

Water Rate Backgrounder

Water Rate Formation in the
San Diego Region

San Diego Taxpayers Educational Foundation

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Introduction

In the summer of 2011, Mayor Jerry Sanders officially ended a two year drought ordinance in the City of San Diego. Lack of water in an unfavorable climate forced leaders in the San Diego region to impose behavioral restrictions on the usage of water. Non-price strategies, such as command and control limits on how much water a household could use and informational campaigns asking citizens to consume less water were combined to encourage conservation of water. Pricing strategies, such as tiered rates, also proved effective during the recent drought. This report examines the factors used to calculate water rates at local San Diego region water agencies.

Water agencies collect revenues from three main sources: capacity charges, base (meter) fees, and commodity charges. Each category will be discussed separately in this report.

Revenue Requirements

Each water agency calculates a certain amount of fixed revenue that must be collected in order to cover the costs of basic operations. Although most water agency revenues come from water rates (commodity charges), one-time capacity charges and fixed service fees are calculated with the intent to recover the cost of operations and maintenance, debt service, and capital improvements. For example, the City of San Diego uses the following equation to calculate revenue requirements¹:

$$\text{Revenue Requirements} = \text{Operations \& Maintenance} + \text{Debt Service} + \text{Capital Projects Financed by Cash} - \text{Revenues From Sources Other Than Rates}$$

Collecting minimum revenue requirements is vital to an agency's finances. Not doing so can result in revenue instability and the need for an agency to raise revenue through other methods such as raising commodity rates.

Cost of Service Analysis

The City of San Diego released a cost of service study in December 2006. Water agencies use Cost of Service Analysis to predict revenue requirements. Since different types of customers exhibit different water usage behaviors, agencies separate customers into classes to create a more equitable distribution of costs. In accordance with standards created by the American Water Works Association (AWWA), most local water agencies have four standard user classes:

¹ Raftelis Financial Consultants, Inc. "City of San Diego Water Cost of Service Rate Study." December 2006.

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- 1) **Single-Family Residential (SFR)** – Individual homes, usually detached houses; only one meter serving the dwelling unit
- 2) **Multi-Family Residential (MFR)** – Apartment or condominium complexes; usually one large meter serving an entire building
- 3) **Commercial and Industrial** – Mostly businesses, but also anything that doesn't fall under the SFR, MFR, or Irrigation classes
- 4) **Irrigation** – Customers using water for farming and agricultural uses

The purpose of classification is to ensure that a water agency does not charge single-family residences similar rates to businesses that use much more water than a household. Restaurants (a commercial customer) use more water than single-family residences, and those differences are reflected in fees and rates. Costs of service must be charged proportionally to the service cost for each user class. For example, if delivering water to single family residences consumes 45 percent of agency delivery costs, then single family residences will be charged an amount to recover approximately 45 percent of those delivery costs.

Monthly Service Charges

Service charges are a flat fee paid by all customers depending on meter size. Some agencies charge different flat fees for different user classes. In the City of San Diego, the purpose of a service charge is to recoup some of the costs associated with meter maintenance, customer service and water used for fire protection. The service charge also helps fund accounting, billing and administrative and technical support costs. Service charges ensure revenue stability and partial payment for various fixed costs associated with operating a water agency.²

The service charge for a single-family residence in the City of San Diego as of July 2012 is \$19.33 per month.³ This amount multiplied by the number of single-family residence ratepayers in the City of San Diego should be approximately the same amount as the cost of procuring and delivering water to all single-family residences in San Diego. The goal is to break even because water agencies are cost recovery enterprises and do not seek profit.⁴

Capacity Charges

Water agencies collect capacity charges any time a water delivery system is expanded to include new development. For example, developers of new sub-divisions, manufacturing centers and apartment buildings must pay this charge in order for the water agency to recoup the costs of expanding water service to new areas. The capacity charge is a one-time fee and is normally paid by private

² Raftelis Financial Consultants, Inc. "City of San Diego Water Cost of Service Rate Study." December 2006.

³ The City of San Diego. "Water & Sewer Bill/Rates." Retrieved from <http://www.sandiego.gov/water/rates/rates.shtml>

⁴ Raftelis Financial Consultants, Inc. "City of San Diego Water Cost of Service Rate Study." December 2006.

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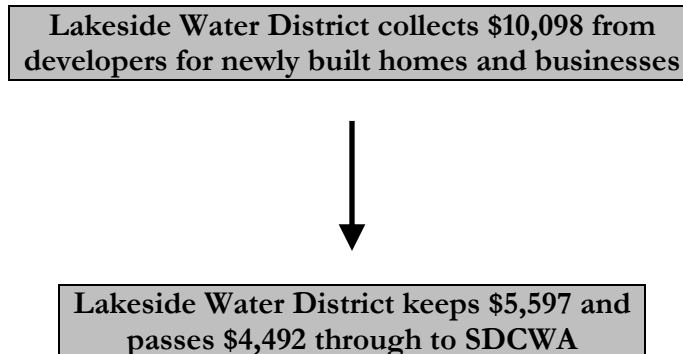
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developers. Capacity fees are collected by the local agency but then given to the San Diego County Water Authority (SDCWA), which performs periodic audits of water agencies to ensure payments are reaching SDCWA. SDCWA passes this cost on to local water agencies.

The 2011 capacity fee levied by SDCWA is \$4,492 for a single-family residence (\$4,326 plus a \$166 treatment fee). The charge is paid to the local agency, but it is the responsibility of the agency to then forward that amount to SDCWA.⁵ Developers pay more if the water agency has its own capacity charge in addition to the charge levied by SDCWA. For example, Lakeside Water District collects \$4,492 in capacity charges on behalf of SDCWA but adds its own estimated capacity charge of \$5,597. Both charges combined increase total capacity charges in Lakeside Water District above \$10,000. The following table shows total capacity charges in Lakeside Water District:

Table 1: Lakeside Water District Meter Installation Fees	
Lakeside Capacity Charges	
Meter Installation	\$2,535
Lakeside Capacity Fee	\$3,062
Sub-Total Lakeside	\$5,597
SDCWA Capacity Charges	
SDCWA Capacity Fee	\$4,326
SDCWA Treatment Fee	\$166
Sub-Total SDCWA	\$4,492
TOTAL	\$10,098

The SDCWA portion of the capacity charge is a pass-through charge. Lakeside collects the total amount (\$5,597 for Lakeside and \$4,492 on behalf of SDCWA) from new development and passes part of that on to pay for SDCWA’s share of the capacity charge (\$4,492).



⁵ San Diego County Water Authority. “Capacity Charges.” Received from <http://www.sdcwa.org/capacity-charges>

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Assembly Bill 1600 (1987) created rules for capacity fees. The bill states that capacity fees cannot exceed the estimated “reasonable cost of providing service.” Furthermore, California Government Code restricts the usage of capacity fee revenues to new projects only. Replacement and maintenance projects must be funded from other revenues.⁶

Commodity Charges

Ratepayers pay variable commodity charges based on how much water they consume. Water usage is measured by water agencies in hundred cubic feet (HCF).⁷

$$\text{Commodity Charge} = \text{Total HCF of Water Consumed} \times \text{Commodity Rate}$$

For example, if a customer consumes 10 HCF and a water agency charges \$2.00 for every HCF, the total commodity charge will be \$20.00 (10 HCF x \$2.00 = \$20.00). The commodity charge appears on the bill along with any other monthly charges.

Conservation-Based Rates

Conservation-based water commodity rates use price signals to encourage customers to curb wasteful uses of water. In San Diego County, several water agencies use tiered-rate (or “block rate”) pricing structures for commodity charges which establish different prices depending on the amount used. For example, a water agency might charge one price for up to 10 units of water and a higher price for every unit after. The following graph shows the conservation-based three-tier structure in the City of San Diego⁸:

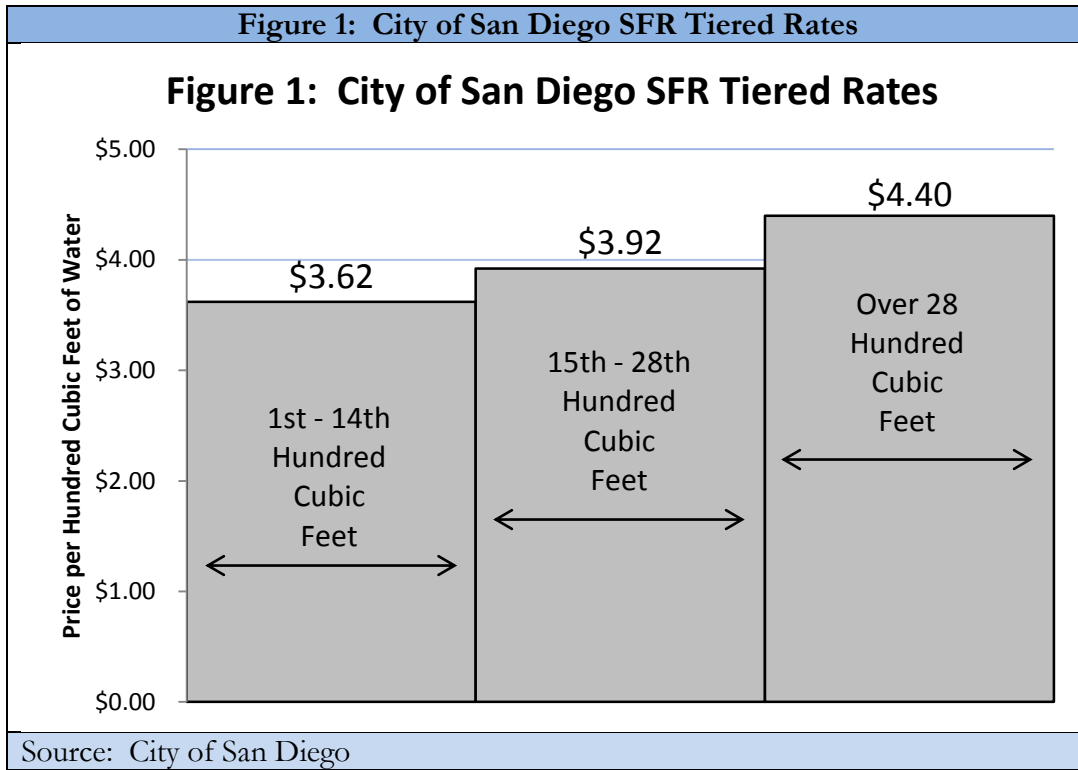
⁶ California Government Code Section 66000-66014. Retrieved from <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=gov&group=66001-67000&file=66012-66014>

⁷ 1 HCF = 748.05 gallons

⁸ “Water Rates.” City of San Diego. Retrieved from <<http://www.sandiego.gov/water/rates/rates.shtml>>.

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Simply creating higher prices based on the amount of water consumed does not necessarily result in a conservation-based rate structure. The California Urban Water Conservation Council (CUWCC) created the following best practices for conservation-based rates:



Customers are encouraged to conserve through commodity charges and not through fixed charges, so the pricing structure must be heavily skewed toward commodity charges. If less than 70 percent of the sum of revenues comes from commodity rates, then the rate structure is skewed too heavily toward fixed charges and not considered a conservation-based rate structure according to CUWCC standards.⁹ However, the 70 percent ratio is arbitrary and non-binding. It resulted from a compromise between water agencies and environmental groups and is not based on any specific demand management principles.

⁹ "Retail Conservation Pricing." *California Urban Water Conservation Council*. California Water Urban Conservation Council. Web. 20 Jan. 2012. <<http://www.cuwcc.org/BMP-11-Rates.aspx>>

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In the case that implementation of tiered rates results in higher revenues for a water agency, the excess revenues can be used for a variety of purposes relating to water operations. Agencies often use these excess revenues to help fund other conservation efforts such as conservation education campaigns.

A common misconception is that tiered rates provide a means of covering the costs associated with increasing the supply of water. According to the American Water Works Association (AWWA), water agencies are not fully aware of the costs of procuring and delivering more water. Tiered rates merely provide a politically feasible method of inducing customers to conserve.¹⁰

San Diego County Water Authority

Most water in San Diego County is distributed to customers through the San Diego County Water Authority (SDCWA). SDCWA is a large umbrella agency that sells water to 24 local smaller agencies for distribution to customers. Like local water agencies, SDCWA charges its customers (the 24 local agencies) fixed fees and also commodity fees based on quantity of water purchased. These fees are often called “pass-through charges” and cover the costs of third parties (in this case the third party is SDCWA). The amount SDCWA charges its member agencies in fixed fees varies depending on the size of the member agency purchasing the water. The City of San Diego, the largest agency under the SDCWA, is charged approximately \$4.7 million per month. A small agency such as San Dieguito Water District pays approximately \$101,000 per month in fixed fees.¹¹

SDCWA fees and rates are factors when calculating local agency fees and rates. There are five fixed rates charged to local agencies by SDCWA. They are:

- 1) **Readiness-to-serve charge** - covers costs related to maintaining currently unused portions of the water system in order to benefit future users of the system.
- 2) **Capacity reservation charge** - pays the cost for providing service during peak times of the day.
- 3) **Customer service charge** - recovers costs necessary for the basic functioning of the Water Authority and implementation of new water policy.
- 4) **Emergency storage charge** - pays for the Emergency Storage Program. The purpose of the program is to have the capacity to provide water in the event of an emergency.
- 5) **Infrastructure access charge** - levied to help cover more of the Water Authority’s fixed costs.¹²

¹⁰ American Water Works Association. “Water Budgets and Rate Structures: Innovative Management Tools”. 2008, pp 9.

¹¹ San Diego County Water Authority: Monthly Member Agency Fixed Charge Allocation. Retrieved from <<http://www.sdcwa.org/monthly-member-agency-fixed-charge-allocation>>.

¹² San Diego County Water Authority: Rates and Charges. Retrieved from <<http://www.sdcwa.org/rates-charges>>

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A few agencies in the area separate SDCWA charges from agency charges on customers' bills. For example, Escondido and Oceanside factor SDCWA pass-through charges into monthly fixed charges, but SDCWA charges are displayed separately:

Agency	Agency Service Fee	SDCWA Readiness-to-Serve Charge	SDCWA Infrastructure Access Charge	Total Monthly Fixed Fees
Escondido	\$19.25	\$2.58	\$2.22	\$24.05
Oceanside	\$14.13	\$1.67	\$2.71	\$18.51

The most influential factor on water rates among agencies in San Diego County is the cost of procuring water from the San Diego County Water Authority. However, price changes at SDCWA reflect increases from the Metropolitan Water District of Southern California (MWD). As costs from Southern California's two main sources (the Colorado River and the State Water Project) increase, those costs are passed along to consumers. Data from the last five years show that SDCWA has been increasing prices at a lower rate than MWD. The following table and graph compare the cost of Tier 1 Untreated Water per acre foot from SDCWA¹³ and MWD¹⁴:

	MWD	% Change		SDCWA	% Change
2007	\$359.08	-2.8%		\$395.96	-1.4%
2008	\$366.69	2.1%		\$407.44	2.9%
2009	\$431.96	17.8%		\$485.43	19.1%
2010	\$499.28	15.6%		\$548.79	13.1%
2011	\$527.00	5.6%		\$597.00	8.8%
TOTAL % CHANGE		42.7%			48.6%

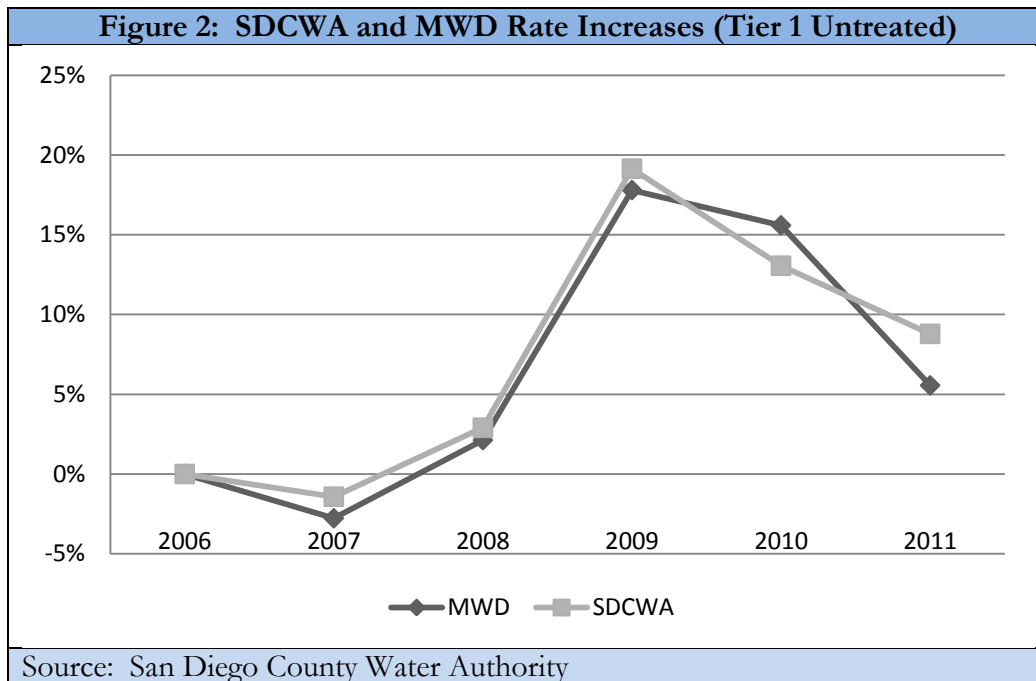
The dependence on MWD for over half of its water supply forces SDCWA to increase its water prices at similar rates. The following graph shows percentage rate increases from 2006 to 2011:

¹³ San Diego County Water Authority: Rates and Charges. Retrieved from <<http://www.sdcwa.org/rates-charges>>.

¹⁴ The Metropolitan Water District of Southern California: Water Rates and Charges. Retrieved from <http://www.mwdh2o.com/mwdh2o/pages/finance/finance_03.html>.

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SDCWA filed charges against MWD in 2010 alleging that MWD overstates transportation costs and understates water supply costs. The lawsuit alleges that SDCWA ratepayers will unjustifiably be charged \$217 million by 2021. The case is currently unresolved but moving forward.¹⁵

State Law

The citizens of California passed Proposition 218 in November of 1996. As a result, citizens have the right to protest an agency's proposed increase in water rates. If a simple majority of affected ratepayers file a formal protest with the water agency, the public can block an increase in water rates. Frequent rate increases throughout San Diego County in recent years suggest that not enough people protest to stop rate increases.

The language of Proposition 218 is vague, leaving the door open for litigation and many interpretations. Initially, water rates were exempt from Proposition 218, but a decade-long series of court cases resulted in revocation of that exemption. California Assembly Bill AB 2882 closes a specific loophole in the vague language of Proposition 218. Passed in 2008, AB 2882 states that the creation of tiered pricing schedules is a legal and effective method of water conservation.

¹⁵ San Diego County Water Authority: MWD Rate Challenge. Retrieved from <<http://www.sdcwa.org/mwdrate-challenge>>.

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In order to ensure that conservation-based rates are legal, AB 2882 was written to comply with both Proposition 218 and Article X¹⁶ of the California Constitution. Four criteria established in AB 2882 must be met for conservation-based rates to be implemented:

- 1) Billing must be based on metered water use.
- 2) A basic use allocation for each customer account must be established. The allocation should a reasonable amount of water for each customer's needs and property characteristics. Factors to be considered in establishing such an allocation include, but are not limited to, the number of occupants, the type or classification of use, the size of the lot or irrigated area, and the local climate data for the billing period.
- 3) A basic charge must be established as a component of the rate structure. The basic charge is a volumetric unit charge for the cost of water service other than fixed costs that are generally recovered through meter charges or other fixed charges.
- 4) A volumetric conservation charge must be imposed on all increments of water use in excess of the basic use allocation. The increments may be fixed or may be determined on a percentage or any other basis, but should be structured in an ascending relationship to encourage water conservation and discourage inefficient use of water.¹⁷

A major issue with the implementation of AB 2882 relates to the proportionality provision of Proposition 218. Larger families obviously need to use more water and are more likely to pay rates in higher tiers. The AWWA affirms that, despite the perception of unfairness, a larger household paying at higher tiers is consistent with the proportionality requirement of Proposition 218. The higher tiers more accurately reflect the costs of providing water to large households without holding smaller households and those who use water responsibly accountable for excess usage. AWWA argues that this increases proportionality of costs among customers instead of unfairly penalizing households that use small amounts of water.¹⁸

¹⁶ Article X defines water as a public good and outlines basic regulations of the use, sale, and distribution of water.

¹⁷ California Assembly Bill 2882. Retrieved from <http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_2851-2900/ab_2882_bill_20080818_enrolled.html>

¹⁸ Gaur, Sanjay, Mark Hildebrand, and Kelly Salt. "Water Conservation Made Legal: Water Budgets and California Law." American Water Works Association, 2009.

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Conclusions

Water agencies calculate charges and rates to recover funds mostly for operations and maintenance. Water agencies also must distribute costs as fairly as possible across four different customer classes. Water rate development in the San Diego region leads to the following conclusions:

- Most agencies in the region use conservation-based tiered rates
- Revenue requirements are a predicted dollar amount that an agency needs to recover in order to recoup costs of basic operations
- SDCWA, the local water wholesaler, procures most of the region's water supply from the Metropolitan Water District of Southern California and distributes water to local agencies
- Rate increases at MWD are responsible for an estimated 48% of the increase in rates at SDCWA