

RATE SETTING AS A WATER CONSERVATION TOOL

INTRODUCTION/PURPOSE

The State of California (State) is subject to periodic drought conditions. The Central Coast and San Luis Obispo County (County) are among the drought-prone areas. The State advocates a number of water conservation plans, among which is a method of pricing water and sewer services using rates that will encourage conservation.

This Grand Jury investigation examines the pricing of residential water services in the County and the disclosure of pricing on bills to determine if they do, in fact, promote water conservation.¹ The Grand Jury report includes a limited review of sewer service pricing related to volume of water used. The report also includes a limited review of whether or not a link between water usage and sewer charges is disclosed on customer bills.

ORIGIN

This investigation was initiated by the Grand Jury.

PROCEDURE

The Grand Jury reviewed pricing of water service by most public providers within the County to determine if rate structures are designed to promote water conservation. Providers included in this report are six of the County's seven cities, the Atascadero Mutual Water Company (MWC),

¹ Conservation can result in reduced revenue to cover fixed costs. However, without conservation there could be greater costs for additional water and infrastructure.

and nine community services districts (CSDs). The Grand Jury also reviewed a comprehensive sampling of customer bills to determine how effectively customers are notified of potential cost savings when using less water. The effectiveness of pricing methods in achieving conservation was examined, as well. Finally, the Grand Jury reviewed information related to sewer service pricing.

This Grand Jury investigation included review of:

- Best Management Practices of the California Urban Water Conservation Council (CUWCC)
- Water and sewer rate structures and sample bills
- Water rate studies
- Various reports and data supplied by providers and the CUWCC
- Information from the internet and news articles

BACKGROUND

In 1977, the California Public Utilities Commission, which is responsible for consumer pricing of services by utilities,² responded to drought conditions with emergency actions that included distribution by utilities of water conservation kits. California's passage of the 1983 Water Management Planning Act required urban water suppliers with more than 3,000 customers to implement water management plans for conserving water.

A 2009 amendment to the California Water Code (SB7) ties State water grants and loans to providers for facility upgrades to implementation of recommended Best Management Practices. Pricing of water and sewer services according to the volume of water consumed can affect customer decisions about conservation, according to the CUWCC.

² Utilities are privately owned companies serving 200 or more customers. Water utilities within San Luis Obispo County are: Golden State Water Company- serving parts of Nipomo Mesa, Los Osos and Edna Valley; Rural Water Company- serving part of Nipomo Mesa; Nacimiento Water Company- serving Oak Shores.

The CUWCC has formed partnerships among urban water agencies and other entities to increase efficient use of water statewide.³ Providers enter into a Memorandum of Understanding to implement, when feasible, CUWCC's Best Management Practices. One of the 14 Best Management Practices⁴ is retail pricing, including tiered water rates, which encourages water conservation. In addition to CUWCC encouragement of conservation pricing, setting prices based on water volume consumed is specifically highlighted by the Public Utilities Commission as a way to encourage water conservation.

Conservation of water resources is mandated by the State (SB 7) to achieve per capita urban water reduction of 20% by 2020, a goal reflected in the County's General Plan Conservation Element. One of the Conservation Element Policies, WR 4.2, is to "Support water-pricing structures to encourage conservation by individual water users . . . " The Conservation Element, adopted in 2010, cautions that water resources in the County are at a critical juncture as demand approaches sustainable supplies.

DISCUSSION

Retail Conservation Pricing⁵

Water service pricing and billing methods designed to foster conservation are based on customer awareness of the link between increased cost and increased consumption, especially if the cost escalates in a tiered fashion as more water is consumed. Similarly, sewer rates based on water consumption can motivate conservation. The amount of water piped into a building is the

³ The cities, community services districts and mutual water company surveyed for this Grand Jury investigation which reported memberships in the CUWCC are: Cities of Paso Robles, Pismo Beach and San Luis Obispo; CSDs for Cambria, Nipomo and Templeton; Atascadero MWC. Some local providers that do not belong to the CUWCC have, nonetheless, implemented its best management practices.

⁴ The CUWCC's Best Management Practices are: retail conservation pricing of water and sewer; conservation practices for utilities; residential plumbing retrofits; water surveys for efficient usage; leak detection and repair; water metering; landscape conservation and incentives; high-efficiency clothes washer incentives; public information programs; school education programs; non-residential conservation programs; designate conservation coordinator; water waste prohibition; residential ultra-low flow toilet replacement.

⁵ Conservation pricing means charging for services based on water volume consumed.

amount piped out for sewer disposal, minus water for outside use. The CUWCC recommends that both water supplied and water disposed of be priced according to volume of water consumed. CUWCC assumes that the incentive to conserve water is greater when both water and sewer are volume priced.

The focus of this report is on water service pricing with a concentration on residential customers. Residential customers, overall, consume the majority of urban water.

Water Rate Structures

According to the CUWCC (Best Practice 11), *“Conservation pricing provides economic incentives (a price signal) to customers to use water efficiently. Because conservation pricing requires a volumetric rate, metered water service is a necessary condition of conservation pricing.”*

CUWCC staff advises that, while a uniform rate structure which prices each unit of water the same promotes conservation, because higher usage means higher cost, a tiered rate structure which escalates pricing as total volume increases, is preferable for achieving conservation.

Rate structures usually contain a base rate, sometimes referenced as a capacity fee, for the fixed costs of providing service. The base rate is charged whether or not water is used during the billing cycle. Base rates can be uniform or vary by category of customer. Some rate structures include a fixed quantity of water in the base rate with a charge for excess usage.

Water providers rely on rate studies to develop rate structures that meet various goals. These goals typically involve a secure supply of water affordable to customers, financial stability for the provider and incentives for customers to conserve.

Local Water Rate Structures

The table below describes the water rate structures for all surveyed providers. All have rate structures that are volume-based. Most rate structures have tiered pricing; a few have a uniform volume rate.

WATER RATE STRUCTURES

Water Provider	Residential	Notes
Cities		
ARROYO GRANDE	base + 4 tiers	
ATASCADERO MWC	base + 4 tiers base + 5 tiers, SF	Base includes minimum water volume 5 th tier, added during drought, has been retained
GROVER BEACH	base + 4 tiers	
MORRO BAY	base + escalating scale	Base includes minimum water volume Rates unchanged since 1994
PASO ROBLES (2)	base + volume	Base expected to be eliminated soon
PISMO BEACH	base + 2 tiers, SF base + volume, MF	
SAN LUIS OBISPO	(1) 3 tiers	
Community Services Districts		
AVILA BEACH (2)	base + volume	Base includes minimum water volume
CAMBRIA	base + 9 tiers	Base includes minimum water volume
HERITAGE RANCH	base + 2 tiers	Base includes minimum water volume
LOS OSOS	base + 4 tiers	
NIPOMO	base + 2 tiers	
OCEANO	base + 2 tiers	
SAN MIGUEL	base + 3 tiers	Base includes minimum water volume
SAN SIMEON (2)	base + volume	
TEMPLETON	base + 4 tiers	Base includes minimum water volume

SF- Single Family Residential

MF- Multi-Family Residential

(1) No Base Rate

(2) No tiers

In 2009, the MWC added a rate tier that targets high users among single family residential customers, its largest customer category. This tier addressed the fact that 25% of single family customers accounted for 57% of total water demand in the peak consumption summer months.⁶ Although not reflected in the above table, both Atascadero MWC and Cambria CSD temporarily increased rates during the drought.

Water rate structures are reviewed by providers with varying frequency. Some are adopted with automatic annual rate increases spanning several years. The rate schedule for the City of Morro Bay is the least current of providers surveyed, unchanged since 1994.

Water Bills

It would seem logical that water conservation due to tiered pricing is most effective when customers are aware of how water services are priced and can readily understand the cost benefit of reducing water use. Such awareness can be promoted by billing methods that highlight the higher unit costs experienced as usage increases. Also, information about sewer charges based on water volume would illuminate the potential savings available through reducing water usage.

Of the providers surveyed, Atascadero MWC employs a billing system that most actively encourages conservation. Water bills show the base rate, tier rates, tier volume usage, and tier charges. Arroyo Grande shows water rate tiers on most of its bills and, although its system does not compute tier usage, this can be done by customers based on the data furnished. Other providers using water rate tiers do not show them on bills. In addition, those providers of both water rates and water volume-based sewer rates do not indicate this on bills, with the exception of the City of San Luis Obispo.⁷

⁶ The provider's data management capabilities include water demand by number of lots of various sizes to facilitate implementation of State requirements for conserving landscape water.

⁷ Residential sewer service provided by Arroyo Grande, Grover Beach, Morro Bay, San Luis Obispo, Avila Beach CSD, Cambria CSD, Heritage Ranch CSD, and San Simeon CSD is based on volume of water consumed. Atascadero, Paso Robles, Pismo Beach, Nipomo CSD, Oceano CSD, San Miguel CSD, and Templeton CSD do not base residential sewer rates on water volume.

While an ideally informative water bill would be customized to show customers the potential cost saving from avoiding higher tier usage, doing so involves computer software capabilities that may not be available or affordable. Determining the data capability of providers is outside the scope of this investigation.

The following table highlights features of water bills and categorizes these features as informative or not informative.

WATER BILLS

Not Informative		Informative
Cities		
ARROYO GRANDE	Water tier consumption not shown	Shows water tiers for residential Compares current & past usage
ATASCADERO MWC		Shows tier rates, usage and charges Compares current and past usage monthly water conservation tip
GROVER BEACH	Water tiers and tier consumption not shown	12 months usage history
MORRO BAY	No reference to rate scale	
PASO ROBLES		12 months usage history monthly conservation message
PISMO BEACH	Water tiers and tier consumption not shown	12 months history
SAN LUIS OBISPO	Water tiers and tier consumption not shown	Compares current and past usage
Community Services Districts		
AVILA BEACH CSD	Rate for water not shown	
CAMBRIA CSD	Water tiers and tier consumption not shown	Compares current and past usage
HERITAGE RANCH CSD	Water consumption not shown Water tiers and tier consumption not shown	12 months usage history
LOS OSOS CSD-water only	Water tiers and tier consumption not shown	12 months usage history
NIPOMO CSD	Water tiers and tier consumption not shown Message box unused	Compares current and past usage Message box
OCEANO CSD	Water consumption not shown Water tiers and tier consumption not shown	12 months usage history
SAN MIGUEL CSD	Water tiers and tier consumption not shown	
SAN SIMEON CSD	Rate for water not shown	
TEMPLETON CSD	Water tiers and tier consumption not shown	Compares current and past usage

Gauging Effectiveness of Conservation Water Pricing

The State's experience during the drought periods that plagued California in the 1980s showed that doubling the price of water drove overall household consumption down by one third; but, households earning under \$20,000 cut consumption by one half while those earning more than \$100,000 reduced use by only 10%.⁸

In response to the most recent drought conditions, some water providers, such as Arroyo Grande, implemented extensive water conservation incentives and imposed stringent conservation requirements. A success rate of around 20% reduction in water usage was reported. However, this overall success rate does not measure the success of individual conservation measures. Thus, the specific success of the water rates vis-à-vis the total effort is not known. The effect of conservation pricing was not evaluated prior or subsequent to the drought by Arroyo Grande and other providers.

There is one probable exception to the unknown effectiveness of conservation pricing: During the drought, the City of San Luis Obispo did not experience a water shortage because it has several sources of water, including an expanding use of reclaimed water. Also, City water conservation programs had been ongoing for many years prior to the drought. In 2008, the City established water conservation sewer pricing for single family residential customers, at which time these customers had average water use of eight units. In each of the next two years, the water use was reduced by one unit, for a total reduction of 25%.⁹ The Utility Conservation representative for the City attributes the reduced water use to water conservation pricing of sewer service, together with information provided to customers about the opportunity to reduce the cost by reducing water use.

⁸ Newsweek, 10/18/10, pp 46, 47

⁹ Among the surveyed providers, San Luis Obispo uses a unique sewer rate structure for single-family residential customers. Each has an annual water "cap" or base that is determined by the customer's water usage averaged over a three-month winter period when usage is typically lowest. This cap establishes the annual sewer base rate, effective each July. Volume above this base is charged at a uniform rate. At the end of summer, owners of single family residences are advised by the City to reduce landscape irrigation and are informed that the average water use over a three-month period in the winter will affect their monthly sewer charge for a year. Single family residential bills indicate the connection between sewer charges and water use.

Water Meters

The CUWCC emphasizes that conservation pricing is dependent on water meters. The Grand Jury learned that the 176 water customers of S & T Mutual Water Company in the Los Osos area have no water meters. This company is among at least 125 small water companies, defined as having 15-199 connections, in the County that lack meters for individual connections.¹⁰

The Grand Jury additionally learned that apartment buildings typically have only one master water meter for the building and a separate landscape meter, instead of having meters for individual apartment units. Without residents knowing how much water they consume or having to pay according to usage, there is no incentive to conserve on the basis of potential cost savings. Metering individual apartment units of new buildings could add considerably to construction costs and retrofitting meters would be even more costly. Water providers charge several thousand dollars for a meter to cover hook-up and other administration costs. Metering individual units would likely result in increased costs to tenants. An additional consideration is that apartment tenants have more turnover than residents of other types of housing and, therefore, collections for apartment unit water bills would probably be more difficult.

There is an alternative to individual apartment units being metered for hook-up to a water service provider. Relatively inexpensive flow meters can be purchased independent of a water provider and unconnected to a water service for billing. The purpose of this additional metering would be to enable apartment building owners to determine the actual water usage of individual units, in order to bill the tenants. An expected outcome would be conserved water by tenants to reduce their costs, with a result that metered apartments could have a competitive rental advantage. Owners of buildings with individually metered units would have an option of charging tenants for the actual water they consume.

No County ordinance requires water meters for urban development outside of cities that are served by a water company. Also, no ordinance of either the County or the seven cities requires

¹⁰ Effective 6/30/11, the State requires metering of source wells for systems serving 15 or more connections.

individual apartment units within a building to have metered water usage. However, parallel County ordinances promote water conservation for urban development outside of cities:

- For Los Osos, retrofits of water fixtures upon change of property ownership and retrofits for existing development to offset water use for new development are required
- For Nipomo, retrofits of water fixtures upon change of property ownership and low water use landscaping standards for new development are required

CONCLUSION

A few water service providers have not incorporated tiered pricing into their rate structures. Of those providers using tiered rates, only two indicate tiers on customer bills and only one shows usage by tiers. Thus, water bills are underutilized for promoting conservation.

Several sewer service providers base charges on volume of water used, but only one clearly indicates this on customer bills. Therefore, sewer bills are also underutilized for promoting water conservation.

Additional opportunities for water conservation exist through metering of both small water system customers and individual apartment units.

FINDINGS & RECOMMENDATIONS

FINDING 1: Morro Bay has not revised its water rate schedule since 1994.

RECOMMENDATION 1:

Morro Bay should review its water rate schedule.

FINDING 2: Paso Robles, Avila Beach CSD, and San Simeon CSD have uniform water rates that do not increase unit cost as consumption increases.

RECOMMENDATION 2:

Paso Robles, Avila Beach CSD, and San Simeon CSD should consider adopting tiered water rates that target high volume users.

FINDING 3: Only Atascadero MWC bills show rate tiers, tier consumption and tier charges.

RECOMMENDATION 3:

Arroyo Grande, Grover Beach, Morro Bay, Pismo Beach, San Luis Obispo, Cambria CSD, Heritage Ranch CSD, Los Osos CSD, Nipomo CSD, Oceano CSD, San Miguel CSD, and Templeton CSD should consider revising water bills to show rate tiers, water usage for each tier and the charges for each tier.

FINDING 4: Water meters are not used for all urban development outside of cities served by a water company.

RECOMMENDATION 4:

The County should consider adopting an ordinance for urban development outside of cities served by a water company, which would require that new development be metered and that existing developments be metered upon ownership transfer.

FINDING 5: Apartment buildings in the seven cities and urban areas outside of the cities typically do not have water meters that register indoor water use for individual units.

RECOMMENDATION 5:

The cities and County should consider adopting an ordinance that would require new apartment buildings to have meters that register indoor water used by individual units. To reduce costs, meters could be a type intended only for use by apartment building owners, instead of those supplied by water providers for water service hook-ups.

FINDING 6: Residential sewer providers that base charges on volume of water consumed do not clearly indicate on their bills that water volume affects sewer charges, with the exception of the City of San Luis Obispo

RECOMMENDATION 6:

Arroyo Grande, Grover Beach, Morro Bay, Avila Beach CSD, Cambria CSD, Heritage Ranch CSD, and San Simeon CSD should consider revising sewer bills to show that water usage affects sewer charges.

REQUIRED RESPONSES

The Board of Supervisors of San Luis Obispo County is required to respond to Findings 4 and 5 and Recommendations 4 and 5. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The Department of Planning and Building of San Luis Obispo County is required to respond to Findings 4 and 5 and Recommendations 4 and 5. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **August 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The City of Arroyo Grande is required to respond to Findings 3, 5 and 6 and Recommendations 3, 5 and 6. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The Atascadero Mutual Water Company is required to respond to Finding 5 and Recommendation 5. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The City of Grover Beach is required to respond to Findings 3, 5 and 6 and Recommendations 3, 5 and 6. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The City of Morro Bay is required to respond to Findings 1, 3, 5 and 6 and Recommendations 1, 3, 5 and 6. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The City of Paso Robles is required to respond to Findings 2 and 5 and Recommendations 2 and 5. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The City of Pismo Beach is required to respond to Findings 3 and 5 and Recommendations 3 and 5. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The City of San Luis Obispo is required to respond to Findings 3 and 5 and Recommendations 3 and 5. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The Avila Beach Community Services District is required to respond to Findings 2 and 6 and Recommendations 2 and 6. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The Cambria Community Services District is required to respond to Findings 3 and 6 and Recommendations 3 and 6. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The Heritage Ranch Community Services District is required to respond to Findings 3 and 6 and Recommendations 3 and 6. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The Los Osos Community Services District is required to respond to Finding 3 and Recommendation 3. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The Nipomo Community Services District is required to respond to Finding 3 and Recommendation 3. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The Oceano Community Services District is required to respond to Finding 3 and Recommendation 3. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The San Miguel Community Services District is required to respond to Finding 3 and Recommendation 3. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The San Simeon Community Services District is required to respond to Findings 2 and 6 and Recommendations 2 and 6. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The Templeton Community Services District is required to respond to Findings 3 and 6 and Recommendations 3 and 6. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 14, 2011**. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The mailing addresses for delivery are:

Presiding Judge	Grand Jury
Presiding Judge Charles S. Crandall Superior Court of California 1050 Monterey Street San Luis Obispo, CA 93408	San Luis Obispo County Grand Jury P.O. Box 4910 San Luis Obispo, CA 93402

The email address for the Grand Jury is: GrandJury@co.slo.ca.us