



Transforming Water Use: A California Water Efficiency Agenda for the 21st Century

There is a growing imperative to accelerate water use efficiency in California. Likely impacts of climate change on California's water supplies, the precipitous collapse of the San Francisco Bay-Delta ecosystem, mounting evidence regarding the fragile state of Delta levees and the recent federal court decision to limit freshwater exports from the Delta all strongly suggest that the state must transform its policies and approaches in order to achieve the vast potential water savings from water efficiency.

Numerous studies have indicated the potential for saving millions of acre-feet of water through improving water use efficiency in California. Indeed, the State Water Plan indicates that urban water efficiency is the single most important tool for meeting California's future water needs. Yet the state is not on target to achieve those water savings. A recent analysis by the CALFED Bay-Delta program revealed that in the urban sector the voluntary process based on the *Memorandum of Understanding Regarding Urban Water Conservation in California* "is not working as intended and its impact on urban water use remains well below its full potential."¹ The analysis further noted that the agricultural water use efficiency program received only 10% of the federal and state funding expected in the CALFED Record of Decision, and the program is expected to achieve only 3% of the identified ecosystem and water supply reliability benefits.²

California's water efficiency efforts have taken on increasing significance in light of studies by NRDC and others highlighting the energy savings that are associated with saving water, as well as the potential for water efficiency to contribute to the ambitious greenhouse gas emissions limit the state has set, pursuant to AB 32.

California is an acknowledged leader in energy efficiency. We have state policies that:

- Establish efficiency as the top priority energy resource for the state,
- Establish a process for determining the potential savings and setting targets,
- Require independent evaluation of savings and reporting on progress towards meeting those targets,
- Remove financial disincentives for utilities to invest in efficiency by decoupling sales from revenues,
- Establish mechanisms to fund efficiency programs through a public goods surcharge and procurement funding, and
- Integrate efficiency into utilities' resource procurement.

In evaluating the water-energy nexus, the California Energy Commission noted that water efficiency policies, programs, and funding lag far behind those of energy efficiency. As the state faces the prospect of reduced water supplies due to climate change, these policy shortcomings must be addressed. To advance water efficiency in California into the 21st century, NRDC

¹ CALFED Bay-Delta Program, *Water Use Efficiency Comprehensive Evaluation*, (Sacramento, CA: August, 2006) p.3.

² Ibid. p.2.

proposes the development of an approach modeled upon our remarkable success in energy efficiency.

Below is a discussion of key components for a 21st century water efficiency policy for California.

1.) The State should adopt a loading order that establishes water use efficiency as a top priority.

In 2003, California's principal energy agencies—the California Energy Commission (Energy Commission), the California Public Utilities Commission, and the California Consumer Power and Conservation Financing Authority (Power Authority)—established an energy resource loading order to guide their energy decisions. The loading order requires the utilities to: first, pursue all cost-effective energy efficiency savings; second, meet new generation needs with renewable and clean distributed generation resources; and third, use efficient fossil-fueled generation. The loading order was re-adopted by the energy agencies in 2005 and endorsed by the Governor. The Legislature codified energy efficiency as the top priority resource in 2005, requiring that all utilities “first acquire all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible.”³

We propose that the Legislature, the State Water Resources Control Board and the California Public Utilities Commission adopt a similar policy for water:

- First, decrease demand through improved water efficiency as the preferred approach to addressing water supply reliability,
- Second, meet additional supply needs with alternative sources, including water recycling, groundwater clean-up and conjunctive use programs,
- Third, use traditional supply options.

We believe that such a phased approach is entirely consistent with the increased emphasis, by water agencies and the state, on integrated regional water management.

2.) The State should adopt policies and implement programs to operationalize the Loading Order.

While the Loading Order takes the important first step of establishing the state's policy, by itself it is not enough. The state must take steps to operationalize the policy. In its *2003 Energy Report*, the Energy Commission recommended that the state:⁴

- Increase public funding for cost effective energy efficiency programs.
- Standardize and increase the evaluation and monitoring of energy efficiency programs to ensure the delivery of savings and benefits.
- Implement appropriate mandates, incentives, and funding to maximize the energy efficiency potential of existing buildings.

³ Senate Bill 1037 (Kehoe, 2005).

⁴ California Energy Commission, *Implementing California's Loading Order for Electricity Resources* (Sacramento, CA:July, 2005) CEC 400-2005-043

These three steps, and others that the state had already implemented, have been instrumental in the state's success in energy efficiency, and are also key to implementing a loading order for water efficiency. In particular, the State should:

- A. Establish a public goods surcharge on every acre-foot of water delivered in California, with the proceeds of that surcharge used to fund efficiency programs.**
- B. Determine water efficiency potential.** Require water use efficiency potential studies by each water agency, or by groups of water agencies engaged in integrated regional planning.
- C. Establish efficiency targets.** Require each agency or groups of agencies to establish targets for water efficiency. The Board should review these targets to ensure they will capture all cost-effective savings.
- D. Integrate water efficiency into water agencies' portfolio.** Require water agencies to invest in all efficiency savings that are cheaper than other alternatives. This funding should supplement the public goods charge to ensure that all cost-effective savings are captured.
- E. Standardize evaluation, measurement, and verification protocols** to determine progress towards meeting these efficiency goals.
- F. Require annual reporting.** Require water agencies or groups of agencies to report annually on their progress towards meeting their targets.
- G. Remove financial disincentives** for water agencies by decoupling revenues from sales so that water agencies are no longer hurt financially by investments in efficiency.
- H. Require urban water system audits and assessment of economically recoverable losses.** To protect against waste and unreasonable use the SWRCB should require urban water suppliers to conduct water loss audits in accordance with International Water Association procedures and to identify and develop a plan to reduce economically recoverable losses.
- I. Implement regulatory and incentives programs** to maximize the water efficiency potential of new and existing development. For example:
 - Adopt water efficiency standards for buildings, landscaping, and appliances,
 - Strengthen LEED water conservation requirements and other green building programs
 - Implement Low Impact Development (LID) requirements through Clean Water Act permits. These LID requirements should be subject to quantifiable measurement so that the supplies "created" through retention or infiltration can be ascertained and compliance with permit mandates verified.

- Support, through allocation of revolving fund monies and by adopting new state water quality policies, improving wastewater treatment so as to make treated wastewater available to offset the use of potable water for applications such as landscape irrigation.
- Offer rebate and incentive programs to help customers save water.

3.) *Planning and Research*

Conducting additional research on the energy and climate implications of water management, and incorporating that information into water planning, will result in more robust approaches for assuring water supply reliability.

- The State Board should work with the Department of Water Resources (DWR), the Air Resources Board, the California Energy Commission, and the Public Utilities Commission, to complete a study that quantifies energy savings and greenhouse gas emission reductions that would be available from aggressive water recycling and water conservation efforts.
- The State Board and DWR should provide information to local agencies regarding the likely impacts of climate change on state and regional water resources. The State and local water agencies should incorporate that information into water plans.
- The State Board should include specific implementation requirements, and quantifiable overall goals, regarding efficiency in its revised Strategic Plan, which it will be adopting later this year.
- The State Board and DWR should require preparation and submission of agricultural water management plans by all agricultural water suppliers using more than 2000 acre-feet of water. Preparation of agricultural water management plans would facilitate a systematic review of water management alternatives that could reduce water use, improve water quality, and provide other environmental and economic benefits. Given that agriculture uses 80% of California's developed water supply, it is reasonable that these users prepare plans and review opportunities for conservation. These plans should also evaluate the likely impacts of climate change on water supplies and should evaluate the performance of various water management alternatives, including water efficiency, under the most likely climate change scenarios.
- The legislature should revise the demand management measures contained in the Urban Water Management Planning Act, which were developed 15 years ago, to reflect new technologies and analysis – such as improved understanding of the energy savings of water conservation.
- The State Board should model the water supplies that could be made available regionally through Low Impact Development practices implemented through Clean Water Act permits.

Conclusion

In summary, water conservation offers unique benefits:

- Largest potential water supply to meet California's future needs.
- Most cost-effective water supply tool available.
- Potential benefits to energy and wastewater utilities who can provide additional resources to support water efficiency efforts.
- Demonstrated effectiveness – conservation has allowed the Bay Area and the City of Los Angeles to maintain the same level of water use for decades, despite significant growth.
- Reduces reliance on pumping from the Bay-Delta and will help implement the recent federal court ruling to protect Delta smelt – and the health of the entire Bay-Delta ecosystem.
- Reduces vulnerability of water supplies to levee failures in the Delta.
- Delivers benefits more rapidly than other strategies.
- Conserves energy and cuts global warming pollution.
- Less vulnerable to the global warming impacts that will reduce water from traditional river diversions, groundwater pumping and surface storage projects.
- Delivers broad benefits throughout California.
- Can result in improved water quality by reducing urban and agricultural runoff.

To capitalize on these benefits the state must transform its policies to prioritize, fund, and assure water efficiency. The state's economic and environmental health depend upon using our water resources efficiently. The agenda laid out above will ensure that our water efficiency record mirrors that of our energy efficiency success.

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