State of California
California Natural Resources Agency
Department of Water Resources

Status of Adoption of Water Efficient Landscape Ordinances, Pursuant to AB 1881 Section 65597

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Executive Summary

This report is submitted to the Legislature pursuant to the requirements of the Assembly Bill (AB) 1881, the Water Conservation in Landscaping Act of 2006 (Laird). This act requires, among other actions, that the California Department of Water Resources (DWR) report to the Legislature on the status of water efficient landscape ordinances adopted by local agencies.

DWR mailed a notice of compliance to 586 local agencies shortly after the adoption of the Updated Model Water Efficient Landscape Ordinance. DWR received a total of 338 responses from local agencies (cities and counties) and water purveyors. Two hundred ninety-eight out of 456 cities responded to the ordinance through email or mail, yielding a sixty-five percent (65%) response. Thirty-four out of 58 counties responded through email or mail, yielding a fifty nine percent (59%) response from the counties. One joint powers authority responded as a local land use authority. Five water purveyors reported that they had adopted voluntary landscape ordinances. (See appendix for details)

The results of a survey conducted by DWR on the compliance with AB 325 in July 2008, and the Western Policy Research 2001 study, show that local agencies had a lack of knowledge about the ordinance, and had a lack of effort to inspect landscapes and monitor water use. Based on the responses that were received, it appears that local agencies are more knowledgeable about landscape water use efficiency than they were prior to AB 1881. The Western Policy Report 2001 shows that local ordinances and guidelines were often less stringent than the AB 325 Model Ordinance. Several of the local agencies now have aimed higher to make their local ordinance more stringent than the Model Ordinance. Local agencies are taking greater responsibilities to monitor landscape water use and water waste than previously.

Introduction

The *California Water Plan Update 2009* states, “California is facing one of the most significant water crises in its history—one that is hitting hard because it has many aspects and consequences. Reduced water supplies and a growing population are worsening the effects of a multi-year drought. Climate change is reducing our snowpack storage and increasing the frequency and intensity of floods. Court decisions and new regulations have resulted in the reduction of water deliveries from the Delta by about 20 to 30 percent. Key fish species continue to decline. In some areas of the state, our ecosystems and quality of underground and surface waters are unhealthy. The current global financial crisis will make it even more difficult to invest in solutions. We must act now to provide integrated, reliable, sustainable, and secure water resources and management systems for our health, economy, and ecosystems.”

The DWR estimates that the population will grow to 45 million by the year 2020. With an increasing population, climate change, and a multi-year drought, the state must take action to promote water efficiency to preserve our limited water supply. Landscape irrigation uses a significant amount of water. DWR's estimate of residential water use for 2005 is 5.9 million acre feet (MAF), of which an estimated 3.2 MAF (or 54 percent) is outdoor water use. There is considerable potential for water savings through irrigation system improvements and behavioral change. Substantial amounts of water can be saved using existing technology and management techniques and further innovation in irrigation equipment design and management methods present an important opportunity to conserve and maintain the state's water supply. Proper system design, correct installation and consistent maintenance of efficient irrigation systems combined with the selection of climate appropriate and water efficient plants are the key components of landscape water use efficiency. With these goals in mind, DWR's updated Model Water Efficient Landscape Ordinance aims to promote water conservation, prevent water waste and protect water quality.

Legislative Background

AB 325 Water Conservation in Landscape Act 1990 (Clute)

The Water Conservation in Landscaping Act, (Assembly Bill 325, Clute) was signed into law on September 29, 1990. The 1990 Statute directed DWR to convene an advisory task force to develop and adopt a Model Ordinance by January 1, 1992. The premise was that landscape design, installation, and maintenance can and should be water efficient. Some of the provisions specified in the statute included plant selection and groupings of plants based on water needs and climatic, geological or topographical conditions, efficient irrigation systems, practices that foster long term water conservation and routine repair and maintenance of irrigation systems. DWR convened a task force, developed and adopted the Model Ordinance in June of 1992. One element of the Model Ordinance adopted by DWR was a landscape water budget. In the water budget approach, a Maximum Applied Water Allowance (MAWA) was established based on the landscape area and the climate where the landscape is located.
AB 325 required that, if by January 1, 1993 a local agency has not adopted a water efficient landscape ordinance or has not adopted findings based on climate, geological or topographical conditions, or water availability, which state that a water efficient landscape ordinance is unnecessary, the Model Ordinance adopted by DWR shall take effect and shall be enforced by the local agency and has the same force and effect as if adopted by the local agency. The local agencies who adopt an ordinance after adoption of the Model Ordinance, shall consider the provisions of the Model Ordinance.

AB 2717 California Urban Water Conservation Council: Stakeholders Taskforce 2004 (Laird)

Assembly Bill 2717 requested that the California Urban Water Conservation Council (CUWCC) to convene a stakeholders Task Force , consisting of private and public agencies and landscape industry leaders, to evaluate and recommend proposals for improving California's water use efficiency in new and existing urban irrigated landscapes.

The bill requested that the stakeholder Task Force report its recommendations to the Governor and the Legislature by December 31, 2005. In the report, Water Smart Landscapes for California the stakeholder Task Force adopted a set of 43 recommendations. Many of the recommendations suggested updating the State Model Ordinance pursuant to AB 325.

AB 1881 Water Conservation 2006 (Laird)

By regulation, AB 1881 requires DWR to update the Model Ordinance in accordance with specified requirements, reflecting many of the recommendations of the Landscape Task Force as documented in the report Water Smart Landscapes for California. Local agencies, not later than January 1, 2010, are required to adopt the updated Model Ordinance or, a local landscape ordinance that is at least as effective in conserving water as the updated model ordinance. If the local agency has not adopted the updated Model Ordinance, or a local ordinance, the updated Model Ordinance will be applicable within the jurisdiction of the local agency, including charter cities and charter counties. The bill requires each local agency to notify DWR by January 31, 2010 of their intent of adopting DWR's Model Ordinance, or if not, submit a copy of their adopted water efficient landscape ordinance and include findings and evidence in the record that the local ordinance is at least as effective as the state Model Ordinance.

This bill directed DWR to submit a report to the Legislature relating to the status of water efficient landscape ordinances adopted by local agencies. DWR has kept a comprehensive and an on-going record of responses from local agencies. The following sections of this report responds to the Legislature's requirement of DWR.

Response to the State Model Water Efficient Landscape Ordinance

Public Outreach

On September 10, 2010, DWR adopted the approved Model Water Efficient Landscape Ordinance. Shortly after adoption, DWR mailed a copy of the Model Ordinance to 586 addresses including all city and county land use planning

agencies in California and those water purveyors that had requested a copy. A letter from the Director of Water Resources regarding the adoption of the Updated Model Water Efficient Landscape Ordinance was sent along with a flyer describing the public workshops offered by DWR. The letter addressed the necessity of water conservation and compliance with AB 1881. Local agencies were required to adopt DWR's Model Ordinance or a local water efficient landscape ordinance by January 1, 2010 and notify DWR of their adoption decision by January 31, 2010.

After the adoption of the Model Ordinance, DWR partnered with other State and local agencies to host a series of workshops to assist local agencies in preparing and implementing the model ordinance in compliance with AB 1881. Workshops were hosted throughout California including, the greater Los Angeles metropolitan area, Oakland, Fresno, San Diego, Santa Clara, Sacramento, Chico and in Lincoln. A WebEx session was hosted to include people who could not participate in the workshops in person. One hundred and sixty-six stakeholders signed on to listen in on the presentations and had the opportunity to ask questions. Each workshop had a high turnout of local agencies participating in the sessions, many who had questions and comments about the Model Ordinance. DWR also hosted several workshops for landscape professionals. A report by Western Policy Research in 2001 found that local agencies, landscape architects, and landscape contractors lack knowledge about the AB 325 Model Ordinance, and water efficient landscapes. The workshops and WebEx sessions proved to be effective in outreaching the public about the Model Ordinance and landscape water efficiency, and helpful in educating the local agencies about the steps to comply with AB 1881. DWR continues offering workshop sessions and presentations for local agencies, developers and landscape professionals.

DWR aimed to provide adequate technical assistance, and make information and materials about the Model Ordinance easily accessible and convenient. The workshop presentation slides, brochures, education materials and, sample forms are posted on the DWR website at http://www.water.ca.gov/wateruseefficiency/landscapeordinance/ .
DWR also posted updated ordinances that were sent from the local agencies as examples of what agencies have done to create their ordinance. The examples were categorized by city and county to simplify searches for a particular ordinance. DWR created step by step instructions on how to modify the Model Ordinance for local adoption. There is an online Frequently Asked Questions page available that provides answers to the most common problems that local agencies faced while updating their ordinance. DWR has assisted local agencies as they crafted, or updated a water efficient landscape ordinance through answering questions and clarifying points of the Model Ordinance.

The Western Policy Research Report 2001 noted that most local agencies had difficulties with water budget calculations. DWR updated the water budget component of the Model Ordinance for determining the maximum water

allowance for a given landscape. DWR created an excel spreadsheet online calculator to aid water budgeting calculations. The spreadsheet has comprehensive instructions on the side, and warnings and messages that guide the user in calculating their water budget, including a plant hydrozone chart that categorizes plants into high, medium, or low plant water use. The spreadsheet is a quick and accurate way of calculating a water budget. The Water Budget Calculator is posted on the DWR Water Efficient Landscape Ordinance web page, http://www.water.ca.gov/wateruseefficiency/landscapeordinance/ and is easily accessible. It can also serve as an example for local agencies to develop their own water budget calculators. Local agencies responded favorably to the usefulness and simplicity of the Water Budget Calculator.

A summary of local agencies Responses

DWR mailed a notice of compliance to 586 local agencies shortly after the adoption of the Updated Model Water Efficient Landscape Ordinance. DWR received a total of 338 responses from local agencies (cities and counties) and water purveyors. Two hundred ninety-eight out of 456 cities responded to the ordinance through email or mail, yielding a sixty-five percent (65%) response. Thirty-four out of 58 counties responded through email or mail, yielding a fifty nine percent (59%) response from the counties. One joint powers authority responded as a local land use authority. Five water purveyors reported that they had adopted voluntary landscape ordinances. (See appendix for details)

There were three possible responses to the compliance of AB 1881. One response was to adopt the State Model Water Efficient Landscape Ordinance. Fifty nine cities, and ten counties responded that they had adopted the state ordinance. The second response was the temporary adoption of the Model Ordinance while the local agency drafts a local ordinance. Fifty nine cities and twelve counties have temporarily adopted the state Model Ordinance while in the process of drafting their own ordinance. A third response was to create their water efficient landscape ordinance that is “at least as effective” as the Model Ordinance. Along with a copy of their ordinance, the city or county are required to submit findings and evidence in the record that their own ordinance will be “at least as effective” in conserving water as the state model ordinance. One hundred eighty (180) cities and twelve counties opted to create their own ordinance that is “at least as effective” as the state model ordinance. Eighty one percent (81%) of cities, seventy five percent (75%) of counties and one joint powers authority included findings with their ordinances.

Some local agencies decided to adopt the Model Ordinance based on the lack of staff and funding to develop an ordinance. Because the Model Ordinance was adopted by DWR late in 2009, some agencies responded that they did not have enough time to develop and adopt their own ordinance, so they took the default option of adopting the State’s Model Ordinance. Other local agencies adopted the Model Ordinance with a few modifications for local adoption. Local agencies

who have not responded to DWR about their intentions of compliance will be subjected to the State's Model Ordinance until the agencies take further action.

Several local agencies commented that they needed more time to create their ordinance, and decided to adopt the Model Ordinance temporarily while in the process of drafting their ordinance. Some cities in this category are restructuring their Development Code in response to the State Green Building Code (CALGreen). To maintain consistency, Cal Green uses the provisions of the State Model Ordinance as a baseline level of compliance for non-residential development. The Western Policy Report of 2001 said that local agencies had problems with achieving consistency between various municipal code sections. Local agencies are incorporating many of the water efficient landscape measures required by AB 1881 in their building codes. They are taking both the Model Ordinance and Cal Green in consideration to maintain consistency in their local codes, as they draft their water efficient landscape ordinance, and update their building codes.

Other cities are in the process of collaborating with other local jurisdictions in their counties to develop a regional water efficient landscape ordinance. Some are working with their water purveyors, and adjoining cities in their area to develop unified regulations that will be "at least as effective" as the State's Model Ordinance. DWR noted that local agencies are making strides in communication and collective efforts between their local jurisdictions, correcting a common problem that was reported in the Western Policy Report of 2001. From other local agencies, DWR received responses that they are still considering developing and adopting their water efficient landscape ordinance. They will be subject to the State's Model Ordinance until further action is taken.

Local agencies, who adopted their water efficient landscape ordinance, developed an ordinance that address the needs of their community, and be at least as effective as the DWR's Model Ordinance.

Several of the local agencies' ordinances proved to be more stringent than the Model Ordinance. Some of the local provisions include:

- The ordinance applies to all new construction, and rehabilitated irrigated landscape areas equal to or greater than 1,000 square feet
- The ordinance applies to all new landscapes regardless of size or occupancy type
- The ordinance limits the allowable turf area to 25% of the irrigated area, unless the project applicant chooses to develop a water budget.
- The ordinance requires at least 80% of the plants in non-turf areas shall be native plants, low-water using plants, or no-water using plants, unless project applicant chooses to develop a water budget
- The ordinance requires dedicated irrigation meters at all accounts with landscaping that exceeds 5,000 square feet.

- The local agency will implement budget-based tiered-rate billing structures to discourage excessive outdoor water use
- Landscapes using recycled water will use the ET adjustment factor of 0.7, rather than 1.0
- The ordinance requires that the precipitation rate of all overhead spray nozzles be less than one inch per hour
- The ordinance requires a final physical site inspection of the landscape installation, and irrigation system installation

Local agencies also sought to simplify and streamline the State's Model Ordinance. Some of the provisions used by local agencies are:

- Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use (ETWU) calculations will be required for every meter instead of every valve to simplify calculations, and reduce paper work
- Removal of effective precipitation because annual precipitation is not adequate for MAWA adjustment
- Self-certification of the landscape documentation package will be performed by a licensed landscape professional authorized to perform tasks and prepare the documents. Self-certification provides a cost effective and efficient method for cities to review plans
- Technical equations and procedures are removed from the ordinance, and placed in a separate guidelines document. The separation of technical aspects from policy issues will make more expedient and responsive changes as landscape technologies change.
- The ordinance uses a series of water conservation standards to ease the process of communicating landscape requirements to applicants, and aids in achieving overall compliance
- Prescriptive elements for parameters used to set the automatic controller are removed in order to defer to irrigation controller manufacturer specifications
- Enrollment in one of the local or regional water budgeting programs will fulfill the irrigation system audit report criteria
- Removal of recycled water, stormwater management, and water waste prevention sections because sections are incorporated by reference to existing codes

The results of a survey conducted by DWR on the compliance with AB 325 in July 2008, and the Western Policy Research 2001 study, show that local agencies had a lack of knowledge about the ordinance, and had a lack of effort to inspect landscapes and monitor water use. Based on the responses that were received, it appears that local agencies are more knowledgeable about landscape water use efficiency than they were prior to AB 1881. The Western Policy Report 2001 shows that local ordinances and guidelines were often less stringent than the AB 325 Model Ordinance. Several of the local agencies now have aimed higher to make their local ordinance more stringent than the Model

Ordinance. Local agencies are taking greater responsibilities to monitor landscape water use and water waste than previously.

Number of cities, counties, and water purveyors responded to the ordinance:

	Number of notices sent out	Number responded	Percent of response
City*	456	298	65%
County*	58	34	59%
Water Districts**		5	
Other Land Use Authority (JPA)	1	1	100%

* Cities and Counties may have dual responsibility of planning function, and water purveyor.

** Water Purveyors were not required by statute to adopt a WELO. Some agencies did so voluntarily.

Actions taken in response to the ordinance:

	Cities	Counties	Joint Powers Authority	Water Purveyors
Adopted own ordinance "at least as effective"	180	12	1	5
Adopted the State Model Ordinance	59	10		0
Temporarily adopt State Model Ordinance, will adopt a local ordinance at a later date	59	12		0

References:

California Water Plan update 2005, Department of Water Resources

California Water Plan update 2009, Department of Water Resources

Model Water Efficient Landscape Ordinance, A report to the Legislature pursuant to AB 1881 Section 65595 (a) (2), Department of Water Resources, January 2010.

Water Efficient Landscape Ordinance (AB325): a Statewide Review, Western Policy Research, Anil Bamezai, Robert Perry, Carrie Pryor, March 2001

Water Smart Landscape for California, A Report to the Governor and Legislature, California Urban Water Conservation Council, December 2005