



February 29, 2008

Chair Tam Doduc and Members of the Board
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Re: *NRDC comments on the State Water Resources Control Board Climate Change Activities*

Dear Chairwoman Doduc and Members of the Board:

On behalf of the Natural Resources Defense Council (NRDC) and our 1.2 million members and activists, of whom more than 250,000 are Californians, we would like to offer our comments on water-related strategies and measures that should be prioritized in the California Air Resources Board (CARB) AB 32 scoping plan, and should be the focus of the State Water Resources Control Board (Board) climate change-related activities. We understand that the Board's climate change activities will also be reflected in the Strategic Plan Update; NRDC will be submitting separate comments as part of that process.

The Board has engaged in exploring the relationship between water management and climate change in a variety of forums, including the joint SWRCB/DWR workshop held in August 2007, the upcoming February 19th Board meeting, and the Water Energy Team of the Climate Action Team (WET-CAT). A common theme that has emerged in all of these processes is that improving water efficiency and reducing water exports by developing local sources such as water recycling and storm water capture, can yield large reductions in greenhouse gas emissions, as well as help the state adapt to the likely impacts of climate change on the state's water supply. Moreover, many of these same steps provide superior ways of addressing water quality problems throughout California. The next step is identification of the measures and policies that the state must implement to achieve the vast cost-effective water savings and reduction in greenhouse gas emissions that have been identified.

Below we offer comments on the specific proposed and potential strategies identified by WET-CAT and identify some foundational data and methodology issues that should be addressed to facilitate implementation of all of these strategies and measures. We support all of the strategies currently identified by WET-CAT for inclusion in the CARB scoping plan. However, while the WET-CAT proposals for water use efficiency are headed in the right direction, they lack specificity, which makes it difficult for us to evaluate whether they are adequate. We urge you to think expansively about how the State Board can play a pivotal role in transforming California water use practices. Furthermore, we urge you to establish conjunctive use/storm water capture, and specifically a statewide program to require and encourage Low Impact Development practices, as an additional strategy that has great potential to reduce greenhouse gas emissions, enhance water supply, and protect water quality.

I. Foundational Measures

A. Assure adequate funding.

Numerous efforts to advance efficiency and to promote alternative water management strategies have fallen short due to inadequate funding. The State should establish a public goods surcharge to fund water efficiency and associated efforts.

B. Improve water measurement

It has often been noted that society measures what we value. Yet an expert panel on water measurement in California found that water management in California was handicapped by inadequate, incomplete and potentially inaccurate data on water use. The state should implement administrative actions identified by the CALFED staff proposal on water measurement and by the AB 2717 Landscape Task Force, including measuring crop water use consumption via remote sensing, better measurement of instream and return flows, better assessment of net groundwater usage, and upgrading the California Irrigation Management Information System (CIMIS). The Board should further assure that statewide ambient water quality monitoring is adequately funded to allow the State Board to track and calculate water quality improvement associated with improved water efficiency and Low Impact Development.

C. Improve data management.

The Board, DWR, and the Department of Health Services (DHS) should partner to create a statewide water use database and a system for reporting water deliveries and diversions. AB 1404 (Laird), which was passed last year, requires a feasibility study of such a database. The Board should take the lead on this study and spearhead subsequent development of the database.

D. Develop a transparent methodology to evaluate the GHG emission reductions from water management measures. While below we discuss specific measures that can be taken to reduce the energy used for water, through efficiency, recycling and other measures, the state still lacks a clear methodology for calculating the emission reductions associated with these activities. The energy intensity of water use varies greatly by location, as well as by source of water, and energy source. Using average numbers will not accurately capture the benefits that can be achieved by targeting carbon-intensive water. The Board should partner with DWR, CEC, and the CPUC to develop a methodology for evaluating the potential GHG reduction as well as for tracking and verifying those savings.

II. Proposed WET-CAT Strategies

A. Water Recycling

We support the proposed WET-CAT strategies and measures to increase water recycling, particularly the recommendations to require water recycling at wastewater treatment plants, and to modify grant criteria. We suggest that priority be given to increased treatment where the discharges are into impaired waters, as well as to locations where increased availability of recycled water can offset more energy-intensive water supplies. The Board should also identify measures to promote use of recycled water for appropriate purposes, while protecting water quality.

The Board should also assure that energy considerations are taken into account when water recycling facilities are developed. For example, an engineering analysis conducted by the Inland Empire Utilities Agency revealed that changing the pipe size at their water recycling facilities could reduce the energy requirements. Because this may increase cost, and not increase yield, the incremental cost should be eligible for funding from energy utilities or alternative funding sources that are created to help the state meet its AB 32 goals.

B. End Use Water Conservation

Improving water use efficiency is one of the most cost-effective way of reducing water-related energy use and greenhouse gas emissions, while also preventing waste and unreasonable use, assuring reliable water supplies, protecting water quality, and stretching limited revolving fund loans available for water and wastewater treatment facility upgrades and expansions.

We urge the Board to play a much more prominent role in these issues. The existing framework for urban water conservation in California (the Memorandum of Understanding Regarding Urban Water Conservation in California) was created in response to State Board hearings on the Bay-Delta in the early 1990s and the threat of Board mandated levels of conservation. A 2004 CALFED analysis revealed that the state was not on track to achieve the vast conservation savings that have been identified by DWR and others. It is therefore time for the Board to reengage and reestablish a leadership role in promoting efficient water use.

We strongly support the measures that the WET-CAT has identified:

- Establish water conservation and efficiency standards for both buildings and appliances that save both water and energy
- Promote greater implementation of water conservation measures and best management practices to improve efficiency
- Increase landscape irrigation efficiency and conservation
- Increase agriculture irrigation efficiency and conservation

We urge the Board and the WET-CAT to add additional specificity to these four measures. We propose modeling a water efficiency framework upon the successful approach used to improve energy efficiency in California. The State Board should adopt a loading order policy that prioritizes water efficiency and should review its policies for places where this priority could be implemented and enforced. This approach is described in more detail in a white paper we submitted to the Board in September 2007, and is consistent with the draft recommendations of the CARB Economic and Technology Advancement Advisory Committee (ETAAC). The framework involves adopting a loading order that prioritizes water efficiency, and then adopting supporting policies to maximize efficiency. This includes determining efficiency potential, establishing explicit targets, standardizing evaluation and verification methodologies and reporting systems, providing incentive programs and consequences for non-compliance, and establishing a dedicated funding source, such as a public goods charge, to fund these programs.

C. Energy Intensity of Water Systems

NRDC supports the measures identified by the WET-CAT team to better inventory water and energy balances, and to assure that information is provided to SWRCB and DWR, and included in State planning documents. We also support efforts to reduce and better manage the energy demands of the water system. We are unsure what the Board meant by indicating that they will “consider GHG emissions that could be produced in the development of water quality standards.” The need to meet AB 32 targets should not be used to justify weakening any water quality standards. Indeed, this letter contains recommendations that would allow the Board to simultaneously accomplish both goals. We do not imply that the Board intended to do this; however, the wording of this recommendation was vague and should be revised.

As discussed above, we strongly support development of a valuation and protocol methodology for the measurement and verification of efficiency and conservation activities/programs. The CPUC has recently authorized pilot water and energy programs and associated measurement and verification activities. These studies may provide valuable information that could be the basis of additional efforts that would add in the greenhouse gas emission reduction elements.

III. Additional Strategies under Consideration

Conjunctive use/ storm water capture has been identified by WET-CAT as an additional measure under consideration. Given the vast potential for LID practices to bring about substantial reductions in CO₂ emissions by reducing the consumption of imported, potable water and its associated energy needs, we strongly urge the Board to classify use of LID as a “Strategy” for reduction of CO₂.

emissions under AB32. Because LID provides an inexpensive and technically superior way to reduce the leading source of water pollution in California, urban runoff, emphasizing LID simultaneously advances other important water resource goals and associated legal requirements.

Use of LID results in the diversion and capture of storm water and dry-weather runoff before it flows into surface waters. This water can then be used on- or off-site as an alternative water source for irrigation of parklands, sporting fields, cluster housing groups, or for fire-fighting. Such an approach reduces storm water pollutants and saves energy in the form of less imported water. This is particularly important in the dry climates that pervade California and much of the West. Because LID can retain all or most rainfall on-site, Southern California could reduce water imports from the Sacramento-San Joaquin Delta or the Colorado River Aqueduct, which both require significant amounts of energy for conveyance.

Nationally, research has repeatedly shown that LID has the potential to deliver vast quantities of useable water through recharge and infiltration, and that it is the most effective and cost-efficient means of managing storm water and abating water pollution. Further, LID uses common sense and simple technology – strategically placed beds of native plants, rain barrels, “green roofs,” porous surfaces for parking lots and roads, and other tools – to retain rainfall on site or help rainfall soak into the ground, rather than polluting the nearest water body. In effect, LID mimics nature’s own filtering systems. In addition to replenished water supplies and significant energy savings, the result is less water pollution from dirty runoff, less flooding, and often, more natural-looking, aesthetically pleasing cityscapes. Moreover, these benefits can be achieved cost-effectively. The U.S. Environmental Protection Agency has emphasized the low-cost of LID practices in a recent report:

“LID practices were shown to be both fiscally and environmentally beneficial to communities... [I]n the vast majority of cases, significant savings were realized due to reduced costs for site grading and preparation, storm water infrastructure, site paving, and landscaping. Total capital cost savings ranged from 15 to 80 percent when LID methods were used, with a few exceptions in which LID project costs were higher than conventional storm water management costs.”

EPA, *Reducing Storm water Costs through Low Impact Development (LID) Strategies and Practices* (2007), at iv.

NRDC has demonstrated through an extensive set of technical comments on NPDES permits in California that the water savings associated with LID, and the ability of LID to reduce the discharge of pollutants in runoff to levels that meet water quality standards, are robust and technically feasible. We urge the SWRCB to consider the technical comments of Dr. Richard Horner, who has carefully supported these conclusions in a series of technical reports that have been submitted to Regional Water Boards in San Diego, Los Angeles, Ventura, and San Francisco. At the micro level, for example, these studies show that using LID at a single restaurant with a 30-car parking lot could capture enough water to meet the needs of a family of four for almost an entire year.¹

A preliminary general estimate of the water savings from implementation of LID practices suggests that if LID were used in just 50% of all residential and commercial properties in Los Angeles, Riverside, and San Diego Counties, an additional 377,000 acre-feet annually could be infiltrated or

¹. See Horner Report at 15. The prototypical restaurant studied by Dr. Horner would capture 0.88 acre-ft. of runoff per year. A typical family of four uses approximately 1 acre-ft. of water per year.

otherwise reused. By offsetting energy-intensive imported water in like amounts, and after accounting for average energy requirements associated with pumping groundwater in these areas, LID could result in the reduction of up to 45,000 metric tons of CO₂ annually in Los Angeles County and an additional 55,000 metric tons of CO₂ in San Diego and Riverside Counties combined. Cumulatively, implementation across southern California at 50% of existing developments could result in savings of up to 160,000 metric tons equivalent of CO₂ per year.

Due to the significant benefits LID provides both with respect to CO₂ emissions and the corresponding reduction in storm water related pollution, LID should be considered as a full-fledged Strategy for the reduction of CO₂ in California. Implementation Measures including the following should be adopted by the State Water Board:

1. Adoption of LID requirements in all Phase I municipal storm water permits in California;
2. Adoption of LID requirements in all Phase II municipal storm water permits.
3. Adoption of LID requirements in the Construction General Storm Water Permit for California.
4. Adoption of a LID-related water capture goal for California with specific sub-goals that reflect opportunity in each of the nine geographic areas with a Regional Water Quality Control Board.

IV. Conclusion

Water management will be key to reducing as well as adapting to climate change. We appreciate the Board's engagement on these water and climate issues and believe that your identification of increased water use efficiency and recycling and reducing the energy intensity of water systems sets the Board along the right path. We urge you also to pursue the foundational measures described above, to more specifically set targets and identify ambitious measures that will achieve those targets, and add LID to the list of strategies that you pursue and recommend to CARB. Thank you for considering our comments. We look forward to continuing to work with you on these issues.

Sincerely,



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