

2/26/10

Water Advisory Committee:

I have spent a few hours on the Internet researching information for your consideration before making any decision concerning setting rates. Research shows that flat rate billing appears to be a thing of the past in water stressed California. Conservation tier billing now appears to be the norm for water providers. (Most water providers in California have replaced their simple flat rate billing systems with tiered systems that progressively penalize customers that use more water. (*Bill Moseley Director of Operations for California Utility Billing Services, a utility billing company that focuses on utility cost recovery in Southern California.*)

Additionally, efforts to provide "conservations incentives" within a flat rate billing rate system appears to require additional, and more sophisticated, analysis of water use by the City and/or developing, funding, and putting incentive programs in place. It would be difficult to establish a flat rate billing system that also includes appropriate conservation incentives as part of the package within the next few weeks and it is unlikely that the incentives could be established in the long term without additional time, expense, and analysis.

I recognize you have much to read and consider, so these first 2 pages will present a summary of what I found and Attachment A will provide additional information and links to the research that I've summarized below. I hope you give this information your attention and find it helpful. Please carefully consider before sending a message that the City of Calistoga is not interested in conserving water.

1. Clarification of what conservation pricing is intended to do.

"Conservation pricing is a system in which the price you pay for water depends on how much water you use. The more water used, the higher the price. The goal of conservation pricing is to *reduce excessive discretionary water use*, especially outdoor irrigation, by making water use increasingly more expensive. Conservation pricing encourages smart water use and protects the region's water resources. "

2. What is non-discretionary water and how does it apply to our current tiereds system and potential changes under a flat rate program?

Non-discretionary water is the minimal amount of water considered necessary to meet needs for drinking, sanitation, bathing and cooking. This amount varies but the industry standard appears to be about 70 gallons per person per day. The minimum figure provided for "survival and health" in developing countries is lower, between **7 and 53 gallons per person per day**. A 1998 AWWA (American Water Works Association) Study of residential use in 1300 homes in twelve US cities using data-loggers found that *without conservation*, the household used on average **64.6 gallons per person per day**. *With conservation*, this rate was reduced to **44.7 gallons per person per day**.

Non-discretionary water is "basic needs" water. You cannot expect conservation within the first tier of users under our current pricing structure where about 100 gallons per day is delivered per household. It just isn't possible. The newly proposed tier one (option 1 and 2 from Feb 23) would allow 112 gallons per household per day which approaches a minimum non-discretionary use of water for a two person household.

It is just as unreasonable to expect some households to reduce their non-discretionary use under the flat rate billing of options 3 or 4 (presented 2/23/2010) just because their rates would nearly double. People can not stop using this basic needs water simply because it gets more expensive under a new pricing structure without jeopardizing their and the communities health.

3. Why not flat rate billing? It seems fair (but isn't when the current billing structure is considered as a comparison.)

Based on a comparison with our current system reverting to a flat rate billing structure provides no incentive to cut the use of discretionary water. In fact, based on both scenario 3 and 4 from the Feb 23 meeting, flat rate billing serves to reward high water users by decreasing the rates that they had been paying *for discretionary water* under the current structure by between 9.5 and 17.5%. A savings for using more discretionary water! At the same time flat rate billing penalizing those who will, or have been, conserving, by increasing their *non-discretionary* use of water by 22% to a staggering 46%. There is no fairness here, nor does it provide an incentive to conserve.

I could find no benefits in moving to a flat rate billing system; in fact most cities either are using the conservation tier billing system or are initiating one. A few larger communities are still using flat rate but apparently without charging for service (meter charge) and with incentive programs in place. These are few and far between but there is one local utility using it. (See City of Napa for their use of a flat rate without meter fee and their active conservation incentive program).

4. While promoting conservations and the use of a tiered billing system may appear to reduce the City's certainty with regard to cost recovery, it is the industry norm. Here are some of the benefits (for the water user, the city, and the environment) as stated by other water providers with regard to saving water by the use of a tiered billing system

The water user:

- Allows users to pay lower prices for baseline non-discretionary water while making a personal choice in their usage of discretionary water.

The City or utility:

- Complies most easily with California's BMPs (best management practices) for water without the need to develop and fund alternative conservation incentives.
- Flattening the demand peak to reduce the need for water supply and treatment investment to meet an artificially high peak.
- Satisfying the demands of new growth without needing additional capital investment for supply and treatment.
- Reduces the need to acquire additional water, especially foreign water (Delta). This is particularly important as it relates to restrictions placed on Delta pumping and the resulting reduced availability. Supplemental water from the Delta is not going to get either more abundant or less expensive to acquire. Conserved water will ALWAYS be the cheapest new water you can buy if you consider the full acquisition costs.

The environment:

- Maintaining the habitat along rivers and streams and restoring fisheries with increased flows to comply with the requirements of state issued water rights permits.
- Reducing the volume of wastewater discharges to rivers and streams.
- Reducing excessive runoff of urban contaminants now being regulated under TMDLs (Total Maximum Daily Load).
- Restoring the natural values and functions of wetlands and estuaries impacted by excessive water supply withdrawals,

Linda Hanson (Calistoga City water user)

Attachment A

Helpful internet sites for more information:

California Water Crisis Website - www.calwatercrisis.org

Aquaforia – www.aquaforia.com

Metropolitan Water District – www.mwdh20.com

Be WaterWise – www.bewaterwise.com

Long Beach Water District – www.lbwater.org

Water Education Foundation – www.water-ed.org

H2ouse Water Saver Home – www.h2ouse.org

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Rate Structure Alternatives for Conservation Pricing

Conservation Oriented Rate Structures from the Alliance for Water Efficiency (<http://www.allianceforwaterefficiency.org/1Column.aspx?id=712>)

The concept of conservation rate structures is to compel the water customer to implement cost effective water conservation measures and practices. The most important aspect of conservation rates is designing the rate structure so a large portion (two-thirds or more) of the charges are based on the quantity of water the customer consumes. This strategy must be balanced with the needs of a water purveyor recovering its fixed costs regardless of actual water usage. In general, an increasing block tier structure, where the cost per unit of water increases as the consumer uses more water, is considered the most effective conservation rate structure. Also, a few water purveyors have implemented water budgets with punitive tiers when budgets are exceeded; and have found this rate structure to be very effective in motivating customers to be water efficient. Often the revenue generated from punitive tiers is used to fund the conservation programs; this sets the tone for water wasters to help fund the efforts of customers participating in water utility conservation programs and measures. The financial justification for conservation rate structures is based on the premise that a large portion of the water purveyor's infrastructure and distribution costs are to meet daily and seasonal peak demands. Water efficiency reduces operating costs, and delays the need for system expansion and acquiring additional water supplies and storage capabilities.

Water providers should look to achieve the following goals when they adopt a water conservation rate structures: reduce daily peak usage, reduce seasonal peak usage, and reducing total system demand.

The many community benefits of implementing water conservation rates include: communicating general water conservation need, rewarding efficient users that contain water usage in the lower tiers, and penalizing non-efficient water use. The rate structure needs to be designed to balance conservation goals with price equity and the water purveyor's revenue stability.

Inclining tier block rate structure is the most common conservation rate structure used by water purveyors. The best examples of this residential rate design include the following features: the first tier provides minimal water usage for a typical household at the minimum reasonable price; the subsequent tiers are priced significantly higher (greater than 50%) than the prior tier. Usually 3 to 4 tiers are adequate for an effective residential rate design. An effective rate design will have more than half of residential customers exceeding the first tier when the new rate structure is first implemented, and at least 30% and 10% of customers using water in the 3rd or 4th tiers respectively (at least during seasonal peak demand).

Water budget based rate structures are also very effective in promoting conservation, though more difficult to implement. In this design, each residence has an inclining block rate structure designed according to its individual needs. The tiers are usually set based upon the quantity of occupants and the square footage of landscape; known to be the two most significant factors in residential water use. The prices of the tiers increase significantly (greater than 50%) after the base usage tier is established. This rate system requires a robust billing system to accommodate the quantity of

individual rate structures (possibly equal to the quantity of customers); and the system requires a formal process to establish each homes base water usage, and respond to the many customers likely to appeal their base tier allotment. Water budget based rates are not only an effective water conservation strategy; the rate structure is the most equitable means to base rate on needs of each individual household. This rate structure can also be adapted for non-residential customers.

What is Conservation Pricing?

Conservation pricing is a system in which the price you pay for water depends on how much water you use. The more water used, the higher the price. The goal of conservation pricing is to reduce excessive discretionary water use, especially outdoor irrigation, by making water use increasingly more expensive. Conservation pricing encourages smart water use and protects the region's water resources.

How Water Is Used

A range of 20 to 40 liters of freshwater per person per day is generally considered to be a necessary minimum to meet needs for drinking and sanitation alone, according to Peter Gleick, president of the Pacific Institute for Studies in Development, Environment and Security. If water for bathing and cooking is included as well, this figure varies between 27 and 200 liters per capita per day (73).

Several different amounts have been proposed as minimum standards. Gleick proposes that international organizations and water providers adopt "an overall basic water requirement of 50 liters per person per day" as a minimum standard to meet four basic needs—for drinking, sanitation, bathing, and cooking. Falkenmark uses the figure of 100 liters of freshwater per capita per day for personal use as a rough estimate of the amount needed for a minimally acceptable standard of living in developing countries, not including uses for agriculture and industry (65, 69, 73) (1 gallon of water = 3.8 liters)

- *65. **FALKENMARK, M. and WIDSTRAND, C.** Population and water resources: A delicate balance. Population Bulletin 47(3): 1-36. Nov. 1992.
- *69. **GARDNER-OUTLAW, T. and ENGLEMAN, R.** Sustaining water, easing scarcity: A second update. Washington, D.C., Population Action International, 1997. p. 2-19.
- *73. **GLEICK, P.** Basic water requirements for human activities: Meeting basic needs. International Water 21(2): 83-92. 1996.

Water Use Statistics

American Water Works Association. AWWA

Daily indoor per capita water use in the typical single family home is 69.3 gallons. By installing more efficient water fixtures and regularly checking for leaks, households can reduce daily per capita water use by about 35% to about 45.2 gallons per day Here's how it breaks down for households using conservation measures: