



City of Industry Waterworks System

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Prepared for:

City of Industry



Prepared by: Greg B. Galindo
General Manager
La Puente Valley County Water District

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Summary

The City of Industry Public Utilities Commission (IPUC) requested the La Puente Valley County Water District (District) complete a water rate study for the City of Industry Waterworks System (CIWS) and provide a recommendation for water rates, which will generate sufficient revenue to meet the cost to provide water service to its customers.

The last water rate increase adopted by the IPUC was in June 2006. At that time rates were increased by an average of 5%. Recently there have been significant increases in the cost of providing water. These increases now necessitate additional revenue. The increased costs include but are not limited to:

1. Cost of Water- Main San Gabriel Basin Watermaster Replacement Water Assessment was increased from \$251.90/acre-foot in 2008 to \$450.00/acre-foot in 2009, then to \$587.00/acre-foot in 2010, and is projected to be \$696.00/acre-foot in 2011.
2. Infrastructure Improvement- The CIWS has 3 reservoirs which need to be relined and recoated within the next three years along with other infrastructure improvements.
3. Inflationary- Costs for materials, supplies and labor have increased since the last rate adjustment.

The major goals for this rate study include:

1. Distribution of the costs to water system customers in a fair and equitable manner.
2. Ensuring rates reflect the current and projected cost of replacement water assessments from the Main San Gabriel Basin Watermaster (Watermaster).
3. Increased revenue stability.
4. Promotion of efficient water use through price signaling.

In addition to these specific goals, water rates in general should:

1. Generate revenues which do not exceed the costs necessary to provide water service to CIWS customers (These costs include operations and infrastructure improvements as well as funding for adequate reserves).
2. Be as simple as possible to explain and administer.
3. Conform to current industry standards and practices.

This report provides an explanation of the process followed in conducting the rate study and the development of the proposed water rate structure.

In summary, the two major changes are proposed for the water rates:

- 1) Adjust service charges (by meter size) to better reflect the cost of service.
- 2) Replace the one uniform commodity rate for all user classes with a tiered rate structure for the residential customer class based on historical usage trends;

Note: *The CIWS has a limited amount of annual production rights in the Main San Gabriel Groundwater Basin. In most years these rights are significantly less than total customer water demands. The water produced in excess of these rights is subject to a replacement water assessment. Thus water used by customers that exceeds these annual production rights is substantially more expensive to provide. The tiered rate structure will encourage water use efficiency and will benefit all customers by decreasing the replacement water assessments the CIWS will be required to pay.*

Table-1 shows the proposed and current bi-monthly service charge by meter size. Based on Cost of Service methodology, an increase to the service charges is recommended. Service charge revenue is independent of water usage. The current service charge rates are significantly lower for some meter sizes in comparison to the cost of service; these rates have been adjusted accordingly. These charges represent approximately 25% of the system's revenues.

Table-1
Current and Proposed Service Charges

Meter Size	Current Bi-Monthly Rate	Proposed Bi-Monthly 2010	Proposed Bi-Monthly 2011	Proposed Bi-Monthly 2012	Proposed Bi-Monthly 2013	Proposed Bi-Monthly 2014
5/8"	\$ 22.80	\$ 27.48	\$ 32.16	\$ 36.84	\$ 41.52	\$ 46.20
3/4"	\$ 22.80	\$ 28.50	\$ 34.21	\$ 39.91	\$ 45.61	\$ 51.32
1"	\$ 32.40	\$ 38.23	\$ 44.07	\$ 49.90	\$ 55.73	\$ 61.56
1.5"	\$ 57.60	\$ 63.52	\$ 69.43	\$ 75.35	\$ 81.26	\$ 87.18
2"	\$ 66.00	\$ 76.38	\$ 86.76	\$ 97.15	\$ 107.53	\$ 117.91
3"	\$ 94.80	\$ 115.81	\$ 136.83	\$ 157.84	\$ 178.86	\$ 199.87
4"	\$ 133.20	\$ 160.50	\$ 196.75	\$ 228.53	\$ 260.30	\$ 292.08
6"	\$ 152.40	\$ 210.00	\$ 280.00	\$ 365.00	\$ 460.00	\$ 550.00
8"	\$ 194.40	\$ 280.50	\$ 410.50	\$ 560.00	\$ 700.00	\$ 850.00

Table-2 shows the current uniform commodity rate, the proposed Commercial and Multi-Family commodity rate and the proposed tiered rate structure for Residential users. The tiers were designed to promote efficient water use by charging a higher rate for water used that is greater than the average customer usage. The higher rate represents water in excess of the CIWS’s annual production right in the Main San Gabriel Groundwater Basin. The two-tier rate design is further discussed in Section 5. (Note: One unit of water shown as HCF (100 cubic feet) is equal to 748 gallons)

**Table-2
Current and Proposed Commodity Rates**

User Class	Current Commodity Rate	Proposed 2010	
Residential	\$1.36	0-30 HCF	Over 30 HCF
		\$1.50	\$1.70
Commercial	\$1.36	\$1.65	
Multi-Family	\$1.36	\$1.65	

The proposed rate recommendations are similar to rate structures found throughout southern California and are based on industry practices as set forth in *Principles of Water Rates, Fees and Charges* (also known as the M1 Manual) published by the American Water Works Association (AWWA). The methodology used is a combination of the Base-Extra Capacity and Commodity-Demand methods. This approach recognizes that the cost to serve each user class not only depends on the amount of water demanded but also on the manner in which it is demanded. This is also known as peaking or capacity needs. Customer classes with higher peaking characteristics are more costly to serve on a per unit basis than those with low peaking needs.

Table-3 on page 4 shows the impact to Residential users (5/8” meter) with varying water use. The water system’s average Residential customer uses 40 HCF in each billing period (bi-monthly).

Under the proposed rate structure, the average bill for Commercial and Multi-Family users will increase approximately 20% in 2010. We understand that both user classes have a wide range of consumption needs and the averages are only one measure of assessing bill impacts. Section 6 provides further information on bill impacts for these user classes.

Table-3
Example Residential Bill Impacts

Usage (HCF)	Current Bi-Monthly Bill	Proposed 2010 Bi-Monthly Bill	Bi-Monthly \$ Change	% Increase
5	\$ 29.60	\$ 34.98	\$ 5.38	18%
10	\$ 36.40	\$ 42.48	\$ 6.08	17%
15	\$ 43.20	\$ 49.98	\$ 6.78	16%
20	\$ 50.00	\$ 57.48	\$ 7.48	15%
25	\$ 56.80	\$ 64.98	\$ 8.18	14%
30	\$ 63.60	\$ 72.48	\$ 8.88	14%
35	\$ 70.40	\$ 80.98	\$ 10.58	15%
40	\$ 77.20	\$ 89.48	\$ 12.28	16%
45	\$ 84.00	\$ 97.98	\$ 13.98	17%
50	\$ 90.80	\$ 106.48	\$ 15.68	17%
55	\$ 97.60	\$ 114.98	\$ 17.38	18%
60	\$ 104.40	\$ 123.48	\$ 19.08	18%

Section 1

Methodology

Methodology

The methodology used for this rate study is based on the industry practice as set forth in *Principles of Water Rates, Fees and Charges* by the AWWA (also known as the M1 Manual). The methodology used is a combination of the Base-Extra Capacity and Commodity-Demand methods. This approach recognizes that the cost to serve each user class not only depends on the amount of water demanded, but also on the manner in which it is demanded, also known as peaking or capacity needs. Customer classes with higher peaking characteristics are more costly to serve on a per unit basis than those with low peaking needs, because of the costs related to the facilities required to meet these demands (i.e. - reservoirs, waterlines, pumping facilities).

The Basic process or steps of the water rate study are provided below with brief descriptions of each step:

1. Quantifying the number of customers in each customer class.
 - a. Sort through all current customers and correct classification as needed.
 - b. Verify existing customer accounts and meter sizes.
 - c. Provide a summary of all customers by meter size and class.
2. Determine revenue needs.
 - a. Review past three years of operation and maintenance expenses.
 - b. Review water system master plan project schedule.
 - c. Project operation and maintenance expenses for the next five years.
 - d. Project the infrastructure improvement expenses for the next ten years.
3. Determine cost of service.
 - a. Calculate a fair allocation of revenue requirements for each customer class.
4. Design rates.
 - a. Determine design to collect target revenues from each class.
 - b. Identify the change in rate and the % impact to customer classes.
 - c. Determine the new rates to collect the target revenues and lessen exceptionally large impacts to customers.
5. Determine final customer impacts
 - a. Calculate bills to assess impacts.
 - b. Compare rates to neighboring water purveyors.

Section 2

Customers and Consumption

2.1 Water System

The CIWS is owned by the City of Industry and managed and operated by the La Puente Valley County Water District under a 10 year operation and management agreement. The agreement was entered into in February 2004 and will expire in February 2014. The CIWS includes approximately 31.9 miles of distribution and transmission mains, 4 wells, 4 booster pump stations, 3 pressure regulating stations and 3 reservoirs. CIWS's primary source of water supply is from its Well 5 which draws groundwater from the Main San Gabriel Groundwater Basin. The aquifer in the area where the well draws water is contaminated with volatile organic compounds (VOC's), Perchlorate and N-Nitrosodimethylamine (NDMA). Under a water treatment and delivery agreement, the water from Well 5 is treated by neighboring San Gabriel Valley Water Company's (SGVWC) Treatment Plant B5. SGVWC then provides water from its distribution system to CIWS through two interconnections between the two systems.

CIWS operates 3 pressure zones. The vast majority of water delivered from SGVWC supplies the 2.5 million gallon capacity Lomitas Reservoir. Booster pumps at the Lomitas site supply water from the reservoir directly into Zone 1. From Zone 1 water is pumped to Zones 2 and 3, also known as the Industry Hills area. The water supplied to this area is metered at the inlet of the first of two booster stations that lift water to the two 2.5 million gallon capacity Industry Hills Reservoirs. The power cost associated with pumping water from Zone 1 to Industry Hills is not paid for by the CIWS and is not included in the revenue requirements for the system. The Industry Hills Reservoirs not only store water for use in Zones 2 and 3, but provide critical storage capacity in the event supply from SGVWC is interrupted. In this case the reservoirs can supply over 2.5 days of the systems average day demand.

2.2 User Classes

Table-4 shows the three customer classes of the CIWS.

Table-4
User Classes and Rate Classes

Customer Class
Residential (Single Family Residence)
Commercial (Commercial/Industrial/Irrigation/Public Authority)
Multi-Family (Apartments/Townhomes/Mobile Home Parks)

2.3 Customer Count

The breakdown of customer meters by meter size and user class, as of December 2009, is shown in Table-5. As shown in the table, Residential customers comprise approximately 82% of the systems customers.

**Table-5
Customer Meters by Size and Rate Class**

Customer Class	5/8"	3/4"	1"	1.5"	2"	3"	4"	6"	8"	Total	% of Total
Residential	1089	164	229	0	0	0	0	0	0	1482	81.7%
Commercial	110	14	111	29	56	2	4	0	2	328	18.1%
Multi-Family	0	0	1	0	0	0	1	0	1	3	0.2%
Total	1199	178	341	29	56	2	5	0	3	1813	100%

2.4 Consumption

Table-6 shows annual customer water consumption by rate class over the last five years (average of 2005 -2009). As shown, approximately 56% of the CIWS's water is consumed by the Residential user class, 3% by Multi-Family and 41% by Commercial users. HCF stands for hundred cubic feet and one (1) HCF is equal to 748 gallons of water.

**Table-6
Consumption by Rate Class**

Customer Class	Average Annual Consumption (HCF)	% of Total Consumption
Residential	353,836	56%
Commercial	258,465	41%
Multi-Family	19,239	3%
Total	631,540	100%

Section 3

Revenue Requirement

The CIWS's revenue requirement is defined as the yearly expenses required to operate the water system, less recurring non-rate revenue such as miscellaneous income or interest earnings. Yearly expenses may include operating and maintenance expenses, debt service (if applicable), reserve funding and cash financed capital projects. The CIWS's estimated revenue requirement for the next five years is shown in Table-7.

Table-7
Revenue Requirement

EXPENSES	2011	2012	2013	2014	2015
GENERAL AND ADMINISTRATIVE	\$ 520,190	\$ 527,014	\$ 533,974	\$ 541,074	\$ 548,315
TRANSMISSION, DISTRIBUTION AND SUPPLY	\$ 559,636	\$ 915,029	\$ 1,002,512	\$ 1,003,513	\$ 1,049,875
INFRASTRUCTURE IMPROVEMENT	\$ 636,000	\$ 646,000	\$ 569,000	\$ 484,000	\$ 325,000
<i>SUBTOTAL ALL EXPENSES</i>	\$1,715,825.75	\$2,088,043.22	\$ 2,105,486.07	\$2,028,586.22	\$1,923,190.00
<i>LESS NON-OPERATING REVENUE</i>	\$ 7,500	\$ 7,500	\$ 7,500	\$ 7,500	\$ 7,500
<i>TOTAL REQUIRED FROM RATES</i>	\$ 1,708,326	\$ 2,080,543	\$ 2,097,986	\$ 2,021,086	\$ 1,915,690

3.1 Yearly Revenue Requirement Discussion

The yearly revenue requirements shown in Table-7 include all the estimated expenses required to operate the CIWS for the indicated year. The rates are designed so that over the next five years the average annual revenue requirement is recovered. This revenue requirement is allocated to users in proportion to the cost of providing service to each customer class, as shown in the next section. The cost of service is recovered from service charges and commodity rates (\$/HCF).

3.2 Revenue Requirement and Long Term Plan Assumptions

The following assumptions were incorporated in this study:

1. 2011-2013 include significant reservoir rehabilitation projects (Industry Hills Reservoirs and Lomitas Reservoir).

2. 2015 assumes the operations and management agreement between the City of Industry and the La Puente Valley County Water District will be extended past 2014.
3. 2011-2015 assumes following the infrastructure improvement project schedule as detailed in the 2009 CIWS Water Master Plan.
4. General Inflationary rate of 2%.

Table-8 shows the assumptions used to estimate the replacement water assessment costs. The next to last column on the right shows the projected replacement water assessment rate, per year over the next several years. The last column shows the associated replacement water annual expense. The replacement water expense is considered a commodity related cost.

**Table-8
Replacement Water Assessment Assumptions**

Production Year Ending	Carry Over Right	Production Right	Total Right	Est. Production	Remaining Right	AF Leased	Lease \$ per Acre Foot	Lease Expense	Replacement Water Obligation	Rep. Water \$ per Acre Foot	Rep. Water Expense
2010	1002.99	948.77	1951.76	1450	501.76	200	\$450.00	\$90,000	0	\$ 587	\$ -
2011	701.76	892.96	1594.72	1500	94.72	0	\$ -	\$ -	0	\$ 696	\$ -
2012	94.72	948.77	1043.49	1515	0	0	\$ -	\$ -	472	\$ 730	\$ 344,084
2013	0	948.77	948.77	1530	0	0	\$ -	\$ -	581	\$ 766	\$ 445,475
2014	0	1004.58	1004.58	1545	0	0	\$ -	\$ -	541	\$ 805	\$ 435,158
2015	0	1004.58	1004.58	1561	0	0	\$ -	\$ -	556	\$ 845	\$ 469,971
2016	0	1004.58	1004.58	1577	0	0	\$ -	\$ -	572	\$ 887	\$ 507,315

Section 4

Cost of Service

Cost of service (COS) is defined as a method to equitably allocate the revenue requirement, discussed in Section 3, to each customer class. A COS analysis is a component of a rate study and yields the proper revenue to be collected from each user class from both the service charge and commodity charges (\$/HCF). The CIWS's COS for 2011 is derived below. The COS analysis for future years is derived in a similar fashion.

The AWWA recognizes four main different cost categories and, as part of a COS analysis, we classify the CIWS's revenue requirement to these four cost categories.

- 1) **Commodity Costs:** costs that pertain to meeting average day water demands.
- 2) **Capacity Costs:** costs associated with meeting demands above average day demands also known as peaking costs.
- 3) **Customer Costs:** costs that are incurred by the CIWS in serving customers regardless of the amount of water demanded by customers.
- 4) **Fire Protection Costs (Private):** costs associated with providing and maintaining fire protection connections (hydrants and meters) as well as having the capacity readily available to fight fires.

Table-9 shows the resulting classification of the CIWS's revenue requirement to the various cost causing components based on AWWA standards.

Table-9
Revenue Requirement by Cost Component Classification

Revenue Component	2011	2012	2013	2014	2015	Average	% of Total
Commodity	\$404,572	\$755,707	\$838,846	\$1,044,915	\$1,007,258	\$810,260	41%
Capacity	\$837,145	\$855,494	\$838,009	\$625,194	\$541,900	\$739,548	38%
Customer	\$384,116	\$385,446	\$330,668	\$335,974	\$348,886	\$357,122	18%
Direct Fire Protection	\$82,492	\$83,876	\$90,463	\$15,003	\$17,646	\$57,896	3%
Total Costs	\$1,708,326	\$2,080,543	\$2,097,986	\$2,021,086	\$1,915,690	\$1,964,826	100%

A typical concern in conducting a rate study is the revenue stability that will be created by the rate design and cost allocation to the four cost components. The more costs are allocated to commodity and capacity components (which are collected through the commodity rate), the more the potential for revenue fluctuations. To attain more revenue stability, a portion of capacity costs should be collected through the service charge. The rates are designed to collect approximately 25-30% of revenue through the service charge. This helps reduce revenue volatility from year to year due to weather and/or other reasons for fluctuations in customer consumption.

4.1 Commodity Costs

To allocate the commodity costs, which are costs recovered through the system’s commodity rate, to each customer class, we calculate the commodity allocation factor as shown in Table-10. This factor is the proportion of total historical consumption for each rate class. Approximately 56% of the water delivered by the CIWS is consumed by Residential customers. Therefore, 56% of the commodity cost, in Table-9, is allocated to the Residential rate class. We use a similar cost allocation methodology for each of the remaining rate classes as well as the remaining cost components. Table-10 shows the commodity allocation factor calculation.

Table-10
Commodity Allocation Factor

Customer Class	Average Annual Consumption (HCF)	% of Total Consumption
Residential	353,836	56%
Commercial	258,465	41%
Multi-Family	19,239	3%
Total	631,540	100%

4.2 Capacity Costs

We allocate a portion of the capacity costs, collected through the service charge, to the rate classes by using the capacity allocation. The capacity allocation factor is the proportion of hydraulically equivalent meters in each user class. Hydraulically equivalent meters are calculated using the AWWA equivalent meter ratios, which are ratios of the safe flows or capacities that can be delivered through each meter size. This best reflects each class’ peaking requirements as measured by their water demands during their highest month of water consumption. Thus, a rate class with higher peaking (capacity) needs is allocated a larger share of the capacity costs. Table-11 shows the capacity allocation factor used to allocate a portion of the capacity costs based on AWWA standards.

**Table-11
Capacity Allocation Factor**

Meter Size	No. of Residential Meters	No. of Commercial Meters	No. of Multi-Family	Total	AWWA Equivalent Meter Ratios	Residential Hydraulically Equivalent Meters	Commercial Hydraulically Equivalent Meters	Multi-Family Hydraulically Equivalent Meters	Total
5/8"	1089	110	0	1199	1	1089	110	0	1199
3/4"	164	14	0	178	1.5	246	21	0	267
1"	229	111	1	341	2.5	572.5	277.5	2.5	852.5
1.5"	0	29	0	29	5	0	145	0	145
2"	0	56	0	56	8	0	448	0	448
3"	0	2	0	2	16	0	32	0	32
4"	0	4	1	5	25	0	100	25	125
6"	0	0	0	0	50	0	0	0	0
8"	0	2	1	3	80	0	160	80	240
Total	1482	328	3	1813	Total	1907.5	1293.5	107.5	3308.5
% of Total	81.74%	18.09%	0.17%		Capacity Allocation Factor	58%	39%	3%	

4.3 Customer Costs

The last allocation step involves allocating customer related costs to each rate class. Customer related costs include billing and collecting costs, answering customer calls and other customer related services. The customer cost allocation factor is derived as the proportion of meters found in each user class. The meter service allocation factor is similar to the customer allocation factor. Table-12 shows the calculation of each of these customer allocation factors. Since the vast majority of the CIWS's customers are Residential, Table-12 shows that over 80% of customer related costs are allocated to the Residential rate class.

**Table-12
Customer Allocation Factor**

User Class	# of Customers	Customer Allocation Factor
Residential	1482	81.7%
Commercial	328	18.1%
Multi-Family	3	0.2%
Total	1813	2427

To finally determine the cost of service for each user class the estimated revenue requirements for components (commodity, capacity and customer) is multiplied by each allocation factor. The results are shown in Table-13.

Table-13
Cost of Service by User Class

User Class	Allocated Commodity Costs	Allocated Capacity Costs	Allocated Customer Costs	Total Cost of Service
Residential	\$499,365	\$469,021	\$319,676	\$1,288,062
Commercial	\$364,769	\$318,049	\$70,751	\$753,570
Multi-Family	\$27,152	\$26,432	\$647	\$54,231
Total	\$891,286	\$813,503	\$391,074	\$2,095,863

To complete the COS, private fire service costs are distributed to each service by customer related cost divided by the number of services and the capacity related costs by the hydraulic capacity units each service size represents. Table-14 depicts this methodology.

Table-14
Cost of Private Fire Service

User Class	Allocated Customer Costs	Total # of Services	Annual Cost per Service
Private Fire Service	\$ 17,368	46	\$ 377.57
User Class	Allocated Capacity Costs	Hydraulic Capacity Units	Annual Cost per Hydraulic Capacity Unit
Private Fire Service	\$ 40,527	2,865	\$ 14.15

Section 5

Water Rates

5.1 Service Charge

The service charge is a fixed charge based on two cost components: (i) customer related costs, and (ii) capacity related costs. The monthly customer cost component is derived by dividing the estimated annual customer costs by the number of meters, then dividing this result by the number of billing periods in a year.

Example: (customer costs/ total number of customers)/ 6 billings

To allocate capacity related costs by meter size, AWWA hydraulic capacity factors were used. These factors relate potential flow that may be conveyed through each meter size. For example a 1.5-inch meter has five times the capacity of a 5/8-inch meter. The second component of the service charge is derived by taking a percentage of the estimated annual capacity costs and dividing that figure by the number of hydraulically equivalent meters; this result is then multiplied by the hydraulic capacity factor and is then divided by the number of billing periods in a year.

Example: ((capacity costs x %)/number of hydraulically equivalent meters) x hydraulic capacity factor)/ 6 billings

Hydraulic meter equivalencies are calculated using AWWA hydraulic capacity factors which relate the potential flow or potential capacity of larger meters relative to a 5/8-inch meter. Table-15 shows the calculation of the service charge.

Table-15
Service Charge Calculation

Meter Size	# of Meters	2010 Customer Charge	Hydraulic Capacity Factor	Hydraulically Equivalent Meters	2010 Capacity Charge	2010 Proposed Bi-Monthly Service Charge (Cust. Chg. + Cap. Chg.)
5/8"	1199	\$ 24.78	1	1199	\$ 2.70	\$ 27.48
3/4"	178	\$ 24.78	1.5	267	\$ 3.73	\$ 28.50
1"	341	\$ 24.78	2.5	853	\$ 3.46	\$ 38.23
1.5"	29	\$ 24.78	5	145	\$ 38.74	\$ 63.52
2"	56	\$ 24.78	8	448	\$ 51.61	\$ 76.38
3"	2	\$ 24.78	16	32	\$ 91.04	\$ 115.81
4"	5	\$ 24.78	25	125	\$ 135.72	\$ 160.50
6"	0	\$ 24.78	50	0	\$ 185.22	\$ 210.00
8"	3	\$ 24.78	80	240	\$ 255.72	\$ 280.50
Total	1813			3309		

The current service charge rates were found to be significantly lower for some meter sizes when compared to the COS, these rates have been adjusted accordingly. The overall goal is to achieve full recovery of customer costs revenue requirements and 25% of the capacity costs revenue requirements through the service charge rate. Table-16 depicts the proposed service charge rate increases for years 2010-2014.

Table-16
Proposed Service Charge Rates

Meter Size	Current Bi-Monthly Rate	2010 Bi-Monthly Rate	% Increase over Previous Year	2011 Bi-Monthly Rate	% Increase over Previous Year	2012 Bi-Monthly Rate	% Increase over Previous Year	2013 Bi-Monthly Rate	% Increase over Previous Year	2014 Bi-Monthly Rate	% Increase over Previous Year
5/8"	22.80	27.48	21%	32.16	17%	36.84	15%	41.52	13%	46.20	11%
3/4"	22.80	28.50	25%	34.21	20%	39.91	17%	45.61	14%	51.32	13%
1"	32.40	38.23	18%	44.07	15%	49.90	13%	55.73	12%	61.56	10%
1.5"	57.60	63.52	10%	69.43	9%	75.35	9%	81.26	8%	87.18	7%
2"	66.00	76.38	16%	86.76	14%	97.15	12%	107.53	11%	117.91	10%
3"	94.80	115.81	22%	136.83	18%	157.84	15%	178.86	13%	199.87	12%
4"	133.20	160.50	20%	196.75	23%	228.53	16%	260.30	14%	292.08	12%
6"	152.40	210.00	38%	280.00	33%	365.00	30%	460.00	26%	550.00	20%
8"	194.40	280.50	44%	410.50	46%	560.00	36%	700.00	25%	850.00	21%

5.2 Commodity Rates

5.2.1 Single Family Residential Customers – Tiered (Inclining Block) Rates

One of the main goals for this rate study was to recover the commodity costs from each user class fairly and equitably, but also to promote efficient water use through price signaling. Therefore, it is recommended to implement a tiered rate structure (also known as an inclining block rate structure) for the Residential user class to encourage water use efficiency and to decrease the amount of expensive replacement water assessments the CIWS will be required to pay.

A tiered rate structure charges a higher volumetric rate in each block of consumption. Several water utilities with former uniform rates have recently implemented tiered water rates as a necessary adjustment to California's drought conditions.

Because the cost of water substantially increases when the CIWS produces water in excess of its annual production right in the Main San Gabriel Groundwater Basin, it is recommended to institute a two tiered rate structure for the Residential user class. The rate structure takes into account usage and allocates the cost of replacement water to customers whose water use causes the system to produce water in

excess of its production right. Table- 17 shows how the System’s annual groundwater production right is used to determine the appropriate quantity of water allocated at Tier 1 pricing, to each Residential customer in a bi-monthly billing period.

**Table-17
Residential Class Tier Calculation**

Customer Class	No. of Customers	Average Annual Usage (HCF)	% of Total Usage	Residential Class Allocation in HCF (Usage% X Pumping Right)	Annual Allocation per Residential Customer (HCF)	Customer Bi-Monthly Allocation Tier 1 (HCF)	Annual Usage Exceeding Pumping Right (HCF)
Residential	1482	353,836	56%	269,212	182	30	84,624
Total System	1813	631,540	100%	480,500	N/A	N/A	151,040

CIWS Annual Production Right = 1103 acre-feet. 1103 acre-feet = 480,500 HCF

Because Residential class customers have similar use patterns, a fair and equitable allocation can be derived from historical usage data and can be set to reflect the actual costs of providing service to the parcels served. Table-18 shows the current and proposed 2010-2014 commodity rates for all rate classes.

**Table-18
Proposed and Current Commodity Rates**

User Class	Current Commodity Rate	Proposed 2010		Proposed 2011		Proposed 2012		Proposed 2013		Proposed 2014	
		0-30 HCF	>30 HCF	0-30 HCF	>30 HCF	0-30 HCF	>30 HCF	0-30 HCF	>30 HCF	0-30 HCF	>30 HCF
Residential	\$1.36	\$1.50	\$1.70	\$1.70	\$1.98	\$1.84	\$2.20	\$1.98	\$2.42	\$2.10	\$2.70
Commercial	\$1.36	\$1.65		\$1.80		\$1.95		\$2.10		\$2.25	
Multi-Family	\$1.36	\$1.65		\$1.80		\$1.95		\$2.10		\$2.25	

5.2.2 Commercial & Multi-Family

It does not appear feasible to establish an inclining block rate for the Multi-Family user class, because one meter serves many residential units and it is not possible to determine the use of each residence. It

also does not appear feasible to establish this type of rate for the Commercial user class because of the greatly varying water needs of Commercial customers. The commodity rates paid by Multi-Family and Commercial users are recommended to be the same no matter how much water is used. However, a higher rate than the cost of the initial block for Residential accounts should be used to ensure that these classes pay their proportional share of the costs of water service. As shown in Table-18 Commercial class user will continue to be charged a uniform rate. Establishing tiered rates for this rate class can create an unfair rate structure. As an example, consider a high-demand industrial water user such as a juice maker, textile manufacturer or plant nursery. The majority of these users' consumption would fall in the high-priced second tier regardless of their legitimate, high-value producing, water needs which do not constitute the inefficient water use that a water agency would want to curb through price signaling.

5.4 Private Fire Service Charge

The private fire service charge also is recommended to be updated to reflect the cost associated with maintaining and billing each connection and the cost associated with the potential demand used for fire fighting purposes. It is estimated that private fire services account for approximately 3% of yearly expenses, totaling approximately \$58,000 on average from 2010-2014. Distributing this across the various sized connections yields private fire service charges as shown in Table-19, below. Note: that the CIWS collects *public* fire protection charges through its service charges.

Table -19
Private Fire Service Charge

Size of Connection (inch)	Number of Services	Current Bi-Monthly Charge	Proposed 2010 Bi-Monthly Charge	Proposed 2011 Bi-Monthly Charge	Proposed 2012 Bi-Monthly Charge	Proposed 2013 Bi-Monthly Charge	Proposed 2014 Bi-Monthly Charge
1.5	0	N/A	\$77.08	\$77.08	\$77.08	\$77.08	\$77.08
2	0	N/A	\$85.56	\$85.56	\$85.56	\$85.56	\$85.56
3	0	N/A	\$108.20	\$108.20	\$108.20	\$108.20	\$108.20
4	3	\$34.00	\$53.46	\$80.20	\$100.24	\$113.61	\$133.66
6	23	\$50.00	\$78.50	\$120.00	\$153.29	\$173.73	\$204.39
8	19	\$67.00	\$95.50	\$135.00	\$185.50	\$245.87	\$289.26
10	1	\$84.00	\$120.25	\$180.00	\$250.00	\$320.00	\$402.43
12	0	\$101.00	\$180.46	\$257.80	\$360.91	\$438.25	\$515.59

Section 6

Customer Bill Impacts

6.1 Residential Bill Impacts

Table-20 shows bill impacts over the next three years for Residential rate class with a (5/8-inch) meter for different levels of consumption. The CIWS average Residential customer uses approximately 40 HCF per bi-monthly billing period.

Table-20
Residential (5/8-inch) Bill Impacts

Usage (HCF)	Current Bi-Monthly Bill	Proposed 2010	Bi-Monthly \$ Change	% Increase	Proposed 2011	Bi-Monthly \$ Change	% Increase	Proposed 2012	Bi-Monthly \$ Change	% Increase
5	29.60	34.98	\$5.38	18%	40.66	\$5.68	16%	46.04	\$5.38	13%
10	36.40	42.48	\$6.08	17%	49.16	\$6.68	16%	55.24	\$6.08	12%
15	43.20	49.98	\$6.78	16%	57.66	\$7.68	15%	64.44	\$6.78	12%
20	50.00	57.48	\$7.48	15%	66.16	\$8.68	15%	73.64	\$7.48	11%
25	56.80	64.98	\$8.18	14%	74.66	\$9.68	15%	82.84	\$8.18	11%
30	63.60	72.48	\$8.88	14%	83.16	\$10.68	15%	92.04	\$8.88	11%
35	70.40	80.98	\$10.58	15%	93.06	\$12.08	15%	103.04	\$9.98	11%
40	77.20	89.48	\$12.28	16%	102.96	\$13.48	15%	114.04	\$11.08	11%
45	84.00	97.98	\$13.98	17%	112.86	\$14.88	15%	125.04	\$12.18	11%
50	90.80	106.48	\$15.68	17%	122.76	\$16.28	15%	136.04	\$13.28	11%
55	97.60	114.98	\$17.38	18%	132.66	\$17.68	15%	147.04	\$14.38	11%
60	104.40	123.48	\$19.08	18%	142.56	\$19.08	15%	158.04	\$15.48	11%
70	118.00	140.48	\$22.48	19%	162.36	\$21.88	16%	180.04	\$17.68	11%
80	131.60	157.48	\$25.88	20%	182.16	\$24.68	16%	202.04	\$19.88	11%

6.2 Commercial & Multi-Family Bill Impacts

Table-21 and Table-22 show the bill impacts over the next three years for the Commercial and Multi-Family rate class for different levels of consumption based on a 1-inch and 2-inch meter size. The average use for this rate class is approximately 52 HCF (1-inch) and 200 HCF (2-inch).

Table -21

Commercial (1-inch) Bill Impacts

Usage (HCF)	Current Bi-Monthly Bill	Proposed 2010	Bi-Monthly \$ Change	% Increase	Proposed 2011	Bi-Monthly \$ Change	% Increase	Proposed 2012	Bi-Monthly \$ Change	% Increase
10	46.00	54.73	\$8.73	19%	62.06	\$7.33	13%	69.39	\$7.33	12%
20	59.60	71.23	\$11.63	20%	80.06	\$8.83	12%	88.89	\$8.83	11%
30	73.20	87.73	\$14.53	20%	98.06	\$10.33	12%	108.39	\$10.33	11%
40	86.80	104.23	\$17.43	20%	116.06	\$11.83	11%	127.89	\$11.83	10%
50	100.40	120.73	\$20.33	20%	134.06	\$13.33	11%	147.39	\$13.33	10%
60	114.00	137.23	\$23.23	20%	152.06	\$14.83	11%	166.89	\$14.83	10%
70	127.60	153.73	\$26.13	20%	170.06	\$16.33	11%	186.39	\$16.33	10%
80	141.20	170.23	\$29.03	21%	188.06	\$17.83	10%	205.89	\$17.83	9%
90	154.80	186.73	\$31.93	21%	206.06	\$19.33	10%	225.39	\$19.33	9%
100	168.40	203.23	\$34.83	21%	224.06	\$20.83	10%	244.89	\$20.83	9%

(This section continues on the following page.)

Table -22

Commercial (2-inch) Bill Impacts

Usage (HCF)	Current Bi-Monthly Bill	Proposed 2010	Bi-Monthly \$ Change	% Increase	Proposed 2011	Bi-Monthly \$ Change	% Increase	Proposed 2012	Bi-Monthly \$ Change	% Increase
25	100.00	117.63	\$17.63	18%	131.76	\$14.13	12%	145.90	\$14.13	11%
50	134.00	158.88	\$24.88	19%	176.76	\$17.88	11%	194.65	\$17.88	10%
75	168.00	200.13	\$32.13	19%	221.76	\$21.63	11%	243.40	\$21.63	10%
100	202.00	241.38	\$39.38	19%	266.76	\$25.38	11%	292.15	\$25.38	10%
125	236.00	282.63	\$46.63	20%	311.76	\$29.13	10%	340.90	\$29.13	9%
150	270.00	323.88	\$53.88	20%	356.76	\$32.88	10%	389.65	\$32.88	9%
175	304.00	365.13	\$61.13	20%	401.76	\$36.63	10%	438.40	\$36.63	9%
200	338.00	406.38	\$68.38	20%	446.76	\$40.38	10%	487.15	\$40.38	9%
225	372.00	447.63	\$75.63	20%	491.76	\$44.13	10%	535.90	\$44.13	9%
250	406.00	488.88	\$82.88	20%	536.76	\$47.88	10%	584.65	\$47.88	9%
275	440.00	530.13	\$90.13	20%	581.76	\$51.63	10%	633.40	\$51.63	9%
300	474.00	571.38	\$97.38	21%	626.76	\$55.38	10%	682.15	\$55.38	9%
325	508.00	612.63	\$104.63	21%	671.76	\$59.13	10%	730.90	\$59.13	9%
350	542.00	653.88	\$111.88	21%	716.76	\$62.88	10%	779.65	\$62.88	9%
375	576.00	695.13	\$119.13	21%	761.76	\$66.63	10%	828.40	\$66.63	9%
400	610.00	736.38	\$126.38	21%	806.76	\$70.38	10%	877.15	\$70.38	9%

Section 7

Rate Comparison

Table-23 shows the Residential rates from 12 local water purveyors in comparison to the proposed 2010 CIWS Residential rates. Although CIWS bills bi-monthly, the table compares rates by calculating monthly bills for each purveyor based on a 5/8-inch meter and average monthly consumption (CIWS average is 20 HCF monthly). The CIWS calculated bill is well below the current average. Note: several of these purveyors are either in the process of raising rates, have approved rate increases for next year or are planning to raise rates within the next twelve months.

Table-23
Comparison of Residential Rates (20 HCF) as of July 1, 2010

Purveyor	10 HCF	20 HCF	30 HCF	40 HCF	50 HCF	60 HCF
Valley County Water	\$16.08	\$23.10	\$33.51	\$43.91	\$54.31	\$64.71
City of Monrovia	\$22.38	\$36.88	\$51.38	\$65.88	\$80.38	\$94.88
City of Azusa	\$24.93	\$41.34	\$59.45	\$77.57	\$95.68	\$113.80
City of Industry	\$28.74	<u>\$44.74</u>	\$61.74	\$78.74	\$95.74	\$112.74
LPVCWD (Zone 1)	\$26.47	\$40.29	\$55.45	\$70.61	\$85.77	\$100.93
LPVCWD (Zone 2)	\$28.70	\$43.80	\$60.23	\$76.66	\$93.09	\$109.52
LPVCWD (Zone 3)	\$30.88	\$47.11	\$64.67	\$82.23	\$99.79	\$117.35
LPVCWD (Zone 4)	\$30.08	\$45.59	\$62.51	\$79.43	\$96.35	\$113.27
Suburban (Zone 1)	\$26.17	\$42.78	\$61.35	\$79.91	\$98.48	\$117.04
Suburban (Zone 2)	\$26.82	\$44.08	\$63.03	\$81.98	\$100.93	\$119.88
Suburban (Zone 3)	\$27.52	\$45.48	\$65.91	\$86.35	\$106.78	\$127.21
VHWC (Zone 1)	\$39.40	\$48.80	\$62.90	\$77.94	\$96.74	\$115.54
VHWC (Zone 2)	\$40.40	\$50.80	\$64.90	\$81.94	\$101.74	\$121.54
VHWC (Zone 3)	\$41.70	\$53.40	\$69.80	\$87.14	\$108.24	\$129.34
VHWC (Zone 4)	\$41.50	\$53.00	\$69.20	\$86.34	\$107.24	\$128.14
San Gabriel Valley Water	\$41.94	\$63.55	\$85.15	\$106.76	\$128.36	\$149.97
City of Glendora (Zone 1)	\$43.37	\$58.37	\$76.75	\$96.25	\$115.75	\$135.25
City of Glendora (Zone 2)	\$44.47	\$60.57	\$80.05	\$100.65	\$121.25	\$141.85
City of Glendora (Zone 3)	\$45.67	\$62.97	\$83.65	\$105.45	\$127.25	\$149.05
City of Glendora (Zone 4)	\$52.27	\$76.17	\$103.45	\$131.85	\$160.25	\$188.65
Golden State Water	\$38.05	\$64.93	\$93.73	\$122.53	\$151.33	\$180.13
Walnut Valley Water (Zone 1)	\$36.64	\$60.92	\$86.22	\$113.03	\$153.43	\$193.83
Walnut Valley Water (Zone 2)	\$38.54	\$64.72	\$91.92	\$120.63	\$162.93	\$205.23
Walnut Valley Water (Zone 3)	\$39.94	\$67.52	\$96.12	\$126.23	\$169.93	\$213.63
Rowland Water (Zone 1)	\$38.16	\$60.10	\$88.24	\$118.24	\$148.24	\$178.24
Rowland Water (Zone 2)	\$39.46	\$62.70	\$92.14	\$123.44	\$154.74	\$186.04
Rowland Water (Zone 3)	\$40.56	\$64.90	\$95.51	\$128.01	\$160.51	\$193.01
Rowland Water (Zone 4)	\$44.96	\$73.70	\$108.64	\$145.44	\$182.24	\$219.04
Rowland Water (Zone 5)	\$47.46	\$78.74	\$116.28	\$155.68	\$195.08	\$234.48
Rowland Water (Zone 6)	\$49.26	\$82.30	\$121.54	\$162.64	\$203.74	\$244.84
City of Covina	\$56.73	\$81.68	\$108.29	\$134.90	\$161.50	\$188.11
Average	\$37.07	\$56.29	\$78.51	\$101.56	\$126.38	\$151.20



Section 8

Other Fees

Through the process of this rate study it was identified that the miscellaneous and special charges also needed updating. These charges are designed to recover the COS from 1)-customers who request the service or 2)-the beneficiary of the service (i.e. service sign up, bill late charge, meter tests, reconnection fee, and fire flow test). These charges are used when the customer is readily identified, the cost for the service can be accurately determined and in some cases to discourage certain behavior. The cost for these services is not recovered by the standard service charge or commodity rates. Table-24 shows the current and recommended fees for these services. It is recommended that the changes proposed below in this Section 9 be evaluated independently from the water rate changes specified in this report.

Table-24
Miscellaneous Fees and Charges

Service	Current	Proposed
Service Deposit	\$20.00	\$100.00 (Refunded upon closing account or applied to last bill)
Connection/Transfer's	N/C	\$15.00
Returned Check-NSF	\$10.00	\$20.00
Delinquent Bill	\$5.00	\$5.00
Door Hangers (notice of disconnection)	N/C	\$5.00
Reconnection	\$25.00	\$25.00
Reconnection-After Hours	N/C	\$50.00
Meter Tampering	\$50.00	\$50.00 plus cost of repairs if needed
On-Site Hydrant (bi-monthly)	\$50.00	\$50.00
Meter Accuracy Test	N/C	\$25.00 If meter is found non defective.
Fire Flow Test	N/C	\$75.00
Will Serve Letter	N/C	\$25.00
Construction Meter	\$1,000 refundable deposit, \$20.00 per month and the commodity rate for water used.	\$1,000 refundable deposit, \$5.00 per day use charge and the commercial commodity rate for water used.

N/C - No Charge

N/A - Not Applicable

Continued

Table- 24

Service	Current	Proposed
New Service Installation	Connection fee, plus the cost of installation. (Labor and Materials)	Connection fee, Water System Access Fee plus the Cost of Installation. (Labor and Materials)
		<i>Water System Access Fee is based on the hydraulic capacity of the connection requested. (Water System Access Fee will be Tabulated at the time the water service facilities are requested)</i>