



## WATER DEPARTMENT MEMORANDUM

DATE: October 20, 2015  
TO: Water Supply Advisory Committee  
FROM: Toby Goddard  
SUBJECT: Peak Season Demand Management Strategies

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**BACKGROUND:** Earlier this year, the Water Supply Advisory Committee created an informal subcommittee or “working group” consisting of five members interested in examining new opportunities to promote sustainable and efficient water use. The focus of this working group was on measures that could save water primarily during the peak season, the critical time period in which water availability is generally lowest, water demand is highest, and the system is the most vulnerable to water shortage.

Members of this working group prepared and contributed to the following products for the full Committee’s consideration:

- A public enrichment presentation held May 21, 2015;
- A progress presentation made before the entire Committee at its regular meeting June 11, 2015; and
- A written report of the working group summarizing its findings and recommendations dated July 15, 2015.

The purpose of this memo is to offer staff’s review and comment on the working groups’ recommendations contained in its written report with respect to consistency with the overall direction of the City’s Water Conservation Master Plan project and with adopted City goals and policies for managing the water system.

**ANALYSIS:** The working group’s report includes nine separate categories consisting of one or more recommendations in each category. The first five are targeted primarily at reducing outdoor use, consistent with the focus of the working group. It also provides a number recommendation’s aimed at reducing indoor or “base” water use, acknowledging the interrelationship between indoor and outdoor use in shaping peak season water demand, and recognizing that indoor use in some commercial sectors, like hotels and

restaurants, is higher in the peak season given the City's attraction as a visitor destination in summer months, and therefore is an appropriate target for helping reduce peak season demands.

The working group's recommendations, as described at the June 11 progress presentation, were also intended for implementation over different time scales. Seven of the nine recommendations are proposed as near-term enhancements to the City's existing water conservation program. The remaining two were offered as recommendations for future consideration and implementation.

Our review and comments offered below follow the same order in which they appear in the working group's report:

1. **Home Water Use Reports.** This measure is one that is currently proposed in the Water Conservation Master Plan, and consistent with the direction the Water Department has been considering as it developed the Conservation Master Plan. Staff is in agreement with this recommendation and acknowledges that the estimated savings in the latest DSS model should be increased from 1% to (at least) 3% to reflect higher anticipated water savings.
2. **Personalized Outreach to Highest Users and Generic Landscape Budgets.** The City has promoted and provided landscape water surveys or home water audits to its top residential users since 2006. Marketing this program with the Home Water Use reports would be simple and straightforward, and would likely expand participation. The current program already offers recommendations on irrigation scheduling and resources for helping transform landscapes. Calculating a generic water budget could be made part of the program. Its usefulness as a one-time recommendation following a landscape site survey, though, may not prove to be highly effective.
3. **Climate-Appropriate Landscaping and Rainwater Infiltration** This proposal consists of several related voluntary and mandatory actions, some of which staff support; some of which have been considered but not selected for implementation earlier in the conservation planning process, and some of which we believe are a better fit with another City Department or agency to incentivize, fund, or mandate.
  - Staff agrees with the call for increasing the amount of the turf conversion rebate. Our current rebate level has fallen behind that of many other agencies, both locally and statewide, yet it is a popular program with customers and has a direct impact on reducing peak season water use at those properties that remove all or portions of their turf. Increasing the rebate level may increase participation level. Program C

now calls for continuing the existing program. It should be amended to include the higher rebate level, higher participation, and larger estimated savings.

- A landscape incentives program was considered but not included with Program C. This approach merits reconsideration, though, in light of the desire to emphasize peak season savings.
- Staff does not support the proposal for making rainwater infiltration a condition of receiving the turf rebate, as proposed by the working group, for two reasons. First, the City's Public Works Department serves as lead agency with regard to storm water best management practices and low-impact development regulations. Residential and commercial development and remodels are already subject to these requirements that are designed to capture sediment and keep pollution out of local waterways and the ocean, as mandated by the State and Regional Water Quality Control Boards. Second, from a groundwater recharge perspective, past studies have concluded enhanced recharge of shallow zones would have very limited effect of deep water recharge, where municipal production is occurring (Hydrologic Conceptual Model, Johnson, 2004). This is because in most places along the Marine Terrace, there is a 100 to 150 foot layer of silt, sand, and clay cap, acting as an aquitard, and because recharge is believed to occur mostly in the hills and streams in the Santa Cruz Mountains north of the main marine terrace, where most urban development lies. Incorporating rainwater infiltration as part of a landscape design is something that individuals may choose to do and landscape contractors may seek to promote, but in staff's view does not warrant spending ratepayer dollars to incentivize as a water supply solution.

4. **Conservation Pricing – Water and Wastewater.** The City is currently in the process of conducting a cost of service analysis that will be used to establish new rate structures. This effort is expected occurring independent of the Water Conservation Master Plan work and the results are expected to be implemented in July 2016.

In terms of pricing objectives, promoting water conservation and efficiency ranked high and were considered to be very important objectives by both the City Council and Water Commission during their March 2015 study session on this topic. The challenge is how to best balance the goal of sending an effective conservation pricing signal with all the other important pricing objectives, such as ensuring revenue stability and sufficiency, and complying with state laws involving retail water pricing.

Although perhaps not on the same timeline, the issue of conservation pricing of sewer service is something that City Council did discuss as part of a recent water rates workshop, and is something that the City is committed to pursue as a signatory to the California Urban Water Conservation Council's MOU.

**5. Shifting Landscape Budgets towards Climate Appropriate Irrigation Levels.**

The large landscape water budget program has been an important and established component of the City's existing water conservation program since 2010. Staff envisions it being expanded to cover more properties and potentially adding a budget-based pricing system over time. As a drought management tool, it has already served in some respects to spur landscape changes by dramatically limiting landscape allotments as part of water rationing. Staff is supportive of the working group's ideas with respect to pursuing strategies for reducing overwatering in the near-term and reducing overall volume of irrigation in the longer term using landscape water budgets as a management tool.

**6. Efficient Clothes Washing Machines, Dishwashers, and Hot Water**

**Recirculation Systems.** Of all the potential measures to reduce water use, high efficiency clothes washers offers one of the largest remaining sources of water savings, and is included in the Water Conservation Master Plan to be continued and expanded. On the other hand, providing incentives to encourage a homeowner to purchase an efficient dishwasher (meeting certain water efficiency standards, such as a limit on the gallons/load) when replacing an existing dishwasher, was considered in planning process but screened out early on given the relatively small amount of water represented by this end use. In staff's view, this is an area where some plumbing code water savings may be realized, as dishwashers turn over relatively quickly, but not something that is worth the Water Department building a program around. Hot water recirculation was modeled but not included in Program C due to its relatively low water savings and high cost, but in a recent review of the measures included in Program C, staff felt this one was deserving of reconsideration due to ongoing public interest in the measure.

**7. Rewarding Businesses for Adopting Best Practices.** Two ideas were set forth here by the working group. One involves granting relief to businesses that adopt best practices in future periods of water curtailment. This concept has already been instituted in the City's Water Shortage Contingency Plan and associated water shortage regulations and restrictions, beginning in Stage 4, through the granting of an exception. The Municipal Code allows for the Director to provide an exception under the following circumstances:

*A business customer has already implemented environmental sustainability measures that have reduced water consumption to the maximum extent feasible. As used in this subsection the term “environmental sustainability measures” refers to installation of high efficiency plumbing fixtures, devices, equipment, and appliances, recycled water systems, and landscaping consisting exclusively of low-water-using plant materials using drip or similar high efficiency, nonspray irrigation systems, or to buildings that are designed, built, and continuously operated according to Leadership in Energy and Environmental Design (LEED) certification standards.*

The second idea involves the City facilitating/financing various promoting water efficiency improvements, such as hotel laundry recycling, as a way to reduce peak water use by reducing indoor usage in visitor serving facilities. This idea is consistent with both the Commercial Incentives measure proposed in the Conservation Plan, as well as with past programs the City has offered its commercial customers (LightWash and Smart Rebates programs) in the past.

8. **Additional Building Code Requirements.** This recommendation was set forth as one of two items for future implementation and includes various ideas for strengthening building codes and retrofit regulations to accelerate innovations in technology and water-efficient equipment. The Water Department has already implemented some of the listed recommendations, including requiring weather based controllers in new landscape, replacing kitchen pre-rinse spray valves, and requiring fixture replacement in existing buildings. A number of conservation initiatives (stricter landscape requirements, water/energy efficient technologies) are being driven at the state level by drought emergency regulations. This recommendation is generally consistent with the Water Department’s direction to pursue measures with long-term savings where they can be justified in terms of their cost of implementation.
9. **Innovation Incubator Program.** This final recommendation was meant as a long-range program to support innovative new technologies and approaches to further water use efficiency. The City has an adopted policy in its General Plan and its Urban Water Management Plan to play a leadership role in supporting research, policy development, standards, and legislation aimed at furthering water use efficiency across the state, and has been recognized in the past for its efforts. The working group’s recommendation is broadly consistent with this policy. Staff considers the listed items as suggestions, and recognizes that ideas may also arise over time for organizing pilot projects around and researching. Staff’s only reservation with this proposal is related to organizational capacity and limited time

that is able to be devoted to this type of work, given all the various priorities that exist.

**SUMMARY:** Aside from a very few specific ideas, the recommendations of the working group are well-aligned with the set of measures and overall direction currently being contemplated as part of the Water Conservation Master Plan. That project is temporarily on hold until a contract amendment and additional funding is approved to complete the program design and analytical work. Some of the suggestions will require modifying existing cost and savings estimates, or making new estimates of cost so they can be evaluated from a benefit/cost perspective and to understand the unit cost of savings involved. The working group made its own separate estimates of water savings, but staff cautions that because of overlap with estimates in the DSS model, it's not clear at this point how much additional water savings could be obtained by the 2035 timeframe above that already projected. Additional work will also need to be done to ensure savings are not double counted in both the DSS model and the new water demand forecast.

Staff has identified the need to revisit both the entire list of measures contained in Program C as well as the proposed implementation timetable. We appreciate the thought and effort that went into the report and recommend incorporating the ideas of the working group into the final plan, tailoring the overall emphasis of the plan more around peak season than currently exists.