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November 17, 2009

The Honorable Daniel Hancock, Chair and Commissioners
Little Hoover Commission
925 L Street, Suite 805
Sacramento, CA 95814
VIA ELECTRONIC MAIL

Re: Little Hoover Commission Advisory Committee Meeting, November 18, 2009
Water Governance: Conservation

Dear Chair Hancock and Commissioners:

On behalf of the California Coastkeeper Alliance (CCKA), which represents 12 Waterkeepers from the Oregon border to San Diego, I welcome the opportunity to submit these responses to the some of the questions raised by the Little Hoover Commission's (Commission) for its advisory committee meeting on water conservation. CCKA and its member Waterkeepers advocate regularly at the local, regional and state level in support of clean, abundant water flows in our waterways and sustainable water supplies. We have submitted written comments to the Commission on overall water governance issues dated June 23rd, and on water rights issues dated August 14th; these are incorporated by reference.

HOW CAN THE STATE IMPROVE ITS CONSERVATION STRATEGIES AND HOW MUCH CAN LEADERS EXPECT TO GAIN FROM CONSERVATION EFFORTS?

Using water more efficiently is one of the key ways to ensure water for a growing California, and at the same time reduce the state's carbon footprint. In California, the extraction, conveyance, local distribution, treatment and use of water accounts for 19 percent of the total demand for electricity and 30 percent of the non-power plant natural gas consumption.[1] As discussed in California's groundbreaking plan for reducing greenhouse gas emissions,[2] the Governor called on the state in 2008 to develop and implement a plan to achieve a 20 percent

[1] California Energy Commission, "California's Water-Energy Relationship," p. 1 (Nov. 2005), available at: http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF.
[2] California Air Resources Board, "Climate Change Scoping Plan," (Dec. 2008) (AB 32 Scoping Plan), available at: http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

reduction in per capita water use statewide by 2020.[3] California would need to achieve approximately 1.8 million acre-feet of urban water use efficiency by 2020 to meet the Governor's call.[4] These reductions are discussed in the AB 32 Scoping Plan because they would achieve a corresponding *1.4 million metric tons* of carbon dioxide reductions by 2020.[5]

Pacific Institute's 2003 state-sponsored study found that such water use reductions are feasible and cost-effective, and indeed identified an even greater potential savings of 2 to 2.3 million acre-feet per year just from existing urban conservation techniques.[6] This report found that "[e]ven without improvements in technology . . . indoor residential use could be reduced by . . . almost 40 percent."[7] The same report found that with respect to outdoor residential use, "cost-effective[8] reductions of at least 32.5% . . . could be made relatively quickly with improved management practices and available irrigation technology."[9] A consortium of business entities in Southern California similarly found that in Los Angeles, Orange, San Bernardino, San Diego, Riverside and Ventura counties alone, "[u]rban water conservation could have an impact equivalent to adding more than 1 million acre-feet of water to the regional supply (about 25% of current annual use)."[10]

The California Bay Delta Authority (CBDA) sponsored yet another study of urban water conservation potential, as part of its comprehensive review of the Water Use Efficiency Element of the CALFED Bay-Delta Program. The CBDA estimated the potential for water savings by 2030 at approximately 3.1 million acre-feet per year, again well over the 20% called for in the Governor's Executive Order. Expected advances in water-saving technology over the next 25 years, which the CBDA analysis did not evaluate, potentially could push savings beyond that figure.[11]

Though the greatest research attention has been paid to residential water use, studies have also been done of savings specific to California's commercial, industrial and institutional water users. These sectors consume roughly 2.5 million acre-feet of water annually, or about one-third of all the water used in California's urban areas. There are numerous, cost-effective strategies that

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[3] Letter from Governor Arnold Schwarzenegger to Senators Don Perata, Darrell Steinberg Mike Machado (Feb. 28, 2008), available at: http://www.swrcb.ca.gov/water_issues/hot_topics/20x2020/docs/govltr_to_legislature022808.pdf. The Department of Water Resources' later plan to implement this goal limited the proposed 20% per capita reduction to urban water use only, despite the fact that the Governor's letter did not include the same limitation.

[4] AB 32 Scoping Plan, Volume 1, at p. C-132.

[5] *Id.*

[6] Pacific Institute, "Waste Not, Want Not: The Potential for Urban Water Conservation in California," p. 1 (Nov. 2003), available at: http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf ("Waste Not, Want Not"); cited in DWR, "California Water Plan Update 2005," DWR Bulletin 160-05, at pp. 22-2–22-3 (Dec. 2005) (2005 Water Plan), available at: http://www.waterplan.water.ca.gov/docs/cwpu2005/vol2/v2ch22.pdf.

[7] "Waste Not, Want Not" at p. 6.

[8] The report defines measures as being "cost-effective" when their unit cost is "less than the unit cost of the cheapest alternative for new or expanded water supply." *Id.* at p. 11.

[9] *Id.* at p. 7.

[10] Los Angeles County Economic Development Corporation (LAEDC), "Where Will We Get the Water? Assessing Southern California's Future Water Strategies," at p. 6 (Aug. 14, 2008) (LAEDC Report); available at: http://www.laedc.org/sclc/documents/Water_SoCalWaterStrategies.pdf (Attachment 2).

[11] 2005 Water Plan at pp. 22-3 – 22-4.

can be applied to achieve significant water savings in this sector, with a potential for savings from 710,000 to 1.3 million acre-feet per year, and a best estimate of 975,000 AF/yr.[12]

Additional attention also should be made to improving efficiency by reducing losses during water transport. Many drinking water systems, for example, "lose as much as 20 percent of treated drinking water each year due to leaks in their pipe networks."[13] Basic infrastructure upkeep of pipes, canals, and other conveyances can yield significant water savings.

Costs also favor increased water conservation and efficiencies. Based on Department of Water Resources (DWR) estimates, the nonpartisan Legislative Analyst's Office found that urban water use efficiency conservatively costs $1,000 to achieve one acre–foot of water savings per year, making urban water use efficiency "both the most cost–beneficial and the highest potential water producer of all of the solutions evaluated."[14] By contrast, surface storage can cost roughly $10,000 to achieve one acre–foot of water savings per year.[15] The LAEDC report estimated that Santa Monica's water conservation strategies in its Sustainable Cities Plan in fact would *save* $210 per acre-foot of water conserved.[16]

With respect to agricultural water use efficiency, the CALFED Record of Decision "estimates that efficiency improvements will result in a water savings (reduction in irrecoverable flows also referred to as net water use) ranging between 120,000 to 563,000 acre-feet per year by 2030," as well as a projected "1.6 million AF per year reduction in applied water (combined recoverable and irrecoverable flows)."[17] The cost of the higher-end net water savings level of 563,000 acre-feet was estimated to range from $35 to $900 per acre-foot."[18]

A recently-released Pacific Institute report similarly found significant feasible water savings from agriculture.[19] The report explored three technology and management options for improving the efficiency of water use in California agriculture: efficient irrigation technology (*i.e.*, "shifting a fraction of the crops irrigated using flood irrigation to sprinkler and drip systems"), improved irrigation scheduling ("using local climate and soil information to help farmers more precisely irrigate to meet crop water needs"), and regulated deficit irrigation ("applying less water to crops during drought-tolerant growth stages to save water and improve crop quality or yield"). The report concludes that all three scenarios evaluated "conservatively

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[12] "Waste Not, Want Not" at 77. *See also* NRDC, "Making Every Drop Work: Increasing Water Efficiency in California's Commercial, Industrial and Institutional (CII) Sector" (May 2009), available at: http://www.nrdc.org/water/cacii/.

[13] NRDC, "Water Efficiency Saves Energy: Reducing Global Warming Pollution through Water Use Strategies," p. 3 (March 2009), available at: http://www.nrdc.org/water/files/energywater.pdf (citing Congressional Budget Office, Future Investment in Drinking Water and Wastewater Infrastructure," p. 8 (Nov. 2002), available at: www.cbo.gov/ftpdocs/39xx/doc3983/11-18-WaterSystems.pdf).

[14] California Legislative Analyst's Office, "California's Water: An LAO Primer," at pp. 65-67 (Oct. 2008) (LAO Report), available at: http://www.lao.ca.gov/2008/rsrc/water_primer/water_primer_102208.pdf.

[15] *Id.*

[16] LAEDC Report at pp. 7-8.

[17] 2005 Water Plan at p. 3-5, available at http://www.waterplan.water.ca.gov/docs/cwpu2005/vol2/v2ch03.pdf.

[18] *Id.* at p. 3-7 (costs would need to be normalized to ensure a consistent statewide baseline, such as in the LAEDC report – *see* attached LAEDC table).

[19] Pacific Institute, "Sustaining California Agriculture in an Uncertain Future" (July 2009), available at: http://www.pacinst.org/reports/california_agriculture/final.pdf ("Sustaining California Agriculture").

show the potential for significant water savings," with a combined potential savings of "between 4.5 million acre-feet in a wet year and 6.0 million acre-feet in a dry year," or a *17 percent reduction in agricultural water use* from only the three scenarios studied.[20] The Pacific Institute report concludes that:

> [b]y investing in "drought-proof" strategies, California farmers can reduce their vulnerability to the kinds of water-supply constraints experienced in the past three years due to drought. Because climate change is expected to increase the frequency and intensity of droughts, these measures can also help California farmers improve their resilience to a changing climate.[21]

The Governor's 2008 letter to the Legislature calling for a 20% reduction in water use per capita statewide was a step in the right direction in terms of increasing conservation around the state. The recently-signed SB X7 7, however, scaled back on these initial steps. For example, the new statute does not mandate conservation strategies for agriculture, which uses 80% of the water in the state, despite their feasibility. This leaves a huge gap in the state's conservation potential. Moreover, SB X7 7 establishes loopholes that may allow some urban areas to avoid further conservation completely.[22] Finally, while violators may become ineligible for state (though not federal) grants and loans, there are no enforcement provisions or fines for not meeting the set targets. These provisions may have the unfortunate effect of creating the impression that water conservation has been addressed, thereby stalling additional needed efforts that would lead to meaningful, swift, sustainable water use reductions and increased efficiencies.

WHAT INCENTIVES CAN BE USED TO GET URBAN AREAS AND AGRICULTURAL WATER USERS TO REDUCE THE AMOUNT OF WATER THEY USE?

Incentives, which are discussed further in the following section of this comment letter, are a key component of a successful water policy. They can be focused on very specific uses (such as rebates for low-flow shower heads), and can also cut across broad categories of uses. For example, one coordinated urban-agriculture incentive approach could be for the state to develop new mechanisms by which municipal water entities invest in agricultural irrigation systems in exchange for some portion of the water conserved.[23] Incentive programs have a long track record of success and should be reviewed further, as discussed below.

Immediate focus should additionally be placed on *erasing disincentives* to conservation. There are numerous hurdles that block effective implementation of conservation programs. A number of these will be politically difficult to address, but they must be corrected for California to have a sustainable water future. For example, a major hurdle to improving water conservation lies

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[20] *Id*. at p. 6. *See also* California Agricultural Water Stewardship Initiative, "Dry Farming," available at: http://agwaterstewards.org/txp/Resource-Center-Articles/22/dry-farming.

[21] "Sustaining California Agriculture" at p. 6.

[22] *See, e.g*., Paul Rogers, "Schwarzenegger signs water conservation bill in San Jose," *San Jose Mercury News* (Nov. 10, 2009), available at: http://www.mercurynews.com/breaking-news/ci_13757425 ("The new law also allows urban districts to measure the 20 percent by taking a 10-year average starting as far back as 1994 and comparing per-capita use then and in 2020. Because of population growth, agencies could meet the target while using more water in 2020 than today.")

[23] "Sustaining California Agriculture" at p. 7.

in the pricing of water. As noted by the Pacific Institute, water is often wasted when it is not properly priced.[24] Proper pricing encourages appropriate investment in conservation and efficiency (though a lifeline rate should be set to ensure that basic human needs are met regardless of ability to pay).[25]

On the urban side, tiered rate structures are already being adopted to help advance conservation.[26] Effective pricing is similarly key in the agricultural sector, including re-examination of inefficient and inappropriate subsidies related to low-value, water-intensive crops.[27] Another example of removing pricing disincentives to conservation would be for the U.S Bureau of Reclamation to "re-visit its water rate structures, ensuring that all water use does not fall within the first tier and that there are large increases between tiers."[28] Moreover, California "should require that all water deliveries, including the settlement contractors . . . be subject to tiered pricing."[29]

Disincentives to conservation could be broadly redressed, and incentives supported, through adoption of a "water loading order" similar to the state's energy loading order, which was adopted as part of the state's first Energy Action Plan.[30] California's energy loading order:

> established that the state, in meeting its energy needs, would invest first in energy efficiency and demand-side resources, followed by renewable resources, and only then in clean conventional electricity supply. This concept is now widely understood and respected both nationally and internationally.[31]

A "loading order for water" would similarly establish and implement state policy for supporting and investing in water conservation as a top priority, followed by capture and reuse of water as the next priority (including water recycling and use of low-impact development techniques that capture stormwater), followed lastly by the development of efficient, low-polluting conventional water supply strategies. The need for, and strategy for developing and implementing, a water loading order was discussed as well in NRDC's "Transforming Water Use,"[32] which among other

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[24] "Waste Not, Want Not" at p. 14.
[25] AB 1242 (Ruskin, 2009) would have established state policy that "every human being has the right to clean, affordable, and accessible water for human consumption, cooking, and sanitary purposes, that is adequate for the health and well-being of the individual and family." The bill was passed by the Legislature but vetoed by Governor Schwarzenegger.
[26] Letter from Karen Franz, San Diego Coastkeeper to Chair Donna Frye and Council Members, San Diego City Council. "City of San Diego Emergency Water Regulations - Water Allocation Methodology" (March 25, 2009), available at: http://www.sdcoastkeeper.org/assets/pdf/campaigns/waterSupply/SDCKLevel2DroughtResponseLtr5-5-09.pdf.
[27] Pacific Institute, "California Water 2030: An Efficient Future," p. 7 (Sept. 2005), available at http://www.pacinst.org/reports/california_water_2030/ca_water_2030.pdf ("California Water 2030").
[28] "Sustaining California Agriculture" at p. 8.
[29] *Id.* at p. 9.
[30] California Public Utilities Commission and California Energy Commission, "Energy Action Plan: 2008 Update," p. 1 (Feb. 2008), available at: http://www.energy.ca.gov/2008publications/CEC-100-2008-001/CEC-100-2008-001.PDF; *see also* http://www.energy.ca.gov/energy_action_plan/.
[31] *Id.; see also* SB 1037 (Kehoe 2005).
[32] NRDC, "Transforming Water Use: A California Water Efficiency Agenda for the 21st Century" (Sept. 20, 2007), available at: http://deltavision.ca.gov/BlueRibbonTaskForce/Feb28_29/Handouts/BRTF_Item_5A_HO2.pdf.

things called for a public good surcharge on every acre-foot of water delivered in California to fund water conservation and efficiency programs.[33]

Efforts similar to those that would populate a statewide water loading order are already taking place in the private water arena. The CPUC's "Water Action Plan"[34] addresses the 20% of water that is delivered by private water utilities. This Plan "identifies the policy objectives that will guide the [CPUC] in regulating the investor-owned water utilities and highlights the actions that the Commission anticipates or will consider taking in order to implement these objectives."[35] Included in the Plan, and reproduced in Attachment 1, is a discussion of the CPUC's strategy to strengthen water conservation programs among regulated utilities to a level comparable to energy utilities.[36]

Finally, closely related to the issue of pricing disincentives is the perverse discouragement of conservation due to its integration with water district revenues. Specifically, in some areas of the state, conservation has been so successful that it is now impacting water districts' short-term revenues. Incredibly, this in turn is causing some districts to scale back on their conservation in order to ensure enough water sales to keep up their cash flow.[37] There is an obvious need to decouple water conservation from revenues to avoid spread of this phenomenon. A well-crafted loading order again will help address this unnecessary but significant hurdle to maximizing conservation.

SHOULD POLICY BE GEARED TOWARD A REGULATORY OR MARKET-BASED APPROACH, OR BOTH?

Both regulatory and market-based approaches are valuable in the critical effort to maximize water conservation, though it should be noted that there can never be a true "market" in an essential element for life such as water. On the market incentive side, expansion of programs such as U.S. EPA's WaterSense[38] can encourage consumers to invest in water-efficient appliances and strategies, just as they have done to great effect on the energy side. Existing market incentive programs in California have proven popular despite unfortunately intermittent funding. For example, in May 2009 the MWD moved to suspend a highly successful program that provided rebates for installation of water-saving toilets and appliances, despite that fact that MWD could barely keep up with demand.[39] By contrast, MWD voted in November to support the allocation of hundreds of millions in public subsidies for the construction of the Poseidon desalination facility

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[33] *Id.* at p. 3.
[34] California Public Utilities Commission, "Water Action Plan," (Dec. 15, 2005), available at: ftp://ftp.cpuc.ca.gov/PUC/hottopics/3water/water_action_plan_final_12_27_05.pdf (Attachment 1) ("CPUC Water Action Plan").
[35] *Id*. at p. 3.
[36] *Id*. at pp. 7-11.
[37] *See* Mike Lee, "Consumers' cuts drying up revenue for districts," *San Diego Union-Tribune* (Sept. 13, 2009), available at: http://www3.signonsandiego.com/stories/2009/sep/13/consumers-cuts-drying-revenue-districts/
[38] http://www.epa.gov/watersense/; *see also* "California Water 2030" at p. 8.
[39] *See, e.g.*, Nicole Santa Cruz, "MWD stops paying rebates for water-saving devices," *Los Angeles Times*, (July 21, 2009 and Aug. 2, 2009), available at: http://articles.latimes.com/2009/jul/21/local/me-water21.

in Carlsbad, a relatively unproven, more polluting, and far less cost-effective alternative to conservation.[40]

On the regulatory side, some insight may be had from other efforts to reduce waste in the state. For example, in 1990 the Integrated Waste Management Act, (AB 939) took effect to build up the state's recycling-based infrastructure and place new, unprecedented responsibility on California cities and counties to cut waste disposal to landfills 25 percent by 1995 and in half by 2000. The statewide waste diversion rate topped 50% percent in 2005, from a rate of about 10 percent in 1989.[41] Enforcement provisions were important to advancing this goal: if a jurisdiction does not meet its 50 percent solid waste diversion, the Integrated Waste Management Board may place it under a compliance order, with further inaction subject to fines of up to $10,000 per day. Similar regulatory provisions applied to water – *i.e.*, clear metrics, plans for implementation, enforcement with fines, and funding for agency oversight – could significantly assist the state in meeting its conservation goals. However, metrics would have to be carefully targeted to conservation: AB 939's metrics focused on diversion of waste from landfills, which has increased recycling but generally not waste reduction.

The success of both incentive- and regulatory-based efforts cannot be effectively determined, and necessary course corrections made, without adequate data. Currently a lack of comprehensive information on water use and conservation, and a failure to effectively compile and disseminate existing data, hinders effective action on conservation. California must collect, compile and report publicly on water use data across use spectrums, and similarly track changes due to applied conservation strategies.[42] AB 1404 (Laird 2007) requires DWR, the State Water Board and CDPH to coordinate the collection, management and use of agricultural and urban water measurement information provided to each agency. The bill also requires the Water Board, in coordination with these entities and a named Delta authority, to prepare and submit a report to the Legislature evaluating the feasibility, estimated costs and potential means of financing a coordinated water measurement database. This report was due to the Legislature on January 1, 2009; though it has been written, it is still sitting at the Governor's office, awaiting release. We ask for the Little Hoover Commission's assistance in obtaining the release of this report to the Legislature and the public, as well as the subsequent adoption of its recommendations to increase the regular availability of standardized water use and conservation data.

Finally, California must begin implementing and enforcing its constitutional and statutory mandate to "prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of water in this state."[43] Water needs should be demonstrated as

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[40] *See, e.g.*, Bettina Boxall, "Public subsidies approved for San Diego County desalination project," *Los Angeles Times*, (Nov. 11, 2009), available at: http://www.latimes.com/news/local/la-me-desalination11-2009nov11,0,1148730.story; *see also* Dr. Peter Gleick, "Doing Desalination Wrong: Poseidon on the Public Dole," *San Francisco Chronicle* (Nov. 3, 2009), available at: http://www.sfgate.com/cgi-bin/blogs/gleick/detail?blogid=104&entry_id=50931.

[41] *See* "The History of the California Environmental Protection Agency: Integrated Waste Management Board," available at: http://www.calepa.ca.gov/about/history01/ciwmb.htm; and California Integrated Waste Management Board, "Statewide Profile for the State of California," available at: http://www.ciwmb.ca.gov/Profiles/Statewide/SWProfile1.asp.

[42] "Waste Not, Want Not" at pp. 14-15.

[43] Water Code Sec. 275; California Constitution Art. X, Sec. 2.

"reasonable and beneficial," and uses (and methods of use and diversion) should be shown to prevent waste. Standards and processes will need to be adopted to implement these mandates across urban[44] (residential, commercial, industrial and institutional) and agricultural[45] sectors.

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Thank you for the opportunity to submit these comments. We look forward to working with you to ensure that the state establishes a water governance system that recognizes the great value of clean, abundant water by establishing and implementing appropriate conservation and efficiency initiatives.

Best regards,

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[44] *See* NRDC's "Transforming Water Use" at p. 3 (recommending that the State Water Board require urban water suppliers to conduct water loss audits and develop plans to reduce economically recoverable losses).
[45] *See* "Sustaining California Agriculture" at pp. 8-9 (calling for "[m]ore aggressive efforts" by the state to apply Article X, Section 2 and Water Code 275's mandate to prevent waste and unreasonable use, including calling on the U.S. Bureau of Reclamation to "require all project contractors to provide a valid 'Needs Assessment' that conforms to state law by demonstrating reasonable and beneficial use of water and prohibiting the waste of water").

ATTACHMENT 1:

CALIFORNIA PUBLIC UTILITIES COMMISSION
WATER ACTION PLAN
(Dec. 15, 2005)
Pages 7-11 (footnotes omitted)

Source: ftp://ftp.cpuc.ca.gov/PUC/hottopics/3water/water_action_plan_final_12_27_05.pdf

California Public Utilities Commission
W A T E R ACTION PLAN
15 December 2005

Objective: Strengthen Water Conservation Programs to a Level Comparable to those of Energy Utilities.

1. Promote metered water service to encourage conservation.

One major conservation incentive is the elimination of flat-rate and un-metered water service. Metering water is essential to send a clear price signal and give the customer a financial incentive to conserve. In addition, installation of Automated Meter Reading (AMR) equipment can provide accurate real time water usage information, reduce labor costs associated with meter reading, and provide more detailed data of customer usage. Section 781 of the Public Utilities Code requires a showing that the metering will be cost-effective, results in a significant reduction in water use, and will not impose unreasonable costs. The CPUC will work to ensure that such a showing is made as often as possible in future water cases, and will then require metered water service. This will be accompanied by appropriate rate designs, as discussed below.

2. Educate water industry stakeholders regarding policies and practices which reduce water and energy consumption.

Education is a vital component of conservation efforts. For decades, energy ratepayers have funded extensive education efforts by energy utilities, which have been critical in California's energy efficiency efforts. A similar approach is needed for water conservation. A "Water Conservation Summit" with, for example, the Department of Water Resources, Department of Health Services, and other interested state agencies and knowledgeable water conservation experts, could be a useful forum to identify and highlight successful conservation policies and practices for public and investor-owned water utilities. The CPUC's own consumer education and web site will also be expanded to include water conservation information.

3. Direct participation by all California Class A and B water utilities in the Urban Water Conservation Council and encourage implementation of the Council's Best Conservation Management Practices.

Statewide urban water conservation is coordinated by the California Urban Water Conservation Council. This organization's membership consists of three groups: water suppliers, public advocacy organizations, and other interested groups. As part of an overall program of promoting conservation, the Commission will encourage development and implementation of best conservation management practices as promoted by the California Urban Water Conservation Council and will direct all Class A and B Water Utilities to participate in the Council. A good first step in this process would be for water IOUs to sign the California Urban Water Conservation Council's Memorandum of Understanding. Water IOUs would be required to demonstrate that they are up-to-date in meeting coverage requirements with Best Management Practices when cost-effective. Cost-effective water conservation above and beyond the Best Management Practices will also be evaluated. In order to facilitate their participation, water utilities and other qualified

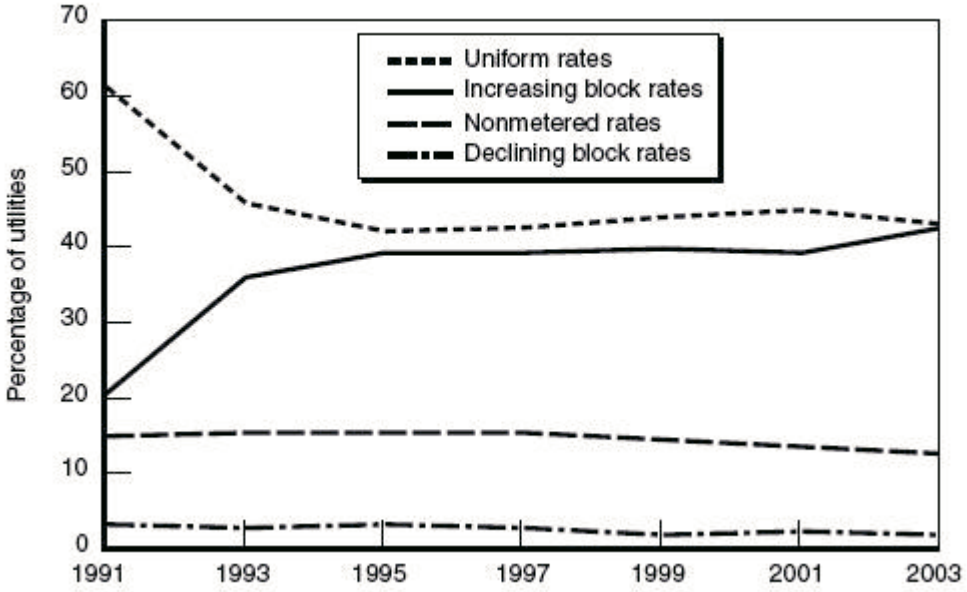
stakeholders will be allowed to seek recovery of expenses related to participation in this effort in their General Rate Case filings.

Further, we will encourage smaller (Class C & D) water IOUs to implement those best practices that make sense for a smaller provider to implement and will seek the assistance of the larger water providers and the California Water Association in disseminating these conservation tools to the smaller water companies.

4. Encourage increasing conservation and efficiency rate designs (such as increasing block rates) where feasible to promote greater conservation.

Various rate designs can help promote efficient use of water. Increasing block rates, in which rates increase with usage, provide a financial incentive for customers to reduce water consumption. The figure below shows the relative use of alternative rate design programs by a sample of California water utilities. There is a significant growth in the use of increasing block rates in the early 1990's in direct response to the severe drought. Approximately half the California water ratepayers in 2003 had increasing block rates. However, among CPUC-regulated water utilities, increasing block rates are virtually non-existent. Thus, there is significant opportunity to implement this approach to rate design. Before instituting increasing block rates, however, the Commission will carefully consider the impact on low income customers and may develop specific low income water rates, similar to its approach for low income energy ratepayers.

Water Utility Rate Structures in California, 1991-2003



Note: The chart reports the share of utilities with each rate structure (total = 100%), using data from 214 utilities present in the survey in all years.

5. Remove current financial disincentives to water conservation.

Because water utilities recover their costs through sales, there is a disincentive associated with demand side management: a successful campaign to reduce water use leads to less revenue and less profit. The Commission will consider de-coupling water utility sales from earnings in order to eliminate current disincentives associated with conservation.

6. Establish utility financial incentives for greater conservation.

In order to provide utility management with the incentive to encourage conservation, the Commission will consider allowing:

1. Financial rewards for utility management when conservation goals are met, and financial penalties when conservation goals are not met.
2. An opportunity for higher earnings resulting from successful conservation efforts, and a sharing of savings with customers.

7. Consider energy usage as an important outcome of all water policy decisions and work toward a 10% reduction in energy consumption by the utilities over the next three years.

California water and wastewater utilities (both publicly and privately owned) consume substantial amounts of energy. Customer consumption and use of water constitutes about 19 percent of all electricity, and about 32 percent of all natural gas consumed in California. The table below summarizes the water-related energy consumption data (excluding incomplete data on diesel fuel consumption, which nonetheless must also be subject to conservation).

2001 Water-Related Energy Use in California

	Electricity (GWh)	Natural Gas (Mill. Therms)
Water Supply and Treatment		
Urban	7,554	19
Agricultural	3,188	
End Uses		
Agricultural	7,372	18
Residential	27,887	4,220
Commercial		
Industrial		
Wastewater Treatment	2,012	27
TOTAL	48,012	4,284
2001 Consumption	250,494	13,571
Percent of Statewide Energy Use	19%	32%

Source: California Energy Commission, *Integrated Energy Policy Report*, September, 2005, p. 121.

There are many supply-side and demand-side policies and technologies which can help reduce this substantial energy consumption. The U.S. Environmental Protection Agency's ENERGYSTAR® program estimates that 10 percent energy savings can be achieved in the water and wastewater industry. The American Council for an Energy-Efficient Economy recommends that regulators ensure energy efficiency is recognized and rewarded, and that all stakeholders be educated on the importance of improving the energy efficiency of water and wastewater facilities.

The CPUC will identify and assess options for energy efficiency strategies for water utilities to reduce energy use associated with water pumping, purification systems, and other water processes such as desalinization. Additional policies which can contribute to increased energy efficiency include addressing sources of energy waste, such as system leaks, poorly maintained equipment, defective meters, unused machines left idling, and improperly operated systems.

8. Collaborate with the California EPA to reduce California greenhouse gas (GHG) Emissions.

The CPUC is actively working with California EPA to implement programs that will reduce GHG emissions, consistent with the Governor's Executive Order establishing specific emission reduction goals for California.

The CPUC recognizes that water supply planning should take into account the likely effects of global warming. Reduced snowpack as a result of rising temperatures is an expected consequence of global warming, possibly resulting in greater water runoff and less runoff percolating into the groundwater. The Department of Water Resources identifies some highly likely results: "Temperatures will rise, which will affect the extent and amount of winter snowpack in the mountains. However, the range in projections of the amount of temperature increase to expect is still quite large." The Department of Water Resources concludes that further studies are required, including better hydrologic monitoring to more accurately assess the trends and changes underway.

Just as we have done on the energy side, we will identify actions that our water utilities can take to reduce GHG emissions. The most obvious, of course is to reduce consumption of electricity, natural gas, and vehicle fuels. We will also encourage California's largest water utilities to join the California Climate Action Registry, a voluntary greenhouse gas registry to promote early actions to reduce greenhouse gas emissions.

ATTACHMENT 2:

ASSESSMENT OF SOUTHERN CALIFORNIA'S FUTURE WATER STRATEGIES

Source: LAEDC, "Where Will We Get the Water?" (Aug. 14, 2008), http://www.laedc.org/sclc/documents/Water_SoCalWaterStrategies.pdf

Assessing Southern California Water Strategies

Strategy	2025 Regional Potential (TAF*)	Typical Project Characteristics							
		Timeframe (years)	Drought-Proof (Reliability)	Risk (Project Aborted)	Enviro Opinion	GHG	Initial Cap. Cost ($millions)	Annual Oper. Cost ($millions)	30-yr cost Treated ($/AF)
Strategies to Replace or Augment Imported Water									
Urban Water Conservation	1,100+	0-2	🟢	🟢	🟢	🟢	$0	$0.5	$210
Local Stormwater Capture	150+	3-5	🔴	🟢	🟢	🟢	$40-$63	$1-$3.5	$350+
Recycling	450+	6-10	🟢	🟡	🟢	🟡	$480	$30	$1,000
Ocean Desalination	150+	6-10	🟢	🟡	🔴	🔴	$300	$37	$1,000+
Groundwater Desalination	TBD	6-10	🟢	🟡	🟡	🟡	$24	$0.7	$750-$1,200
Strategies to Increase Imported Water									
Transfers-Ag to Urban	200+	1-5	🟡	🔴	🟡	🟢	n/a	n/a	$700+
Strategies to Increase Reliability									
Inter-agency Cooperation	**	0-5	🟢	🟡	🟢	🟢	low	low	n/a
Groundwater Storage	1,500+	3-5	🟡	🟡	🟢	🟡	$68-$135	$13	$580
Surface Storage	0	10+	🔴	🔴	🔴	🟡	$2,500+	$7.5-$15.5	$760-$1,400

*TAF-Thousand Acre-Feet
** Improves reliability and efficiency of existing supplies
Source: LAEDC

🟢 **Favorable** 🟡 **Neutral** 🔴 **Unfavorable**

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