	\$ 11,725	\$ 201	\$ 604	\$ 122,905	\$ 709,383
Volumetric Revenue	1,037,413	69,848	103,168	17,108	11,980	7,785	7,785	6,555	-	272,917	1,526,773
Total Revenue	\$ 1,576,885	\$ 77,898	\$ 105,793	\$ 31,808	\$ 21,080	\$ 19,510	\$ 19,510	\$ 6,756	\$ 604	\$ 395,822	\$ 2,236,156
Revenue Requirement											\$ 2,229,793
Over/(Under) Recovery (\$)											\$ 6,363
Over/(Under) Recovery (%)											0%

Trophy Club MUD No. 1 Water and Wastewater Rate Study Monthly Bill Comparison

Water

	Residential <u>5,000 Gallons</u>		Residential <u>10,000 Gallons</u>
Westlake	57.50	Westlake	73.00
Argyle	41.76	Argyle	58.01
Roanoke	39.30	Roanoke	57.60
Southlake	37.34	Southlake	54.99
Denton	30.70	Denton	48.45
TCMUD Scenario 1	28.40	TCMUD Scenario 1	43.66
Keller	26.27	Keller	41.92
TCMUD Scenario 2	26.21	Eules	41.83
TCMUD Scenario 3	26.21	TCMUD Scenario 2	41.47
TCMUD (Current)	25.21	TCMUD Scenario 3	41.47
Eules	23.64	TCMUD (Current)	39.91
Fort Worth	20.66	Fort Worth	36.30

Sewer

	Residential <u>5,000 Gallons</u>		Residential <u>10,000 Gallons</u>
Westlake	43.80	Argyle	64.96
Argyle	43.64	Westlake	61.80
Southlake	35.16	Southlake	50.16
TCMUD Scenario 3	29.83	Denton	47.25
TCMUD Scenario 1	28.94	Roanoke	45.25
Denton	28.50	TCMUD Scenario 3	45.05
Keller	27.55	Fort Worth	43.58
TCMUD Scenario 4	27.03	TCMUD Scenario 1	43.38
TCMUD Scenario 2	25.50	Keller	43.25
TCMUD (Current)	25.21	TCMUD Scenario 4	39.58
Fort Worth	24.20	TCMUD Scenario 2	38.00
Eules	19.99	TCMUD (Current)	37.71
Roanoke	18.50	Eules	32.72

TCMUD000953

RESPONSIVE TO STAFF 2-3

From: Jennifer McKnight
Sent: Friday, April 15, 2016 9:45 AM
To: Terri Sisk; Renae Gonzales
Subject: PUC Data: Item No. 2-3
Attachments: PUBLIC HEARING 072115 FINAL.pdf

Link to meeting video July 21, 2015 where rates adopted:

<https://www.youtube.com/watch?v=uLNb82z-XKI&feature=youtu.be>

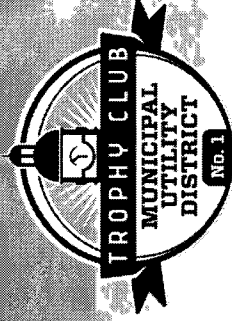
The presentation starts right after the meeting is called to order.

Also, the presentation provided at the meeting is attached.

Jennifer

Public Hearing Regarding Proposed Water & Sewer Rates

July 21, 2015



TCMUD000955
812

Board Goals for Rate Modeling

Board set primary goals of rate model:

- Meet financial needs of the District.
- Promote water conservation.
- Include “lifeline rate” for low/fixed income and prevent rate shock.

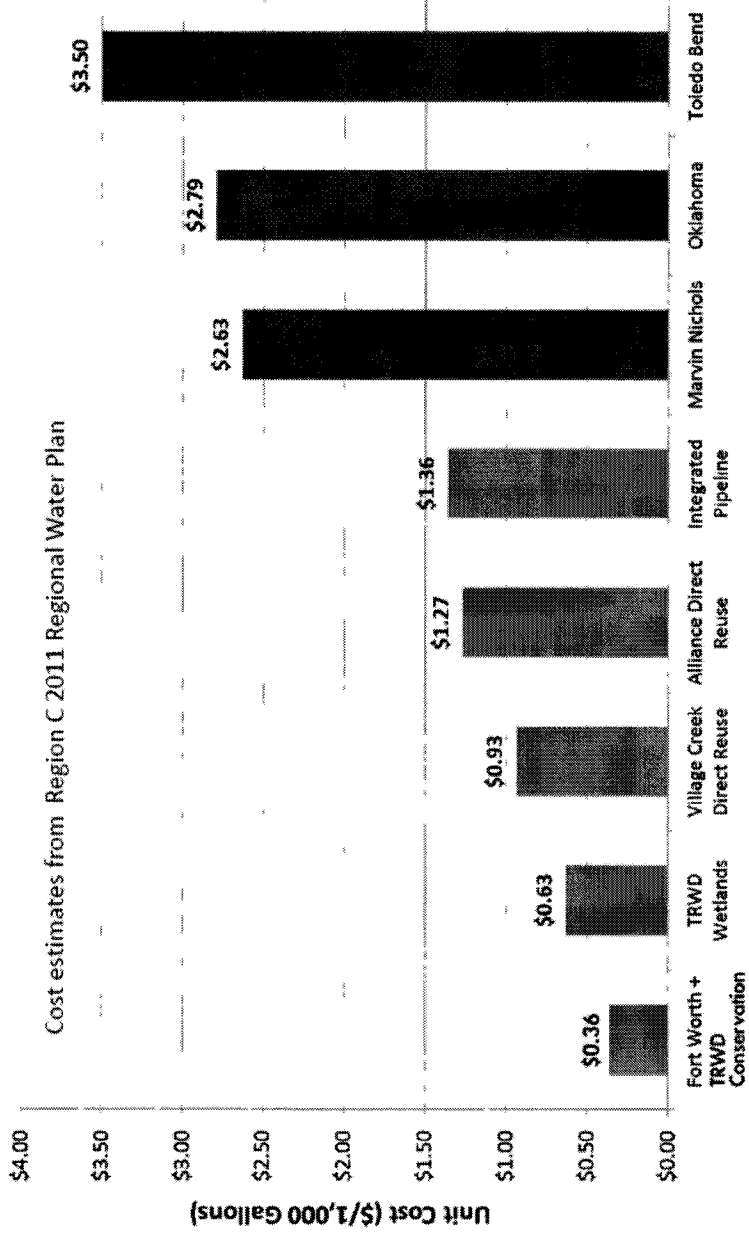
Conservation as a Supply Strategy

- Extends the life of existing supplies.
- Helps to meet the needs of growing population.
- Delays the need for expensive new infrastructure, equipment, and supplies.
- Helps to make more water available during a drought.
- Reduces peak demands (and peak charges from wholesalers).
- Water Conservation is the least expensive supply strategy but it does not completely offset cost increases.

Presentation by TRWD at Water Fest

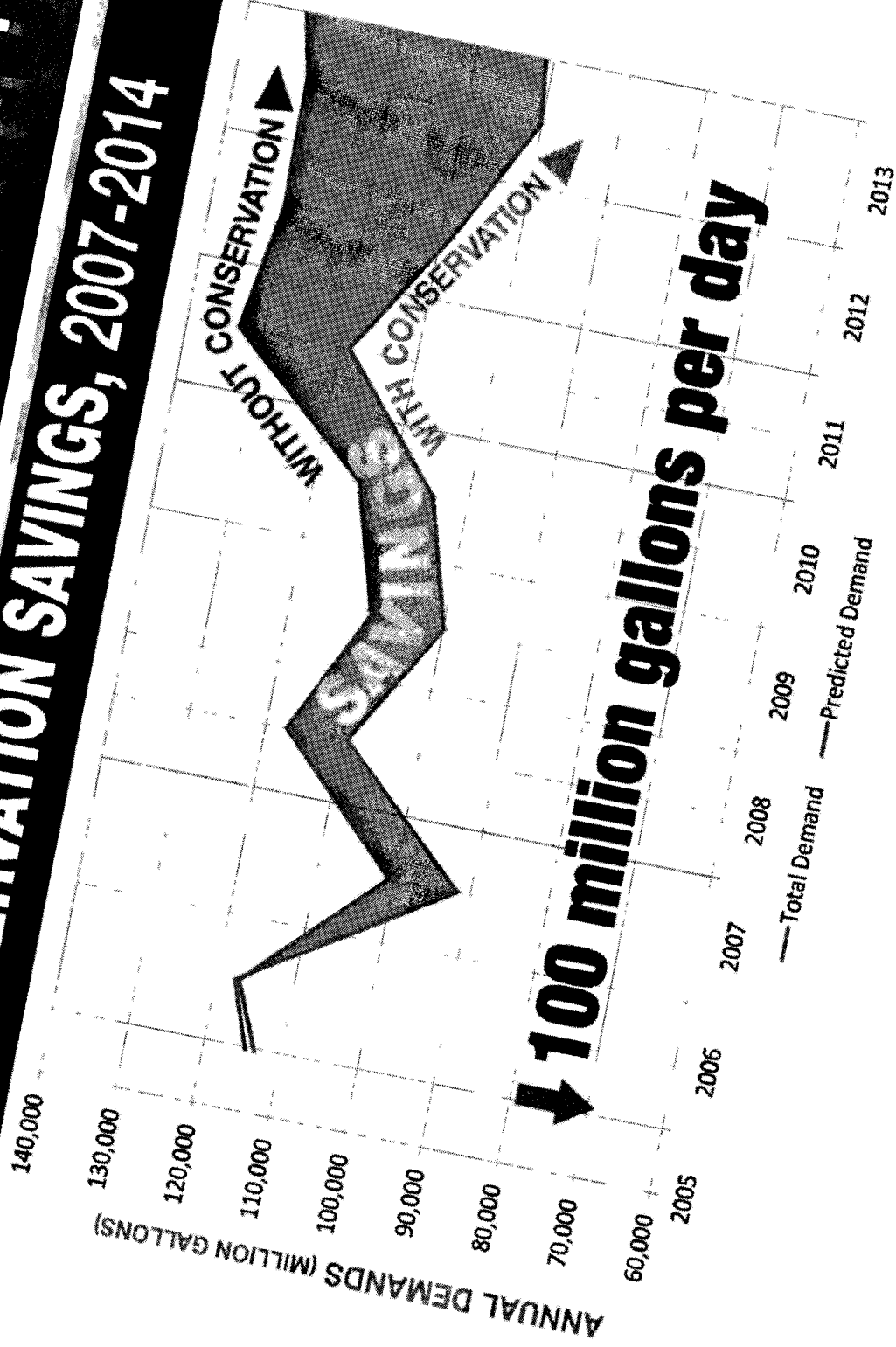
Cost of Future Supply Alternatives

Save water.
Nothing can
replace it.



Presentation by TRWD at Water Fest

CONSERVATION SAVINGS, 2007-2014



Model Developed

- Model developed by J. Stowe Group (aka NewGen Strategies).
- Incorporated board goals.
- Model developed per American Water Works Association (AWWA) “cost of service” methodology.
- Rates for water based upon costs for treatment and distribution by customer class (residential and commercial).
- Rates for sewer based upon costs for collection and treatment by customer class (residential and commercial).

Model Developed

- Projects revenue requirements over next 5 years.
- Cost allocations for fixed vs. variable expenses for both water and sewer.
- Cost of service by customer class.
- Sewer classes can be based on “strength” of wastewater. In TCMUD, no difference in commercial strength and residential strength

Why Use A Model?

- Prior to model development rates were not set to cover costs and relied heavily upon reserves to supplement operational expenses.
- Rate models are developed “system specific” and look at the current and future costs to operate the utility.
- Rate models help to achieve financial stability and to project funds required for necessary future improvements.

What Does the Model Include?

• Inflation and Allocation Inputs
• Current Rate Input
• Budget Input & Revenue Requirement Development
• Revenue Requirement Functionalization
• Water Revenue Requirement
• Classification of Water Revenue Requirement
• Peaking Factors
• Water Customer Class Cost Allocation
• Water Billing Determinants Input
• Projected Water Revenue Under Current Rates
• User Defined Rate Adjustments

• Projected Water Revenue Under User Defined Rates
• Wastewater Revenue Requirement
• Wastewater Billing Determinants
• Sewer Revenue Under Current Rates
• User Defined Wastewater Rate Adjustments
• Sewer Revenue Under Current Rates
• Water CIP Input
• Wastewater CIP Input
• CIP Funding Plan and Debt Service
• Presentation of Changes in Fund Balance - Current Rates
• Presentation of Changes in Fund Balance - User Defined Rates

Historical Increases BY TCMUD No. 1

Residential Water	Proposed			
	9/14/2010	10/18/2011	1/31/2012	5/20/2014 7/21/2015
Water Tiers				
0-6,999	2.48	2.50	2.50	2.70 3.03
7,000-12,999	3.00	3.05		
7,000-17,999			3.05	3.14 3.53
13,000-25,999	3.23	3.30		
18,000-25,999			3.30	3.64 4.09
26,000-50,999	3.34	3.40	3.40	4.23 4.75
51,000+	3.44	3.50	3.50	4.91 5.52

Historical Increases By TCMUD No. 1

Commercial Water Water Tiers	Proposed			
	9/14/2010	10/18/2011	1/31/2012	5/20/2014 7/21/2015
0-6,999	2.48	2.50	2.50	2.70 3.03
7,000-12,999	3.00	3.05		
7,000-17,999			3.05	3.14 3.53
13,000-25,999	3.23	3.30		
18,000-25,999			3.30	3.64 4.09
26,000-50,999	3.34	3.40	3.40	4.23 4.75
51,000+	3.44	3.50	3.50	4.91 5.52

Historical Increases By TCMUD No. 1

TCMUD No. 1 Sewer Rates - 2015

Residential Sewer

Sewer Tiers	9/14/2010	10/18/2011	1/31/2012	5/20/2014	7/21/2015	Proposed
0-6,999	2.48	2.48	2.50	2.50	2.63	2.63
7,000-12,000	3.00	2.50	2.50	2.50	2.63	2.63
12001-18000				2.50		2.63

**Sewer Capped at 18K gallons*

Commercial Sewer

Sewer Tiers	9/14/2010	10/18/2011	1/31/2012	5/20/2014	7/21/2015	Proposed
0-6,999	2.48	2.50	2.50	2.50	2.63	2.63
7,000-12,999	3.00	3.05				
7,000-17,999			3.05			
13000-25999	3.23	3.30				
18,000-25,999			3.30			
26,000-50,999	3.34	3.40	3.40			
51,000+	3.44	3.50	3.50			

**No cap on sewer usage*

Historical Increases By City of Fort Worth



Annual Increase

Year	Annual Increase
2011	10%
2012	11%
2013	0%
2014	21%
2015	8%

Wholesale water costs represent about 54% of the water department's operating expense!

Factors Considered In Review of Water Rates

- Absorb increases in wholesale water costs (both FY 15 and projected FY 16).
- Increase in materials and supply costs.
- Increased sampling and analyses (PID and MUD).
- Annual reserve for PID EST future maintenance.
- CIP for FY 2016 of \$300,000.

Assumptions: Water

- Maintain tiered pricing for water conservation.
- Continue to move closer to AWWA meter equivalency base rates:

Meter Size	AWWA (capacity GPM)	Factor based on 5/8
5/8 inch	20	1.00
1 inch	50	2.50
1-1/2 inch	100	5.00
2 inch	160	8.00
3 inch	300	15.00
4 inch	500	25.00
6 inch	1,000	50.00

Why Should Larger Meters Pay More?

- AWWA recognizes larger meters incur higher “customer costs.”
- Since meter repair and replacement and capacity charges vary by meter size, utilities have meter charges that vary by meter size.
- Meter sizing is based on many factors including the size of the home, distance from the water main, number of plumbing fixtures, and irrigation system requirements. Meter sizing is established in the plumbing code.

Proposed Water Rates (Res. & Com.)

Base Rates

Meter Size	Current	Proposed
3/4" - 5/8"	12.71	12.99
1"	16.71	20.39
1.5"	26.42	32.23
2"	38.06	46.43
3"	65.23	79.58
4"	104.04	126.93
6"	201.06	245.29

Volumetric Rates

Volume	Current	Proposed
0-6,000	2.70	3.03
6,001-17,000	3.14	3.53
17,001-25,000	3.64	4.09
25,001-50,000	4.23	4.75
50,0001 +	4.91	5.52

Residential Water Rate 5/8" Meter Impact to Bill

Water Usage	5,000	10,000	15,000	20,000	25,000	30,000
Current Bill	26.21	41.47	57.17	74.37	92.57	113.72
Proposed Bill	28.14	45.29	62.94	82.27	102.72	126.47
Monthly Increase	\$ 1.93	\$ 3.82	\$ 5.77	\$ 7.90	\$ 10.15	\$ 12.75

Residential Water Rate 1" Meter Impact to Bill

Water Usage	5,000	10,000	15,000	20,000	25,000	30,000
Current Bill	30.21	45.47	61.17	78.37	96.57	117.72
Proposed Bill	35.54	52.69	70.34	89.67	110.12	133.87
Monthly Increase	\$ 5.33	\$ 7.22	\$ 9.17	\$ 11.30	\$ 13.55	\$ 16.15

Commercial Water Rate 2" Meter Impact to Bill

	25,000	50,000	75,000	100,000	125,000	150,000
Water Usage						
Current Bill	117.92	223.67	346.42	469.17	591.92	714.67
Proposed Bill	136.16	254.91	392.91	530.91	668.91	806.91
Increase	\$ 18.24	\$ 31.24	\$ 46.49	\$ 61.74	\$ 76.99	\$ 92.24

Scenarios Reviewed & Selected

SEWER RATES

- **Scenario 1:**
 - Keep current rate structure to recover cost of service
 - Current rate structure includes 18,000 gallon cap for residential and no cap for commercial
- **Scenario 2:**
 - No cap on sewer use for residential and commercial
 - Sewer charge per 1000 gallons for all water consumption
- **Scenario 3:**
 - Winter Average for sewer charges for residential
 - No cap for commercial
- **Scenario 4:**
 - Flat rate for all users; no volumetric charge
 - Flat rate calculated by dividing needed revenues by number of active connections.

Proposed Sewer Rates



Scenario 1: Status Quo

- Residential sewer caps at 18,000 gallons.
- Commercial sewer has no cap (sewer paid for full consumption).

Base Rates

Current	Proposed
14.58	15.35

Volumetric Rates

Current	Proposed
2.50	2.63

Residential volume (cap at 18,000 gallons) was 531,623,000 gallons.

Commercial volume (no cap) was 83,232,000 gallons. This is 86% residential and 14% commercial.

Proposed Sewer Rates

Scenario 2: No Cap

- Residential sewer has no cap (sewer paid for full consumption).
- Commercial sewer has no cap (sewer paid for full consumption).

Base Rates

Current	Proposed
14.58	14.58

Volumetric Rates

Current	Proposed
2.50	2.50

Residential volume (no cap) was 780,833,000 gallons. Commercial volume (no cap) was 83,232,000 gallons. This is 90% residential and 10% commercial.

Proposed Sewer Rates

Scenario 3: Winter Averaging

- Residential rate set on average usage for Dec, Jan, Feb.
- Commercial sewer paid for full consumption.

Base Rates

Current	Proposed
14.58	19.10

Volumetric Rates

Current	Proposed
2.50	3.28

Residential volume (winter average for all accounts) was 355,918,000 gallons. Commercial volume (no cap) was 83,232,000 gallons. This is 81% residential and 19% commercial.

Proposed Sewer Rates

Scenario 4: Flat Rate

- Residential pays flat rate.
- Commercial pays flat rate.
- Flat rate calculated by dividing needed revenues by number of active connections.

Base Rates

Current	Proposed
14.58	47.68

Volumetric Rates

Current	Proposed
2.50	N/A

Rate Comparison: Sewer

Residential	5,000	10,000	15,000	20,000	25,000	30,000
Water Usage						
Current Bill	27.08	39.58	52.08	59.58	59.58	59.58
✓ Scenario 1: Status Quo	28.50	41.65	54.80	62.69	62.69	62.69
Scenario 2: No Cap Res	27.08	39.58	52.08	64.58	77.08	89.58
Scenario 3: Winter Ave Res*	35.50	51.90	68.30	84.70	101.10	117.50
Scenario 4: Flat Fee	47.68	47.68	47.68	47.68	47.68	47.68

* Residential Class Winter Average is 7,266 gallons per month.

Average Annual Usage

<u>Usage Group</u>	<u>% Accounts</u>
Up to 6000 gallons	30.31%
7000 to 17,000 gallons	29.63%
18,000 to 25,000 gallons	9.67%
26,000 to 50,000 gallons	9.68%
Over 50,000 gallons	20.72%

Rate Affect: Lowest User

Customer A 58 meter with no irrigation system.

Total Annual Usage	00,000
Annual Average	3,007
Winter Average	2,333

Annual Utility Bill Amount

Current	Water & Stat Quo	Water & No Cap Sewer	Water & Flat Sewer
\$556.28	\$560.98	\$546.02	\$833.22
		WA Sewer	
		\$582.06	

Rate Affect: Mid-Range User

Customer B58 meter with irrigation system.

Total Annual Usage	85,000
Annual Average	7,083
Winter Average	5,000

Annual Utility Bill Amount

Current	Water & Stat Quo	Water & No Cap Sewer	Water & WA Sewer	Water & Flat Sewer
\$778.99	\$831.8	\$811.39	\$899.93	\$99.09

Rate Affect: Mid-Range User

Customer C11 meter with irrigation system.

Total Annual Usage	180,000
Annual Average	15,000
Winter Average	333

Annual Utility Bill Amount

Current	Water & Stat Quo	Water & No Cap Sewer	Water & Flat Sewer
\$1,288.23	\$1,299.90	\$1,980.00	\$1,000.22
		\$1,287.78	

Rate Affect: Super User

Customer A meter ith high usage.

Total Annual Usage <input type="checkbox"/>	703,000
Annual Average <input type="checkbox"/>	58,583
<input type="checkbox"/> inter Average <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> , <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Annual Utility Bill Amount

Current	Water & Stat Quo	Water & No Cap Sewer	Water & Flat Sewer
Water & Sewer	WA Sewer	Cap Sewer	Flat Sewer
\$3, <input type="checkbox"/> 71.50	\$ <input type="checkbox"/> 098.08	\$5,278.2 <input type="checkbox"/>	\$3,917.9 <input type="checkbox"/>

Sewer Usage: Commercial Volume

- Percent usage commercial reviewed by engineers during preliminary engineering review of system and determined to be less than 20% of total volume.
- Percent usage commercial reviewed by rate consultants during model development last year and determined to be less than 20% of total volume. This was again reviewed by staff and rate consultants this year and again determined to be less than 20% of total volume.

FAQ

Why is a rate increase necessary?

- Assuming “normal” precipitation conditions, existing water and wastewater rates are insufficient to fully fund the cost of providing water and wastewater service.
- Wholesale cost increases continue to impact us.
- Significant wastewater capital improvements are underway and \$9.3M revenue-supported debt has been issued for the wastewater plant.
- Other improvements in the water and sewer systems will be needed in the next 5 to 10 years as infrastructure is aging.

FAQ

Would it be cheaper to get an irrigation meter since

I use less than 18,000 gallons per month in my home?

- The cost to set an irrigation meter is \$1469.
- Additionally, the cost to relocate internal plumbing to the irrigation system and installation and testing of a backflow device would have to be paid by the customer.
- Customers with an irrigation meter are required to pay a base fee each month for the irrigation meter, even in months where there is no usage.
- If a customer uses less than 18,000 gallons of water, he is only billed for usage (not for 18,000 gallons).

FAQ

Is it true my water rates are going up to pay for the wastewater treatment plant upgrade?

- **Water rates are only used for water system costs.** This includes the cost of purchased water, chemicals, tanks, pumps, meters, water line repairs and maintenance, and water line upgrades.
- **Sewer rates are only used for wastewater system costs.** This includes the costs for the treatment plant upgrade (revenue bonds), wastewater treatment, plant repairs and maintenance, lift station repairs and maintenance, and collection system repairs and maintenance (sewer lines).

FAQ

What costs have increased?

- Purchased water from the City of Fort Worth
- Wastewater Treatment Plant upgrades
- Chemicals
- Sludge hauling
- Pipe and repair materials
- Sampling and analyses (water, wastewater influent and effluent)
- Electricity
- Aging infrastructure

Public Comments

Thank you for attending the meeting and for allowing the District to provide you and your family with high quality water and wastewater services, at one of the lowest prices in the region!