December 16, 2014



<u>COMMENT LETTER – URBAN WATER CONSERVATION WORKSHOP</u>

Dear State Water Board Members:

The Sebastopol Water Information Group (SWiG) is an alliance of well owners and Sebastopol residents in west Sonoma County. SWiG provides Sonoma County citizens with accurate scientific information on water supplies and water quality.

We commend the Water Board's assembly of monthly water supply/demand data from large retailers across the state, and for making the data publicly accessible. The reports are an extremely important first step to developing objective bases for evaluating efforts to create a balance between supply and demand, at least for the urban sector. However, additional data - already available at all reporting agencies - is required to reach valid conclusions about the degree of success of conservation efforts.

We strongly urge the Water Board to convert the emergency reporting requirement to a regular requirement, so as to support long term planning for the future.

1. What more should be done at the local and/or State level in the near-term to increase water conservation?

The first step is to use existing multi-year billing data to quantify the impact of weather, population/occupancy, and implement conservation measures. Widely known standard statistical techniques^{1,2} - some embedded in commercial software packages - are available to do this. A comparison of usage for the same month between two years, made without controlling for factors such as those mentioned above, yields little if any knowledge necessary for smart water planning.

Once valid information is in hand, additional demand reduction efforts can be prioritized and justified. The third step would be to create enforceable ordinances, steeply tiered rate structures, and effective support programs that attract more customers to replace inefficient fixtures and processes. Without transparent quantification, the trust required for passing and enforcing regulations cannot be developed.



¹ S. Gato; N. Jayasuriya; and P. Roberts (2007), "Forecasting Residential Water Demand: Case Study", *J. Water Resour. Plann. Manage.*, Vol. 133, No. 4, 2007

² M.M. Haque et al, (2013), "Quantification of Water Savings due to Drought Restrictions in Water Demand Forecasting Models", *J. Water Resour. Plann. Manage.*, http://ascelibrary.org/ doi/abs/10.1061/(ASCE)WR.1943-5452.0000423

What additional conservation requirements, if any, should the State Water Board consider adopting if dry conditions persist into the new year?

Based on experience and subsequent analysis in Australia³, the first requirement would be to ban - and strictly enforce - the use of potable water for landscape irrigation, swimming pools, and sports fields. This could be mitigated by expanding the availability of reclaimed water and increasing incentives for greywater systems and rainwater capture.

What additional data should the State Water Board be collecting and how would it be used?

Require reporting monthly data back to 2000, so that historical trends can be examined and correlated to weather and other relevant factors such as population growth, building codes, and economic conditions. Understanding recent trends will provide a much more valid evaluation of conservation results than simply comparing usage during individual months in 2013 and 2014. Figure 1, for example, shows the sharp reductions from 2007 to 2011 in Sonoma County, which were followed by sharp increases in 2012 and 2013. Careful analysis could provide beneficial information in the data underlying these patterns.



The original requirement to calculate unit water use (gpcd) has already triggered an agreement to disaggregate the reporting data into residential and non-residential use. Further disaggregation by customer category is critical for validating results - and for prioritizing future conservation efforts. For some categories, it would also be useful to provide a normalizing unit (e.g. students, floor area, and grounds acreage for schools).

³ M.M. Haque et al, (2014), "Probabilistic Water Demand Forecasting Using Projected Climatic Data for Blue Mountains Water Supply System in Australia", *Water Resour Manage* (2014) 28:1959–1971

Extracting indoor usage from multi-year data - already widely practiced - will allow calculation of monthly outdoor demands. Up-to-date estimates of indoor usage for each disaggregated category should be reported. Adding readily available weather data (e.g. from CIMIS stations), such as evapotranspiration, will help develop reliable performance correlations and validate outdoor conservation results.

The 3,000-connection lower limit for reporting is too high, and should be reduced below 300 connections. The data required by the Water Board is already available for such reporting from all but the smallest customer-operated systems. Besides encompassing more urban users, the smaller entities use the same water sources as the large agencies, so the data will provide a more complete assessment of supply-side risks. SWiG is particularly concerned about the City of Sebastopol which relies entirely on groundwater and impacts residences outside city limits, but is not required to report usage (similarly, the City of Cotati which uses 40% groundwater).

Finally, require wholesalers to report monthly deliveries to retailers. This would not be an extra burden for wholesalers. Sonoma County Water Agency, for example, has been updating supply volumes for many years on its website each month. The additional wholesale data will provide:

- validation of reported values, and whether all supplies and demands are accounted for,
- distribution between sources (e.g. wholesalers' surface water and retailers' local wells), and
- a more complete assessment of supply-side risks.

Sincerely yours,

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