



# PACIFIC INSTITUTE

*Research for People and the Planet*

## SUMMARY OF RECOMMENDATIONS FOR THE WATER CONSERVATION AND RECYCLING ROUNDTABLE April 2010

### **Update water efficiency standards for appliances and fixtures.**

- The Energy Policy Act of 1992 established national efficiency standards for toilets, urinals, kitchen and lavatory faucets, and showerheads manufactured after January 1, 1994. While these standards have been effective, they are outdated. Since the Act of 1992 was adopted, new, more efficient models have been developed. Some states are trying to update and expand these standards to reflect these advances, with mixed results. California and Texas recently required that all toilets and urinals sold in these states by 2014 use 1.28 gpf and 0.5 gpf or less, respectively. However, California’s request to implement more ambitious standards for clothes washers was originally rejected by the Department of Energy. In order to ensure that new homes and businesses are as efficient as possible, national efficiency standards for appliances and fixtures must be updated to reflect new, more efficient technologies and expanded to include all water-using appliances.

### **Better integrate water and energy planning.**

- Water conservation and efficiency is not just about water, it’s also about energy. As we focus on reducing greenhouse gas emissions, the California Energy Commission has found that water conservation and efficiency programs can deliver similar energy savings at a fraction of the cost. Water and energy planning must be better integrated at the state and federal levels to optimize the opportunities for multiple benefits.

	<i>Energy Efficiency Programs</i>	<i>Water-Use Efficiency Programs</i>
<b>Energy Savings (billion kWh; annualized)</b>	6.8	6.5
<b>Cost (\$ million)</b>	\$1,500	\$826
<b>Cost per kWh; annualized</b>	\$0.22	\$0.13

Source: California Energy Commission, California’s Water-Energy Relationship, final staff report, 2005.

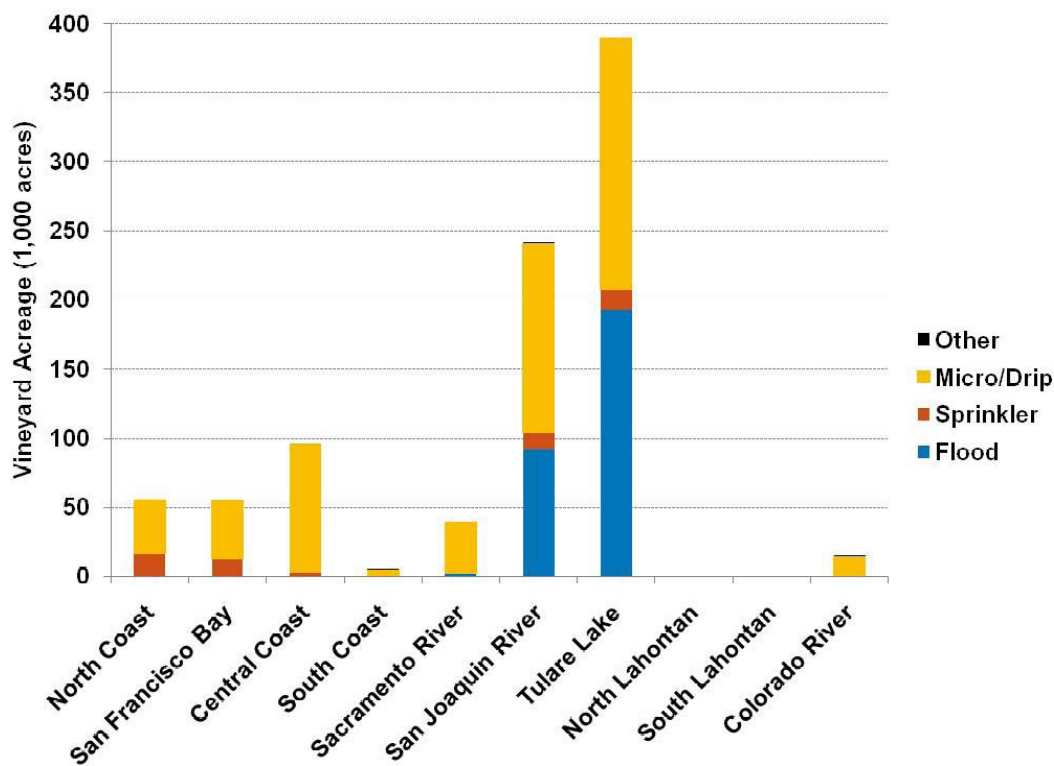
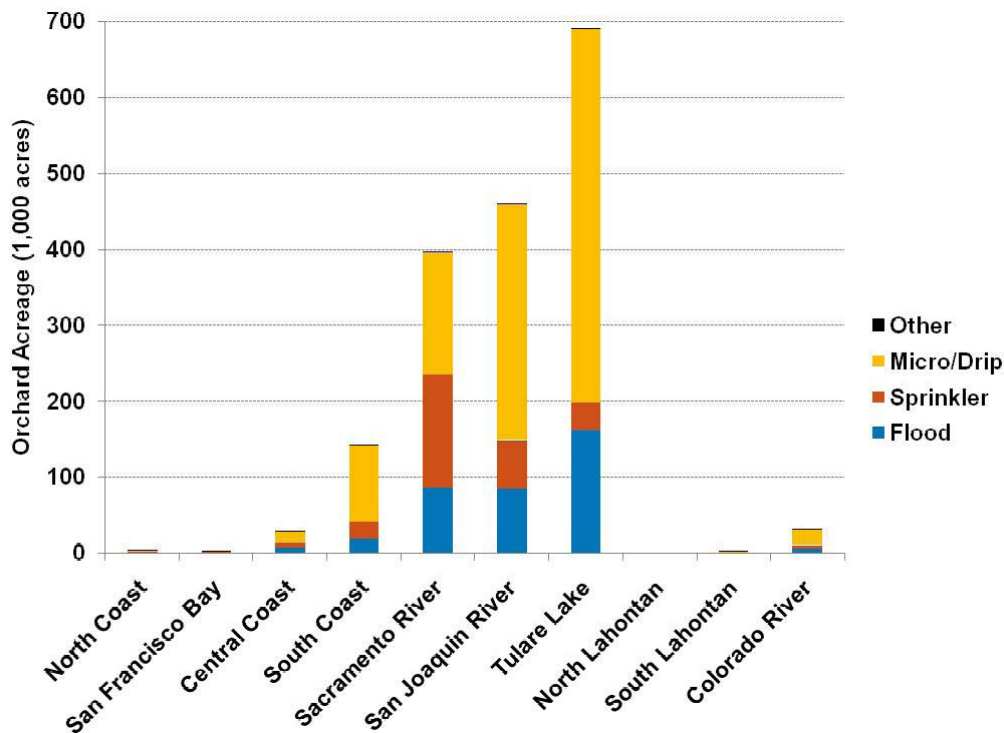
**Provide financial incentives to facilitate the adoption of water conservation and efficiency improvements.**

- Federal Farm Bill conservation programs invest in our nation’s on-farm infrastructure, helping agricultural producers defray the costs of water conservation and efficiency improvements (e.g. EQIP, CSP, AWEP). However, only a fraction of the applications for federal cost-shares through these programs are funded annually. This means that each year we turn away thousands of farmers who are interested in improving their water management. According to the American Farmland Trust (2007), “In 2004, there were over 180,000 applications from farmers for EQIP financial assistance. Three out of four – totaling \$2 billion – were unfunded.”
- Farm Bill conservation programs should also be targeted at areas where there is the most potential for improvement. For example, in California the vast majority of flood irrigation on orchard and vineyard crops occurs in two hydrologic regions: San Joaquin River and Tulare Lake. There should be a concerted effort to update irrigation systems in these areas (see following figures). Farm Bill conservation programs should require that water efficiency improvements result in a net water savings (e.g. EQIP’s new language).
- Federal investment in state revolving funds (SRF) has declined since the 1990s. In 2006 the federal government provided under \$1 billion dollars for clean water SRFs, down from over \$3 billion in 1991 (in 2007 dollars).<sup>1</sup> Federal funding for drinking water SRFs are about \$800 million annually, down from high of \$1.2 billion in 1998.<sup>2</sup> Despite the drop in federal investment, the amount of funds available to states has steadily increased due to the revolving loan nature of the program. In 2009, however, the federal government gave a major boost to SRFs. Through the American Recovery and Reinvestment Act (ARRA), the federal government provided \$2 billion and \$4 billion for local water and wastewater infrastructure improvements, of which 20% was required to be set aside for “green” infrastructure or a water or energy efficiency project. This one-time boost will certainly assist utilities in making much-needed improvements and help boost local economies; however, it is important to provide more consistent, long-term investment in these funds in the future. In addition, green set-asides should be created in all existing SRFs to expand our definition of infrastructure to include decentralized solutions, such as Low Impact Development and water conservation and efficiency improvements.
- Expand, coordinate, and target rebate and retrofit programs to provide additional incentive for particular areas to implement water conservation and efficiency improvements.

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<sup>1</sup> Food & Water Watch Water Infrastructure

<sup>2</sup> OECD water infrastructure chapter



**Improve water use monitoring, particularly for outdoor water consumption (SEBAL).**

- Federal agencies should provide technical assistance and funding to California to better monitor its actual water use (current methods estimate water consumption based on reference evapotranspiration rates and out-of-date cropping patterns).
- Field studies indicate that remotely sensed data can be used to improve the accuracy water consumption estimates and reduce data collection costs. A 2005 study found that the Surface Energy Balance Algorithm for Land (SEBAL), which uses satellite imagery from Landsat 5 and 7 to record thermal infrared, visible, and near-infrared radiation for evapotranspiration measurements, has a typical daily accuracy at the field scale of 85%, and of 95% over an entire growing season (Bastiaanssen et al. 2005). Furthermore, the National Aeronautics and Space Administration reports that traditional monitoring costs in the eastern Snake River Plain region in Idaho are typically \$500,000 annually and that using Landsat data would cut costs to \$80,000, an 84% reduction (Rocchio 2007). Currently, DWR is using this technique in cooperation with the USBR in the Lower Colorado for Imperial, Palo Verde, and Coachella Valley to get annual estimates of crop acreage and location. They are also working with the USBR to develop a system to be used in the Central Valley. This is an important step toward more frequent, accurate, and consistent data than current crop water measurements.

**Eliminate pricing policies that subsidize the inefficient use of water.**

- As providers of water, both state and federal agencies can influence water use by implementing new rate structures that encourage efficient use of water and investment in efficiency technology.
- Avoid common conservation pricing pitfalls by:
  - Ensuring that average water uses are evenly spread between tiers, and
  - Ensuring that water rates are set to recover predictable annual capital costs, and are not subsidized by heavy water use.
- Avoid inappropriate subsidies for new water-supply options.