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Association of California Water Agencies

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April 29, 2010

Mark Cowin, Director
Department of Water Resources
California Department of Water Resources
P.O. Box 942836, Room 1115-1
Sacramento, CA 94236-0001

Sent via E-mail and U.S. Mail

Dear Director Cowin:

I am pleased to transmit the Association of California Water Agency's (ACWA) ***Whitepaper on "Option 4": Proposal for Implementation of Water Conservation Requirements in SBX 7-7.*** As you know, ACWA has worked for several months to develop the attached proposal that addresses the requirements of Water Code section 10608.20(b)(4)) for an alternative target-setting method to complement the other three methods specified in the legislation.

ACWA assembled a workgroup of water agency representatives with strong managerial, technical, legal and public policy expertise that carefully considered the legislative requirements in drafting this whitepaper. We have widely circulated various drafts of the proposal and made significant changes to address technical and policy considerations. We believe the ACWA proposal is fully compliant with the statute and offers a flexible yet fair framework for adopting an Option 4 alternative that sets the stage for success.

However, neither a viable Option 4, nor any of the other target-setting alternatives, can assure successful compliance with the 20% goal unless coupled with strong incentives for water agencies to widely implement the many water conservation projects upon which success depends. ACWA looks forward to working with DWR and other stakeholders to assure that existing funding is leveraged, new funding is used effectively, and regulatory streamlining is put in place to ensure that California meets its water conservation goals.

We look forward to working with you through the DWR Urban Conservation Stakeholder Advisory Committee process to ensure that the ACWA proposal gets full evaluation and complete consideration as DWR works to develop a viable Option 4.

Sincerely,

Timothy H. Quinn
Executive Director

Association of California Water Agencies

Whitepaper on "Option 4": Proposal for Implementation of Water Conservation Requirements in SBX 7-7 April 19, 2010

Executive Summary

The Association of California Water Agencies (ACWA) and its members have supported and implemented a variety of water conservation measures over the past twenty years. The implementation of SBX7-7, enacted in November 2009, will require water agencies throughout California to continue and increase that commitment to water conservation over the next ten years to achieve the state's goal of a 20% reduction in water use, measured in gallons per capita per day (gpcd).

The legislation requires that urban retail water suppliers must calculate their respective demand reduction targets by one of four methods: a 20% reduction in baseline gpcd water use, achieving set performance standards, achieving 95% of the applicable state hydrologic region target, or through a method to be identified and developed by DWR. This fourth option is to take into account: climatic and population density differences, provide flexibility to communities and regions, plant water needs, and different levels of CII water use.

The ACWA Option 4 proposal includes two elements:

- A procedure through which a water supplier can establish a target for water conservation that will require the agency to contribute its fair share of the statewide 20% reduction; and
- Acknowledgement that code enforcement/water metering, urban use of recycled water, and active water conservation should all be considered in demonstrating compliance with the 20% Option 4 reduction target.

To establish a target, Option 4 takes as its foundation that water use in any two water systems can be compared on a water use efficiency basis. It is recommended that DWR establish landscape water use in agencies that could use Option 3 as a reference standard. Other urban retail suppliers could then determine their local water conservation target by comparing landscape water use in their service areas to the reference standard.

Calculations to account for variances in climate, plant water needs and population density from the reference standard can be performed to establish adjusted landscape efficiency targets. The indoor residential target will be 95% of reference area current indoor use. Finally, Commercial Industrial Institutional use would be set at a 10% reduction until the recommendations of the DWR/CUWCC Taskforce provide more appropriate direction.

Compliance with the 20% Option 4 conservation target will not be the only driver for water conservation over the next decade. The 2009 State Water Plan has identified four strategies that must be considered, since all will play a role in assuring compliance with the 20% target: code enforcement/water metering, urban water recycling, locally cost effective active conservation, and grant funded active conservation. Finally, there are examples of California water agencies aggressively implementing all five of the current CUWCC Best Management Practices for water conservation. These should be considered as potential tools that will assure meeting the 20% goal.

Association of California Water Agencies

Whitepaper on "Option 4": Proposal for Implementation of Water Conservation Requirements in SBX 7-7 April 19, 2010

Introduction

This whitepaper describes a proposal by the Association of California Water Agencies (ACWA) for consideration by the Department of Water Resources (DWR) in implementing the so-called "Option 4" for water conservation as enacted in SBX7-7 (Water Code section 10608.20(b)(4)).[1] This proposal is intended to achieve three goals that are implicit in the statutory language: (i) ensuring that urban retail water suppliers that do not choose one of the other three "option paths to compliance" with the Governor's 20x2020 contribute their fair share towards a 20% reduction in statewide per capita urban water use by 2020, (ii) providing those urban retail water suppliers with flexibility to adopt water conservation plans that are tailored to the unique circumstances of each water district service area, and (iii) encouraging regional cooperation to maximize regional and statewide benefits and reduce the costs of implementing conservation measures.

Background

California Urban Water Conservation Council

The State Water Resources Control Board (SWRCB) placed increased emphasis on urban water conservation during the 1980's. During that same period, it became apparent that a formal process was needed to identify good urban water use efficiency and conservation practices as well as track progress in implementation of those practices. Urban conservation in the state took a major step in 1991 when the California Urban Water Conservation Council (CUWCC) was created, as urban water agencies, environmental interests, and the business community came together to sign the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU). Key to the MOU is a set of Best Management Practices (BMPs) for water conservation. The BMPs are measures that are the most effective water conservation measures currently available. Each BMP is regularly reviewed for effectiveness and updated as needed. Additionally, as new technologies or practices become available, they are considered for inclusion in the list of BMPs as well. The most recent review and revision of the BMPs took place in December 2008. During this process, the BMPs were categorized as either Foundational or Programmatic. The Foundational BMPs include Utility Operations, and Education and Public

[1] Further references to the Water Code sections adopted by SBX7 7 will be to their code section number, so "10608.20" would be a reference to Water Code section 10608.20.

Information, and are those activities that a water supplier carries out as a matter of its regular course of business. The Programmatic BMPs address the Residential; Commercial, Industrial, Institutional (CII); and Landscape water conservation sectors. A key component of the revised Programmatic BMPs is a "flex list" of measures to achieve implementation savings goals. This flex list concept allows water agencies more latitude in designing conservation programs best suited to their geographic and demographic circumstances. Finally, every two years (the reporting period required by the MOU), the CUWCC provides a report to the SWRCB that summarizes BMP implementation reports received from the MOU signatories.

The Governor's Call for Urban Water Conservation

A confluence of significant events has impacted California's water supplies and increased the focus on water use efficiency and conservation, including:

- severe declines of key fish populations in the Sacramento-San Joaquin Delta,
- resulting legal and regulatory actions that have reduced the withdrawal of water from the Delta for use in southern California, the southern Bay Area and the San Joaquin Valley,
- increased awareness that climate change may result in changes in Sierra and Colorado River system snowpack, river flows, and in sea level worldwide,
- drought from 2006 through 2009, which has resulted in a deficit in precipitation in the northern and central Sierra, where much of California's water supply originates.

In light of these circumstances, on February 29, 2008, the Governor sent a letter to the Legislature that called for a statewide 20% reduction in per capita water use by 2020. Water conservation alone will not solve all of California's many water supply challenges, but most agree with the Governor that urban water conservation has an important role to play in future water management strategies.

SBX7-7

Enacted in November 2009 and effective as of January 1, 2010, SBX7-7 establishes the State's intent to achieve a 20% reduction in statewide urban per capita water use by 2020. It also contains new requirements for agricultural water suppliers.

The urban sector requirements of the bill apply mainly to urban retail water suppliers. Urban retail water suppliers must determine their "base daily per capita water use" and report it in their 2010 UWMPs by July 1, 2011 (this time extension is granted by the bill). They must utilize one of three methods identified in the bill:

- Average gross water use over a continuous 10-year period ending no earlier than Dec 31, 2004 and no later than Dec 31, 2010 (definition of gross water use is included in the bill).

- For retailers with at least 10% of 2008 demand served by recycled water (provided by either retailers or wholesalers), this calculation may be extended to include an additional five years ending no earlier than Dec 31, 2004 and no later than Dec 31, 2010.

- For those retailers that are already close to their gpcd reduction targets (no more than 5% reduction), the estimate of average gross water use reported in gpcd and calculated over a continuous five-year period ending no earlier than Dec 31, 2007 and no later than Dec 31, 2010.

Urban retail water suppliers must also calculate their respective demand reduction targets by utilizing one of four methods identified in the bill:

1. 80% of baseline gpcd water use (i.e., a 20% reduction) (referred to herein as Option 1).

2. The sum of the following performance standards: indoor residential use (provisional standard set at 55 gpcd); plus landscape use equivalent to the State Model Landscape Ordinance (70% of ETo); plus 10% reduction in baseline CII use by 2020 (referred to herein as Option 2).

3. 95% of the applicable state hydrologic region target as set in the Draft 20x2020 Water Conservation Plan (April 03, 2009) (referred to herein as Option 3). For those urban retail water suppliers already meeting the applicable hydrologic region target this represents a 5% reduction.

4. A method to be identified and developed by DWR through a public process and reported to the Legislature by Dec 31, 2010, to achieve a cumulative statewide 20% reduction. An agency is not bound to use this new method if it results in a target that is higher than 20% for that agency**.** It is this methodology that is the subject of this white paper (referred to herein as Option 4).

Option 4 must take into account climatic differences and population density differences within the state, provide flexibility to communities and regions, consider different levels of per capita water use according to plant water needs in different regions, consider different levels of CII water use in different regions, and avoid placing an "undue hardship" on communities that "have implemented conservation measures or taken actions to keep per capita use low."

Through a concurrent public process, and in consultation with the CUWCC, DWR also must develop technical methodologies and criteria for the "consistent implementation" of all four paths to targeted reductions, such as methodologies for calculating daily per capita water use, baseline CII water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use and landscaped area water use (10608.20(h)(1).) ***Urban***

retail water suppliers are required to use these methods once they are developed (10608.20(h)(2)). Urban retail water suppliers must meet their interim gpcd targets, which are equal to one-half of the reduction to meet the target, by Dec 31, 2015 and their final targets by Dec 31, 2020 (10608.24(a)-(b)).

Wholesalers must comply with other requirements established by SBX7-7. They must provide in their UWMPs "an assessment of…present and proposed future measures, programs and policies to help achieve the water use reductions required…" (10608.36). Wholesalers may participate as part of a regional compliance effort (10608.28).

Retail suppliers may comply individually, or as a regional group by mutual agreement of the participating entities (10608.28). Regional compliance may be through a wholesaler and its retail member agencies, regional water management group, integrated regional water management plan funding area, hydrologic region or other appropriate geographic scale approved by DWR (10608.28). This approach is not mandatory, but is an option that agencies can choose (10608.28). Should a regional water management group decide to take on planning and reporting for retail agencies, all data and reports must include information for both the regional water management group and for each consenting retailer and urban wholesaler supplier separately (10608.28(b)).

Proposal

ACWA believes that Option 4 should include two elements.

- First, Option 4 should describe the procedure through which a water agency can establish a target for water conservation within its service area represented as gpcd in 2020. The target will require that agency to contribute its "fair share" to accomplishing California's goal of reducing urban water use 20% per capita statewide by 2020 and will also take into account the agency's unique circumstances as required by SBX7-7 (10608.20(b)(4)).

- Second, to demonstrate compliance with the Option 4 20% reduction target, code enforcement/water metering, urban use of recycled water, and active water conservation should all be considered.

Establishing Target

SBX7-7's first three conservation options rely on generalized statewide standards. Option 1 requires a flat 20% reduction in a retailer's water use. Option 2 is a formula using standardized criteria that are not subject to modification (55 gpcd indoors, 70% of reference evapotranspiration outdoors, and a 10% reduction in the CII sector). Option 3 uses regional gpcd targets established in the draft DWR 20x2020 Water Conservation Plan, which relied on statewide weighted averages of water use, but without consideration for differences in land use density, and minimal consideration of climatic differences, and then requires a further 5% water-

use reduction. Option 1 represents a conservation target, in that 20% must be achieved, whereas Options 2 identifies a level of efficiency that must be reached, regardless of an agency's baseline. Option 3 is a hybrid, requiring a 5% reduction if the regional efficiency target can be reached, again regardless of the baseline starting point.

Option 4 requires DWR to develop gpcd targets that specifically recognize local variations in factors beyond water agencies' control – including climate and land use density – that will significantly affect local per capita landscape water use. Indoor water use and CII water use targets are mostly unaffected by climate and land use density and under Option 4, and would be handled in a manner that is consistent with the other options.

Under all four options once an urban water retail water supplier has established a target, it can achieve that target through conservation in any combination of the outdoor residential, indoor residential, or CII sectors.

Proposed Methodology

Option 4 takes as its foundation that water use in any two water systems can be compared on a water use efficiency basis. By separating CII and indoor water use from landscape water use we can recognize the inherent variations in CII use between communities, develop fair standards for indoor use for everyone, and make valid comparisons of landscape water use by taking into account the differences in the amount of landscaped area per capita and reference ETo rates.

Option 4 recommends that DWR establish a reference standard for landscape water use (in gpcd) by taking a weighted average of landscape water use, amount of landscaped area per capita and reference ETo rates for all of the agencies that currently meet the targets in the 20x2020 Water Conservation Plan (Draft), and would thereby qualify for a 5% reduction under Option 3.

Option 4 then provides for an urban retail supplier determining its local water conservation target (in gpcd) by comparing landscape water use to the reference standard. This approach effectively represents a comparable level of water efficiency as agencies qualifying for Option 3. This methodology directly takes into account climactic variations, , population density and plant water needs as identified by the Legislature. Past conservation efforts are incorporated implicitly, by comparing to the highly efficient areas qualifying for option 3. This methodology treats the three components of urban water use (CII, indoor residential, and outdoor residential) as conceptually distinct, but retains the Legislature's fundamental requirement that water use efficiency as a whole should be viewed through the lens of gpcd. The methodology provides for the wide variability of CII use by separating out CII, treating it consistently with other parts of the legislation, and recognizing the future work of the CII task force.The calculations below for the CII, indoor, and landscape components are for the purpose of determining an overall conservation target (in gpcd), but do not imply specific requirements for each water use sector nor which sector a supplier will focus on to meet its target.

Preliminary Calculations

Determine agency's gross water use as defined in the Water Code 10608.12(g).

1. Determine CII annual water uses by means of meters/accounts and deduct CII water use from gross water use. Convert to gallons and divide the CII use by 365 (days) and the population to convert to gpcd.

2. Solely for the purpose of determining supplier's ***existing*** indoor residential water use, calculate (in gpcd) indoor use using the method that is most technically reasonable for the suppplier:

    a. 70 gpcd[2]

    b. Average January or February daily water deliveries in gallons, divided by population.

    c. Available data from dedicated indoor/landscape meters.

    Note: This proposal uses these methods of determining indoor water use only for determining existing use in order to allow suppliers to determine their outdoor use. As discussed below, this proposal uses other methods for determining the indoor use component of the supplier's 2020 water-use target.

3. Calculate outdoor landscape water use in gpcd as the remainder when CII and indoor use are subtracted from gross water use.

Reference Area

The Reference Area is defined as a consolidated representation of those urban retail suppliers that qualify for Option 3 by currently meeting the regional hydrologic targets in DWR's draft 20x2020 Water Conservation Plan or by qualifying for the 100 gpcd exemption. Using this Reference Area allows a supplier to compare its water use efficiency with the water use efficiency of the agencies that the Legislature recognized as being highly efficient due to past conservation efforts.

4. DWR will calculate (using the same methodology as above) the gpcd in the Reference Area for CII uses, indoor residential water use and landscape water use.

[2] Residential End Uses of Water. Water Research Foundation (1999). Peter Mayer, et al., Project #241A. Order Number: 90781.

5. DWR will calculate the population-weighted evapotranspiration for the Reference Area based on its ETo map.

6. DWR will calculate the population-weighted landscape area for the Reference Area in square feet per capita.

Calculating the Urban Retail Water Supplier's Target gpcd

7. Calculate the landscape component of the water use target (in gpcd) by applying the following adjustments:

    a. To adjust for climate and plant water needs, multiply the Reference Area landscape water use estimate (in gpcd) by the ratio of your agency's ETo to the Reference Area ETo (in inches).

    b. Landscape area is inversely related to population density. To adjust the calculation for population density, or more accurately, differences in landscape area per capita, an estimate for a net landscape area must be determined. Landscape area can be determined through aerial photos, planning agency data, on-site surveys, or other methods. Multiply the result of calculation 7(a) above by a factor that is the ratio of your agency's landscape area in square feet per capita divided by the Reference Area's landscape area in square feet per capita. (Again, DWR will calculate the landscape area for the Reference Area.)

    c. Multiply the result of 7a and 7b by 0.95 to reflect the 5% reduction required on the part of agencies using Option 3. The result is landscape water use component of the supplier's conservation target (in gpcd).

8. Calculate the indoor residential water use component of the target by multiplying indoor use in the Reference Area by 0.95.

9. The CII component of the supplier's target will be calculated as follows:

    a. Multiply the CII portion of your gross water use (from Step 1)by 0.90 (a 10% reduction). This 10% reduction is consistent with the CII reduction in Option 2. In accordance with the CUWCC's BMP 4, credit for prior activities may be claimed for up to 50% of the reduction.

    b. After the DWR and CUWCC CII task force has submitted its report to the Legislature by April 1, 2012 under SBX7-7 (10608.43), the report recommendations shall be considered in updating the urban water supplier's targets.

10. Calculate your Option 4 gpcd target by adding the three components above: your landscape water use component, your indoor residential water use component, and your CII components.

In short, this option is crafted to ensure that – allowing for statutorily-permissible factors such as population density and climate – agencies choosing Option 4 achieve at minimum an equivalent level of water use efficiency as the collective population-weighted average of those agencies recognized by the Legislature as being highly efficient, which would qualify under Option 3.

Achieving a 20% Reduction in Urban Per Capita Water Use

As noted above, SBX7-7 is intended to implement the Governor's call for a 20% statewide reduction in per capita urban water use by 2020. The Department of Water Resources, the Natural Resources Defense Council and ACWA all agree that the appropriate test is whether Option 4 – if it were implemented by all urban water agencies in California – would result in a 20% statewide reduction in per capita water use by 2020.

The best available data – specifically data available in the Department's most recent California Water Plan – indicates that the implementation of conservation measures under the Urban Water Management Plan Act and other laws should achieve a 20% reduction in per capita water use by 2020.

However, compliance with the conservation target, regardless of which option a supplier selects, will not be the only driver for water conservation over the next decade. For a variety of reasons, water supplier efforts may exceed those identified in their 2010 UWMPs.

The Department of Water Resources estimates, in the 2009 California Water Plan Update, that the following water conservation programs will be implemented by 2030. To demonstrate how those savings ratios might be applied to the 20% statewide reduction, proportional savings to 2020 are use below.

1. Code enforcement/water metering. Under existing law, nearly urban water suppliers in California will be required to begin metering water deliveries and charging based on volumetric rates by 2020. Also under existing law, new construction will be required to meet a standard of 20% reduction in water use beginning in 2011. The Department estimates that these two programs will combine over the next decade to reduce urban water use by a total of 769,000 acre-feet annually (afy).

2. Use of recycled water. In 2009, the State Water Resources Control Board adopted an aggressive new policy to encourage the use of recycled water in California. The Department of Water Resources estimates that there may be as

much as 700,000 to 850,000 afy of additional recycled water use by 2020; the State Water Resources Control Board's policy calls for a minimum of an additional 200,000 afy by 2020.

3. Active conservation. Due to climate change and decreased water supplies, many urban water agencies, particularly in Southern California, are turning to conservation as a cost-effective means to improve water supply reliability. Simply put, conservation will be the most reliable and cost-effective source of new water for many agencies. The Department of Water Resources estimates that the average cost of water conserved is approximately $227/af and that, by 2020, California urban water agencies will conserve an additional 773,000 afy. Further, the implementation of Proposition 84 will provide hundreds of millions in grants over the next decade that may be used for water conservation measures (and other water management strategies, including recycling) that are not locally cost-effective. The Department of Water Resources estimates that these grant funds will result in an additional 224,000 afy of conserved or recycled water.

Combining these measures would result in just under 2 million acre-feet of new water supplies from conservation over the next ten years. Using the Department of Finance's estimate that California will have approximately 44.13 million people in urban areas in 2020, these programs would result in a net reduction in water use of 39 gpcd (or more), which is approximately equal to 20% of the current 192 gpcd. Thus, current programs for water conservation can – at the statewide level – result in meeting the Governor's goal of a 20% statewide reduction in per capita urban water use by 2020.

The question for Option 4, therefore, is whether it will require urban retail water agencies to implement each of these programs (while, at the same time, requiring the establishment and attainment of hard targets).

a. Option 4 is consistent with the implementation of code enforcement efforts because those efforts are driven by other provisions of state law and nothing in Option 4 would undercut those efforts. Indeed, by establishing an indoor residential target at 95% of current use in the Reference Areas, Option 4 may well encourage retrofits over and above those required by CALGREEN (which requires a 20% reduction in interior water use in all new construction.) Moreover, because implementation of these measures is largely within the control of cities and counties that have direct incentives (e.g., compliance with the California Building Code) to implement the law aggressively and so create local construction jobs, it seems likely that water agencies will meet the Department of Water Resources' estimates and that Option 4 will enhance those efforts.

b. Option 4 also provides a very substantial incentive to the implementation of recycled water programs because, under SB 7X 7, the use of recycled water does not count in determining an agency's water use. Thus, the substitution of recycled water for outdoor irrigation with potable water would be a way for an urban retail water agency to meet its ratepayers' desire for outdoor landscaping while still reducing per capita water use. In these ways, Option 4 will allow urban retail water agencies to reduce outdoor residential water use and to reduce outdoor CII use (e.g., public parks and playgrounds, soccer fields, commercial landscaping, and the like). Given the Department's relatively minimal goal of 200,000 afy (the Orange County Water District GWRS plant, by itself, accounts for about 70,000 afy), it seems likely that these incentives could result in substantial conservation over and above the levels anticipated by the Department of Water Resources.

c. Option 4 is also consistent with the implementation of water conservation measures as a way to improve water supply reliability; many agencies have adopted this strategy over the past decade and many more are likely to do so with the advance of climate change. For all of these reasons, Option 4 is not only consistent with the implementation of efforts that the Department of Water Resources' analysis suggest are needed to meet the SB 7X 7 mandate; Option 4 reinforces the incentives that agencies have to implement these measures vigorously.

Of course, due to the recent enactment of the law, there is presently substantial uncertainty about how individual agencies will, collectively, satisfy the mandate that they implement water conservation measures that are sufficient to meet the statewide goal of a 20% reduction in urban per capita demand by 2020. The first "official" indication of each urban retail water agency's conservation target will come with submission of the 2011 urban water management plans (in which each agency will formally identify which of the four conservation compliance options it will be using and its specific water savings target). After the conservation information from the 2011 plans is aggregated by DWR, DWR and stakeholders can then update the projected aggregate total.

It should be noted that an additional uncertain element would provide great opportunity to assist in moving the state toward the 20 percent by 2020 urban goal (or possibly beyond 20 percent): passage of the November 2010 water bond. With $250 million identified for conservation, $1 billion for recycled water and much more in the way of funding for other programs where grants can be used for conservation (such as the IRWM program), the bond could be tremendously effective in ensuring that the goal is reached. Needless to say, ACWA strongly supports the passage of the bond.

The best available data from the Department's most recent California Water Plan demonstrates that local agencies' implementation of key measures should reduce per capita use by 20% statewide in the same manner contemplated by SB 7. ACWA's proposed Option 4 approach will increase the likelihood of that result by adding an additional conservation requirement to those on which the Department based its projection. Specifically, ACWA's proposed Option 4 approach would require all agencies that select that approach to achieve the same level of water use efficiency achieved by agencies that the Legislature identified as exemplary in enacting Option 3. This requirement would require agencies that select ACWA's proposed Option 4 approach to achieve greater conservation than the Department has estimated that they will achieve due to other factors. Because ACWA's proposed Option 4 approach – if implemented by all agencies – effectively would require more conservation than the level of conservation that the Department assumed in the Water Plan, and because the Water Plan estimates that the state will achieve a 20% reduction in water use by 2020, ACWA's proposal satisfies SB 7's requirements for Option 4, while also incorporating SB 7's requirements for local flexibility.

Tools for Water Conservation

Urban retail water suppliers will require tools to reduce their water uses under Option 4. CUWCC has identified useful water conservation tools in, among other places, its two Foundational BMP categories, including Utilities Operations and Education Programs.

The implementation of the three Programmatic BMP sectors is where the flexibility of Option 4 will be most beneficial to water agencies. A 2008 California Urban Water Agencies (CUWA) study of its member agencies provides some excellent examples of Programmatic BMP programs designed to best meet the needs of the diverse service areas across California and encourage regional cooperation. Each of these programs, or tools, considered population and climate condition variables to develop effective programs reflective of needs of the community served. Below are some select examples of programs included in the study. While these programs were specifically designed for unique circumstances, they are exactly the types of programs and measures that are included in the attached Appendix A, CUWCC Flex List, and which should be encouraged through the Option 4 process.

Regional Water Authority – The City of Sacramento and 21 other water agencies in the Sacramento metropolitan area work cooperatively to conserve water and obtain grant funding for water conservation programs. Notable programs that have achieved water efficiency on a regional scale include public outreach, school education, residential and commercial rebate programs and landscape programs.

Geographic Information Systems Tools – Alameda County Water District uses GIS to link irrigation meters to parcels for customers with dedicated landscape accounts, including city parks. Parcels are digitized to determine landscaped area measurements and then these accounts are added to the district's water budget program. Water budget reports are sent to customers and

their landscape contractors three times per year. District customers with a dedicated landscape water meter who remain within their water budget for the previous year are recognized. Participants and their landscape contractors receive an award certificate and their business name and landscape contractor are placed on a list that is published in the local newspaper one Sunday in May during Water Awareness Month.

Commercial Landscape Survey Program – The City of San Diego Commercial Landscape Survey Program is provided free of charge to CII customers with more than one acre of landscaped property in the city. Qualifying properties receive an audit of the irrigation system, practical advice, water-saving recommendations, a water-use budget, a written evaluation of the irrigation system's performance, aerial photos of the property, a water-use estimate for the upcoming year, and an irrigation controller schedule for each month. In fiscal year 2008, 135 water budgets were produced with new water savings of 75,802 gallons per day with most properties reporting water savings between 20 and 40 percent.

Regional CII Program - By combining all of their member agency CII programs into one large regional program more than seven years ago, Metropolitan Water District designed one of the most comprehensive CII programs in the nation. Last year alone, the program expanded from 18,000 devices rebated to more than 43,000 devices rebated. Over 110,000 devices have been rebated since the regional program started. The regional design also allows Metropolitan and its member agencies to partner with the energy utilities such as Southern California Edison and Sempra rebates for commercial clothes washers, food steamers and other technologies.

High-Efficiency Clothes Washer Programs – East Bay Municipal Utility District (East Bay MUD) led the effort among CUWA members to obtain grant funding for a high-efficiency clothes washer program. CUWA members have partnered with Pacific Gas and Electric Company to provide rebates for the purchase of high-efficiency clothes washers. This innovative program is offered to more than 100 Bay Area communities and allows customers to complete a single rebate application for both a water and energy rebate. CUWA members participating in the program include Alameda County Water District, Contra Costa Water District, East Bay MUD, Santa Clara Valley Water District, San Francisco PUC, and Zone 7 Water Agency. San Diego County Water Authority started its high-efficiency clothes washer incentive program in 1994 and provided financial incentives that resulted in the installation of nearly 80,000 high-efficiency clothes washers. Through joint funding and marketing with San Diego Gas and Electric, in fiscal year 2008 alone, the program was responsible for the replacement of over 17,000 inefficient clothes washers with high-efficiency clothes washers. Metropolitan Water District of Southern California (Metropolitan) has provided rebates for high-efficiency clothes washers since 1995, and the City of Sacramento (Sacramento) has provided rebates to residential customers since 2004.

Appendix A
CUWCC Flex Track Menus
(From the CUWCC Website)

2008 Flex Track Menus

In addition to the measures on the BMP List, the Flex Track menu options may be implemented to meet the savings goal for this BMP. Agencies choosing the Flex Track option are responsible for achieving water savings greater than or equal to that which they would have achieved using only the BMP list items. The Flex Track Menu will be maintained and regularly updated in the MOU Compliance Policies. Three Flex Track Menus are found below for the Residential, CII, and Landscape BMPs. These were developed by the BMP Revision Committees in 2008, and will be updated from time-time by the Research and Evaluation Committee. These will be maintained in the CUWCC MOU Compliance Policy and BMP Guidebooks.

Residential Flex Track Menu

1) High bill contact with single-family and multi-family customers.

2) Educate residential customers about the behavioral aspects of water conservation.

3) Notify residential customers of leaks on the customer's side of the meter.

4) Provide bill or surcharge refunds for customers to repair leaks on the customer's side of the meter.

5) Provide unique water saving fixtures that are not included in the BMP list above.

6) Install residence water use monitors.

7) Participate in programs that provide residences with school water conservation kits.

8) Implement an automatic meter reading program for residential customers.

9) Refer to the landscape BMP for the Flex Track menu of landscape measures.

Any other programs that the signatory may implement for residential users that result in documented water savings.

Commercial, Industrial and Institutional Flex Track Menu

1) Industrial Process Water Use Reduction

    a) Recycling

    b) Deionization

2) Commercial Laundry Retrofits

3) Industrial Laundry Retrofits

4) Filter Upgrades

5) Car Wash Reclamation Systems

6) Wet Cleaning

7) Water Audits

8) Clean In Place (CIP) Technology

9) Waterless Wok

10) Alternative On-site Water Sources

a) Cooling Condensate

b) Foundation Drain Water

c) Gray Water

d) Storm Water

e) Rain Water

f) Pond and Water Feature Recycling

11) Submetering

12) Pool Covers

13) High Efficiency Showerheads

14) Faucet Flow Restrictions

15) Water Efficient Dishwashers

16) Hot Water on Demand

17) Pre-rinse Spray Valves of 1.2 gpm (gallons per minute) or less

18) Central Flush Systems

19) Other Measures chosen by the Agency

Landscape Flex Track Menu

	Measure*	Documentation
1.	**Monitor and report on landscape water use**	
1a.	Measure landscapes and develop water budgets for customers with dedicated landscape meters. Provide timely water use reports with comparisons of water use to budget (through bills, electronically, by mail or other means) that provide customers the information they need to adjust irrigation schedules.	# number of sites with dedicated meters, number of sites with landscape measurements and water budgets, number of sites to be measured and provided water budgets each of the next 10 years, estimated water savings
1b.	Measure landscapes and develop water budgets for customers with mixed meters. Provide timely water use reports with comparisons of water use to budget (through bills, electronically, by mail or other means) that provide customers the information they need to adjust irrigation schedules.	# number of sites with mixed meters, number of sites with landscape measurements and water budgets, number of sites to be measured and provided water budgets each of the next 10 years, estimated water savings
1c.	Establish agency-wide water budget.	# water budget, amount of water used (AF/acre)
1d.	Establish agency-wide, sector-based irrigation goal to reduce water use, based on seasonality.	# minimum irrigation goal (AF/acre compared seasonally)
2.	**Provide technical landscape resources and training**	
2a.	Upon customer requests, provide landscape irrigation management and landscape design information and resources: provide assistance, answer customer questions, respond to run-off and high-bill calls.	# number of contacts: calls in person, over the phone, or via e-mail, estimated water savings
2b.	Perform landscape & irrigation audits: including irrigation scheduling, plant information, and landscape area measurement.	# number of audits conducted per year, measurement of square footage of turf, non-turf areas, estimated water savings
2c.	Sponsor, co-sponsor, promote, or support landscape workshops, training, presentations and other technical educational events for homeowners and professionals: design, installation, maintenance, water management (gardeners, contractors, landscape architects/designers, irrigation specialists,	# number of events, number of participants, list title or type of events

	irrigation equipment manufacturers and distributors, nurseries, retailers, homeowners associations, property managers, etc.).	
2d.	Establish time-of-day irrigation restrictions.	Y/N describe restrictions
3.	**Provide incentives**	
3a.	Establish landscape budget-based rates.	Y/N describe rates
3b.	Provide incentives for conversions from mixed-use meters to dedicated landscape meters.	# number of conversions, estimated water savings
3c.	Provide incentives for installing sub-meters to separate landscape water use.	# number of sub-meters installed, estimated water savings
3d.	Provide incentives for irrigation equipment upgrades that improve distribution uniformity, irrigation efficiency, or scheduling capabilities (i.e. controllers, emitters, soil moisture sensors, pressure regulators, rain shut off devices, etc.).	# number of devices/systems installed, estimated water savings
3e.	Provide incentives for the reduction of water use over an irrigated area, or reduction in the size of the irrigated area due to replacement of turf or other high water-using plants with low water-using plants, artificial turf, or permeable surfaces.	# acreage of turf replaced, reduced acreage of irrigated landscape, estimated water savings
3f.	Provide incentives for conversions from potable to recycled water.	# number of conversions, number of incentives, funds invested, estimated water savings
3g.	Provide incentives for the use of alternative sources of water in the landscape (i.e. graywater, rainwater, cisterns, etc.).	# number of conversions, number of incentives, funds invested, estimated water savings
4.	**Participate in local and regional planning and regulatory activities**	
4a.	Collaborate with planning agencies at the local and regional level, other water suppliers in the area and stakeholders in response to state or federal requirements such as the State Model Water Efficient Landscape Ordinance and AB 1881. Participate in the development, review, implementation, and enforcement of requirements for new developments. Provide water use data to planning agencies.	Y/N, describe involvement
4b.	Establish or participate in a water conservation advisory committee or other community outreach effort to drive market transformation and exchange information about landscape water conservation with developers, community-based organizations, homeowners associations, residential customers, landscape professionals, educators, other water suppliers	Y/N, describe involvement

	in region.	
4c.	Participate in regional efforts: integrated water resource management, watershed management, NPDES permit agencies, etc.	Y/N, describe involvement
5.	**Develop a holistic approach to landscape water use efficiency**	
5a.	Develop and implement a comprehensive landscape water conservation program for all customers. Target marketing efforts to those most likely to result in benefits to both customer and Agency.	
6.	**Other Measures**	