WUES-DWR-2021-20

A Report to the State Water Resources Control Board Prepared Pursuant to California Water Code Section 10609

September 2022



California Department of Water Resources Water Use Efficiency Branch

Note: This report is part of the package of reports developed by the California Department of Water Resources to meet the requirements of Senate Bill 606 and Assembly Bill 1668 of 2018 for urban water use efficiency.

State of California Gavin Newsom, Governor

California Natural Resources Agency Wade Crowfoot, Secretary for Natural Resources Saul Gomez, Undersecretary Andrea Ambriz, Deputy Secretary for External Affairs

California Department of Water Resources Karla A. Nemeth, Director Cindy Messer, Lead Deputy Director

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Flood Management and Dam Safety Gary Lippner

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State Water Project **Ted Craddock**

Sustainable Groundwater Management **Paul Gosselin**

Public Affairs Margaret Mohr Climate Resilience John Andrew

Integrated Watershed Management Kristopher A. Tjernell

> Special Initiatives Bianca Sievers

Statewide Water and Energy Vacant Position

> Legislative Affairs Kasey Schimke

Office Executives

Office of General Counsel Thomas R. Gibson

Community Liaison Anecita Agustinez

Internal Audit Office David Whitsell Office of Workforce Equality Tiffany Vital

Government and

Division of Regional Assistance

Arthur Hinojosa, Manager

Water Use Efficiency Branch

Ryan Bailey, Manager Peter Brostrom (in memoriam)¹

Stakeholder Outreach Summary for Developing Urban Water Use Efficiency Standards, Variances, and Performance Measures Project Team

California Department of Water Resources

Water Use Efficiency Branch

Bekele Temesgen Sabrina Cook Morteza Orang Ricardo Trezza Stanley Mubako Scott Hayes Betsy Vail Shem Stygar Julie Saare-Edmonds Muffet Wilkerson - Retired Annuitant

Division of Planning

Manucher Alemi, Policy Advisor

Division of Regional Assistance

Matthew Bates, Assistant Manager Diana S. Brooks, Policy Advisor

Integrated Watershed Management

Teji Sandhu, Policy Advisor to the Deputy Director Andria Avila, Executive Assistant to the Deputy Director

Special Restoration Initiatives Branch

James Campagna, Office Technician

¹ Peter Brostrom served as the California Department of Water Resources Water Use Efficiency Branch Manager through October 29, 2020, and he was instrumental in assembling the stakeholder working groups and study design.

Water Use Studies Working Group Members

Arcadis Greg Imamura

California American Water Patrick Pilz

> *City of Sacramento* William Granger

County of Napa Christopher M. Silke

> *Ecolab* Mark Muellner

Kennedy Jenks Consultants Meredith Clement

Los Angeles Department of Water and Power Terrence McCarthy

Municipal Water District of Orange County Rachel Waite

Niemela Pappas & Associates Tiffany Phan

Plumbing Manufacturers International Cambria McLeod

> *Private Citizen* Martha Davis

San Francisco Public Utilities Commission Julie Ortiz

Santa Clarita Valley Water Agency Matthew S. Dickens

South Tahoe Public Utility District Shelly Thomsen

Valley County Water District Tara Robinson

Walnut Valley Water District Donna DiLaura Association of California Water Agencies Dave Bolland

> Camrosa Water District Charlotte Lopez

Coachella Valley Water District Jason Lucas

Eastern Municipal Water District Sara Quintero

Irvine Ranch Water District Amy McNulty

Long Beach Water Department Dean Wang

Moulton Niguel Water District Justin Finch

Natural Resources Defense Council Tracy Quinn

> Pacific Institute Heather Cooley

Rancho California Water District Jason Martin

Sacramento Suburban Water District Greg Bundesen

> San Jose Water Courtney Rubin

Sonoma-Marin Saving Water Partnership Chelsea Thompson

> Stanford University Newsha Ajami

> > Valley Water Metra Richert

WateReuse CA Charles LaSalle WaterNow Alliance Caroline Koch West Yost Associates Elizabeth Drayer

Western Municipal Water District Jason Pivovaroff

Standards, Methodologies, and Performance Measures Working Group Members

Alameda County Water District Stephanie Nevins

Bay Area Water Supply and Conservation Agency Andree Johnson

> *City of Glendale* Michael De Ghetto

City of Petaluma Chelsea Thompson

City of Sacramento Roshini Das

Coachella Valley Water District Katie Evans

Delta Stewardship Council Cory Copeland

> *Ecolab* Mark Muellner

Gardenworks Inc. Peter Estournes

Los Angeles Department of Water and Power Sofia Marcus

Mission Springs Water District John M. Soulliere

Olivenhain Municipal Water District Brian Sodeman

Plumbing Manufacturers International Cambria McLeod

> Regional Water Authority Amy Talbot

Association of California Water Agencies Dave Bolland

> California Water Service Ken Jenkins

> > City of Lakewood Toyasha Sebbag

City of Pleasanton Rita Di Candia

City of Santa Monica Russell Ackerman

Contra Costa Water District Bob Eagle

East Bay Municipal Utility District Alice Towey

EKI Environment & Water, Inc. Kat Wuelfing

Irvine Ranch Water District Fiona Sanchez

Metropolitan Water District Krista Guerrero

Natural Resources Defense Council Tracy Quinn

> Pacific Institute Heather Cooley

Rancho California Water District Tyson Heine

San Diego County Water Authority Elizabeth Lovsted San Jose Water Kurt Elvert

Stanford University Newsha Ajami

Western Municipal Water District Karly Gaynor Santa Clara Valley Water District, Pajaro River Watershed Samantha Greene

Water Systems Optimization Kate Gasner

Landscape Area Measurement Working Group Members

California Water Service Ken Jenkins

Contra Costa Water District Chris Dundon and Bob Eagle

East Bay Municipal Utility District Richard Harris, Alice Towey, and Charles Bohlig

> North Marin Water District Ryan Grisso

> > Pacific Institute Heather Cooley

Placer County Water Agency Tony Firenzi

Regional Water Authority Amy Talbot

San Margarita Water District Nate Adams

> Santa Rosa Water Sean McNeil

South Tahoe Public Utility District Shannon Cotulla and Shelly Thomsen Calaveras County Joel Metzger

Eastern Municipal Water District Elizabeth Lovsted and Sara Quintero

> City of Folsom Don Smith

Natural Resources Defense Council Tracy Quinn

Padre Dam Municipal Water District Melissa McChensey

Rancho California Water District Justin Haessly

> Retired Specialist Tom Ash

Santa Ana Watershed Project Authority Ian Achimore

San Francisco Public Utilities Commission Julie Ortiz

> Waterfluence John Whitcomb

Technical Consultants

Sacramento State, College of Continuing Education, Consensus and Collaboration Program

Orit Kalman Sophie Carrillo-Mandel

Stantec Consulting Services Inc.

Yung-Hsin Sun Vanessa Nishikawa Maliheh Karamigolbaghi

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Abbreviations and Acronyms

2018 Legislation	2018 Legislation on Water Conservation and Drought Planning (Senate Bill 606 [Hertzberg] and Assembly Bill 1668 [Friedman], as amended)
AB	Assembly Bill
BMP	best management practice
CII	commercial, industrial, and institutional
CII-BMP	commercial, industrial, and institutional water use best management practice
CII-DIMWUS	Commercial, Industrial, and Institutional Outdoor Irrigation of Landscape Areas with Dedicated Irrigation Meters Water Use Efficiency Standard
CL	stakeholder comment letter
D	stakeholder discussion with the California Department of Water Resources (Note: Acronym as used in WUES-DWR-2021-20)
DIM	dedicated irrigation meter
DWR	California Department of Water Resources
EO	Executive Order
IRWUS	Indoor Residential Water Use Efficiency Standard
ORWUS	Outdoor Residential Water Use Efficiency Standard
PM	working group public meeting (Note: Acronym as used in WUES-DWR-2021-20)
Recommendation Package	Urban Water Use Efficiency Recommendation Package
S	stakeholder survey (Note: Acronym as used in WUES-DWR-2021-20)
SB	Senate Bill
SB X7-7	California Water Conservation Act of 2009
State	State of California
State Water Board	State Water Resources Control Board
UWUO	urban water use objective

WC	California Water Code
WGW	working group workshop

Executive Summary

The California State Legislature passed the 2018 Legislation on Water Conservation and Drought Planning (Senate Bill 606 [Hertzberg] and Assembly Bill 1668 [Friedman], as amended; hereinafter referred to as the "2018 Legislation"), which included provisions for advancing urban water use efficiency through developing and implementing various water use efficiency standards, variances, and performance measures.

As reflected in several decades of stakeholder processes, spanning diverse programs and initiatives, the California Department of Water Resources (DWR) has shown an extensive commitment to comprehensive, open, and transparent public engagement. Acknowledging the value of stakeholder input in the development of water use efficiency recommendations, this report summarizes DWR's efforts to continue this legacy of public participation and stakeholder engagement (stakeholder outreach), consistent with the directives under California Water Code Section 10609.

On May 20, 2019, DWR convened a public meeting to introduce stakeholders to the 2018 Legislation and invited interested stakeholders to participate in three working groups to inform development of its recommendations for guidelines and methodologies for water use efficiency standards, variances, and performance measures. All recommended guidelines and methodologies are subject to approval and adoption by the State Water Resources Control Board (State Water Board). The working three groups included:

- Landscape Area Measurements Working Group.
- Water Use Studies Working Group.
- Standards, Methodologies, and Performance Measures Working Group.

The three working groups provided a structure for a robust stakeholder outreach process that included a variety of facilitated engagement opportunities. During the periods between these engagement opportunities, stakeholders were invited to share additional comments and to provide specific input on key questions using surveys. Stakeholders were asked to submit comments on draft recommendations and other information shared during the workshops and meetings. In addition, DWR participated in numerous meetings with stakeholders to solicit information and gather additional input to support the research and to inform the development of the Urban Water Use Efficiency Recommendation Package (Recommendation Package).

The diverse stakeholders included, but were not limited to, representatives from State of California agencies, cities, counties, urban retail water suppliers, environmental organizations, industry, professional consultants, other interested persons, and the

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public. These stakeholders provided invaluable input and made extensive contributions to DWR's Recommendation Package.

In recognition of the importance of coordination and collaboration for the effective implementation of the 2018 Legislation, DWR and the State Water Board staff and leadership met regularly and focused on specific topic areas as needed.

DWR has completed a significant body of work to meet the requirements of the 2018 Legislation and provided recommendations on different topics to the State Water Board for adoption. To streamline document development and recognize the inherent interrelationship among different topics and the need for overall consistency, DWR organized the various reports in its Recommendation Package that allows mutual referencing and incorporates content by reference. All reports in this Recommendation Package are given a serial number in the form of "WUES-DWR-2021-xx." The recommendations were prepared per the requirements of the 2018 Legislation and are to be transmitted to the State Water Board. All recommendations are subject to approval and adoption by the State Water Board.

Readers can refer to the individual reports – incorporated by reference and listed in Appendix A of this report – for details on approaches and recommendations on the Indoor Residential Water Use Efficiency Standard; Outdoor Residential Water Use Efficiency Standard; Commercial, Industrial, and Institutional Outdoor Irrigation of Landscape Area with Dedicated Irrigation Meters Water Use Efficiency Standard; Water Loss Standard; variances for unique uses of water that could have a material effect on the urban water use objective; and potable reuse water bonus incentive accounting.

1.0 Introduction

Senate Bill (SB) 606 (Hertzberg) and Assembly Bill (AB) 1668 (Friedman) of 2018, as amended (hereinafter referred to as the "2018 Legislation"), established a new foundation for long-term improvements in water conservation and drought planning to adapt to climate change and the resulting longer and more intense droughts in the State of California (State). These two bills provide expanded and new authorities and requirements to enable permanent changes and actions for those purposes, thereby improving the State's water future for generations to come. Details of these provisions are summarized in *Making Water Conservation a California Way of Life: Primer of 2018 Legislation on Water Conservation and Drought Planning, Senate Bill 606 (Hertzberg) and Assembly Bill 1668 (Friedman)* (DWR and State Water Board, 2018).

The 2018 Legislation contains provisions for advancing urban water use efficiency through developing and implementing various water use efficiency standards, variances, and performance measures per California Water Code (WC) Section 10609. The 2018 Legislation requires the California Department of Water Resources (DWR), in coordination with the State Water Resources Control Board (State Water Board), to conduct necessary studies and investigations and recommend for adoption by the State Water Board:

- Standards for outdoor residential use (WC Section 10609.6).
- Standards for outdoor irrigation of landscape areas with dedicated irrigation meter or other means of calculating outdoor irrigation use in connection with commercial, industrial, and institutional (CII) water use (WC Section 10609.8).
- Performance measures for CII water use (WC Section 10609.10).
- Appropriate variances for unique uses that can have a material effect on water use of an urban retail water supplier's urban water use objective (UWUO) (WC Section 10609.14).

DWR is also required to recommend for adoption by the State Water Board guidelines and methodologies for urban retail water suppliers calculating their UWUO (WC Section 10609.16).

To maintain consistency with the State policy encouraging potable reuse (as defined in WC Section 13561), a bonus incentive is allowed for an urban retail water supplier that delivers water from a groundwater basin, reservoir, or other source that is augmented by potable reuse water (WC Section 10609.20). The bonus incentive is to adjust the urban retail water supplier's UWUO by the volume of eligible potable reuse water delivered to residential customers and landscape areas with dedicated irrigation meters (DIM) in connection with CII water use.

Related to public participation and stakeholder engagement (stakeholder outreach), the 2018 Legislation further requires that:

- Per WC Section 10609(b)(3), DWR and the State Water Board must solicit broad public participation from stakeholders and other interested persons in the development of the standards and the adoption of regulations.
- Per WC Section 10609.4(b)(2), the studies, investigations, and report related to a standard for indoor residential water use must include collaboration with, and input from, a broad group of stakeholders, including, but not limited to, environmental groups, experts in indoor plumbing, and water, wastewater, and recycled water agencies.
- Per WC Section 10609.10(b), prior to recommending performance measures for CII water use, DWR must solicit broad public participation from stakeholders and other interested persons relating to:
 - Recommendations for a CII water use classification system for the State that address significant uses of water.
 - Recommendations for setting minimum size thresholds for converting mixed CII meters to DIMs, and evaluation of, and recommendations for, technologies that could be used in lieu of requiring DIMs.
 - Recommendations for CII water use best management practices, which may include, but are not limited to, water audits and water management plans for those CII customers that exceed a recommended size, volume of water use, or other threshold.
- Per WC Section 10609.18, DWR and the State Water Board must solicit broad public participation from stakeholders and other interested persons in the development of the standards and the adoption of regulations, and that the State Water Board must hold at least one public meeting before taking any action on any standard or variance recommended by DWR.

For the purposes of this outreach effort, "public participation" is defined as activities that provide opportunities for interested members of the public to be informed of the development process of recommendations for water use efficiency standards, variances, and performance measures. Moreover, "stakeholder engagement" includes activities that engage stakeholders who have explicitly chosen to actively participate in the development of recommendations for water use efficiency standards, variances, and performance measures by providing input specific to the various component. Additionally, "stakeholder outreach" refers to public participation and stakeholder engagement activities that are designed to facilitate a dialogue between DWR and its stakeholders, in an inclusive, transparent, and accessible manner, and to advance

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information sharing to the benefit of the development process for recommendations on water use efficiency standards, variances, and performance measures.

1.1 Purpose of the Report and Relationship to the California Department of Water Resources' Urban Water Use Efficiency Recommendation Package

DWR has completed a significant body of work to meet the requirements of the 2018 Legislation and to provide recommendations on different topics to the State Water Board for adoption. To streamline document development and recognize the inherent interrelationship among different topics and the need for overall consistency, DWR organized the various reports into an Urban Water Use Efficiency Recommendation Package (Recommendation Package) that allows mutual referencing and incorporates content by reference. All reports in this Recommendation Package have a serial number in the form of WUES-DWR-2021-xx. For each report, Appendix A includes the list of documents within the Recommendation Package that are incorporated by reference.

This report, *Stakeholder Outreach Summary for Developing Urban Water Use Efficiency Standards, Variances, and Performance Measures* (WUES-DWR-2021-20), details activities undertaken by DWR to fulfill requirements of the 2018 Legislation, acknowledging the value of input from interested stakeholders in the development of water use efficiency recommendations. Furthermore, this report discusses the public engagement process and results for all aspects of the Recommendation Package and, as such, all reports included in the Recommendation Package are listed in Appendix A of this document.

1.2 Commitment to Outreach

The 2018 Legislation requires that DWR, in coordination with the State Water Board, solicit broad public participation. In response to this directive, DWR committed to a robust and comprehensive outreach process with all interested stakeholders. DWR understood that, once adopted by the State Water Board, the water use efficiency standards could be far-reaching. More specifically, these standards could impact agencies with direct involvement in water as well as those with decision-making authority over land use, public safety, the environment, and economic development. Furthermore, the standards could affect the behavior of entities, businesses, and organizations, while also benefiting people across the State.

Diverse stakeholders, including those representing State agencies, cities, counties, urban retail water suppliers, environmental organizations, industry, professional

consultants, other interested persons, and the public, provided invaluable input during all stages of the stakeholder outreach process and made extensive contributions to the development of the Recommendation Package.

As reflected in several decades of stakeholder processes spanning diverse programs and initiatives, DWR has shown an extensive commitment to comprehensive, open, and transparent public outreach. DWR's Water Use Efficiency Branch, beginning with the Water Conservation Act of 2009 (SB X7-7) and extending to this current work to meet requirements of the 2018 Legislation, has convened dozens of advisory-based stakeholder groups, public meetings, and workshops to foster robust conversations involving affected parties, expert representatives, and the general public. The purpose of these meetings and workshops was to inform DWR's work and final outcomes over a wide range of statutory requirements related to water use efficiency and conservation. DWR has been guided by its commitment to being inclusive, transparent, accessible, consultative, and collaborative in all engagement activities, with an emphasis on fostering conversations, providing information, receiving and addressing input, reporting outcomes, and explaining the rationales for its decisions. This document summarizes DWR's public outreach efforts.

1.3 Report Organization

This report is organized into six sections:

- Section 1 Introduction provides the background and purpose of this document.
- Section 2 Stakeholder Outreach Activities describes the approach to DWR's comprehensive public engagement.
- Section 3 Information Sharing lists the various modes of communication that DWR utilized to inform working group members and interested stakeholders about opportunities for engagement.
- Section 4 Coordination with the California State Water Resources Control Board describes the ongoing collaboration between DWR and the State Water Board.
- Section 5 Summary of Outreach Efforts by Topic and Type lists the various activities and meetings that were convened to solicit input from working group members and interested stakeholders.
- Section 6 Glossary provides a list of key terms and their definitions used in this document.

This report includes two appendices:

- **Appendix A** provides the list of documents in DWR's Recommendation Package that are incorporated by reference.
- **Appendix B** provides stakeholder comment letters that were sent directly to DWR staff.

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2.0 Stakeholder Outreach Activities

Starting in June 2018, DWR began soliciting stakeholder input on the 2018 Legislation. On May 20, 2019, DWR convened a public meeting to introduce stakeholders to the 2018 Legislation. During the meeting, which was attended by 150 participants, DWR initiated the stakeholder engagement process and invited participants to join three newly formed stakeholder working groups to inform the development of DWR's recommendations for guidelines and methodologies for water use efficiency standards, variances, and performance measures:

- Landscape Area Measurement Working Group (20 members).
- Water Use Studies Working Group (35 members).
- Standards, Methodologies, and Performance Measures Working Group (33 members).

Each of the three working groups comprised representatives from State agencies, cities, counties, urban retail water suppliers, environmental organizations, industry, professional consultants, other interested persons. The individual members of the working groups are acknowledged at the beginning of this report. Table 1-1 provides a summary of the topics assigned to each working group.

Table 2-1 California Department of Water Resources' Water Use Efficiency Working Group Topics

	Working Group			
Topic for Working Group Input	Landscape Area Measurement	Water Use Studies	Standards, Methodologies, and Performance Measures	
Measurements for residential irrigable	×			
lands with validations for accuracy	^			
IRWUS		x		
ORWUS			x	
CII-DIMWUS		x	X	
CII performance measures		x	X	
Variances and bonus incentive		X	X	

Key:

CII = commercial, industrial, and institutional

- CII-DIMWUS = Commercial, Industrial, and Institutional Outdoor Irrigation of Landscape Areas with Dedicated Irrigation Meters Water Use Efficiency Standard
- IRWUS = Indoor Residential Water Use Efficiency Standard
- ORWUS = Outdoor Residential Water Use Efficiency Standard

In addition to the formation of the working groups, DWR concurrently engaged interested persons and the public in a variety of meeting formats to inform and solicit input on the development of the water use efficiency recommendations. Stakeholder outreach meetings began as a combination of in-person and virtual options, but then shifted to virtual only meetings in response to COVID-19 pandemic protocols. The transition to remote meetings resulted in increased participation and overall broader engagement of diverse stakeholders. All working group workshops (WGW), discussed below, and public meetings were recorded and provided on-demand opportunities for interested persons and the public to be informed about the process as it progressed.

2.1 Working Group Workshops

WGWs were designed to engage working group members on specific questions. Participation in the WGWs was limited to working group members to allow them to directly engage with DWR staff, its technical team, and other members. All WGWs were held as remote meetings via the Zoom platform, which allowed for small group discussion utilizing the breakout room feature. Information shared by DWR staff and its technical team during the WGWs was posted to the DWR - 2018 Water Conservation Legislation SharePoint site² (described below).

2.2 Working Group Public Meetings

Due to the interconnectedness of topics, and in an effort to promote dialogue and information-sharing, working group members, stakeholders, and interested persons were invited to attend working group public meetings (PM) that occurred immediately after the WGWs. The PMs provided opportunities for working group members and the public to hear presentations from DWR staff and its technical team on key topics related to the recommendations. Participants were encouraged to discuss and provide feedback on the topics covered, and the wide range of attendees brought varying perspectives to each PM.

Information shared and input gathered at the PMs, as well as meeting recordings, were posted to the DWR –2018 Water Conservation Legislation SharePoint site. Due to health and safety protocols enforced during the COVID-19 pandemic, all but the first few PMs were held as virtual meetings via the Zoom platform and had a high level of participation from both working group members and interested stakeholders. Members of the public were encouraged to participate in meetings and provide input throughout the process to ensure that all perspectives were represented and considered.

² https://cawater.sharepoint.com/sites/dwr-wusw/SitePages/Home.aspx

2.3 Stakeholder Discussions with the California Department of Water Resources

Throughout the recommendation development process, DWR conducted and responded to numerous requests for additional meetings and engagement activities from both individual entities and groups of stakeholders for the purposes of learning from their experiences, understanding their specific concerns, soliciting information, responding to questions, gathering data, and receiving feedback. DWR staff and the technical team participated in scheduled meetings with nongovernmental organizations, such as the Natural Resources Defense Council, the Pacific Institute, and the Association of California Water Agencies, to address questions and to receive input to inform the development of the Recommendation Package.

2.4 Stakeholder Surveys

Working group members and other interested persons and the public were invited to complete surveys to provide information based on their respective experiences and to help inform the development of DWR's recommendations. Links to Google Forms' surveys were provided during the PMs, and follow-up requests and reminders were sent out through three Listservs to encourage participation. Refer to Section 3 of this report for information on the Listservs.

The two surveys solicited information about the commercial, industrial, and institutional best management practices (CII-BMPs) Performance Measure; variances; and bonus incentive. A description of each survey is presented below:

- CII-BMPs survey: This survey solicited input on the draft CII-BMPs Performance Measure with regard to its ability to be implemented and for additional best management practices (BMP) that should be included. The CII-BMPs survey questions were sectioned into five categories: Education, Incentives – Indoors, Incentives – Outdoors, Incentives – Both Outdoors and Indoors, and Policy. A total of 30 stakeholders participated in the survey.
- Variances and bonus incentive survey: This survey sought targeted input from urban retail water suppliers (with more than 3,000 connections or more than 3,000 acre-feet of potable water) that are subject to annual water use reporting requirements. The survey solicited input regarding the unique uses and applicability of the proposed variances to inform DWR's assessments. A total of 78 stakeholders participated in the survey.

2.5 Stakeholder Comment Letters

Stakeholder comment letters received following the presentations of the draft recommendations were incorporated, as appropriate, into DWR's final recommendations to the State Water Board. During the comment period, sixty-seven comment letters from stakeholders were received during the development of the recommendations, and all are provided for reference and to promote transparency in relation to the stakeholder process. The following presents a brief summary of the comment letters received by DWR:

- The Indoor Residential Water Use Efficiency Standard (IRWUS) recommendation, provided to the Legislature on November 30, 2021, received 21 comment letters (see Appendix K of DWR's indoor water use study [DWR, 2021b]).
- Following the meeting on the Commercial, Industrial, and Institutional Outdoor Irrigation of Landscape Areas with Dedicated Irrigation Meters Water Use Efficiency Standard (CII-DIMWUS), Outdoor Residential Water Use Efficiency Standard (ORWUS), and variances during the November 16 and 17, 2021, working group meeting, 24 comment letters were received (see Appendix B of this report).
- Following the January 25, 2022, working group meeting, 15 comment letters were received (see Appendix B of this report).
- During the development of ORWUS, 7 comment letters were received with various dates (see Appendix B of this report).

3.0 Information Sharing

Throughout the process of developing the Recommendation Package, DWR shared information about data collected and its analysis, proposed alternatives, draft recommendations, and the ongoing progress of developing the recommendations. The primary outreach tools used were: (1) DWR – 2018 Water Conservation Legislation SharePoint site that served as a repository of information, and (2) the email subscription list that was used to announce engagement opportunities and provide meeting materials to the working groups. Information shared with the working group members prior to the WGWs and PMs was also made available publicly via the DWR – 2018 Water Conservation Legislation SharePoint site after the workshops and meetings.

3.1 California Department of Water Resources – 2018 Water Conservation Legislation SharePoint Site

At the onset of the engagement process, DWR set up and continued to actively maintain the DWR – 2018 Water Conservation Legislation SharePoint site to host data and information for working group members, nongovernmental organizations, urban retail water suppliers, State and local government staff, industry, and other interested persons and the public. Although access to the meeting materials on the SharePoint site requires registration, it is open to all who request access. There were 576 people who had signed up for access to the SharePoint site at the time of this writing. During DWR's stakeholder engagement effort, the SharePoint site hosted meeting announcements and document libraries for each of the working groups, and it included information on public meetings and workshops, meeting agendas and related materials, presentations, recordings, and summaries of participant input from the meetings.

3.2 Email Subscription List

Once AB 1668 and SB 606 passed into legislation, there was tremendous stakeholder interest in keeping abreast of DWR's efforts to develop recommendations. DWR continues to maintain a comprehensive email subscriber list that has been used to inform working group members, stakeholders, and interested persons about engagement opportunities (i.e., meeting announcements and reminders) and availability of resources and information (i.e., presentations and meeting recordings). All Listserv meeting announcements were also posted on the DWR website. There are three different Listservs that were used throughout the stakeholder engagement process (the number of subscribers for each Listserv was current at the time of this writing):

• AB 1668/SB 606 General Listserv (712 subscribers).

- Urban Water Use Efficiency Listserv (786 subscribers).
- Water Loss Listserv (631 subscribers).

4.0 Coordination with the California State Water Resources Control Board

On May 9, 2016, Governor Edmund G. Brown Jr. issued Executive Order (EO) B-37-16 directing State agencies to establish a long-term framework for water conservation and drought planning that builds on the conservation accomplished during the historical drought and implementation of the Governor's Water Action Plan. These agencies then developed a collaborative program to formulate the long-term framework for water conservation and drought planning called for in the EO, initiated extensive public outreach and stakeholder engagement, and submitted a Final Report the following year.³

DWR and the State Water Board recognized the importance of continuing that coordination and collaboration to ensure the effective implementation of the 2018 Legislation as well as to streamline efforts. Staff and leadership from the two agencies met via Microsoft Teams meetings monthly. Subgroups that were focused on specific topic areas met as needed, some as often as weekly, and brought their conclusions back to the broader group. With respect to urban water use efficiency, the efforts of the two agencies were complementary, and built on each other, with DWR developing recommendations for the State Water Board to adopt in a rulemaking proceeding.

³ California Department of Water Resources, State Water Resources Control Board, California Public Utilities Commission, California Department of Food and Agriculture, and California Energy Commission. 2017. "Making Conservation A California Way of Life, Implementing Executive Order B-37-16 Final Report." April.

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5.0 Summary of Outreach Efforts by Topic and Type

The extensive outreach effort included a total of seven WGWs (participation ranged from 25 to 45 working group members) and 29 PMs with between 20 and 300 participants. In addition to the scheduled WGWs and PMs, DWR staff participated in separately scheduled meetings with 175 interested stakeholders and responded to 168 documented emails and phone calls. DWR received 98 comment letters in response to the recommendations from meeting presentations and 108 survey responses on specific topics of interest. Tables 5-1 through 5-6 provide summaries of all outreach efforts related to DWR's development of urban water use efficiency recommendations per the 2018 Legislation. The topics include DWR's recommendations for:

- Measurements for residential irrigable lands with validations for accuracy (Table 5-1).
- IRWUS (Table 5-2).
- ORWUS (Table 5-3).⁴
- CII-DIMWUS (Table 5-4).
- Variances and bonus incentive (Table 5-5).
- Guidelines and methodologies; standards; variances; performance measures; and Annual Water Use Report (Table 5-6).

As described in Section 2, the stakeholder outreach activities in these tables include:

- Working group workshops (WGW).
- Working group public meetings (PM).
- Stakeholder discussions with DWR (D).
- Stakeholder surveys (S).
- Stakeholder comment letters (CL); see Appendix K of the DWR's indoor water use study (DWR, 2021b) for IRWUS comment letters and Appendix B of this report for the rest of the comment letters.

Emails and phone correspondence.

⁴ ORWUS outreach included calculating urban retail water suppliers' compliance with Water Use Targets (per SB X7-7 [California Water Conservation Act of 2009]).

Stakeholder Outreach Summary for Developing Urban Water Use Efficiency Standards, Variances, and Performance Measures | Summary of Outreach Efforts by Topic and Type

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Date	Format	Meeting Presentations / Discussion Topics	Number of Participants / Meetings / Comment Letters
June 11, 2018	PM	Introduction of landscape area definitions used in classifying landscapes in the pilot study and overall measurement results.	42 in-person participants, 100 participants (estimated - virtual)
2019 to 2022	D	 Meetings with pilot study urban retail water suppliers. Parking strips and easements. Stakeholder workshops follow-up. LAM pilot study. Ceres Imaging. 	34 meetings
2019 to 2022	Monday.com Feedback Form	• Feedback from urban retail water suppliers about their LAM data and modifying the dataset.	205 responses
2019 to 2022	Email/Phone	Responses to urban retail water supplier questions about their LAM data.	168 participants
2019 to 2022	D	Responses to urban retail water supplier questions about their LAM data.	65 participants
February 25, 2019	PM	Detailed working group discussion on landscape area definitions and classification.	18 participants
February 12, 2020	WGW	 Description of outdoor residential landscape classification scheme and interpretation rules, and training on data review portal. LAM data analysis. Description of landscape classification and interpretation rules. Participant landscape data review using the portal. Results from current mapping analysis. 	25 participants
June 3, 2020	PM / CL	 Residential landscape irrigation measurement technical working group panel on DWR parcel classification. Confirmation of area of interest boundaries. Validation of aerial interpretation of residential parcels. Verification that landscape area matches urban retail water suppliers' residential accounts. 	144 participants / 14 comment letters
July 29, 2020	WGW	 Present completed parcel classification validation report to working group members, including methodology, analyses, and results for residential parcel irrigation status classification. Precursor to larger quarterly meeting that included interested persons. 	25 participants
August 20, 2020	РМ	 Validation of residential parcel irrigation classification. Preliminary results of DWR internal studies. Timeline for delivery of urban retail water supplier results. 	108 participants
November 19, 2020	PM	 Refresher on residential landscape area classifications and definitions. Residential landscape area estimation reports and data. Review of web portal access. Using the residential landscape area estimates. 	186 participants
April 14, 2021	PM	 Review of LAM data delivery process. District review process. Review of data issues – normal request for adjustments through DWR. Review of data issues – to be considered throughout variance development process. 	95 participants
Кеу:			1

CL = stakeholder comment letter

 $\mathsf{D}=\mathsf{stakeholder}\xspace$ discussions with California Department of Water Resources

LAM = landscape area measurement

PM = working group public meeting

DWR = California Department of Water Resources WGW = working group workshop

Date	Format	Meeting Presentations / Discussion Topics	Number of Participants / Meetings / Comment Letters	
November 19, 2019	РМ	 Introduction to 2018 Water Conservation Legislation AB 1668 (Friedman) and SB 606 (Hertzberg). Research questions and studies (disaggregated study of current water use). Residential indoor water use and impacts on water systems. Water budget variance studies: residential evaporative coolers and seasonally occupied residences. CII water use classification system: overview of needs, approaches, and issues. 	80 in-person participants / 100 participants online (estimated)	
February 2020 to June 2021	D	 Request to urban retail water suppliers for participating in DWR's indoor water use study (DWR, 2021a). Data request for DWR's indoor water use study. DWR's indoor water use study (DWR, 2021a) update and review of stakeholder comments. Review DWR's indoor water use study and answer open questions. Monthly disaggregation methods. Flume pilot study. Single-family residential AMI disaggregation study. Statewide estimates of single-family residential indoor water use using census tracts and population data. DWR's indoor water use study update: "CalWEP P2P: What's Up with Indoor Residential Water Use Studies?" Individual meetings with: Placer County Water Agency, Natural Resources Defense Council, Pacific Institute, Association of California Water Agencies. 	7 to 200 participants / 31 meetings	
July 23, 2020	РМ	 DWR's indoor water use study (DWR, 2021a) overview and scope. Sampling strategy and approach to monthly, hourly, and end-use disaggregation analyses to develop estimates of statewide baseline indoor residential water use. 	189 participants	
April 22, 2021	РМ	 Legislative overview for DWR's indoor water use study (DWR, 2021a). DWR's indoor water use study results (DWR, 2021a). State Water Board study on efficient indoor residential water use. DWR – State Water Board Draft Joint Recommendations on IRWUS. This is also related to Table 5-6 activities. 	307 participants	
May 21, 2021	PM / CL	 Legislative overview for IRWUS. DWR's indoor water use study (DWR, 2021a) overview and results. State Water Board study on efficient indoor residential water use. DWR – State Water Board draft joint recommendations on IRWUS. This is also related to Table 5-6 activities. 	176 participants / 21 comment letters	
July 19, 2021	РМ	 DWR – State Water Board joint recommendations on IRWUS. This is also related to Table 5-6 activities. Review of working group and stakeholders' comments to date. State Water Board impacts analysis. Solicit input on additional State policy and financial assistance that would help local agencies achieve water conservation and operational changes needed for recommended standards. 	82 participants	

Table 5-2 Stakeholder Outreach for Indoor Residential Water Use Efficiency Standard

Key:

AB = Assembly Bill

AMI = advanced metering infrastructure

CalWEP P2P = California Water Efficiency Partnership: Peer to Peer Conference

CII = commercial, industrial, and institutional

CL = stakeholder comment letter

D = stakeholder discussions with California Department of Water Resources
DWR = California Department of Water Resources
IRWUS = Indoor Residential Water Use Efficiency Standard
PM = working group public meeting
SB = Senate Bill
State Water Board = State Water Resources Control Board

Date	Format	Meeting Presentations/Discussion Topics	Number of Participants / Meetings / Comment Letters
November 16, 2021	PM	DWR's draft recommendations for ORWUS and CII-DIMWUS.	220 participants
October 28, 2020	PM	 Process for development of ORWUS recommendation. Overview of LAM process and reference evapotranspiration. Data analysis to inform and support standard development. 	186 participants
February 24, 2021	PM	 Inform working group and public about DWR's process in developing a recommendation for ORWUS. Provide overview of working group process to support this work. 	295 participants
June 30, 2021	РМ	 ORWUS analytical considerations: current status of outdoor water use, MWELO guidelines, and land cover type. Provisional recommendation for ORWUS and compliance with water use targets (per SB X7-7). 	147 participants
August 25, 2021	PM	 Review of analysis results in response to stakeholder feedback provided at previous meetings (buffer options, merits for buffer cap, cover type, and ramping down the standard). 	168 participants

Table 5-3 Stakeholder	Outreach for O	utdoor Residentia	I Water Use	Efficiency	Standard
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Key: CII-DIMWUS = Commercial, Industrial, and Institutional Outdoor Irrigation of Landscape Areas with Dedicated Irrigation Meters Water Use Efficiency Standard

DWR = California Department of Water Resources

LAM = landscape area measurement

MWELO = Model Water Efficient Landscape Ordinance

ORWUS = Outdoor Residential Water Use Efficiency Standard

PM = working group public meeting

SB X7-7 = California Water Conservation Act of 2009

Table 5-4 Stakeholder Outreach for Commercial, Industrial, and Institutional Outdoor Irrigation of Landscape Areas with Dedicated Irrigation Meters Water Use Efficiency Standard and **Performance Measures**

Date	Format	Meeting Presentations/Discussion Topics	Number of Participants / Meetings / Comment Letters
February 2020 to November 2021	D	 CII water use metrics, including classification system. CII elements and standard. CII LAM. CII performance measures. Tracking and water use in CII properties. CII Conversion Threshold Performance Measure. CII landscapes – In-Lieu Technologies Performance Measure. 	29 participants
March 22, 2021	РМ	 Review the overall process of the water use efficiency standards and objectives development and, specifically, CII-DIMWUS, the CII water use classification system, and performance measures. Provide an overview of billing classification and CII-DIMWUS. Engage stakeholders in a focused discussion on CII performance measures. 	118 participants
March 3, 2021 to May 21, 2021	S	• CII-BMPs survey: Review a draft list of BMPs for their ability to be implemented and gaps. The survey grouped BMPs into five categories: education, incentives – indoors, incentives – outdoors, incentives – both outdoors and indoor, and policy.	30 participants
April 26, 2021	PM	 CII water use classification system. CII-BMPs Performance Measure. CII-DIMWUS. 	113 participants
May 24, 2021	WGW	 Engage working group members to gain their input on appropriate BMPs to be incorporated into the CII-DIMWUS development process. Audits, water management plans, and other education BMPs. Incentive and policy-based BMPs. An overview – white paper outline for the summary of technical BMPs for CII performance measure. 	163 participants
May 24, 2021	PM	 Present information on key topics: Audits, water management plans, and other educational BMPs. Incentive- and policy-based BMPs. An overview – white paper outline for the summary of technical BMPs for CII water use. 	163 participants
June 28, 2021	WGW	Engage working group members to gain their input on CII water use classification system and two BMPs related to CII-DIMs to be incorporated into the CII-DIMWUS development process.	30 participants
June 28, 2021	РМ	 Engage working group members to gain their input on CII water use classification system and two BMPs related to CII-DIMs to be incorporated into CII-DIMWUS development process. 	154 participants
July 28, 2021	WGW	 Engage working group members to gain their input on CII water use classification system and annual reporting on CII performance measures. CII water use classification system: revisiting Option 2 – building on the EnergyStar property classification system. Content for the annual reporting for CII performance measures: annual reporting for CII performance measures – scope and purpose. 	38 participants
January 2022	D	CII-BMPs performance measure reporting matrices.	CalWEP (participant)

BMP = best management practice

CalWEP = California Water Efficiency Partnership

CII = commercial, industrial, and institutional

CII-BMP = commercial, industrial, and institutional best management practice CII-DIM = commercial, industrial, and institutional dedicated irrigation meter

CII-DIMWUS = Commercial, Industrial, and Institutional Outdoor Irrigation of Landscape Areas with Dedicated Irrigation Meters Water Use Efficiency Standard D = stakeholder discussion with California Department of Water Resources LAM = landscape area measurement S = stakeholder survey WGW = working group workshop MUM = mixed use meter PM = working group public meeting

Date	Format	Meeting Presentations/ Discussion Topics	Number of Participants / Meetings / Comment Letters
September 2020 to November 2021	D / CL	 General discussion on variances and related topics: Fluctuations in seasonal populations. Irrigation with high TDS recycled water. Recycled water benefits and impacts. Commercial or noncommercial agricultural use. Evaporative coolers. General discussion on bonus incentive. 	15 participants / 24 comment letters
February 12, 2021	PM	 Orientation of working group, schedule, and packaging of DWR recommendations. Review and confirmation of variance list: Evaporative coolers. Populations of horses and other livestock. Fluctuations in seasonal populations. Irrigation with high TDS recycled water. Soil compaction and dust control. Supplemental water to ponds and lake to sustain wildlife. Irrigating vegetation for fire protection (expanded to emergency). Commercial or noncommercial agricultural use. Consideration of additional variances. 	189 participants
March 11, 2021	PM	 In-depth focus on studies related to the following variances: Fluctuations in seasonal populations. Evaporative coolers. Soil compaction and dust control (modified to dust control). Introduction to bonus incentive. 	194 participants
April 1-14, 2021	S	 Variances and bonus incentive survey of urban retail water suppliers (with more than 3,000 connections or more than 3,000 acre-feet potable water) that are subject to Annual Water Use Report filing requirements. Solicit urban retail water suppliers' experiences regarding unique uses and applicability of proposed variances to inform their assessment. 	78 participants
April 8, 2021	PM	 In-depth focus on the following variances: Horses and other livestock. Fire protection (modified to emergency). Presentation and discussion on bonus incentive. Update on ongoing variance related work: Seasonal populations. Evaporative coolers. Soil stabilization and dust control (modified to dust control). 	160 participants
June 10, 2021	WGW	 Overview of variance development process. Working group members breakout discussions to inform development of bonus incentive and three variances (seasonal populations, dust control, and emergency [expanded from fire protection]). 	45 participants

Table 5-5 Stakeholder Outreach for Variances and Bonus Incentive

Table 5-5 Stakeholde	r Outreach for	Variances and	Bonus Incentive	(contd.)
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Date	Format	Meeting Presentations/ Discussion Topics	Number of Participants / Meetings / Comment Letters
June 10, 2021	РМ	 Overview of variance development process. Presentations and discussions to inform development of bonus incentive and three variances (seasonal populations, dust control [expanded from soil stabilization and dust control], and emergency [expanded from fire protection]). 	154 participants
July 21, 2021	WGW	 Overview of variance development process. Working group members breakout discussions to inform development of five variances (evaporative coolers, horses and other livestock, irrigation with high TDS recycled water, supplemental water to ponds and lakes to sustain wildlife, and commercial or noncommercial agricultural use). 	45 participants
July 21, 2021	РМ	 Overview of variance development process. Presentations and discussions to inform development of five variances (evaporative coolers, horses and other livestock, irrigation with high TDS recycled water, supplemental water to ponds and lakes to sustain wildlife, and commercial or noncommercial agricultural use). 	73 participants

Notes:

evaporative coolers = variance for significant water use of evaporative coolers

seasonal populations = variance for significant fluctuations in seasonal populations

irrigation with high TDS recycled water = variance for significant landscaped areas irrigated with recycled water having high levels of total dissolved solids

commercial or noncommercial agricultural use = variance for significant use of water for commercial or noncommercial agricultural use

horses and other livestock = variance for significant populations of horses and other livestock

supplemental water to ponds and lakes to sustain wildlife = variance for significant use of water to supplement ponds and lakes to sustain wildlife

dust control = variance for significant use of water for dust control for horse corrals and animal exercising arenas

emergency = variance for significant use of water during major emergencies

Key:

CL = stakeholder comment letter

D = stakeholder discussions with California Department of Water Resources

DWR = California Department of Water Resources

PM = working group public meeting

S = stakeholder survey

TDS = total dissolved solids

WGW = working group workshop
Date	Format	Meeting Presentations/Discussion Topics	Number of Participants / Meetings / Comment Letters
October 25, 2021	РМ	 Review background and legislative directive. Present update on provisional ORWUS recommendation. Present information on thresholds for converting mixed-use CII meters to DIM (or equivalent technology) and recommendations for technologies that could be used in lieu of requiring DIMs. Present information on the CII outdoor standard development process. ORWUS and CII-DIMWUS also presented in this meeting. 	227 participants
November 12, 2021	РМ	 Present approach and tool to compare objective-based total water use calculated using DWR's recommended water use standards against the SB X7-7 2020 water conservation targets. Present an outline of DWR report, <i>Recommendations for Guidelines and Methodologies for Calculating Urban Water Use Objective</i> (WUES-DWR-2021-01B), which summarizes how an urban retail water supplier calculates its UWUO. 	153 participants
November 17, 2021	PM / CL	 DWR's draft recommendations on key components: Variances. CII water use classification system. Bonus incentive. Draft guidelines and methodologies for calculating UWUO. 	205 participants / 24 comment letters
January 25, 2022	PM / CL	 DWR's recommendations for CII water use performance measures: Thresholds for converting CII mixed-use meters to DIMs (or equivalent technologies). (Note: this refers to Conversion Threshold Performance Measure.) Technologies that could be used in lieu of requiring DIMs (or equivalent technologies). (Note: this refers to In-Lieu Technology Performance Measure.). CII-BMPs Performance Measure. Annual reporting of performance measures. 	195 participants / 15 comment letters

Table 5-6 Stakeholder Outreach for Guidelines and Methodologies, and Standards, Variances, Performance Measures, and Annual Reporting Recommendations

Key:

CII = commercial, industrial, and institutional

CII-BMP = commercial, industrial, and institutional best management practice

CL = stakeholder comment letter

DIM = dedicated irrigation meter

PM = working group public meeting

SB X7-7 = California Water Conservation Act of 2009

UWUO = urban water use objective

Stakeholder Outreach Summary for Developing Urban Water Use Efficiency Standards, Variances, and Performance Measures | Summary of Outreach Efforts by Topic and Type

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6.0 Glossary

The following key terms are listed below for easy reference. Where applicable, existing definitions from statutes and regulations are provided.

animal exercising arena. An open space used for animal training, exercises, and activities. An exercise arena can also be referred to as a horse corral, paddock, or other non-vegetated exercise and riding areas (collectively, "corrals").

best management practice. A set of practices, measures, or procedures that are beneficial, empirically proven, cost effective, and widely accepted by the professional community.

bonus incentive. The adjustment to the annual urban water use objective that an urban retail water supplier may have based on the eligible potable reuse volume, as described in California Water Code Section 10609.20(d).

commercial, industrial, and institutional water use. Water used by commercial water users, industrial water users, institutional water users, and large landscape water users, as defined in California Water Code Section 10608.12(d).

commercial water user. A water user that provides or distributes a product or service, as defined in California Water Code Section 10608.12(e).

conversion threshold. The minimum size threshold for converting mixed-use commercial, industrial, and institutional dedicated irrigation meters or In-Lieu Technologies.

dedicated irrigation meter. A meter used only for irrigation of outdoor landscape areas. However, a mixed-use meter with no more than five percent of total delivered water serving non-landscape irrigation purposes can also be considered a dedicated irrigation meter for the purpose of the urban water use objective and actual water use calculations and reporting.

equivalent technology. Any other device or process that is not a dedicated irrigation meter, which measures the volume of water delivered to the landscape and reports directly to the urban retail water supplier, on the same time interval as service area dedicated irrigation meters, and with the same accuracy as service area dedicated irrigation meters such that it can be used for billing purposes if an urban retail water suppliers chooses to do so.

evaporative cooler. A device that cools air through the evaporation of water.

evapotranspiration. The amount of water transpired by plants, retained in plant tissues, and evaporated from plant tissues and surrounding soil surfaces.

high levels of total dissolved solids. For the purposes of variance development, high levels of total dissolved solids in recycled water were defined as between 900 and 1,600 milligrams per liter.

horse corral. An open space used for horse training exercises and activities. A horse corral can also be referred to as animal exercise arenas, paddocks, or other non-vegetated exercise and riding areas (collectively referred to as, "corrals").

In-Lieu Technologies. Technologies that improve landscape water use efficiency by any means other than the direct measurement of water use that is an equivalent technology. In-Lieu Technologies refers to the devices, equipment, or analytical methods that are defined in the California Department of Water Resources' recommended In-Lieu Technologies Performance Measure.

industrial water user. A water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development, as defined in California Water Code Section 10608.12(i).

institutional water user. A water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions, as defined in California Water Code Section 10608.12(j).

large landscape. A nonresidential landscape as described in the performance measures for commercial, industrial, and institutional water use adopted pursuant to California Water Code Section 10609.10, as defined in California Water Code Section 10808.12(I).

livestock. The U.S. Code of Federal Regulations Section 780.328 defines "livestock" as, "cattle, sheep, horses, goats, and other domestic animals ordinarily raised or used on the farm. Turkeys or domesticated fowl are considered poultry and not livestock." California Civil Code Section 3080 states "livestock means any cattle, sheep, swine, goat, or horse, mule or other equines." For the purposes of variance development, only livestock greater than 200 pounds were considered because they consume more water on a daily basis than smaller livestock and could therefore have a material effect on an urban retail water supplier's water use.

material effect. Having real importance or great consequences. In the context of California Department of Water Resources' recommendations regarding the urban water use objective and variances, a material effect is an effect on the urban water use objective that could influence the compliance status of an urban retail water supplier.

mixed-use meter. A meter serving both indoor water use and outdoor landscape irrigation.

performance measures. Actions to be taken by urban retail water suppliers that will result in increased water use efficiency by commercial, industrial, and institutional water users. Performance measures may include, but are not limited to, educating commercial, industrial, and institutional water users on best management practices, conducting water use audits, and preparing water management plans. Performance measures do not apply to process water, as defined in California Water Code Section 10608.12(n).

potable reuse. Direct potable reuse, indirect potable reuse for groundwater recharge, and reservoir water augmentation, as defined in California Water Code Section 13561, as defined in California Water Code 10608.12(o).

public participation. Activities that provide opportunities for interested members of the public to be informed of the development process of recommendations for water use efficiency standards, variances, and performance measures.

recycled water. Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource, as defined in California Water Code Section 13050(n), as defined in California Water Code Section 10608.12(q).

reference evapotranspiration. The evapotranspiration rate from an extended surface of 3- to 6-inch-tall (8- to 15-centimeter-tall) green grass cover of uniform height, actively growing, completely shading the ground, and not short on water (the reference evapotranspiration rate reported by the California Irrigation Management Information System).

residential parcels. For the purposes of variance development, residential parcels are property parcels with a residential land use designation under the governing general plans of counties and cities.

seasonally occupied home. Homes occupied for part of the year, seasonally or for recreation, that include second homes, vacation homes, and vacation rentals, provided that the home is still categorized as a residence. It is not necessary for a seasonally occupied home to have any particular seasonal pattern of occupancy – only that it is not the usual residence for any individual. For the purposes of variance development, all residential homes with seasonal, recreational, or occasional occupants were counted as seasonally occupied.

stakeholder engagement. Activities that engage stakeholders who have explicitly chosen to actively participate in the development of recommendations for water use

efficiency standards, variances, and performance measures by providing input specific to the various components.

stakeholder outreach. Public participation and stakeholder engagement activities that are designed to facilitate a dialogue between the California Department of Water Resources and its stakeholders, in an inclusive, transparent, and accessible manner, and that advance information sharing to the benefit of the development process for recommendations on water use efficiency standards, variances, and performance measures.

stakeholders. A broad group of members of the public with vested interests in the development of the recommendations on water use efficiency standards, variances, and performance measures. Stakeholders included, but were not limited to, representatives of State of California agencies, cities, counties, urban retail water suppliers, environmental organizations, industry, professional consultants, and other interested parties and the public.

total dissolved solids. The inorganic salts, metals, and minerals present in water. This term is usually expressed in parts per million or milligrams per liter.

urban retail water supplier. A water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes, as defined in California Water Code Section 10608.12(t).

urban water use efficiency standards. The standards effective through California Water Code Section 10609.4 (indoor residential use) or adopted by the State Water Resources Control Board (outdoor residential, water loss, and commercial, industrial, and institutional outdoor irrigation of landscape areas with dedicated meters) pursuant to California Water Code Section 10609.2.

urban water use objective. An estimate of aggregate efficient water use for the previous year based on adopted water use efficiency standards and local service area characteristics for that year, as described in California Water Code Section 10609.20, as defined in California Water Code Section 10608.12(u).

variances. Allowable volumes of water that can be added to the urban water use objective for efficient unique uses of water that could have a material effect on the urban water use objective.

water loss. The total of apparent loss and real loss (California Code of Regulations, Title 23, Section 638.1(a) and Section 638.1(k), respectively) in an urban retail water supplier's system. Apparent loss means loss due to unauthorized consumption and/or nonphysical (paper) loss attributed to inaccuracies associated with customer metering or systematic handling errors. Real loss means the physical water loss from the

pressurized potable water system and the urban retail water supplier's potable water storage tanks, up to the point of customer consumption.

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7.0 References

- DWR and State Water Board (California Department of Water Resources and State Water Resources Control Board). 2018. Making Water Conservation a California Way of Life. Primer of 2018 Legislation on Water Conservation and Drought Planning Senate Bill 606 (Hertzberg) and Assembly Bill 1668 (Friedman). Accessed at: <u>https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/Make-Water-Conservation-A-California-Way-of-Life/Files/PDFs/Final-WCL-Primer.pdf?la=en&hash=</u>
- DWR (California Department of Water Resources). 2021a. Results of the Indoor Residential Water Use Study. Accessed at: <u>https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/AB-1668-and-SB-606-Conservation/Results-of-the-Indoor-Residential-Water-Use-Study.pdf</u>
- . 2021b. Appendix K. DWR Response to Summary of Public Comments and IRWUS Comment Letters. Accessed at: <u>https://water.ca.gov/-/media/DWR-</u> <u>Website/Web-Pages/Programs/Water-Use-And-Efficiency/AB-1668-and-SB-606-</u> <u>Conservation/Appendix-K-DWR-Response-to-Summary-of-Public-Comments-</u> <u>and-IRWUS-Comment-Letters23Aug21.pdf</u>

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Appendix A – Urban Water Use Efficiency Recommendation Package Reports Incorporated by Reference

- DWR (California Department of Water Resources). September 2022. Recommendations for Urban Water Use Efficiency Standards, Variances, Performance Measures, and Annual Water Use Reporting. DWR Report Number: WUES-DWR-2021-01A.
- DWR (California Department of Water Resources). September 2022. Assessment of Recommended Urban Water Use Efficiency Standards in Relation to the Senate Bill X7-7 Statewide Target. DWR Report Number: WUES-DWR-2021-01A.T1.
- DWR (California Department of Water Resources). September 2022. Recommendations for Guidelines and Methodologies for Calculating Urban Water Use Objective. DWR Report Number: WUES-DWR-2021-01B.
- DWR (California Department of Water Resources). September 2022. Recommendations for Outdoor Residential Water Use Efficiency Standard. DWR Report Number: WUES-DWR-2021-02.
- DWR (California Department of Water Resources). September 2022. Technical Report: Landscape Area Measurements Final Project, Report EA-133C-16-CQ-0044. DWR Report Number: WUES-DWR-2021-02.T1.
- DWR (California Department of Water Resources). September 2022. Recommendations for Commercial, Industrial, and Institutional Outdoor Irrigation of Landscape Areas with Dedicated Irrigation Meters Water Use Efficiency Standard. DWR Report Number: WUES-DWR-2021-03.
- DWR (California Department of Water Resources). September 2022. Summary of Recommendations for Variances. DWR Report Number: WUES-DWR-2021-04.
- DWR (California Department of Water Resources). September 2022. Recommendations for Variance for Significant Water Use of Evaporative Coolers, Methods of Calculation, and Supporting Data Requirements. DWR Report Number: WUES-DWR-2021-05.
- DWR (California Department of Water Resources). September 2022. Methods for Estimating Residential Evaporative Cooler Consumption and Prevalence Using Account-Level Water and Energy Consumption Data. DWR Report Number: WUES-DWR-2021-05.T1.

- DWR (California Department of Water Resources). September 2022. Recommendations for Deferring Variance for Significant Water Use of Home Use Medical Devices. DWR Report Number: WUES-DWR-2021-06.
- DWR (California Department of Water Resources). September 2022. Recommendations for Variance for Significant Populations of Horses and Other Livestock, Methods of Calculation, and Supporting Data Requirements. DWR Report Number: WUES-DWR-2021-07.
- DWR (California Department of Water Resources). September 2022. Recommendations for Variance for Significant Fluctuations in Seasonal Populations, Methods of Calculation, and Supporting Data Requirements. DWR Report Number: WUES-DWR-2021-08.
- DWR (California Department of Water Resources). September 2022. Methods for Estimating Seasonal Populations with Water and Energy Data. DWR Report Number: WUES-DWR-2021-08.T1.
- DWR (California Department of Water Resources). September 2022. Recommendations for Variance for Significant Landscaped Areas Irrigated with Recycled Water Having High Levels of Total Dissolved Solids, Methods of Calculation, and Supporting Data Requirements. DWR Report Number: WUES-DWR-2021-09.
- DWR (California Department of Water Resources). September 2022. Recommendations for Variance for Significant Use of Water for Dust Control for Horse Corrals and Animal Exercising Arenas, Methods of Calculation, and Supporting Data Requirements. DWR Report Number: WUES-DWR-2021-10.
- DWR (California Department of Water Resources). September 2022. Recommendations for Variance for Significant Use of Water to Supplement Ponds and Lakes to Sustain Wildlife, Methods of Calculation, and Supporting Data Requirements. DWR Report Number: WUES-DWR-2021-11.
- DWR (California Department of Water Resources). September 2022. Recommendations for Variance for Significant Use of Water During Major Emergencies, Methods of Calculation, and Supporting Data Requirements. DWR Report Number: WUES-DWR-2021-12.
- DWR (California Department of Water Resources). September 2022. Recommendations for Variance for Significant Use of Water for Commercial or Noncommercial Agricultural Use, Methods of Calculation, and Supporting Data Requirements. DWR Report Number: WUES-DWR-2021-13.

- DWR (California Department of Water Resources). September 2022. Recommendations for Bonus Incentive, Methods of Calculation, and Supporting Data Requirements. DWR Report Number: WUES-DWR-2021-14.
- DWR (California Department of Water Resources). September 2022. Summary of Recommendations for Performance Measures for Commercial, Industrial, and Institutional Water Use. DWR Report Number: WUES-DWR-2021-15.
- DWR (California Department of Water Resources). September 2022. Recommendations for Commercial, Industrial, and Institutional Water Use Best Management Practices Performance Measure. DWR Report Number: WUES-DWR-2021-16.
- DWR (California Department of Water Resources). September 2022. Best Management Practices for Improving Efficiency in Commercial, Industrial, and Institutional Water Use: Key Successes and Challenges in California. DWR Report Number: WUES-DWR-2021-16.T1.
- DWR (California Department of Water Resources). September 2022. Recommendations for Commercial, Industrial, and Institutional Water Use Classification System Performance Measure. DWR Report Number: WUES-DWR-2021-17.
- DWR (California Department of Water Resources). September 2022. Recommendations for Dedicated Irrigation Meter Conversion Threshold for Commercial, Industrial, and Institutional Outdoor Irrigation Water Use Performance Measure. DWR Report Number: WUES-DWR-2021-18.
- DWR (California Department of Water Resources). September 2022. Recommendations for In-Lieu Technologies for Dedicated Irrigation Meters for Commercial, Industrial, and Institutional Outdoor Irrigation Water Use Performance Measure DWR Report Number: WUES-DWR-2021-19.
- DWR (California Department of Water Resources). September 2022. Urban Water Use Efficiency Recommendation Package: Glossary and Abbreviations and Acronyms. DWR Report Number: WUES-DWR-2021-21.

Stakeholder Outreach Summary for Developing Urban Water Use Efficiency Standards, Variances, and Performance Measures | Appendix A – Appendix A: Urban Water Use Efficiency Recommendation Package Reports Incorporated by Reference

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Stakeholder Outreach Summary for Developing Urban Water Use Efficiency Standards, Variances, and Performance Measures | Appendix B – Stakeholder Comment Letters

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February 14, 2022

WUEStandards@water.ca.gov

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: Draft Water Use Efficiency CII Performance Measure Recommendations

Dear Water Use Efficiency Branch

The Association of California Water Agencies (ACWA), California Municipal Utilities Association (CMUA), and California Water Association (CWA)(collectively referred to as "the Coalition") appreciate the opportunity to submit written comments to the Department of Water Resources (DWR) on its draft Water Use Efficiency Commercial, Industrial, and Institutional (CII) Performance Measure Recommendations (draft Recommendations). ACWA represents over 460 local public water agencies that supply water for domestic, agricultural, and industrial uses to over 90 percent of California's population. CMUA represents over 50 water agencies that deliver water to nearly 75 percent of Californians. CWA represents water agencies that provide drinking water to just over 15 percent of the State and are subject to the jurisdiction of the California Public Utilities Commission. Our associations' members will be tasked with complying with the draft Recommendations and offer the following input for DWR's consideration.

- 1. COALITION RECOMMENDATIONS. The Coalition comment letter includes our support for specific elements of DWR draft Recommendations, as well suggested changes to address water suppliers' overarching policy concerns and technical concerns with the draft Recommendations. The inclusion of the Coalitions' suggested changes in DWR's final Recommendations could lead to meaningful water use efficiency in the CII sector in accordance with *Making Water Conservation a California Way of Life*, while minimizing unnecessary challenges and costs to water suppliers. We appreciate DWR's consideration of these recommendations.
 - A. Equivalent Compliance Pathway. We strongly encourage DWR to include the proposed Equivalent Compliance Pathway (see Appendix A) as an additional pathway for water suppliers to comply with the draft Recommendations that would address several of the Coalition's overarching policy concerns. The Equivalent Compliance Pathway Program would allow suppliers to comply with their currently implemented CII water use efficiency programs that are (1) adapted to the unique need of the service area, (2) recognize past and ongoing water use efficiency programs and efforts, and (3) are determined to be cost effective by the water supplier. See Appendix A for additional details on the Equivalent Compliance Pathway.
 - B. <u>Technical Edits to Specific Recommendations</u>. The Coalition comment letter includes specific redline changes to DWR's draft recommendations:
 - i. Performance Measure: CII Water Use Classification System (CS)

- Recommendations on Dedicated Irrigation Meter Conversion Threshold for Commercial, Industrial, and Institutional Outdoor Irrigation Water Use Performance Measures (CT)
- iii. Recommendations on In-Lieu Technologies for Dedicated Irrigation Meters for CII Outdoor Irrigation Water Use Performance Measures (IL)
- iv. Recommendations for Commercial, Industrial, and Institutional Water Use Best Management Practices Performance Measure (BMP)
- 2. COALITION SUPPORT FOR DRAFT RECOMMENDATION COMPONENTS. The Coalition submitted comments to DWR on a Commercial Outdoor Landscape Area with DIM Standard Recommendation on November 24, 2021. Our comments requested CII performance measures that focus on actions that will result in actual water savings and are cost-effective. The Coalition appreciates DWR's subsequent revisions to the proposal and some of the following elements included in the draft Recommendations:
 - A. <u>One-Acre Threshold</u>. ACWA appreciates that DWR has revised its earlier proposed recommendation of 20,000 square feet or irrigated landscape area as the threshold for CII mixed used meter (MUM) conversation to dedication irrigation meter (DIM) or Equivalent Technology to one acre. In our November comments, the Coalition recommended an alternative threshold for converting MUMs as parcels that are irrigating an acre or greater citing concerns that 20,000 square feet would not be a cost-effective threshold and would create undue burden on waters suppliers and CII customers. We additionally support that the conversion threshold is measured on a per parcel basis.
 - B. <u>5 Year window</u>. We appreciate that the proposed implementation schedule would provide water suppliers up to 5 years after State Water Board adoption to complete the identification of MUM meter accounts and implementation of in-lieu technologies. We think that this time would be necessary in order to complete the necessary components included in the draft Recommendation.
 - C. <u>Characterization of In-Lieu Technologies</u>. We appreciate the proposed in-lieu technologies, which include water budget-based rate structure, water budget-based management, hardware improvements with enhanced performance and function, remote sensing for irrigation management combined with other available technology, and the potential for other technologies.
- **3. OVERARCHING POLICY CONCERNS.** The Coalition is concerned that DWR's draft Recommendations would create enormous challenges for water suppliers and require significant resources to implement. We have outlined these concerns below and offer the following solutions:
 - A. <u>Recognize Efficient Water Use</u>. We have significant concerns that the draft Recommendations, as proposed, do not recognize and reward existing efficient water use. Many agencies and water users have been implementing CII water use efficiency programs for decades. However, the draft Recommendations assume that agencies and CII water

users are starting at zero. This is inconsistent with the goals of Making Water Conservation a California Way of Life Framework and DWR's recommendations should be modified to reward investments and achievements in water use efficiency and support cost-effective investments to further water use efficiency.

- i. <u>Adopt an Equivalent Compliance Pathway</u>. The *Equivalent Compliance Pathway* (see Appendix A) would allow for consistency and alignment with locally developed and implemented CII programs, rather than creating a one-size fits all program that fails to recognize the success and local conditions of existing and future CII programs.
- ii. Set a Conversion Threshold that Recognizes Water Efficiency. The Coalition's November 24, 2021 proposal for setting a CII threshold for conversion of MUMs to DIMs or equivalent technology included an alternative approach that addressed the end goal of water efficiency. In our proposal, water suppliers would, for MUMs irrigating one acre or greater, estimate the annual outdoor water use and compare it with the outdoor water use efficiency standards. Only MUMs with an outdoor water use greater than the outdoor water use efficiency standard would require subsequent actions. That would include a Compliance Plan, designed to reduce water demand to meet the water use efficiency standard by converting to DIMs, a DIM Equivalent Technology, or through In-Lieu Technologies. DWR should amend its recommendation to include the Coalition's proposal that allows for efficient water use on mixed use meter sites to be excluded from additional requirements.
- B. <u>Recognize Water Suppliers' Limited Authority</u>: It is essential that the draft Regulation acknowledge water suppliers' limitations in regards to requiring and enforcing CII customers to participate in performance measures. Water agencies can only offer services and programs and cannot require customer participation. Water suppliers should not be required to meet regulatory requirements outside their control.
 - Delete Inappropriate Requirements. As proposed, the draft performance measures recommendations would require three specific BMPs for all in-lieu technology programs, including Communications BMP (IL 3.1.4.1), Irrigation System Maintenance BMP that includes annual inspections, maintenance, and repairs (IL 3.1.4.2), and Irrigation Scheduling BMP that includes assistance with setting up and updating irrigation schedules, inspections, maintenance, and repairs (IL 3.1.4.3). These BMPs would prescribe new inappropriate and infeasible responsibilities to water agencies and could expose water agencies to significant liability. DWR should delete requirements that are not consistent with water suppliers' authorities.
- C. <u>Provide Appropriate Flexibility for Implementing</u>. We appreciate DWR's recognition that water suppliers have the best understanding of their water users. However, DWR's draft Recommendations prescribe an implementation pathway that limits water suppliers' flexibility to map and target CII customers. For example, CT recommendation 4.1 would provide urban retail water suppliers up to five years after State Water Board adoption to complete mapping of accounts to the CII water use classification system for annual reporting purposes. However, CT recommendation 4.1.1.1 would then establish a minimum level of progress in account mapping per year of 20% of CII water accounts. While this may

be the best approach for some water suppliers, others may want to approach mapping differently. The draft Recommendations should allow for alternative timelines and strategies to meeting the broader timeline, rather than setting a prescriptive, one-size fits all approach for implementation.

- <u>Recognize that Large Users of Water May Be Efficient</u>. The draft Recommendations should recognize that top water users can be efficient despite using a larger volume of water and being a top water user is not necessarily indicative of water waste. For example, a restaurant with a higher water use than another user could simply have a greater number of customers, despite having made investments in water use efficiency. DWR should amend its recommendation to include an Equivalent
 Compliance Pathway that would allow water suppliers the flexibility to target CII customers with the greatest potential for improved water efficiency. The proposed focus on large water users could have unintended impacts to small businesses, which often request assistance with water use efficiency.
- D. <u>Minimize Unnecessary Reporting</u>. The draft Recommendations would shift water agencies' resources to complying with burdensome reporting requirements, rather than focusing on working with CII customers to achieve water savings. DWR should consider the goals of AB 1755, the Open and Transparent Water Data Act and AB 1668 requirements under Water Code Section 10609(c)(4) which directs the state to identify opportunities for streamlined reporting, eliminate redundant data submissions, and incentivize open access to data collected by urban and agricultural water suppliers, and the overall usefulness of data requested. Water suppliers are very concerned with the useful and general purpose of the proposed data requested, such as submitting metrics and performance standards. We recommend that DWR delete unnecessary and non-beneficial reporting requirements.

4. TECHNICAL RECOMMENDATIONS.

- A. <u>Performance Measure: CII Water Use Classification System</u>
 - 3.2 Urban retail water suppliers will follow DWR's account mapping guidance based on NAICS with necessary customization, including land use designations (APNs) used by county assessor's offices, for categorizing their water accounts for CII performance measure reporting purposes.
 - Recommendation: DWR should provide a guide to associate NAICS codes to their respective classification category to maintain consistency across water agencies and to aid agencies in this task. The State should provide NAICS dataset in order to provide consistency, uniformity, and reliability of NAICS dataset. This would save each water agency from having to procure this data independently.
 - ii. 4.1.1.2 Should an urban retail water supplier experience a substantial hardship meeting the minimum level of progress, by year 3, the urban retail water supplier will provide an implementation plan to meet the full mapping requirement. That implementation plan will be subject to State Water Board approval.

- Recommendation: Waters suppliers should be directed to work with State Water Board staff. State Water Board approval is not necessary.
- iii. 4.3 Urban retail water suppliers are required to conduct periodic reviews and update their account mapping for CII water use classification; 4.3.1 Review and updated account mapping should occur at least every other year.
 - Recommendation: Reviewing and updating mapping at this frequency would require significant staff resources and is not necessary. The draft Recommendations should provide a longer period to review and update account mapping, so long as new customer NAICS codes are being updated.
- B. <u>Recommendations for Commercial, Industrial, and Institutional Water Use Best</u> <u>Management Practices Performance Measure</u>
 - i. 4.1.3 Landscape landscape and irrigation management practices to promote improved water use efficiency such as turf removal or replacement programs, irrigation system inspection and maintenance, irrigation scheduling training, new development landscape inspection, workshops and training, and others.
 - Recommendation: Include irrigation hardware/ system improvements as a landscape BMP.
 - 4.2.1 Identification of CII-sectors above the threshold (classifications in top 20%) for targeting BMP programs including method used for excluding process water in determining the top 20% and top 2.5% of CII water users.
 - Recommendation: The proposed thresholds would limit the flexibility for water suppliers to implement the most effective program based on the unique characteristics of their service area. Provide water suppliers the flexibility to direct their limited resources in a manner that will be most effective and equitable to customers.
 - Recommendation: Water suppliers should have the discretion to include or exclude and should have the ability to remove all CII accounts that have process water, regardless of percentage of use or customer type. Excluding process water is fundamentally impossible to implement. Process water is not individually metered, varies year over year, and industry reports do not exist for all the uncustomary types of CII customers.
 - iii. 4.2.6 Identification of metrics or key performance indicators that will be used to determine progress and success of the CII-BMP implementation program.
 - Recommendation: Water agencies should provide DWR with a list of their program offerings in each BMP category, not metrics and key performance indicators for compliance. This would help reduce the reporting burden on water suppliers and acknowledge that water agencies can offer programs but cannot force customers to participate.

- iv. 4.4 Subject to appropriate approvals, DWR may coordinate with the State Water Board and other agencies to issue an advisory to land use authorities for cooperation and assistance to urban retail water suppliers in information sharing during building permit issuances that may affect CII water use.
 - Recommendation: DWR and the State Water Board should encourage information sharing and, when requested, the transfer of responsibilities to water suppliers.
- v. 5.1 Urban retail water suppliers have up to 2 years after State Water Board adoption of the CII Classification System Performance Measure to design and begin implementing their CII-BMP program.
 - Recommendation: BMP implementation should only start after the classification system is completed. All draft Recommendation requirements should be coordinated and aligned.
- vi. 5.6.1 Urban retail water suppliers should coordinate with the corresponding land use authority(ies) to add a requirement for consulting urban retail water suppliers, where appropriate, for awareness of changes and potential reclassifications and updates of fixtures, appliances, and infrastructure.
 - Recommendation: This requirement should be removed. This is unnecessary as new non-mixed use customers will contact the water supplier to request new service.
- C. <u>Recommendation on Dedicated Irrigation Meter Conversion Threshold for Commercial,</u> <u>Industrial, and Institutional Outdoor Irrigation Water Use Performance Measure</u>
 - i. 3.1.1. The Conversion Threshold PM applies to aggregate irrigated CII landscape area, measured on a per parcel basis, greater than one acre.
 - Recommendation: Threshold should reward efficiency. Consistent with the Coalition's comments in Section 3.A.ii, only MUMs with an outdoor water use greater than the outdoor water use efficiency standard should require subsequent actions.
 - ii. 4.1.1. The minimum level of progress in account mapping is 20% of CII mixed-use meter accounts per year as specified in the CII classification performance measure.
 - Recommendation: Completing the classification system may be a onetime account mapping project of sites (without DIM over one acre) to be completed in years 3-5. A submitted classification plan should provide compliance. Water suppliers should not be expected to take additional BMP implementation actions before understanding CII customers' water use.
 - iii. 4.3.1. Generally, CII landscape area measurements associated with mixed CII meters should be performed and certified by a qualified professional with measurements formally adopted by the corresponding water supplier's governing body through a public process.
 - Recommendation: Clarify that a qualified professional is someone trained in measuring landscapes.

• Recommendation: Remove the requirement that the measurements must be adopted by a governing body and allow for certification by the general manager.

D. <u>RECOMMENDATION ON IN-LIEU TECHNOLOGIES FOR DEDICATED IRRIGATION METERS FOR</u> <u>COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL OUTDOOR IRRIGATION WATER USE</u> <u>PERFORMANCE MEASURE</u>

- i. 2.3.1. Once an urban retail water supplier determines that the aggregated landscape area within a parcel exceeds the one-acre size threshold, the urban retail water supplier should decide the technical and financial feasibility of DIM conversion based on local conditions and declare the chosen pathway for compliance consistent with the DIM conversion threshold performance measure.
 - Recommendation: Clarify that of the three pathways of compliance with the Conversion Threshold, only conversion to a dedicated meter or an equivalent technology (2.3.1.1.1) is subject to water use standards. The other two pathways, using in-lieu technologies (2.3.1.1.2.) and reducing the landscape below the threshold and reporting BMPs (2.3.1.1.3.), would not be part of the calculation either of the water use objective or of the annual water use that is compared to the objective.
- ii. 3.1.4. The following BMPs are required for all in-lieu technology programs.
 - Recommendation: Proposed BMPs 3.1.4.1, 3.1.4.2, and 3.1.4.3 should be removed. As discussed in Section 3.B.i, these requirements would place inappropriate responsibilities and liabilities on water agencies.
- iii. 3.1.4.1. Communications BMP, including regular and ongoing communication and engagement among the urban retail water supplier, Landscape Manager, Property Owner, and Building Manager with the intention of increased water use efficiency on CII landscapes including notifying CII customers when landscape water use may be more than the CII-DIMWUS.
 - Recommendation: Remove this proposed BMP. The proposed BMP would essentially mandate water suppliers to have a full-scale landscape irrigation budget program. This would add significant ongoing expenses to require landscape budgets for mixed use accounts and may not be technically feasible with the best of landscape budget software available or water agencies do not have access to irrigation water use data from some of the In-Lieu Technologies and cannot notify customers if they are over budget. Additionally, waters suppliers cannot require engagement from customers, landscape managers, property owners, and building managers.
- iv. 3.1.4.2. Irrigation System Maintenance BMP, including at least annual system inspections, maintenance, and repairs as applicable and providing resources for CII customers to find qualified professionals certified/trained on irrigation system best management practices.
 - Recommendation: Remove this proposed BMP. It is inappropriate to require water agencies to conduct inspections, maintenance and repairs for CII customers. This should be removed. Water suppliers can offer surveys, plans, etc. in generic form. It is inappropriate for a water supplier to monitor and

enforce irrigation system maintenance and repairs, and could pose significant liability issues.

- v. 3.1.4.3. Irrigation Scheduling BMP, including assistance with setting up and updating irrigation schedules appropriate for the landscape plants, checked by certified / trained irrigation professional.
 - Recommendation: Remove this proposed BMP. It is inappropriate and would create significant liabilities for water agencies to prescribe actions to customers, including irrigation schedules. This should be removed.

ACWA, CMUA and CWA appreciate the opportunity to provide input to DWR on this effort. Please do not hesitate to contact me at ChelseaH@acwa.com or (916) 441-4545 if you have any questions regarding our input.

Chilsea Hans

Chelsea Haines Regulatory Relations Manager Association of California Water Agencies

Andrea Abergel Senior Regulatory Advocate California Municipal Utilities Association

Inf M Capitolo

Jennifer Capitolo Executive Director California Water Association

CC: The Honorable Karla Nemeth, Director, California Department of Water
 The Honorable Joaquin Esquivel, Chair, State Water Resources Control Board
 Mr. Ryan Bailey, Water Use Efficiency Branch Manager, Department of Water Resources
 Mr. Dave Eggerton, Executive Director, Association of California Water Agencies
 Ms. Cindy Tuck, Deputy Executive Director for Government Relations, Association of California
 Water Agencies

<u>Appendix A</u> CII Performance Measures: *Equivalent Compliance Program*

CONCEPT: DWR should include an *Equivalent Compliance Pathway* as an option for water suppliers who have already developed and implement CII water use efficiency programs to comply with the CII-BMPs Performance Measures. Many water suppliers begin their CII programs by targeting the top 20 percent of customers and it can be a very useful approach. As noted above, targeting the top 20 percent is not always the most effective if those customers are already efficient, and this is often the case for suppliers who already implement CII programs. Over time, many suppliers adapt their CII programs to target customers with more potential for improved water efficiency that builds on and recognizes past program efforts. New CII programs could also be structured to target certain sectors, something that the initial classifications could help identify.

With this in mind, the *Equivalent Compliance Program* would provide suppliers with greater flexibility to implement CII water use efficiency programs that are (1) adapted to the unique need of their service area, (2) recognize past and ongoing water use efficiency programs and efforts, and (3) are determined to be cost effective by the water supplier. This approach is consistent with the recommendations of the CII Task Force Report (Oct 2013).

REQUIREMENTS: As part of the program, the Performance Measures should be structured to include the mandatory account classification as a first step, consistent with DWR's CII Water Use Classification System recommendations 3.1. Once the accounts are classified, suppliers would be required to evaluate their current CII water use efficiency program, and implement cost-effective CII efficiency programs structured to include at least one program from each the 5 categories of BMPs recommended by DWR as described below.

<u>COMPLIANCE</u>: The CII Performance Measures may be implemented on an individual supplier and/or regional basis or any combination of the two. Suppliers would check an additional box in each category to indicate that the program is being implemented on a regional basis and identify the regional agency or agencies responsible for implementation. Regional CII Performance Measure implementation could include partnerships such as, but not limited to, wholesale water suppliers, partnerships of contiguous retail agencies, joint powers authorities or other collaborative efforts by water suppliers to jointly implement CII programs.

Consistent with DWR's draft Recommendations, water suppliers would be required to classify all CII into a classification system that addresses significant water users over a 5-year period. Additionally, water suppliers would be required to have a CII-BMP implementation program specific to their service area CII-customers that includes at least one BMP from each of the five above categories.

<u>REPORTING</u>: Performance measure compliance reporting to the State would use a checkbox to indicate which activities from each of the 5 BMP categories the agency is implementing, and whether or not the measure is being implemented on a regional basis.

Equivalent Compliance Program: Checklist

1.
□ CII Account Classification (required for all supplies)

- 2.
 CII-BMPs PM Specification (suppliers must implement a BMP from each category)
 - A. \Box Outreach and Education: practices and actions to inform and educate the CII community to improve water use efficiency.
 - i. Direct contacts via site visit or phone calls

 - iii. 🛛 Conducting workshops or developing training videos
 - iv. Uebpage portals to access CII water efficiency information, tools and rebates
 - v. 🛛 Cost-effectiveness analysis tools
 - vi. 🛛 Commercials and advertisements
 - vii. 🛛 Grass roots marking
 - viii. 🛛 Community based social marketing
 - ix. 🗌 Other: _
 - B.
 □Incentive Programs: the structured use of rewards and recognition to motivate CIIcustomer water use efficiency.
 - i. Rebates and cost-share for replacing inefficient fixtures, equipment, irrigation systems, or landscapes with water efficient ones
 - ii. □ Certification or branding programs
 - iii. 🛛 Value-added programs that offer additional benefits
 - iv. 🛛 CII water budget rate structure
 - v. CII Water budgets with other rate structures
 - vi. 🗌 Other: _
 - □ Regional Implementation. Identify Regional Implementation Agency(ies):
 - C.
 Landscape: landscape and irrigation management practices to promote improved water use efficiency.
 - i. Turf removal or replacement programs
 - ii. \Box Irrigation system inspection and maintenance
 - iii. 🛛 Irrigation scheduling training
 - iv. \Box New development landscape inspection
 - v. 🗌 Workshops and training
 - vi. 🗌 Other: _
 - □ Regional Implementation. Identify Regional Implementation Agency(ies):
 - D. Collaboration and Coordination: formalized internal operational and institutional arrangements.
 - i. Coordination with 'green' building certification or recognition programs to promote water use efficiency,
 - ii. Coordination with land use authorities to check new landscape design and implementation,
 - iii. Collaboration with non-government organizations on outreach and education, and others.

- iv. 🛛 Grant funding awards to implement CII water efficiency programs
- v. 🗌 EPA WaterSense partner
- vi. 🗆 Other: _____
- E. Operational: necessary or planned operational BMP(s)
 - i. System infrastructure changes (e.g., smart meter replacement programs),
 - ii. Billing or data collection procedures (e.g., data tracking, analysis, water budget-based rates and reporting improvements),
 - iii. Other operational BMPs to facilitate CII-BMP program implementation and evaluation.
 - iv. 🗆 Other: _____



A Chapter of the Alliance for Water Efficiency

February 15, 2022

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

Re: Draft CII Performance Measures Recommendations Comments

Dear Water Use Efficiency Branch:

The California Water Efficiency Partnership (CalWEP) is a statewide non-profit member-based organization representing over 220 California water agencies, businesses, and other organizations. Collectively our water agency members provide services to over 6.6 million connections across the state. With a mission and commitment to maximize water efficiency, CalWEP has a deep history working on customer side conservation and efficiency programs. We believe that data-driven conservation and efficiency are paramount to ensuring that California has a reliable and resilient water future.

CalWEP appreciates the opportunity to review and comment on DWR's recommendation on CII Performance Measures presented on January 25, 2022, as part of the water conservation legislation.

DIM Conversion Threshold for CII Outdoor Irrigation Water Use Performance Measure:

<u>CalWEP supports the aggregate irrigated CII landscape area threshold recommendation of greater than one acre for installation of DIMs or equivalent technology at CII-MUM accounts.</u> Specifically, this recommendation is supported by select findings from the feasibility analysis technical memorandum completed by CalWEP and the California Data Collaborative (CADC) and submitted to DWR as comment on November 24, 2021. As our feasibility analysis found, and as quoted directly in paragraph 2.6.5.3 of the subject recommendation:

"In some instances, sites that are large (40,000 square feet), where splitting requires minimal construction on the customer side, and where DIM installation reduces irrigation water use, meter splitting may be a cost-effective approach."

CII Performance Measures:

<u>CalWEP supports the option of a performance measures compliance pathway for those CII-MUM</u> parcels, where converting CII-MUMs to DIMs is deemed not cost-effective, infeasible, or will not result in additional water use efficiency after the conversion. While the findings from our feasibility analysis did find that landscapes greater than 40,000 square feet could result in a positive return on investments for the supplier per meter split, these outcomes were modeled

under scenarios where water savings post DIM installation approached or met 20%. However, as we noted in our analysis:

"Expert opinion was that 20 percent savings would only be achievable through substantial additional investment on top of the meter split, such as the application of water budget-based rates, water management plans, or other best management practices."

If the costs of these "additional investments" were accounted for in our feasibility analysis, it is presumed that the NPVs cited would be much lower and DIM conversion perhaps cost prohibitive for the supplier. This exemplifies why deciding the best performance pathway to compliance should be at the discretion of the supplier. Further, CalWEP is in agreement with and appreciates the following acknowledgements by DWR within the subject recommendations:

DIM Conversion Threshold Performance Measure, Paragraph 2.6.2.1.1:

"The State cannot determine the best course of actions and is not familiar with detailed conditions associated with a specific landscape.", and

DIM Conversion Threshold Performance Measure, Paragraph 2.6.4.2: "Only an urban retail water supplier and individual CII customers can: Determine the technical and financial feasibility of converting mixed CII meters."

By offering three pathways for compliance (DIMWUS, In-Lieu, BMPs), DWR allows suppliers to account for site conditions at individual CII parcels that directly affect water use efficiency while also receiving the greatest return in water savings from their investments. <u>Based on the above,</u> <u>DWR should consider including provisions or modifying proposed provisions within their recommendation to the Board that grants maximum flexibility to a supplier in deciding which compliance pathways and associated technologies or BMPs will result in the greatest water savings over time on a per-parcel or CII classification basis. This comment extends to section 4.2. within the BMP Performance Measure recommendation that establishes thresholds for individual and sector CII accounts and prescriptive BMPs per threshold category.</u>

General Comments:

CalWEP has over the decades emerged as an expert in urban water conservation and efficiency as a result of its historical (via the California Urban Water Conservation Council) and ongoing work assessing and researching the impacts of various best management practices offered by its members which are comprised of hundreds of water suppliers across the state of California. Our work has yielded numerous resources for our members and has allowed suppliers to adapt their conservation programs and services to optimize savings and improve efficient use of water. We will continue to offer this same level of support while also remaining at the forefront of data collection through our partnerships with the technology and water industry sectors. Therefore, CalWEP appreciates the opportunity to offer these comments and looks forward to continuing to provide expertise to DWR and the State Water Resources Control Board during this ongoing rule-making process to fulfill the requirements of SB 606 and AB 1668.

Please contact Lisa Cuellar, Senior Program Manager at CalWEP, if you have any questions regarding this information (<u>lisa@calwep.org</u>).

Sincerely,

with funch

Justin Finch, Chair California Water Efficiency Partnership Moulton Niguel Water District

cc: Charlotte Ely, California State Water Resources Control Board



Ronald Davis Director Division 1

Mark R. Emmerson Director Division 2

Jeff Nelson Director Division 3

February 15, 2022

7837 FAIR OAKS BOULEVARD CARMICHAEL, CALIFORNIA 95608 TELEPHONE: (916) 483-2452 FAX: (916) 483-5509 Ron Greenwood Director Division 4

Paul Selsky Director Division 5

Cathy Lee General Manager

Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 1416 9th St, Sacramento, CA 95814 Submitted via email: <u>WUEStandards@water.ca.gov</u>

Subject: CII Regulation Recommendations

Dear California Department of Water Resources (DWR) Leadership and Staff,

The Carmichael Water District (CWD) has reviewed the Draft CII Regulation Recommendations (Draft Regulation), and appreciates the opportunity to provide written comments to DWR. CWD recognizes the effort DWR has made in developing the Draft Regulation and the willingness to incorporate stakeholder feedback. Based on our review of the Draft Regulation CWD urges DWR to consider the following comments/suggestions:

1. Responsibility & Authority

Like the majority of water suppliers in California, CWD does not have land use authority which expressively impacts the ability to enforce many of DWR's recommendations in the Draft Regulation. Similar to the Model Water Efficient Landscape Ordinance (MWELO), the Draft recommendations include land use authority requirements that simply are not available to a special district like CWD. In the context of turf grass conversions, the only tools that are available to CWD are education materials and financial incentives, which rely heavily on voluntary participation. As demonstrated in the past, voluntary measures to reduce turf areas are not a reliable tool and rely heavily on property owner's willingness/financial ability to participate. The responsibility and authority to implement the Draft Regulation need to be clearly defined prior to finalizing the Regulation.

2. Additional Reporting Requirements

As with all of the regulations being developed under the SB606/AB1668 framework, CWD is extremely concerned over the increase of data collection/tracking and duplication of reporting in complying with the Draft Regulation. Labor-intensive data requirements in the Draft Regulation, such as Water budget-based management and CII BMP implementation, will further stress CWD's limited staffing resources. Even the in-lieu compliance options, such as water budget-based

CII Regulation Recommendations Comments Page 2

management, are not easily implemented with CWD's current staffing levels. CWD urges the State Water Board to address the need for centralization and consolidation of data inquires with high quality templates, guidance documents, and State sponsored implementation support.

3. Customer Rates and Affordability.

Customer rate driven funding is the only reliable and steady source available for CWD to implement water conservation activities. This source is extremely limited given the competing nature of funding safe reliable water supplies, and implementing operationally intensive conservation programs. Cost associated with applying the Draft Regulation will increase the cost of water in our service area in the form of materials, equipment, and supplies to install dedicated irrigation meters, additional staffing to implement alternative compliance and BMP activities, increased incentive programs, and public outreach. The inverse relationship of keeping rates affordable for all customers, while at the same time increasing expenses to meet new efficient water use objectives, must be taken into account when considering recommendations in the Draft Regulation. Absent the availability of State level funding, CWD will face hurdles in implementing the Draft Regulation without significantly affecting the affordability of water for our customers.

CWD appreciates your consideration of these comments. We look forward to continuing to work with DWR towards practical and balanced water efficiency standards.

Sincerely,

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Cathy Lee **(** General Manager



COACHELLA VALLEY WATER DISTRICT

Established in 1918 as a public agency

GENERAL MANAGER Jim Barrett

CLERK OF THE BOARD

Sylvia Bermudez

ASSISTANT GENERAL MANAGER Robert Cheng

ASSISTANT GENERAL MANAGER Dan Charlton

February 15, 2022

Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 Sacramento, CA 95814 WUEStandards@water.ca.gov

Dear Water Use Efficiency Branch;

Re: CII Performance Measures

Coachella Valley Water District (CVWD) welcomes the opportunity to provide comments to the California Department of Water Resources (DWR) on the recently proposed DWR recommendations on Commercial, Industrial, and Institutional (CII) Performance Measures. CVWD serves approximately 300,000 residents in its 1,000 square-miles of service area ranging from the San Gorgonio Pass to the Salton Sea, mostly within the Coachella Valley area of Riverside County, including small areas within Imperial and San Diego counties.

CVWD appreciates DWR's consideration of comments submitted on November 23, 2021 and revisions made to the proposed standards to include a one-acre threshold for dedicated irrigation meters (DIMs) or equivalent technologies, as well as consideration of in-lieu technologies, including water budget-based rate structures, which CVWD has had in place since 2008 and is our strongest conservation tool.

CVWD is grateful for DWR's proposed 5-year window which would allow for the implementation of the extensive components identified in Draft Recommendations, but requests the need for added flexibility or alternative timelines.

We appreciate DWR's continued consideration of our input. CVWD respectfully submits the following comments and concerns on DWR's CII Performance Measures:

• CVWD has reservations that the Recommendations do not recognize existing water users that are practicing efficient water use. The supposition is that agencies would be starting at zero, and those who are being efficient would need to further maximize their efficiencies. Furthermore, water agencies cannot mandate users to participate in conservation measures; a separate meter would not guarantee that users would seek to be more efficient. Thus, begging the question of who would be responsible for enforcement measures or participation in said conservation programs?

Water Use Efficiency Branch Dept. of Water Resources February 15, 2022 Page 2

- CVWD requests that water agencies determine when in-lieu technology or DIMs be used on a property. In-lieu technology should be viewed as equivalent, when needed, to demonstrate the greater water savings.
- CVWD seeks clarification on who the responsible party is for the implementation costs of proposed regulations: DWR or water agencies? CVWD is concerned that this would create greater costs to the agency and not be economically feasible for smaller agencies. In that same vein, should DWR believe the customer be the responsible party for retrofitting, it is imperative to note that this would have undue economic impacts to underserved communities.
- CVWD would like to emphasize the need for properly sized meters. This helps to ensure the consumption is being tracked more accurately. Similarly, it lessens the likelihood of failed meters, increasing incurred costs to the agency.
- Regarding DWR's Recommendation for CII Best Management Practices (BMP) Performance Measures, CVWD requests that agencies determine which BMP category is a best fit for customers/rate payers or most cost effective. CVWD believes it will be difficult to measure performance indicators via established metrics; however, CVWD is amenable to providing DWR with a list of programs customers can utilize. As a water supplier, CVWD cannot mandate customers participate in various programs.

Additionally, CVWD has signed onto a letter by ACWA, CMUA and CWA, and is in support of their larger set of comments, specifically the Equivalent Compliance Pathway identified in Appendix A of the coalition letter.

Coachella Valley Water District is grateful for the opportunity to provide comments and looks forward to continued collaboration with DWR and the State Water Board to successfully implement *Making Water Conservation a California Way of Life*.

Please do not hesitate to contact me at (760) 398-2651, extension 3405 or via email at jshimmin@cvwd.org, with any questions about this letter or its comments. Additional staff contacts are Victoria Llort, Government & Regional Affairs Coordinator, at extension 3564 or via email at vllort@cvwd.org.

Sincerely,

gaor

Jenna Shimmin Conservation Manager

K:\COMMLEGI\Victoria\Conservation Way of Life (SB 606 & AB1668)\Letters\February 2022 File: 0870.

Kristin Bloomer, President (Division 5) James Cioffi, Vice President (At large) Joseph K. Stuart, Secretary-Treasurer (At large) Patricia G. Oygar, Director (At large) Paul Ortega, Director (Division 4)



February 15, 2022

DWR WUE Team,

Thank you for the workshops in November of 2021 and January 2022 regarding draft CII Performance Measure Recommendations. It is clear that your time spent a lot of time and thought in developing the recommendations and materials presented. Desert Water Agency also appreciates the opportunity to comment before DWR presents its recommendations to the State Water Resources Control Board.

Our feedback on the draft recommendations are below.

Cost-effectiveness

Further study is needed to support the recommendation for separating mixed-used meters at the one acre threshold. Simply selecting that amount for MWELO consistency does not meet the legislative requirement for financial feasibility.

While DWA appreciates the complexity of the task at hand, the cost to implement the performance measures may well exceed the water-savings benefits. A more streamlined approach would allow suppliers to focus on other water use efficiency objectives without jeopardizing CII water savings.

Adding staff to implement this program would raise affordability concerns for low-income customers. The onus to provide these services to CII accounts would fall on all customers despite the disproportionate allocation of resources to a specific subset CII customers.

Additionally, the cost of meter separation and ongoing monthly charges associated with additional meters create affordability issues for the businesses and municipalities affected by the dedicated irrigation meter requirement.

Threshold for meter conversion

One acre of irrigated area per parcel is too small of a threshold. DWA has hundreds of accounts that would require compliance and only 2 full-time equivalent water conservation staff members. DWA encourages DWR to substantiate and use a cost-effective area.

DWA urges DWR to consider applying the threshold to <u>grass areas</u> within a parcel only. The costeffectiveness of dedicated meters for xeriscape areas has not been established but would be far less than grass areas. Additionally, focusing resources on areas with desert landscaping will not be the best use of our limited staff resources.

Encouraging CII customers to reduce landscape area beneath one acre could result in xeriscape being replaced with hardscape or simply inert material, which would have a number of undesirable consequences.



Streamlining and technical assistance

The more simple and streamlined these programs can be, the better for implementation across the states 400 plus water agencies. Any best management practice enforcement that can be managed at the state level will reduce redundancy.

DWA requests technical assistance from the state, including templates and reporting assistance. Any requirements for ongoing communication with CII customers should have an onus on water agencies to reach out or inform but should not penalize agencies for CII customers' lack of responses.

DWA experience with CII engagement give us serious concerns regarding requirements to get documentation from and access to CII properties.

Customer engagement

Unfortunately, CII customers can be some of the most challenging to reach due to the multiple points of contact and turnover. Suppliers can only reasonably be tasked with getting out information and making programs available.

Additionally, customer outreach to CII customers has focused heavily on wise water use through native or low water use landscaping. That customers can achieve compliance with CII DIM standards through landscape removal acts in opposition to a long-term outreach promoted by DWA.

Based on tentative information gathered during this comment period, DWA will have as many as 200 CII sites that will require some form of outreach. Evaluating sites, determining DIM or in-lieu technology compliance, and tracking implementation and follow up is likely to be extremely staff time intensive. This is not to mention any programmatic or installation time challenges. Tracking the CII DIM program for these sites including follow up BMPs as necessary is likely to necessitate at least one additional full time staff member to maintain CII outreach and compliance. This risks taking resources away from conservation incentive programs, which are proven to save water.

In-lieu technology requirements

The BMP requirements included as part of in-lieu technology requirements will be extremely time intensive. The Communications, Irrigation System Maintenance, and Irrigation scheduling BMPs will require a knowledgeable water conservation professional to provide follow up with CII customers. Desert Water Agency already actively communicates with our CII customers, but the addition of required in person site visits makes compliance with in-lieu technology requirements difficult. Ensuring that recommendations are followed and that site visits are coordinated throughout the year will require at least one full time staff member devoted to CII DIM compliance. In person audits and irrigation timing recommendations may also make CII customers feel mandated to act and pose a possible legal concern.

In lieu technology requirements as written also tend to ignore previous efforts by CII water users to reduce water use. CII water users in the DWA service area have worked to reduce water use through investments in low water use landscaping, smart irrigation controllers, and high efficiency sprinkler nozzles none of which give them any benefit in the CII DIM guidelines as written.


Implementation timeline

DWA would appreciate DWR identifying recommended implementation dates for classification, DIM and best management practices that allow maximum time for agencies to comply given the WUE legislative deadlines.

If you have any questions about our comments, please feel free to contact me. Desert Water Agency sincerely appreciates your time and attention to improving water use efficiency in California.

Thank you,

/etzan

Ashley Metzger Director of Public Affairs & Water Planning Desert Water Agency | <u>www.dwa.org/save</u> <u>ashley@dwa.org</u> | 760-323-4971 ext. 184





February 1, 2022

Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 1416 9th St, Sacramento, CA 95814 wuestandards@water.ca.gov

Re: Comments on Draft Recommended Performance Measures for the Commercial, Industrial, and Institutional (CII) Sector

Dear Water Use Efficiency Branch:

The East Bay Municipal Utility District (EBMUD) appreciates the opportunity to review and provide comments on the Department of Water Resource (DWR)'s January 25, 2022 draft recommendations for performance measures for the CII Sector. EBMUD supported AB 1668 and SB 606 that established the State's long-term conservation framework in 2018. EBMUD has over forty years of real, on-the-ground experience in improving water use efficiency, strongly supports water conservation, and has the track record to prove it.

EBMUD appreciates DWR's willingness to engage with stakeholders in developing these recommendations. While EBMUD has been an active participant in DWR's various stakeholder discussions on these topics, the DWR recommendations presented on January 25, 2022 were the first time that agencies were able to see the actual recommended performance measures. These recommendations included many new concepts, requirements, and definitions that had not been discussed at previous meetings. EBMUD strongly encourages DWR to extend the comment period past February 8, 2022 to allow stakeholders more time to review the documents and provide meaningful feedback.

The DWR recommendations are heavy on reporting requirements that would not result in actual water savings, instead adding administrative tasks that diverts staff resources away from performing actual work to achieve water conservation goals. It would be more beneficial if DWR provided tools and resources similar to the USEPA Water Sense program.

The attached includes our comments on the draft recommendations, organized by document. If you have questions or wish to discuss further, please feel free to contact me at (510) 287-1105.

Regards,

alice E. Joney

Alice E. Towey Manager of Water Conservation East Bay Municipal Utility District

<u>EBMUD Comments on "Dedicated Irrigation Meter Conversion Threshold for</u> <u>Commercial, Industrial, and Institutional Outdoor Irrigation Water Use Performance</u> <u>Measure"</u>

The overall structure of the regulations unfairly burdens agencies who have been proactive in installing dedicated irrigation meters, by requiring them to meet unreasonable water use efficiency standards rather than just implementing BMPs as is required for mixed use meters. This would lead to unequal enforcement, wherein agencies that have been proactive in installing dedicated irrigation meters would be held to a different standard (with a potential monetary penalty) compared to agencies who only have mixed used meters for CII customers. EBMUD recommends that DWR modify the standard for Commercial, Industrial, and Institutional Outdoor irrigation of Landscape Areas with Dedicated irrigation Meters Water Use Efficiency Standard (CIIDIMWUS) to make it more feasible for agencies like EBMUD, who have been proactive in requiring dedicated irrigation meters, to meet.

DWR is requiring agencies to convert sites to dedicated irrigation meters if they meet the proposed threshold of one acre of aggregate irrigated CII landscape area, measured on a per parcel basis. DWR developed the CIIDIMWUS to calculate the volume of water allowed for all dedicated irrigation meters in an agency's service area, and the CIIDIMWUS will be part of an urban retail supplier's Water Use Objective (UWUO). It should also be noted that converting these customers to dedicated irrigation meters has a significant cost burden, but does not equate to automatic water savings.

However, some agencies have been proactive in requiring dedicated irrigation meters for smaller size parcels. EBMUD has required dedicated irrigation meters for large, irrigated areas of CII properties since the 1970's. Currently Section 31 of EBMUD's Regulations Governing Water Service requires a dedicated irrigation meter for any applicant for new or expanded service with an irrigated area of 5,000 square feet or more. EBMUD currently has over 5,000 such meters in its service area.

The CIIDIMWUS is unreasonably stringent. It sets the evapotranspiration factor (ETF) at 0.8 for 2023 through 2029 and at 0.65 from 2030 on. This is inconsistent with DWR's own findings, presented at its October 25, 2021 Standards, Methodologies and Performance Measures Working Group meeting, that an ETF of 0.7 is not supported based on real-world data for existing CII landscape water use efficiency. *We recommend that DWR revise the standard to set the ETF at 0.8 without lowering it in 2030*.

DWR's calculations also include an irrigation efficiency of 80%, which is not supporting in any field studies as achievable. The August 17, 2022 comment letter from the Association of California Water Agencies and the California Municipal Utilities Association provided data showing why an 80% irrigation efficiency is not realistic. *EBMUD recommends that irrigation efficiency be lowered to no more than 70% in the CIIDIMWUS equation.*

The calculation also reduces the volume of water available by including effective precipitation, even though it is not required by the legislation, MWELO, or in DWR's own CIMIS calculations. *EBMUD recommends that effective precipitation be removed from the CIIDIMWUS equation*.

EBMUD Comments on "Dedicated Irrigation Meter Conversion Threshold for Commercial, Industrial, and Institutional Outdoor Irrigation Water Use Performance Measure"

Setting overly stringent requirements for CII dedicated irrigation meters could have the effect of discouraging agencies from requiring them. EBMUD suggests that DWR revisit the CIIDIMWUS with this consideration in mind.

<u>EBMUD Comments on "Recommendation on In-Lieu Technologies for Dedicated</u> <u>Irrigation Meters for Commercial, Industrial, and Institutional Outdoor Irrigation Water</u> <u>Use Performance Measure"</u>

The draft regulations provide three compliance pathways for CII landscaped areas that exceed the threshold. Agencies can either: convert those landscapes to dedicated irrigation meters (or equivalent technologies); use in-lieu technology to demonstrate improvements in water use efficiency; or reduce the landscape area below the threshold.

DWR's recommendations specify several in-lieu technologies that are considered acceptable, including water budget-based rates, water budget-based management, and hardware improvements like Advanced Metering Infrastructure that provide enhanced performance and function. EBMUD appreciates the effort that has gone into developing these options.

However, the draft recommendations also require agencies to implement three specific BMPs for all in-lieu technology programs. This includes an Irrigation System Maintenance BMP that requires "at least annual system inspections, maintenance, and repairs as applicable and providing resources for CII customers to find qualified professionals certified/trained on irrigation system best management practices." This requirement is problematic; water agencies do not have the authority or mandate to maintain their customers' systems, or to require customers to maintain them in a specific way. Implementing this BMP would also be cost prohibitive; EBMUD has over 5,000 dedicated irrigation meters and performing annual inspections of all of them would equate to fifteen site visits per workday minimum; meeting this requirement would require significant staff resources that could be better spent on other conservation activities. EBMUD recommends that DWR eliminate this BMP or revise it to focus on providing educational resources for customers so that they can better maintain their own irrigation systems.

Similarly, the draft recommendations require agencies with in-lieu technology to implement an Irrigation Scheduling BMP, which requires providing "assistance with setting up and updating irrigation schedules appropriate for the landscape plants, checked by certified / trained irrigation professional." Again, it is not appropriate to require retail water agencies to be responsible for setting their customers' irrigation schedules. Similar to the comment above, **EBMUD recommends that DWR eliminate this BMP or rewrite it to focus on providing educational resources for customers so that they can determine and implement their own irrigation schedules.**

EBMUD Comments on "Recommendations for Commercial, Industrial, and Institutional Water Use Best Management Practices Performance Measure"

EBMUD appreciates DWR's recognition of the complexities involved in developing programs for the CII sector, and we recognize the attempt to provide agencies with flexibility so they can design a program tailored to their service area. However, the resulting CII BMPs Performance Measure is overly complicated, and it would lead to onerous reporting requirements without necessarily securing additional water savings.

The draft performance measure requires urban agencies to develop and implement CII programs targeting both the CII sectors representing the top 20% of water use, and the top 2.5% of individual customers, excluding process water for both. This is problematic in that it equates higher water use with inefficiency, where in the CII sector higher water use may be indicative of economic activity. There are several additional problems with this approach.

First, DWR's recommendations do not take into consideration that many urban agencies have existing CII water conservation programs. EBMUD has had a water conservation program for decades and has worked extensively with most of its large CII water users. In many cases, there might not be additional new programs for these sectors that are cost effective. **DWR should make some allowance for agencies who have already developed extensive CII programs.**

In addition, the requirement that agencies exclude process water as they are calculating sector and individual customer water use, while laudable, is difficult to implement. Retail water agencies do not have information on their customer's process water use and may not have ways to estimate it. Many customers do not have submeters separating out their process water. For some customers this is proprietary information that they do not willingly share.

In general, the recommended performance measure is very convoluted, and it is not clear that it would lead to lasting water savings. One approach to simplification would be to shift focus from specific CII sectors to those non-process uses of water that are common across sectors. For example, most non-process water use in the CII sector falls into one of the following categories:

- Domestic water use (e.g., drinking water, toilets and sinks, showers, kitchens)
- Leaks
- Irrigation (for mixed use meters)

An alternative that would be much simpler to implement would be to require agencies to implement BMPs targeting each of these three areas. Agencies could tailor these programs to different sectors in their service area as needed, based on water use and their own experience working with these customers. To compliment this approach, DWR could develop efficiency technology resources, grants, and tools to help water agencies achieve long-standing water conservation for their CII customers.



VIA EMAIL: WUEStandards@water.ca.gov

February 15, 2022

Water Use and Efficiency Branch Department of Water Resources P.O. Box 942836 Sacramento, CA 94236-0001

Subject: CII Performance Measure Recommendations

Dear Water Use and Efficiency Branch:

The Irvine Ranch Water District (IRWD) thanks you for the opportunity to comment on the Commercial, Industrial, and Institutional (CII) Performance Measure Recommendations presented at the January 25, 2022 Department of Water Resources (DWR) Stakeholder Workshop. IRWD has been a leader in implementing successful, cost-effective water use efficiency programs in all customer sectors for the past three decades. For us and our business customers, conservation is already a way of life.

While we recognize the tremendous challenge DWR has faced in developing recommendations in response to the requirements of Water Code Section 10609.10, we write to raise significant concerns about the applicability, achievability, and overall cost effectiveness of the proposed CII Performance Measures should the recommendations be adopted by the State.

DWR's recommendations should be modified to:

- 1) Provide an Equivalent Compliance Pathway that recognizes prior and current implementation of effective CII programs and allows water suppliers flexibility in determining which accounts to target for CII water use efficiency;
- 2) Provide an Equivalent Compliance Pathway for agencies with CII water budgets or other established CII programs that is more appropriate to the unique needs of their service area;
- 3) Remove additional BMP requirements (3.1.4.2 and 3.1.4.3) for in-lieu technologies; and
- 4) Streamline the reporting requirements.

With these concerns in mind, IRWD specifically asks that the following comments be addressed before the final CII Performance Recommendations are provided to the State Water Resources Control Board for consideration.

Irvine Ranch Water District – Comments on the CII Performance Measure Recommendations February 15, 2022 Page 2

Comments and Requested Action:

1) The CII Performance Measure recommendations that are focused on targeted top users are "one-size-fits-all," as they do not factor in the cost-effectiveness of implementation and penalize water suppliers that have actively implemented CII sector water efficiency programs. The recommendations should recognize previous efforts, allow flexibility in targeting CII customers, and include an Equivalent Compliance Pathway.

Targeting the top 20% of users can be a good strategy for initiating a CII program, or for when a water supplier has limited information about its CII customers. However, DWR's recommendations may not be appropriate for water suppliers that have been successfully implementing CII programs for many years, and that have developed more sophisticated, targeted approaches.

IRWD has a long history of implementing water efficiency programs for CII customers. During the last thirty years, all high-volume users have been contacted by IRWD multiple times, and many have already implemented all cost-effective water efficiency improvements. For example, the University of California, Irvine (UCI) is IRWD's top water use customer and is also one of the most efficient. IRWD has conducted several comprehensive water surveys of the UCI facilities and provided over \$621,000 in financial incentives to UCI since 2009. UCI remains IRWD's top CII water user, but has already implemented all cost-effective improvements, which save the campus 79 million gallons per year.

We recommend that the Performance Measures be modified to provide an Equivalent Compliance pathway, requiring water suppliers to implement CII programs that include at least one element from each of DWR's 5 proposed BMP categories. Suppliers would report compliance through a checklist indicating which activities the supplier is implementing.

2) Water budgets are a highly effective tool for managing and improving water efficiency in the CII sector. DWR should develop an Equivalent Compliance Pathway that would provide suppliers with more flexibility to continue implementing existing CII programs, or at a minimum include Water Budget Based Rate Structures as a stand-alone Performance Measure.

Water budget-based rate structures are an effective water use efficiency tool on their own and additional BMPs should not be required of the water supplier. This type of rate structure provides the end user with a strong financial incentive to manage the water to the budget. As reported in the IRWD CII Mixed-Use Meters Case Study submitted to DWR on July 16, 2021, an analysis of 724 mixed-use meters over a three-year period found the following:

- 86% of the bills during the three-year study period were at or below budget.
- 54% of accounts are under budget for all 12 months of the year.
- Of the remaining 46% of accounts with periodic over-budget usage, 30% are back within budget after just one month of over budget use. The performance of this group indicates the responsiveness of the customers to the water budget rate structure.

Irvine Ranch Water District – Comments on the CII Performance Measure Recommendations February 15, 2022 Page 3

- An additional 40% of accounts were back in budget after two to four months of overbudget use.
- Only 3% of accounts were always over their budget and those are the accounts that would be targeted for direct outreach by IRWD.

These metrics clearly demonstrate the effectiveness of the use of water budget-based rate structures to target inefficient use and the responsiveness of customers to addressing and correcting it. Water budgets are a sophisticated tool that go far beyond targeting top users and implementing prescriptive measures that may or may not target water waste. IRWD recommends that DWR include an Equivalent Compliance Pathway for suppliers that already have CII water budget-based rate structures or other effective CII programs in place within their service areas.

3) Water budget-based rate structures are effective as an in-lieu technology and implementation of additional Best Management Practices should not be required.

We appreciate DWR's consideration of and responsiveness to stakeholder input regarding the establishment of a threshold for separating mixed-use meters, and for revising the recommended threshold from 20,000 square feet to 1 acre of landscape. We support DWR's recommendation that water budgets (with and without rate structures) may be used as an inlieu technology but should not also require additional BMPs. Water budget-based rate structures should suffice as a stand-alone compliance option, as an In Lieu Technology. As discussed in the IRWD CII Mixed Use Meters Case Study submitted to DWR on July 16, 2021, and as summarized below, IRWD's water budget-based rate structure for CII customers meets the criteria for each of DWR's 5 recommended BMP categories:

4.1.1. Outreach and Education

CII water budgets provide an efficiency standard at the account level against which the customer's monthly water use can be measured. IRWD's budget-based rate structure has just two tiers for CII customers, the Base Rate or the Wasteful Rate. These tiers are specifically named to get the customer's attention, thereby communicating with the customer through the monthly bill about efficient water use. This efficiency performance metric is also used by IRWD to target outreach to customers with wasteful usage. IRWD provides customer tools and resources on a dedicated webpage.

4.1.2. Incentive Programs

CII water budgets provide an efficiency standard at the individual customer account level against which the customer's monthly water use can be measured. IRWD's budget-based rate structure sends a strong price signal to the customer if water use exceeds the budget. Each month an account is either within budget or over-budget. Usage within budget is currently billed at the Base rate of \$2.42 per hundred cubic feet (CCF. One CCF = 748 gallons). Usage that exceeds the budget is billed at the Wasteful rate of \$14.64 per CCF. The strong price signal provides the impetus for customers to address the cause of water

waste and to invest in water efficient equipment. The revenue generated from the overbudget tiers is used to fund water efficiency programs and rebates.

4.1.3. Landscape

Water budgets motivate customers to install efficient irrigation equipment and ensure it is properly maintained. A customer with poorly maintained equipment or water management would exceed their budget and receive a high bill. Budget-based tiered rate structures alert customers to problems which are often the result of improper irrigation scheduling or equipment failures. IRWD offers additional resources, including weekly meter tracking sheets and educational programs for the professional landscape industry and customers that help keep water use within budget.

4.1.4. Collaboration and Coordination

The IRWD outdoor budgets are aligned with the principles of the Model Water Efficiency Landscape Ordinance (MWELO). Additionally, all new landscape irrigation accounts are required to have a dedicated meter. IRWD has also developed a WaterStar Business Recognition Program to incentivize and recognize CII customers that are water efficient. These customers are promoted on the IRWD website and in the monthly newsletter.

4.1.5. Operational

The water budget-based rate structure is at the core of IRWD rates and billing. IRWD collects all the data necessary for proper water budget calculations and has a process in place to review CII account water budgets every three years.

4.1.6. Water audits and/or water management plans

While not required by DWR, IRWD has dedicated staff available to provide one-on-one customer assistance and perform free water efficiency site surveys. During the site surveys staff identify causes of over budget use, ensure the budget is correct for the site and promote water efficiency programs and incentives.

IRWD has significant concerns regarding the recommended BMPs that would be required in addition to the in-lieu technology, specifically the requirements for irrigation systems inspections, maintenance and repairs (3.1.4.2) and irrigation scheduling (3.1.4.3). In the case of water budgets, these actions would not enhance the water improvements made from the highly effective targeted outreach to over-budget customers. These actions would be costly, without necessarily increasing water efficiency. These additional BMPs also would assign responsibilities and liabilities to a water supplier for actions on a customer's property that exceed a water supplier's authority.

We recommend that the additional BMPs for in-lieu technologies be removed from the recommendations.

Irvine Ranch Water District – Comments on the CII Performance Measure Recommendations February 15, 2022 Page 5

4) The burden of reporting is not taken into consideration by the CII Performance recommendations and should be minimized to only key beneficial metrics.

The staff resources to collect the proposed data and documentation for reporting compliance to the state will create an onerous and undue burden that may not be cost-effective for the water supplier. Water suppliers will need to divert staff resources away from program implementation to reporting. We recommend that the reporting requirements be streamlined so that reporting has a specific purpose and to eliminate burdensome, redundant and non-beneficial requirements.

The intent of the "Making Conservation a California Way of Life" legislation is for California to have a reasonable water efficiency standard for indoor and outdoor water use. IRWD's water budget-based rate structure allows IRWD to, far more effectively, target water efficiency in the CII sector than the proposed performance measures through monthly comparisons of actual use to water budget for all CII customers. Resources can be focused on where water efficiency improvements can be made rather than on top water using customers who may already be efficient.

Thank you for the significant time and effort you have taken to consider the CII Performance Measures, and for considering our concerns and the issues we have raised. We look forward to continuing to work with DWR to develop appropriate recommendations on the CII Performance Measures portion of the objective as warranted. Please do not hesitate to contact me at (949) 453-5590 if we can be of assistance to you.

Sincerely,

Paul A. Cook, P.E. General Manager

Dear Water Use Efficiency Branch,

Lakeside Water appreciates the opportunity to submit written comments to the California Department of Water Resources (DWR) on the recently released information on the Commercial, Industrial, and Institutional (CII) Water Use Efficiency Standard Recommendations. In general, these comments request that DWR consider the resources needed to develop and implement the CII standards and focus on cost-effective programs that will result in reduced water use.

We appreciate the consideration DWR gave to previous comments supplied by stakeholders including:

- Raising the threshold of irrigated landscape area for mixed use meters (MUM) conversion to dedicated irrigation meters (DIM) or Equivalent Technology from 20,000 square feet to one acre; and
- Providing 5 years to complete the identification of MUM and implementation of in-lieu technology; and
- Providing options for the implementation of in-lieu technologies.

Lakeside Water is concerned that the draft recommendations do not appropriately consider existing CII water use efficiency programs. The San Diego Region has implemented conservation programs since the early 1990s, including CII programs. Currently, the region offers multiple water use efficiency incentives to commercial customers, including a dedicated landscape survey program, a program that partners with San Diego Gas & Electric to improve water and energy efficiency for commercial customers, and other CII specific programs designed to cost effectively reduce water use in the CII sector. We support an equivalent compliance pathway for suppliers with existing programs that recognizes historic and current investments in CII water use efficiency. We also request that efficiency be allowed on a regional basis.

Furthermore, we recommend that any proposed requirement recognizes that the success of CII programs is dependent on CII customers and the agencies working together. There is limited opportunity to force participation in water use efficiency programs and implementation of water use efficiency practices. Compliance with the water use efficiency standards should be based on the availability of programs and not the rate of customer participation. This is especially true in areas where CII programs have been in place for a long time and customer participation may be difficult to incentivize.

The goal of the water use efficiency legislation is to improve the efficiency of water use. To help achieve that goal, the requirements should be flexible, focus on cost-effective methods with demonstrated water savings potential, and allow water suppliers to determine where the largest opportunity for water savings is. Reporting should also be streamlined, with DWR working with stakeholders to identify useful data points to collect and eliminate unnecessary reporting.

Lakeside Water appreciates your consideration of these comments and looks forward to working with DWR on finalizing the recommendations for CII WUE standards. If you require additional

information, please contact me.

Jeanne Swaringen

Lakeside Water District 10375 Vine St. Lakeside, CA 92040

619-443-3805

t.kalman@csus.edu
2 12:05:05 PM

Hello,

I have a question that was skipped please address.

Are the suppliers expected to measure the building and landscape area to see who falls outside of the 1 acre threshold for the parcel? And... this is expected in the first year for the top 20% and the 2.5%? How does DWR see this being funded?

Thank you,

Joseph Baquerizo Water Conservation

Joseph.Baquerizo@lbwater.org 1800 E. Wardlow Rd. Long Beach, CA 90807 lbwater.org STEVE VAUS, Mayor JOHN MULLIN, Deputy Mayor CAYLIN FRANK, Councilmember DAVE GROSCH, Councilmember BARRY LEONARD, Councilmember





February 15, 2022

WUEStandards@water.ca.gov

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: Commercial, Industrial, and Institutional (CII) Recommendations Comments

Dear Water Use Efficiency Branch,

The City of Poway (Poway) is located in the Northern San Diego County area and supplies water to approximately 50,000 residents. Poway also has a variety of businesses in over 500 companies including industries, manufacturers, retail and wholesale providers, business and personal service firms within its boundaries that provide employment to over 18,000 employees.

Poway appreciates the opportunity to submit written comments to the California Department of Water Resources (DWR) on the recently released information on the Commercial, Industrial, and Institutional (CII) Water Use Efficiency Standard Recommendations. In general, these comments request that DWR consider the resources needed to develop and implement the CII standards and focus on cost-effective programs that will result in reduced water use.

We appreciate the consideration DWR gave to previous comments supplied by stakeholders including:

- Raising the threshold of irrigated landscape area for mixed use meters (MUM) conversion to dedicated irrigation meters (DIM) or Equivalent Technology from 20,000 square feet to one acre; and
- Providing 5 years to complete the identification of MUM and implementation of in-lieu technology; and
- Providing options for the implementation of in-lieu technologies.

Poway is concerned that the draft recommendations do not appropriately consider existing CII water use efficiency programs. Poway, along with other water agencies within the San Diego Region, has implemented conservation programs since the early 1990s, including CII programs. Currently, the region offers multiple water use efficiency incentives to commercial customers, including a dedicated landscape survey program, a program that partners with San Diego Gas & Electric to improve water and energy efficiency for commercial customers, and other CII specific programs designed to cost effectively reduce water use in the CII sector. We support an equivalent compliance pathway for suppliers with existing programs that recognizes historic and current investments in CII water use efficiency. We also request that efficiency be allowed on a regional basis.

Furthermore, we recommend that any proposed requirement recognizes that the success of CII programs is dependent on CII customers and the agencies working together. There is limited opportunity to force participation in water use efficiency programs and implementation of water use efficiency practices. Compliance with the water use efficiency standards should be based on the availability of programs and not the rate of customer participation. This is especially true in areas where CII programs have been in place for a long time and customer participation may be difficult to incentivize.

City Hall Located at 13325 Civic Center Drive Mailing Address: P.O. Box 789, Poway, California 92074-0789 www.poway.org The goal of the water use efficiency legislation is to improve the efficiency of water use. To help achieve that goal, the requirements should be flexible, focus on cost-effective methods with demonstrated water savings potential, and allow water suppliers to determine where the largest opportunity for water savings is. Reporting should also be streamlined, with DWR working with stakeholders to identify useful data points to collect and eliminate unnecessary reporting.

Again, Poway appreciates your consideration of these comments and looks forward to working with DWR on finalizing the recommendations for CII WUE standards. If you require additional information, please contact Jessica Parks, Utilities Administrator at (858) 668-4703.

Sincerely,

Eric Heidemann, Director of Public Works City of Poway

Regional Water Authority Building Alliances in Northern California 5620 Birdcage Street Suite 180 Citrus Heights, CA 95610



Dan York, Chair Tony Firenzi, Vice Chair

Members

- California American Water
- Carmichael Water District
- Citrus Heights Water District

Del Paso Manor Water District

El Dorado Irrigation District

Elk Grove Water District

Fair Oaks Water District

Folsom, City of

Golden State Water Company

Lincoln, City of

Orange Vale Water Company

Placer County Water Agency

Rancho Murieta Community Services District

Roseville, City of

Sacramento, City of

Sacramento County Water Agency

Sacramento Suburban Water District

San Juan Water District

West Sacramento, City of

Yuba City, City of

Associates

County of Placer

El Dorado County Water Agency

Sacramento Area Flood Control Agency

Sacramento Municipal Utility District

Sacramento Regional County Sanitation District February 15, 2022

Submitted via email: WUEStandards@water.ca.gov

Subject: CII Regulation Recommendations

Dear California Department of Water Resources (DWR) Leadership and Staff,

The Regional Water Authority (RWA) appreciates the opportunity to comment on the Draft Commercial, Industrial, and Institution (CII) Regulation Recommendations as presented at the January 25, 2022 public meeting and to be incorporated in the broader Senate Bill 606/Assembly Bill 1668 legislation framework. RWA is a joint powers authority representing 20 public and private water suppliers serving over 2 million residents in Sacramento, Placer, El Dorado, Yolo, and Sutter Counties. RWA's mission is to protect and enhance the reliability, availability, affordability and quality of water resources for our members.

In addition to supporting all the recommendations and comments ACWA/CMUA/CWA Coalition comment letter, RWA has the following additional comments:

1. Equivalent Compliance Pathway:

We encourage DWR to include the Coalition's proposed Equivalent Compliance Pathway as a solution to address several of the Coalition's and RWA's policy and technical concerns including the need to recognize past and ongoing CII efficiency programs and to support in the implementation of locally cost-effective programs.

2. <u>Classification and Best Management Practices:</u>

We encourage DWR to revise the proposed schedule for water suppliers to start promoting BMPs to the top 20% CII sectors until after the classification process is completed. The current process calls for a supplier to classify 20% of its CII customer accounts a year for 5 years to reach 100% account classification. Furthermore, DWR should remove the annual percent goal of 20% and instead focus on the desired outcome – 100% of accounts classified by year 5.

3. Staff and Budget Limitations:

The sheer amount of DWR's proposed recommendations and reporting requirements will likely outstrip many suppliers' current water efficiency related resources, both in terms of available staff time and budget. For example, smaller urban retail water suppliers' efficiency programs typically have an annual budget of between \$15,000 and \$60,000 and 1.0 to 0.5 full time equivalent (FTE) staff to manage and implement all water efficiency activities, including but not limited to their CII programs. Most suppliers will need to hire additional staff to meet the proposed CII regulation requirements, which will primarily be funded by customer rate increases. Furthermore, this is only one component of the SB606/AB1668 framework. Several of the other framework components like residential indoor and outdoor supplier water use budgets are also being proposed by DWR with similar cost prohibitive staff and resource implications. RWA is concerned there is insufficient staff and funding capacity for both suppliers and the state to

adequately implement and track the comprehensive SB606/AB1668 framework. One solution to help reduce this staff and resource burden is to delete unnecessary and non-beneficial reporting requirements throughout the regulation like reporting metrics and penetration studies.

4. <u>Support for Regional Compliance:</u>

DWR should allow and encourage suppliers to pool resources toward a regional/multiple agency programs to achieve compliance with some of the CII regulation recommendations like customer outreach materials. RWA already has experience managing similar successful regional programs. For example, RWA's award winning multidecade Regional Water Efficiency Program implements a regional approach to provide public outreach, school education and rebate programs funded from pooled supplier resources.

5. <u>Properly Placed Implementation Responsibility and Customer Compliance:</u>

Some of the DWR's recommendations can be interpreted to be outside of a water supplier's authority and are instead, an authority of municipal land use/planning department, which are sometimes but not always one in the same. For example, water suppliers can provide educational materials and rebates to CII customers outlining the benefits of converting turf grass to lower water use plant material but often do not have the authority to force customers to make that change. Furthermore, properties built several decades ago were designed under different landscape and associated water use guidelines allowing for higher water use. Converting these older landscapes to use less water would require a significant customer commitment of both time and money (even with a supplier rebate), when considering that for the majority of CII sectors, the cost of water represents a relatively small portion of overall business costs. DWR should clearly match the CII regulation recommendation components to the appropriate implementation partner, which includes customers, water suppliers, land use authorities, and private industry to assign responsibility and reduce confusion. Furthermore, DWR should recognize there are limitations on suppliers' control over customer participation which could impact a supplier's compliance status as currently proposed.

6. Focus on Customer Education:

Suppliers should be able to achieve compliance by providing educational information (link to website, etc.) and basic guidance on sector specific best management practices but not be required to include site-specific programming like irrigation controller set up or sector-specific mechanical efficiency upgrades. Many suppliers have been offering CII water efficiency programs and education for decades and this past and ongoing commitment should be recognized as part of reaching compliance. Furthermore, the typical water efficiency staff person is not an expert in multiple CII sector specific efficiency technologies and therefore, CII customers should rely on sector specific experts for technology/mechanical related efficiency improvements.

In closing, the region's suppliers are committed to cost effective water efficiency as part of a supplier's essential function to provide clean, safe, affordable water to customers. A careful balance of all supplier priorities is necessary to continue to reliably provide water at the reasonable cost. This balance includes recognizing and minimizing

diminishing returns, which exist for all water efficiency related programs (including CII), once a cost-effective level of service has been achieved.

With this mindset, we look forward to continuing to work with the DWR on implementation of the CII Regulation and other related initiatives to address both climate resiliency and the human right to water.

Sincerely,

Jim Vefe

James Peifer Executive Director



February 15, 2022

Carlsbad Municipal Water District City of Del Mar City of Escondido City of National City City of Oceanside City of Poway City of San Diego Fallbrook Public Utility District Helix Water District Lakeside Water District Olivenhain Municipal Water District Otay Water District Padre Dam Municipal Water District Camp Pendleton Marine Corps Base Rainhow Municipal Water District Ramona Municipal Water District Rincon del Diablo Municipal Water District San Dieguito Water District Santa Fe Irrigation District South Bay Irrigation District Vallecitos Water District Valley Center Municipal Water District Vista Irrigation District Yuimo Municipal Water District

MEMBER AGENCIES

OTHER REPRESENTATIVE

County of San Diego

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

Sent via email to: <u>WUEStandards@water.ca.gov</u>

RE: Commercial, Industrial, and Institutional (CII) Recommendations Comments

Dear Water Use Efficiency Branch:

The San Diego County Water Authority (Water Authority) has a long history of implementing water use efficiency programs in partnership with its 24 member agencies. To assist in improving water use efficiency for Commercial, Industrial, and Institutional (CII) customers, the Water Authority currently offers a diverse portfolio of programs that includes a dedicated landscape survey program, a program that partners with San Diego Gas & Electric to improve water and energy efficiency for commercial customers and an award-winning education program for large landscape maintenance professionals. Based on our experience we are offering comments about the CII Water Use Efficiency Standard Recommendations. In general, these comments request that the California Department of Water Resources (DWR) consider the resources needed to develop and implement the CII standards and focus on cost-effective programs that will result in reduced water use.

Existing programs should be considered when determining compliance with CII requirements and the Water Authority supports the Equivalent Compliance Program submitted by the Association of California Water Agencies, California Municipal Utilities Association, and California Water Association. We also support the detailed comments included in the letter submitted with the Equivalent Compliance Program by the associations.

To reduce overhead costs and resource requirements for individual agencies, we ask that regional programs are also considered when determining compliance with CII requirements. The Water Authority implements conservation programs in partnership with its member agencies. This allows the region to offer a diverse range of water use efficiency opportunities and outreach cost effectively and efficiently. Water suppliers of all sizes within the region can offer CII water saving opportunities to customers without having to devote significant resources to the effort. This is especially helpful for small agencies and those with limited resources.

Options for best practices, classification and meter configurations should allow for enough flexibility that cost effective water savings occur. Any actions that do not demonstrate water savings should be eliminated from requirements. If demonstrated water efficiency already exists, no additional efforts should be mandated. All requirements should Water Use Efficiency Branch February 15, 2022 Page 2

recognize that water savings will depend on both the programs offered and the customer's willingness and ability to participate. Compliance with CII standards should not be dependent on customer response. Finally, any data requirements should be developed with input from water suppliers to determine the feasibility and the benefits of providing the information.

The Water Authority appreciates your consideration of these comments and looks forward to working with DWR on finalizing the recommendations for CII WUE standards. If you require additional information, please contact Elizabeth Lovsted at <u>elovsted@sdcwa.org</u>.

Sincerely,

Killey Gage

Kelley Gage Director of Water Resources

Enclosure(s)

CHARLES T. GIBSON SAUNDRA F. JACOBS JUSTIN MCCUSKER BETTY H. OLSON, PH.D FRANK URY

DANIEL R. FERONS GENERAL MANAGER

February 15, 2022

Santa Margarita Water District

WUEStandards@water.ca.gov

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: CII Water Use Performance Measures

Dear Water Use Efficiency Branch,

Santa Margarita Water District (District) appreciates the opportunity to submit written comments to the California Department of Water Resources (DWR) on the recently released CII Water Use Performance Measures ("Measures"). The District recognizes the significant workload to consider and develop these Measures.

The District is committed to investing in infrastructure and programs that strengthen water resiliency and conserve the State's water resources. To that end, the District nearly doubled its required SBx7-7 per capita water use reduction goal, achieving a 39% reduction through implementation of cost-effective efficiency programs for its customers, strategic recycled water development and conversions, and the implementation of a water-budget based tiered rate structure.

We ask that DWR and the State Water Resources Control Board ("SWRCB") consider an additional mechanism for CII compliance that preserves flexibility for utilities in implementing CII Measures and customer-choice for CII landowners and end-users. The Association of California Water Agencies ("ACWA") has provided such an alternative in the form of a CII *Flexible Compliance Program*. The CII *Flexible Compliance Program* would maintain the many programs, incentives, and technical assistance resources that utilities throughout the State provide to achieve CII water use efficiency, based on their unique CII customer sectors served.

Santa Margarita Water District's overall CII demand represents only 5% of the District's total potable demand. We rely on providing market-based incentives (e.g. turf removal rebates, high-efficiency toilet rebates, etc.), technical assistance and awareness programs, and variable water and wastewater rates to our CII customers to maintain and increase efficiency in this sector. Strategically, we must assess how and where to prioritize programs to achieve efficiency; 75% of our potable demands are in the residential sector and the remaining 20% is from dedicated

potable irrigation customers. It is critical that we preserve flexibility in the CII sector to efficiently allocate time and resources to achieve efficiency, which is why we strongly advocate for the CII *Flexible Compliance Program* alternative that ACWA is proposing.

The District thanks DWR for their ongoing effort to support the efficient use of water in California and the opportunity to provide input on this effort. You can reach me at (949) 459-6533 or <u>NateA@SMWD.com</u> if you have any questions.

Sincerely,

Vatilet

Nathan Adams Water Reliability Planning Manager Santa Margarita Water District



February 14, 2022

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

Submitted via email: WUEStandards@water.ca.gov

Re: Comments on Draft Water Use Efficiency CII Performance Measure Recommendations

Dear Water Use Efficiency Branch,

On behalf of the City of Santa Rosa Water Department (Santa Rosa Water) I am writing to provide input and comments on the draft Commercial, Industrial, and institutional (CII) Standards, Methodologies and Performance Measure Recommendations (Standards) recently released by the Department of Water Resources (DWR).

Santa Rosa Water is an urban retail water supplier serving approximately 175,000 residents in Sonoma County. Santa Rosa has a long-standing commitment to drought preparation and water use efficiency, recognizing the vital role that long-term drought preparation and continued improvement in water use efficiency provide in maintaining a resilient water supply. Since the 1990s, Santa Rosa Water has spent over \$21 million on water conservation programs, including replacing over 56,000 toilets with ultra-low and high-efficiency toilets, performing over 3,000 water use efficiency audits, providing rebates for over 14,400 high-efficiency clothes washers, and incentivizing customers to convert over 3.5 million square feet of single family, and CII turf to a low water use landscape.

During a stakeholder presentation on January 25, 2022, DWR discussed draft recommendations and possible outcomes for compliance with these Standards. Santa Rosa Water has some concerns about the recommendations presented and the feasibility of compliance, which are provided below.

I. Performance Measure Specifications

In terms of performance measure specifications, Santa Rosa Water recommends that the regulations consider a water supplier's past CII water use efficiency investments and activities with large and small CII accounts. Santa Rosa Water first established CII programs in the early 1990's and has conducted over 1,500 free water use efficiency audits for CII customers, which includes a review of all water uses, including plumbing, irrigation, process and cooling water, and resulting recommendations for water use efficiency improvements. Additionally, we have contracted with an engineering firm to provide highly technical, complex analysis of CII facilities and water balance studies, which is not easily replicated by internal staff. Because such assessments are valuable tools in meeting performance measures, Santa

Rosa Water recommends that on-going funding is made available to water suppliers for technical assistance with this complicated sector.

Like many water providers, Santa Rosa Water already offers rebate and incentive programs for CII accounts, including rebates for High-Efficiency Urinals, Clothes Washers, Cash for Grass, Irrigation Efficiency, Rainwater Harvesting and Sustained Reduction. The Sustained Reduction Rebate is an innovative program that pays our customers a rebate for every 1,000 gallons saved for any water use efficiency improvement. Since 2009, Santa Rosa Water has issued 29 Sustained Reduction Rebates to CII accounts which has resulted in current water savings of over 53 million gallons annually.

Instead of effectively penalizing a water provider through the regulatory framework for already achieving significant water savings, Santa Rosa Water recommends that the performance measure specifications account for the prior investments water providers have already made in water use efficiency.

II. Indoor Water Use Efficiency

The Standards, as proposed, assume that large water users are inefficient and requires water suppliers to categorize the top 20 percent of CII mixed-use meter users, by volume, in the first year. Top water users can be efficient despite using a larger volume of water and it is not necessarily indicative of water waste. For example, in comparing two restaurants side-by side, one could simply have a greater number of customers and thus, higher water use, despite having already made investments in water use efficiency.

More clarity is also needed on what year, baseline and/or frequency should be used to analyze water use. The very nature of CII facilities water use results in fluctuations from year to year which makes adhering to a baseline comparison very difficult. Further, recent events, including the COVID-19 pandemic, have significantly impacted CII water use.

Furthermore, the draft proposal excluding process water from the Standard is fundamentally impossible to implement. For example, we cannot determine what process water is used at a site because it is not individually metered, varies year over year, and industry reports do not exist for all the uncustomary types of CII customers. As many stakeholders have already identified, the CII classification is incredibly diverse when compared to other sectors. The current definition lists process water only for industrial users but Santa Rosa Water, like other water providers, has commercial customers who use process water at their facilities. We recommend removing all CII accounts that have process water, regardless of percentage of use or customer type.

III. Water Use Classification System

Under the draft Standards, water suppliers are required to conduct periodic reviews and update their account mapping for CII water use classification at least every other year. This is unnecessary, overly burdensome, and would not result in additional water savings. Further, the proposed timeline to implement the classification system is not likely achievable. Santa Rosa has over 4,000 CII accounts in our service area. Classifying these accounts will take an appreciable amount of time.

Additionally, we urge that implementation of CII Best Management Practices (BMP) does not begin until after the classification system is completed. Currently water suppliers have up to two years after the State Water Board's adoption of the Standard to design and begin implementing their CII BMPs. This simply is not enough time. To simplify the process and not create an undue burden on water providers,

Santa Rosa Water recommends that the Standards require water suppliers to update site classifications only when a change in customer classification occurs, and provide five years for the classification to occur before the implementation of the BMPs.

IV. Outdoor Irrigation Water Use

Santa Rosa Water believes there are numerous limitations with the proposed performance measure for converting Mixed Use Meters (MUM) to Dedicated Irrigation Meters (DIM). Given our limited staff capacity, complying with this performance measure would impose a significant burden. In our service area we estimate that there are over 2,100 parcels that have commercial mixed-use meters. Two hundred and seventy of those parcels are over one acre, or 65,000,000 square feet. To measure this area, it is estimated that it would take at least 2.5 full-time employees one year to complete. This would have a huge impact on Santa Rosa Water, a medium sized agency with limited Water Use Efficiency staff. This requirement would take time away from the implementation of other water saving programs to the detriment of our other customer classes. We remain in the midst of a historical drought in the North Bay, and customer demand for water use efficiency programs is extremely high, with monthly call volumes in the hundreds.

Although DWR has stated that five years is available to water suppliers to measure MUMs, in fact these measurements must be completed prior to the implementation of the DIM conversion, BMPs, or in-lieu or equivalent technology, which effectively provides very little time to measure these sites. We recommend that the five-year implementation schedule be solely for the measurement of MUMs and subsequent time be given for the implementation of the BMPs, conversion to DIM, or in-lieu or equivalent technology.

One of the recommended pathways to compliance is to reduce the square footage of landscaped area, which increases the heat island effect and exacerbates the effects of climate change. We recommend this pathway be removed and replaced with a compliance pathway for sites that have at least 75 percent low water use landscape. Low water use landscapes have achieved significant water savings already and have limited potential for increased water use efficiency, even if converted from a MUM to a DIM.

As the Standard is written, CII landscape area measurements associated with mixed CII meters must be performed and certified by a qualified professional with measurements formally adopted by the corresponding water supplier's governing body through a public process. We request that a "qualified professional" be an individual that is trained in measuring landscapes, as determined by the water provider, and who is hired by the water provider. We also request that "formally adopted" is removed and replaced with "certified by the Utility General Manager or Director."

V. In-Lieu Technologies for Dedicated Irrigation Meters

Santa Rosa Water appreciates the robust list of possible in-lieu technologies that can be used to meet the compliance requirement for the DIM conversion threshold. One of the options includes water budget-based rate structures. Santa Rosa Water does employ a budget-based rate structure using a sitespecific landscape water budget for dedicated irrigation meters. However, CII water use on mixed use meters is complex and difficult to measure in terms of a budget. Even with Santa Rosa Water's hourly Advanced Metering Infrastructure (AMI) data, water usage throughout the day and night could be attributed to irrigation, process water, cooling tower usage or other facility equipment. Additionally, a CII facility's water use will normally fluctuate over time due to staffing and production levels making it difficult to ascribe a budget based on periodic audits as the Standard is currently written.

VI. Water Use Best Management Practices Performance Measure

Santa Rosa Water requests more guidance from DWR on the proposed BMP implementation plan and schedule to comply. While we fully support best management practices and the benefit of achieving water savings through implementation, this Standard creates an enforcement issue. Santa Rosa cannot implement BMPs on the property side for the customer; the customer must be responsible for implementation.

We also request more guidance on what is considered an "Operational BMP" listed as one of the five proposed BMP categories for indoor CII compliance, and whether a CII program already implemented by a water supplier would qualify under this category. Santa Rosa Water believes that a completed infrastructure change that increases water use efficiency should be given credit, for example installation of AMI, which Santa Rosa completed in 2021. We also urge DWR to recognize that large infrastructure changes or modifications to billing systems take time and may conflict with the BMP implementation process.

Thank you for the opportunity to provide input and comments on the draft CII water Standards, Methodologies and Performance Measure Recommendations. We greatly appreciate your leadership in this matter and look forward to working with DWR on reducing water use in the CII sector.

If you have any questions, please feel free to contact Claire Nordlie, Sustainability Coordinator, at 707-543-3962 or CNordlie@srcity.org.

Sincerely, u Bule

Jennifer Burke Director of Water, City of Santa Rosa



VALLEY CENTER MUNICIPAL WATER DISTRICT

A Public Agency Organized July 12, 1954

Board of Directors Robert A. Polito President Enrico P. Ferro Vice President Daniel E. Holtz Director Oliver J. Smith Director Michael E. Babineau Director

February 15, 2022

WUEStandards@waterboards.ca.gov

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: Support for Comments Submitted ACWA, CMUA and the California Water Association on the CII Performance Measures Recommendations

Dear Water Use Efficiency Branch;

Valley Center Municipal Water District is in full support of the joint comments and recommendations referred to above for the CII Performance Measures Recommendations from DWR to the SWRCB.

DWR must be mindful of the combined burden being placed on water agencies with the CII, the Indoor, and Outdoor WUE, and Water Loss regulations. Quite honestly, these massive regulatory requirements will overwhelm small to medium size water agencies, forcing rapid expansions of staff resources to achieve compliance. Of course, all this will be happening against a backdrop of falling water commodity revenues associated with WUE, increased capital investment to address water loss issues, and overriding concern about the affordability of water for low-income and disadvantaged communities.

This is absolutely a "Gordian Knot" of regulations simultaneously taking water agencies in multiple countervailing directions. In its totality, this is a formula for significant increases in the cost of water and diminution of water agency financial viability to the detriment of the customers and communities served.

The joint comments and recommendation (copy attached) are from multiple water agency professionals who intimately understand the workings and capabilities of public water agencies. The comments are aimed at making the CII regulations more practical and cost-effective to implement and cognizant of the limitation on a water agency's ability to enforce CII compliance; all without compromising the achievement of the overall CII efficiency goals. All water agencies and water professionals understand the critical importance of stewardship of our most important natural resource, water. However, we are also concerned about the sheer weight of the multi-faceted regulatory program we are expected to implement over the next very few years. We (and I would trust DWR and the SWRCB), want all of us to be successful in achieving the goals of increased water use efficiency rather than falling into a costly and an inefficient regulatory enforcement quagmire

Implementing the recommendations of ACWA, CMUA, and CWA will help us all achieve success as we move forward to making Water Conservation a California Way of Life.

Sincerely;





February 14, 2022

WUEStandards@water.ca.gov

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: Draft Water Use Efficiency CII Performance Measure Recommendations

Dear Water Use Efficiency Branch

The Association of California Water Agencies (ACWA), California Municipal Utilities Association (CMUA), and California Water Association (CWA)(collectively referred to as "the Coalition") appreciate the opportunity to submit written comments to the Department of Water Resources (DWR) on its draft Water Use Efficiency Commercial, Industrial, and Institutional (CII) Performance Measure Recommendations (draft Recommendations). ACWA represents over 460 local public water agencies that supply water for domestic, agricultural, and industrial uses to over 90 percent of California's population. CMUA represents over 50 water agencies that deliver water to nearly 75 percent of Californians. CWA represents water agencies that provide drinking water to just over 15 percent of the State and are subject to the jurisdiction of the California Public Utilities Commission. Our associations' members will be tasked with complying with the draft Recommendations and offer the following input for DWR's consideration.

- 1. COALITION RECOMMENDATIONS. The Coalition comment letter includes our support for specific elements of DWR draft Recommendations, as well suggested changes to address water suppliers' overarching policy concerns and technical concerns with the draft Recommendations. The inclusion of the Coalitions' suggested changes in DWR's final Recommendations could lead to meaningful water use efficiency in the CII sector in accordance with *Making Water Conservation a California Way of Life*, while minimizing unnecessary challenges and costs to water suppliers. We appreciate DWR's consideration of these recommendations.
 - A. Equivalent Compliance Pathway. We strongly encourage DWR to include the proposed Equivalent Compliance Pathway (see Appendix A) as an additional pathway for water suppliers to comply with the draft Recommendations that would address several of the Coalition's overarching policy concerns. The Equivalent Compliance Pathway Program would allow suppliers to comply with their currently implemented CII water use efficiency programs that are (1) adapted to the unique need of the service area, (2) recognize past and ongoing water use efficiency programs and efforts, and (3) are determined to be cost effective by the water supplier. See Appendix A for additional details on the Equivalent Compliance Pathway.
 - B. <u>Technical Edits to Specific Recommendations</u>. The Coalition comment letter includes specific redline changes to DWR's draft recommendations:
 - i. Performance Measure: CII Water Use Classification System (CS)

- Recommendations on Dedicated Irrigation Meter Conversion Threshold for Commercial, Industrial, and Institutional Outdoor Irrigation Water Use Performance Measures (CT)
- iii. Recommendations on In-Lieu Technologies for Dedicated Irrigation Meters for CII Outdoor Irrigation Water Use Performance Measures (IL)
- iv. Recommendations for Commercial, Industrial, and Institutional Water Use Best Management Practices Performance Measure (BMP)
- 2. COALITION SUPPORT FOR DRAFT RECOMMENDATION COMPONENTS. The Coalition submitted comments to DWR on a Commercial Outdoor Landscape Area with DIM Standard Recommendation on November 24, 2021. Our comments requested CII performance measures that focus on actions that will result in actual water savings and are cost-effective. The Coalition appreciates DWR's subsequent revisions to the proposal and some of the following elements included in the draft Recommendations:
 - A. <u>One-Acre Threshold</u>. ACWA appreciates that DWR has revised its earlier proposed recommendation of 20,000 square feet or irrigated landscape area as the threshold for CII mixed used meter (MUM) conversation to dedication irrigation meter (DIM) or Equivalent Technology to one acre. In our November comments, the Coalition recommended an alternative threshold for converting MUMs as parcels that are irrigating an acre or greater citing concerns that 20,000 square feet would not be a cost-effective threshold and would create undue burden on waters suppliers and CII customers. We additionally support that the conversion threshold is measured on a per parcel basis.
 - B. <u>5 Year window</u>. We appreciate that the proposed implementation schedule would provide water suppliers up to 5 years after State Water Board adoption to complete the identification of MUM meter accounts and implementation of in-lieu technologies. We think that this time would be necessary in order to complete the necessary components included in the draft Recommendation.
 - C. <u>Characterization of In-Lieu Technologies</u>. We appreciate the proposed in-lieu technologies, which include water budget-based rate structure, water budget-based management, hardware improvements with enhanced performance and function, remote sensing for irrigation management combined with other available technology, and the potential for other technologies.
- **3. OVERARCHING POLICY CONCERNS.** The Coalition is concerned that DWR's draft Recommendations would create enormous challenges for water suppliers and require significant resources to implement. We have outlined these concerns below and offer the following solutions:
 - A. <u>Recognize Efficient Water Use</u>. We have significant concerns that the draft Recommendations, as proposed, do not recognize and reward existing efficient water use. Many agencies and water users have been implementing CII water use efficiency programs for decades. However, the draft Recommendations assume that agencies and CII water

users are starting at zero. This is inconsistent with the goals of Making Water Conservation a California Way of Life Framework and DWR's recommendations should be modified to reward investments and achievements in water use efficiency and support cost-effective investments to further water use efficiency.

- i. <u>Adopt an Equivalent Compliance Pathway</u>. The *Equivalent Compliance Pathway* (see Appendix A) would allow for consistency and alignment with locally developed and implemented CII programs, rather than creating a one-size fits all program that fails to recognize the success and local conditions of existing and future CII programs.
- ii. Set a Conversion Threshold that Recognizes Water Efficiency. The Coalition's November 24, 2021 proposal for setting a CII threshold for conversion of MUMs to DIMs or equivalent technology included an alternative approach that addressed the end goal of water efficiency. In our proposal, water suppliers would, for MUMs irrigating one acre or greater, estimate the annual outdoor water use and compare it with the outdoor water use efficiency standards. Only MUMs with an outdoor water use greater than the outdoor water use efficiency standard would require subsequent actions. That would include a Compliance Plan, designed to reduce water demand to meet the water use efficiency standard by converting to DIMs, a DIM Equivalent Technology, or through In-Lieu Technologies. DWR should amend its recommendation to include the Coalition's proposal that allows for efficient water use on mixed use meter sites to be excluded from additional requirements.
- B. <u>Recognize Water Suppliers' Limited Authority</u>: It is essential that the draft Regulation acknowledge water suppliers' limitations in regards to requiring and enforcing CII customers to participate in performance measures. Water agencies can only offer services and programs and cannot require customer participation. Water suppliers should not be required to meet regulatory requirements outside their control.
 - Delete Inappropriate Requirements. As proposed, the draft performance measures recommendations would require three specific BMPs for all in-lieu technology programs, including Communications BMP (IL 3.1.4.1), Irrigation System Maintenance BMP that includes annual inspections, maintenance, and repairs (IL 3.1.4.2), and Irrigation Scheduling BMP that includes assistance with setting up and updating irrigation schedules, inspections, maintenance, and repairs (IL 3.1.4.3). These BMPs would prescribe new inappropriate and infeasible responsibilities to water agencies and could expose water agencies to significant liability. DWR should delete requirements that are not consistent with water suppliers' authorities.
- C. <u>Provide Appropriate Flexibility for Implementing</u>. We appreciate DWR's recognition that water suppliers have the best understanding of their water users. However, DWR's draft Recommendations prescribe an implementation pathway that limits water suppliers' flexibility to map and target CII customers. For example, CT recommendation 4.1 would provide urban retail water suppliers up to five years after State Water Board adoption to complete mapping of accounts to the CII water use classification system for annual reporting purposes. However, CT recommendation 4.1.1.1 would then establish a minimum level of progress in account mapping per year of 20% of CII water accounts. While this may

be the best approach for some water suppliers, others may want to approach mapping differently. The draft Recommendations should allow for alternative timelines and strategies to meeting the broader timeline, rather than setting a prescriptive, one-size fits all approach for implementation.

- <u>Recognize that Large Users of Water May Be Efficient</u>. The draft Recommendations should recognize that top water users can be efficient despite using a larger volume of water and being a top water user is not necessarily indicative of water waste. For example, a restaurant with a higher water use than another user could simply have a greater number of customers, despite having made investments in water use efficiency. DWR should amend its recommendation to include an Equivalent
 Compliance Pathway that would allow water suppliers the flexibility to target CII customers with the greatest potential for improved water efficiency. The proposed focus on large water users could have unintended impacts to small businesses, which often request assistance with water use efficiency.
- D. <u>Minimize Unnecessary Reporting</u>. The draft Recommendations would shift water agencies' resources to complying with burdensome reporting requirements, rather than focusing on working with CII customers to achieve water savings. DWR should consider the goals of AB 1755, the Open and Transparent Water Data Act and AB 1668 requirements under Water Code Section 10609(c)(4) which directs the state to identify opportunities for streamlined reporting, eliminate redundant data submissions, and incentivize open access to data collected by urban and agricultural water suppliers, and the overall usefulness of data requested. Water suppliers are very concerned with the useful and general purpose of the proposed data requested, such as submitting metrics and performance standards. We recommend that DWR delete unnecessary and non-beneficial reporting requirements.

4. TECHNICAL RECOMMENDATIONS.

- A. <u>Performance Measure: CII Water Use Classification System</u>
 - 3.2 Urban retail water suppliers will follow DWR's account mapping guidance based on NAICS with necessary customization, including land use designations (APNs) used by county assessor's offices, for categorizing their water accounts for CII performance measure reporting purposes.
 - Recommendation: DWR should provide a guide to associate NAICS codes to their respective classification category to maintain consistency across water agencies and to aid agencies in this task. The State should provide NAICS dataset in order to provide consistency, uniformity, and reliability of NAICS dataset. This would save each water agency from having to procure this data independently.
 - ii. 4.1.1.2 Should an urban retail water supplier experience a substantial hardship meeting the minimum level of progress, by year 3, the urban retail water supplier will provide an implementation plan to meet the full mapping requirement. That implementation plan will be subject to State Water Board approval.

- Recommendation: Waters suppliers should be directed to work with State Water Board staff. State Water Board approval is not necessary.
- iii. 4.3 Urban retail water suppliers are required to conduct periodic reviews and update their account mapping for CII water use classification; 4.3.1 Review and updated account mapping should occur at least every other year.
 - Recommendation: Reviewing and updating mapping at this frequency would require significant staff resources and is not necessary. The draft Recommendations should provide a longer period to review and update account mapping, so long as new customer NAICS codes are being updated.
- B. <u>Recommendations for Commercial, Industrial, and Institutional Water Use Best</u> <u>Management Practices Performance Measure</u>
 - i. 4.1.3 Landscape landscape and irrigation management practices to promote improved water use efficiency such as turf removal or replacement programs, irrigation system inspection and maintenance, irrigation scheduling training, new development landscape inspection, workshops and training, and others.
 - Recommendation: Include irrigation hardware/ system improvements as a landscape BMP.
 - 4.2.1 Identification of CII-sectors above the threshold (classifications in top 20%) for targeting BMP programs including method used for excluding process water in determining the top 20% and top 2.5% of CII water users.
 - Recommendation: The proposed thresholds would limit the flexibility for water suppliers to implement the most effective program based on the unique characteristics of their service area. Provide water suppliers the flexibility to direct their limited resources in a manner that will be most effective and equitable to customers.
 - Recommendation: Water suppliers should have the discretion to include or exclude and should have the ability to remove all CII accounts that have process water, regardless of percentage of use or customer type. Excluding process water is fundamentally impossible to implement. Process water is not individually metered, varies year over year, and industry reports do not exist for all the uncustomary types of CII customers.
 - iii. 4.2.6 Identification of metrics or key performance indicators that will be used to determine progress and success of the CII-BMP implementation program.
 - Recommendation: Water agencies should provide DWR with a list of their program offerings in each BMP category, not metrics and key performance indicators for compliance. This would help reduce the reporting burden on water suppliers and acknowledge that water agencies can offer programs but cannot force customers to participate.

- iv. 4.4 Subject to appropriate approvals, DWR may coordinate with the State Water Board and other agencies to issue an advisory to land use authorities for cooperation and assistance to urban retail water suppliers in information sharing during building permit issuances that may affect CII water use.
 - Recommendation: DWR and the State Water Board should encourage information sharing and, when requested, the transfer of responsibilities to water suppliers.
- v. 5.1 Urban retail water suppliers have up to 2 years after State Water Board adoption of the CII Classification System Performance Measure to design and begin implementing their CII-BMP program.
 - Recommendation: BMP implementation should only start after the classification system is completed. All draft Recommendation requirements should be coordinated and aligned.
- vi. 5.6.1 Urban retail water suppliers should coordinate with the corresponding land use authority(ies) to add a requirement for consulting urban retail water suppliers, where appropriate, for awareness of changes and potential reclassifications and updates of fixtures, appliances, and infrastructure.
 - Recommendation: This requirement should be removed. This is unnecessary as new non-mixed use customers will contact the water supplier to request new service.
- C. <u>Recommendation on Dedicated Irrigation Meter Conversion Threshold for Commercial,</u> <u>Industrial, and Institutional Outdoor Irrigation Water Use Performance Measure</u>
 - i. 3.1.1. The Conversion Threshold PM applies to aggregate irrigated CII landscape area, measured on a per parcel basis, greater than one acre.
 - Recommendation: Threshold should reward efficiency. Consistent with the Coalition's comments in Section 3.A.ii, only MUMs with an outdoor water use greater than the outdoor water use efficiency standard should require subsequent actions.
 - ii. 4.1.1. The minimum level of progress in account mapping is 20% of CII mixed-use meter accounts per year as specified in the CII classification performance measure.
 - Recommendation: Completing the classification system may be a onetime account mapping project of sites (without DIM over one acre) to be completed in years 3-5. A submitted classification plan should provide compliance. Water suppliers should not be expected to take additional BMP implementation actions before understanding CII customers' water use.
 - iii. 4.3.1. Generally, CII landscape area measurements associated with mixed CII meters should be performed and certified by a qualified professional with measurements formally adopted by the corresponding water supplier's governing body through a public process.
 - Recommendation: Clarify that a qualified professional is someone trained in measuring landscapes.

• Recommendation: Remove the requirement that the measurements must be adopted by a governing body and allow for certification by the general manager.

D. <u>RECOMMENDATION ON IN-LIEU TECHNOLOGIES FOR DEDICATED IRRIGATION METERS FOR</u> <u>COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL OUTDOOR IRRIGATION WATER USE</u> <u>PERFORMANCE MEASURE</u>

- i. 2.3.1. Once an urban retail water supplier determines that the aggregated landscape area within a parcel exceeds the one-acre size threshold, the urban retail water supplier should decide the technical and financial feasibility of DIM conversion based on local conditions and declare the chosen pathway for compliance consistent with the DIM conversion threshold performance measure.
 - Recommendation: Clarify that of the three pathways of compliance with the Conversion Threshold, only conversion to a dedicated meter or an equivalent technology (2.3.1.1.1) is subject to water use standards. The other two pathways, using in-lieu technologies (2.3.1.1.2.) and reducing the landscape below the threshold and reporting BMPs (2.3.1.1.3.), would not be part of the calculation either of the water use objective or of the annual water use that is compared to the objective.
- ii. 3.1.4. The following BMPs are required for all in-lieu technology programs.
 - Recommendation: Proposed BMPs 3.1.4.1, 3.1.4.2, and 3.1.4.3 should be removed. As discussed in Section 3.B.i, these requirements would place inappropriate responsibilities and liabilities on water agencies.
- iii. 3.1.4.1. Communications BMP, including regular and ongoing communication and engagement among the urban retail water supplier, Landscape Manager, Property Owner, and Building Manager with the intention of increased water use efficiency on CII landscapes including notifying CII customers when landscape water use may be more than the CII-DIMWUS.
 - Recommendation: Remove this proposed BMP. The proposed BMP would essentially mandate water suppliers to have a full-scale landscape irrigation budget program. This would add significant ongoing expenses to require landscape budgets for mixed use accounts and may not be technically feasible with the best of landscape budget software available or water agencies do not have access to irrigation water use data from some of the In-Lieu Technologies and cannot notify customers if they are over budget. Additionally, waters suppliers cannot require engagement from customers, landscape managers, property owners, and building managers.
- iv. 3.1.4.2. Irrigation System Maintenance BMP, including at least annual system inspections, maintenance, and repairs as applicable and providing resources for CII customers to find qualified professionals certified/trained on irrigation system best management practices.
 - Recommendation: Remove this proposed BMP. It is inappropriate to require water agencies to conduct inspections, maintenance and repairs for CII customers. This should be removed. Water suppliers can offer surveys, plans, etc. in generic form. It is inappropriate for a water supplier to monitor and

enforce irrigation system maintenance and repairs, and could pose significant liability issues.

- v. 3.1.4.3. Irrigation Scheduling BMP, including assistance with setting up and updating irrigation schedules appropriate for the landscape plants, checked by certified / trained irrigation professional.
 - Recommendation: Remove this proposed BMP. It is inappropriate and would create significant liabilities for water agencies to prescribe actions to customers, including irrigation schedules. This should be removed.

ACWA, CMUA and CWA appreciate the opportunity to provide input to DWR on this effort. Please do not hesitate to contact me at ChelseaH@acwa.com or (916) 441-4545 if you have any questions regarding our input.

Chilsea Hans

Chelsea Haines Regulatory Relations Manager Association of California Water Agencies

Andrea Abergel Senior Regulatory Advocate California Municipal Utilities Association

Inf M Capitolo

Jennifer Capitolo Executive Director California Water Association

CC: The Honorable Karla Nemeth, Director, California Department of Water
 The Honorable Joaquin Esquivel, Chair, State Water Resources Control Board
 Mr. Ryan Bailey, Water Use Efficiency Branch Manager, Department of Water Resources
 Mr. Dave Eggerton, Executive Director, Association of California Water Agencies
 Ms. Cindy Tuck, Deputy Executive Director for Government Relations, Association of California
 Water Agencies
<u>Appendix A</u> CII Performance Measures: *Equivalent Compliance Program*

CONCEPT: DWR should include an *Equivalent Compliance Pathway* as an option for water suppliers who have already developed and implement CII water use efficiency programs to comply with the CII-BMPs Performance Measures. Many water suppliers begin their CII programs by targeting the top 20 percent of customers and it can be a very useful approach. As noted above, targeting the top 20 percent is not always the most effective if those customers are already efficient, and this is often the case for suppliers who already implement CII programs. Over time, many suppliers adapt their CII programs to target customers with more potential for improved water efficiency that builds on and recognizes past program efforts. New CII programs could also be structured to target certain sectors, something that the initial classifications could help identify.

With this in mind, the *Equivalent Compliance Program* would provide suppliers with greater flexibility to implement CII water use efficiency programs that are (1) adapted to the unique need of their service area, (2) recognize past and ongoing water use efficiency programs and efforts, and (3) are determined to be cost effective by the water supplier. This approach is consistent with the recommendations of the CII Task Force Report (Oct 2013).

REQUIREMENTS: As part of the program, the Performance Measures should be structured to include the mandatory account classification as a first step, consistent with DWR's CII Water Use Classification System recommendations 3.1. Once the accounts are classified, suppliers would be required to evaluate their current CII water use efficiency program, and implement cost-effective CII efficiency programs structured to include at least one program from each the 5 categories of BMPs recommended by DWR as described below.

<u>COMPLIANCE</u>: The CII Performance Measures may be implemented on an individual supplier and/or regional basis or any combination of the two. Suppliers would check an additional box in each category to indicate that the program is being implemented on a regional basis and identify the regional agency or agencies responsible for implementation. Regional CII Performance Measure implementation could include partnerships such as, but not limited to, wholesale water suppliers, partnerships of contiguous retail agencies, joint powers authorities or other collaborative efforts by water suppliers to jointly implement CII programs.

Consistent with DWR's draft Recommendations, water suppliers would be required to classify all CII into a classification system that addresses significant water users over a 5-year period. Additionally, water suppliers would be required to have a CII-BMP implementation program specific to their service area CII-customers that includes at least one BMP from each of the five above categories.

<u>REPORTING</u>: Performance measure compliance reporting to the State would use a checkbox to indicate which activities from each of the 5 BMP categories the agency is implementing, and whether or not the measure is being implemented on a regional basis.

Equivalent Compliance Program: Checklist

1.
□ CII Account Classification (required for all supplies)

- 2. CII-BMPs PM Specification (suppliers must implement a BMP from each category)
 - A. \Box Outreach and Education: practices and actions to inform and educate the CII community to improve water use efficiency.
 - i. Direct contacts via site visit or phone calls

 - iii. 🛛 Conducting workshops or developing training videos
 - iv. Uebpage portals to access CII water efficiency information, tools and rebates
 - v. 🛛 Cost-effectiveness analysis tools
 - vi. 🛛 Commercials and advertisements
 - vii. 🛛 Grass roots marking
 - viii. 🛛 Community based social marketing
 - ix. 🗌 Other: _
 - B.
 □Incentive Programs: the structured use of rewards and recognition to motivate CIIcustomer water use efficiency.
 - i. Rebates and cost-share for replacing inefficient fixtures, equipment, irrigation systems, or landscapes with water efficient ones
 - ii. 🗌 Certification or branding programs
 - iii. 🛛 Value-added programs that offer additional benefits
 - iv. 🗌 CII water budget rate structure
 - v. CII Water budgets with other rate structures
 - vi. 🗌 Other: _
 - □ Regional Implementation. Identify Regional Implementation Agency(ies):
 - C.
 □Landscape: landscape and irrigation management practices to promote improved water use efficiency.
 - i. Turf removal or replacement programs
 - ii. \Box Irrigation system inspection and maintenance
 - iii. 🛛 Irrigation scheduling training
 - iv. \Box New development landscape inspection
 - v. 🗌 Workshops and training
 - vi. 🗌 Other: _
 - □ Regional Implementation. Identify Regional Implementation Agency(ies):
 - D. Collaboration and Coordination: formalized internal operational and institutional arrangements.
 - i. Coordination with 'green' building certification or recognition programs to promote water use efficiency,
 - ii. Coordination with land use authorities to check new landscape design and implementation,
 - iii. Collaboration with non-government organizations on outreach and education, and others.

- iv. 🛛 Grant funding awards to implement CII water efficiency programs
- v. 🗌 EPA WaterSense partner
- vi. 🗆 Other: _____
- E. Operational: necessary or planned operational BMP(s)
 - i. System infrastructure changes (e.g., smart meter replacement programs),
 - ii. Billing or data collection procedures (e.g., data tracking, analysis, water budget-based rates and reporting improvements),
 - iii. Other operational BMPs to facilitate CII-BMP program implementation and evaluation.
 - iv. 🗆 Other: _____





August 17, 2021

WUEStandards@water.ca.gov

Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 1416 9th St, Sacramento, CA 95814

Re: Provisional Outdoor Standard

Dear Water Use Efficiency Branch,

The Association of California Water Agencies (ACWA) and California Municipal Utilities Association (CMUA) appreciate the opportunity to provide comments to the California Department of Water Resources (DWR) on the *provisional outdoor standard presented at the June 30 Standards and Methodologies workshop*. ACWA represents over 460 public water agencies that deliver approximately 90 percent of the water used for residential, commercial and agricultural purposes in California. CMUA represents over 50 water agencies that deliver water to nearly 75 percent of Californians. The Water Code recognizes that our members, local urban retail water suppliers, have the responsibility of meeting the urban water use objective which is comprised of the standard-based water use targets. We additionally note that water agencies are at the forefront of preparing for and managing the impacts of climate change, including longer and more intense droughts. As many of California's regions enter a second consecutive dry year and drought, much has been learned and improved on following California's historic 2012 – 2016 drought.

We recognize that DWR, in coordination with the State Water Resources Control Board (State Water Board), has a statutory requirement to conduct necessary studies and investigations, and recommend no later than October 1, 2021, a standard for outdoor residential and dedicated irrigation meters. However, we have significant concerns regarding DWR's approach to develop a provisional outdoor standard. DWR's provisional standard proposes an ET factor (ETF) of 0.7 for Irrigated Irrigable landscapes. Water suppliers that do not meet their Water Use Objective can also include 20 percent of Irrigable Not Irrigated landscapes in their calculation, also using an ETF of 0.7. DWR's provisional standard applied outdoor water. We recognize the importance of developing feasible and implementable outdoor water efficiency standards to help meet the State's long term water use efficiency goals and, therefore, we offer the following comments on DWR's provisional outdoor standard.

ACWA recommends that the outdoor standard be developed based on the principles of MWELO to achieve efficient outdoor use, and not based on design standards that do not reflect actual performance. The outdoor standard should consider real-world performance of irrigation systems and existing landscapes to result in an efficiency standard that is feasible and implementable. Developing the

outdoor standard by back-calculating it using estimates of outdoor applied water (derived from estimates of residential indoor water use) does not reflect optimal irrigation for landscape health, and is subject to multiple sources of error. With these considerations in mind, ACWA recommends that the outdoor standard be established based on the horticultural and irrigation principles of MWELO as follows:

• **1.0 ETF for Irrigable Irrigated (II):** An ET Factor of 1.0 considers horticultural science and realistic irrigation efficiency and delivery systems for both new and existing landscapes, as shown in Table 1. This represents a balance between higher water use plants such as turf which are predominant in existing landscapes and lower water use or drought tolerant plants. It also assumes a reasonable balance between existing irrigation efficiency, balancing overhead spray and more efficient drip and high-efficiency rotary nozzles.

I	а	b	e	1	

				D		F
А	В	С		D = avg(A X C)	E	F = D X E
				Overall		
	Plant Type	% of Area in		Landscape	Irrigation	ET Factor
Plant Factor	Description	Landscape		Plant Factor	Efficiency (IE)	(based on IE)
0.3	Low water use plants		h		0.45	1.49
0.5	Woody shrubs/trees	35%			0.55	1.22
0.6	Warm season grass			0.67	0.625	1.07
0.8	Cool season grass	60%			0.70	0.95
0.8	Annuals	5%	J		0.80	0.84

ET Factors Under Different Lansdcape Factor and Irrigation Efficiency Scenarios

- **0.55 ET Factor for 100% Irrigable Not Irrigated (INI):** We propose a lower ET factor of 0.55 for INI since any newer plantings and irrigation systems would be expected to be more efficient than existing systems.
- **1.2 ET Factor for Special Landscape Areas and Recycled Water for 100% of II and INI area:** This reflects the additional water requirements for functional, special landscape areas, areas irrigated with recycled water, and actual irrigation system performance rather than a design standard.
- **Remeasure and reevaluate in 5 years:** There is significant uncertainty about INI areas, including how much irrigation water is required, and the rate of change from INI to II areas. To address this uncertainty, we recommend that the II and INI LAM be remeasured and the ET Factor for INI be reevaluated in 5 years.

Detailed explanations and the supporting data for these outdoor standard recommendations is provided in Attachment A.

We urge DWR to ensure that the final recommended outdoor standard meets the intent of the *Making Water Conservation a California Way of Life*. We have significant concern that the provisional recommendation of a 0.7 ET Factor for the outdoor standard is not a reasonable efficiency standard and will undermine the intent of *Making Water Conservation a California Way of Life*, which was to allow agencies to cost-effectively and flexibly implement water use efficiency. Furthermore, the provisional recommendation would not allow for healthy landscapes and shade trees, which help mitigate climate change impacts like urban heat island effect that disproportionately impact disadvantaged communities.

We appreciate your consideration of these recommendations and are committed to collaborating with DWR and the State Water Board to successfully implement *Making Water Conservation a California Way of Life.* To discuss these comments, please contact Chelsea Haines at <u>chelseah@acwa.com</u>.

Sincerely,

Chiles Ha

Chelsea Haines Regulatory Relations Manager Association of California Water Agencies

Attachment A

1. The outdoor standard should incorporate the <u>principles</u> of the Model Water Efficient Landscape Ordinance (MWELO), but it does not need to be based on MWELO irrigation system design standards.

While the enabling legislation calls for the outdoor standard to be based on the principles of the Model Water Efficiency Landscape Ordinance (MWELO), it does not require that the MWELO irrigation system design standards be used, or that the outdoor standard be capped based on current MWELO design requirements. Performance of existing irrigation systems cannot be expected to be the same as an irrigation design standard for new or renovated landscape. There are numerous reasons why in-ground irrigation system performance and applied water diverges from design standards, such as the growth of plant material that blocks irrigation over time. Installation not according to the design plan also results in degradation of the irrigation system from the original design that negatively affects actual performance.

The legislation calls for the <u>principles</u> of MWELO to be incorporated. Principles that are based on horticultural and irrigation science, including ET Adjustment Factors (a product of Plant Factor <u>and</u> Irrigation System Efficiency) and reference evapotranspiration, should guide the development of the outdoor standard as they are most relevant to existing landscapes. In MWELO, landscape designers are required to calculate the Maximum Applied Water Allowance (MAWA), which is a theoretical/optimal volume of water that might be applied on a landscape, given a known area, plant factor and evapotranspiration rate.

Thus, in developing the outdoor efficiency standard, the plant factor and irrigation system efficiency should not be back-calculated based on an estimated landscape area and estimated applied water; the underlying horticultural and irrigation science of existing landscapes should be used to develop the outdoor efficiency standard. Although the ET Adjustment Factor in MWELO is based on the parcel level, the science and <u>principles</u> can be expanded to multiple parcels or aggregated landscape area using assumptions of the mix of plant material in typical established landscape plant palettes and data on average irrigation efficiency from manufacturers and real-world distribution uniformity (DU) catch-can tests.

We recommend that DWR use horticultural principles and irrigation system data to develop an appropriate and reasonable outdoor standard that considers both existing and new landscapes and actual performance of existing in-ground irrigation systems.

2. 80% of California's housing stock was built prior to the establishment of MWELO in 1993; these pre-existing residential landscapes were not conceived or built to perform to the design standards found in MWELO.

The legislation requires that the outdoor standard consider both new and existing landscapes. Based on housing data for California, from the 2010 US Census and 2019 CA Dept. of Finance, there were over 11 million housing units built before 1990 that were never subject to MWELO. Since 1990, just over 3 million additional housing units have been constructed. Only one in five houses built in California were potentially subject to MWELO design standards. Since 80% of California's housing

stock pre-dates MWELO, it is unreasonable to assume that MWELO's design standards are the operating conditions found in homes, landscapes, and irrigation systems built before 1990. The chart below summarizes the housing stock by decade during which MWELO has been in effect.

Year	1990 (pre-MWELO)	2000	2010	2019
Housing Units	11,182,513	12,214,550	13,680,081	14,235,201
<u></u>				

Sources: US Census of Population and Housing for California (<u>web link</u>) and CA Department of Finance housing data from 2019 (<u>web link</u>)

Of the 20% of homes that have been built since MWELO has been in place, typically MWELO only applies to developer installed landscaping, which is usually the front yard, and often not applicable to back-yards. Further, the enforcement of MWELO is only as effective as the land-use regulating agency permitting new homes. Additionally, lack of enforcement of MWELO further weakens its effectiveness, even as a design standard in homes that are subject to it. The review and approval of MWELO landscapes has been non-existent for years and only recently have the approving agencies began to enforce MWELO, although it is still not widely enforced. In addition, the post installation inspection of these new landscapes is virtually non-existent, thus ensuring that these new MWELO landscapes are not installed as designed. Data from East Bay Municipal Utility District (East Bay MUD) data show that sites that were designed to meet MWELO 2010 and 2015 design standards perform above 150% of reference evapotranspiration.

3. Use of a design standard of 0.8 for Irrigation System Efficiency does not reflect the reality of irrigation efficiency in existing landscapes or in how landscapes perform over time.

Water Purveyors throughout the State have accumulated data on actual irrigation system performance through the various landscape programs implemented over ten plus years. The Municipal Water District of Orange County (MWDOC) has conducted distribution uniformity (DU) catch-can tests at 1,014 residential and 1,106 non-residential sites as part of its water use efficient landscape incentive programs. The average distribution uniformity for residential landscapes is 0.55 and for non-residential sites is 0.58. Data from Qualified Water Efficient Landscaper (QWEL) catch can audits conducted in the Bay Area between 2019-2020 by certified irrigation auditors show DUs ranging from 0.40 to 0.70, with an average DU of 0.50.

These field measurements of DU that are significantly lower than 0.80 are corroborated by recently completed field studies by UC Davis (Evapotranspiration Adjustment Factor Study (Agreement #4600008156). Certified irrigation specialists performed DU tests pre and post irrigation system improvements at existing mature turf landscapes throughout California and found average DU results of 0.55 pre-retrofit and 0.68 post-retrofit. While irrigation system performance improved after installing the most efficient rotating nozzles on the market, average DU was still below 0.70.

Additionally, DWR's proposed irrigation efficiency factor of 0.8 does not reflect the true operating ranges of irrigation efficiency that irrigation equipment manufacturers associate with their products.

The Irrigation Association (IA) provides the following ranges of expected DUs for rotary and spray sprinklers.

Sprinkler Type	Achievable	Target	Historical
Rotary Nozzles	0.75 – 0.85	0.65-0.75	0.55-0.65
Spray Sprinklers	0.65 – 0.75	0.55-0.65	0.45-0.55

The Irrigation Association notes the following important caveat regarding the expected range of DU's:

"the shape of the area covered by the sprinkler system will influence the spacing and pattern of the sprinklers. This directly affects the ranges of DU that can be expected. The higher achievable values are obtained when the sprinklers have consistent spacing between them and the rows of sprinklers are also consistent. Many residential properties have smaller and curvilinear shapes that do not allow for consistent sprinkler patterns, so distribution uniformity is compromised even when the design, installation, and maintenance is the best that can be expected."

Manufacturers calculate irrigation efficiency in a highly controlled environment (e.g. perfect operating pressures, little to no wind, perfect head-to-head coverage, etc.) and assume that the system is installed "perfectly" according to their specifications. The reality is that once a system goes from design on paper to "in the ground" there is a natural and expected loss of efficiency. The "Achievable" and "Target" ranges are based on controlled, environments with optimal landscape design and installation. This is not the case, especially in the residential sector and the "Historical" ranges are actually representative of typical installed landscapes. This real-world data needs to be considered in establishing any assumed Irrigation Efficiency. Irrigation science and real-world data demonstrate that DWR's assumption of an Irrigation Efficiency of 0.8 is not achievable.

Although frequently used interchangeably, irrigation efficiency is influenced by distribution uniformity (DU). Efficient irrigation is when water is beneficially used compared to the amount of irrigation water applied. DU is a metric utilized to characterize the evenness of application of water to the planted area.

DU is often used as a proxy for irrigation efficiency since it is readily measurable. Catch-can measurements for DU are the recommended practice for quantifying system uniformity (Irrigation Association, 2013). When considering irrigation management that is less than 100% efficient, Irrigation Efficiency only decreases any given DU value. For example, a DU of 0.60 multiplied by an irrigation management efficiency of 80% results in an Irrigation Efficiency value of 48%. For this reason, assuming an Irrigation Efficiency of 80% requires an unrealistically high DU performance value. Existing landscapes do not perform to these unattainable standards, and even when retrofitted with more efficient irrigation equipment cannot achieve a DU of 80%.

To illustrate this, East Bay MUD conducted a program that retrofitted landscapes irrigated by spray nozzles with efficient rotating nozzles. The average DU of the landscapes at the 17 sites before the retrofit was 0.48. While the retrofit significantly improved the performance, the average DU of the all the sites post-retrofit was 0.69. The Coachella Valley Water District has conducted similar DU catch-can tests at residential sites in its service area and has found DU for spray heads and rotating nozzles to range from 0.58-0.60 and 0.62-0.65, respectively.

We recommend that the outdoor standard be based on an Irrigation Efficiency reflects actual irrigation performance that is measured in the field and supported by irrigation manufacturer specifications, which ranges from 0.55 to 0.65.

4. DWR's provisional ET Factor of 0.7 is calculated from an unrealistic irrigation efficiency assumption (80% IE) that arbitrarily limits Plant (Landscape) Factors, such that it does not reflect existing landscapes.

The proposed ET Factor of 0.7, when combined with an irrigation efficiency of 0.8, results in an average plant factor of 0.56. (ET Factor = Plant Factor/Irrigation Efficiency or 0.7 = 0.56/0.8). This does not consider the plant watering requirements for existing landscapes, many of which are predominantly turf grass. In fact, cool season grasses or annuals, with a plant factor of 0.8, and an irrigation efficiency of approximately 0.55, would require an ET factor of 1.45 to ensure maintenance of healthy landscape.

The table presented below is an exploration of what the ET Factor (column F) would be for a typical pre-MWELO suburban residential landscape using different Irrigation Efficiency (column E) assumptions. The yard is predominantly comprised of cool season grass and annuals, which both have a plant factor of 0.8 (65% of landscaped area, combined). The remaining 35% of landscaped area is woody shrubs and trees with a plant factor of 0.5. The composite landscape Plant Factor would be 0.67 (Column D). The resulting ET Factor ranges are all over the DWR provisional outdoor standard of 0.7, even with an unrealistically high IE assumption of 80%. In fact, the most likely ET Factor is over 1.0 given real world Irrigation Efficiency and performance of existing landscapes.

				D		F
А	В	С		D = avg(A X C)	E	F = D X E
				Overall		
	Plant Type	% of Area in		Landscape	Irrigation	ET Factor
Plant Factor	Description	Landscape		Plant Factor	Efficiency (IE)	(based on IE)
0.3	Low water use plants				0.45	1.49
0.5	Woody shrubs/trees	35%			0.55	1.22
0.6	Warm season grass			0.67	0.625	1.07
0.8	Cool season grass	60%			0.70	0.95
0.8	Annuals	5%	J		0.80	0.84

ET Factors Under Different Lansdcape Factor and Irrigation Efficiency Scenarios

We recommend that the outdoor standard be based on an Irrigation Efficiency of 0.625 that reflects in-field irrigation performance and based on a plant factor that takes into account typical plant palettes.

5. Back-calculating an outdoor standard from estimated applied outdoor use embeds multiple sources of error and is not based on horticultural principles or irrigation science.

Back-calculating an outdoor standard from estimates of indoor use, estimates of landscape area and estimates of applied outdoor water use incorporates multiple sources of error and is not based on horticultural science or the principles of MWELO. It embeds multiple sources of potential error and fails to consider on-site and in-field conditions, such as plant type and health, source water, and watering requirements.

The estimates of indoor use developed by DWR incorporate errors based on the fact that residential meters combine indoor and outdoor use. Assumptions of population and how much of the actual use is indoor versus outdoor includes levels of error. This is compounded by the fact that the eAR data used by DWR is based on water supplier billing data. Water suppliers billing data for residential account classifications do not align well with the parcel-based data used by DWR in developing residential landscape area measurements (LAM). As a result, the landscape area and billing data do not align and have sources of error. In particular, dedicated irrigation meters and mixed-use meters are frequently mis-categorized by DWR in the residential LAM data, resulting in overstated residential LAM. Consequently, any assessment of applied water, using a larger irrigated area than is actually the case, would result in DWR significantly under-estimating applied water on existing landscapes. In the case of Irvine Ranch Water District, DWR's estimate of residential LAM is overstated by 19%.

Another source of error in back-calculating an ET factor based on estimated applied water is that the approach does not consider the actual plant watering requirements. It assumes that applied water is the appropriate amount of water to maintain healthy landscapes, when many residential landscapes may be deficit irrigated, and therefore not maintained at an optimal level for plant health. The University of California has developed plant factors for many urban and ornamental landscapes, based on horticultural science. We recommend that DWR use WUCOLS data and estimates of existing plant palettes and typical ranges of irrigation efficiency to develop recommendations for the outdoor standard, rather than rely on estimates of applied water that are subject to multiple sources or error and is inconsistent with the principles of MWELO.

Another concern with DWR's approach is the data trimming of calculated ET Factors from the analysis to limit it to a range of 0.1 to 1.0, which does not reflect the reality of existing landscape use. An existing predominantly turf landscape, with an Irrigation Efficiency of 0.55, could be expected to have an ET factor of 1.45. The legislation requires that the standard consider existing as well as new landscapes.

DWR's data trimming approach fails to consider existing landscapes. While turf replacement and other outdoor programs can improve efficiency, the legislation clearly did not require existing landscapes to be replaced. The outdoor standard needs to be set so that both existing and new landscapes can be maintained in a healthy way. DWR's overall approach of back-calculating an ET Factor based on estimations of applied water is not appropriate and is not consistent with the principles of MWELO, and the problem is further compounded by data trimming landscape ET Factors that the legislation clearly states must be considered.

The ET Factor Matrix, below, highlights in light green all the ET Factors that DWR has omitted from considering by narrowly considering only an IE of 80% and a Plant (landscape) Factor of 0.56. Existing residential landscapes can have ET Factors of over 1.0, given many reasonable and expected operating conditions (e.g. an IE of 55% and Plant/Landscape Factor of 0.56 results in an ET Factor of

1.02). Special Landscape Areas and sites that use recycled water should be expected to have an ET Factor of 1.0 or greater (indicated by dark green cells), given the requirements to maintain such sites (e.g. sports fields) while being irrigated by overhead rotor irrigation. ACWA's recommendation for an ET Factor of 1.0 is still an aspirational target that better reflects existing real-world landscape and irrigation system performance than does DWR's proposal of a 0.7 ET Factor that is based on design standards and assumptions of Irrigation Efficiency that are not found in the field.

ET	Factor			Р	lant/Lands	cape Facto	or			
N	Aatrix	0.20	0.40	0.50	0.56	0.60	0.70	0.80	1.00	
	45%	0.44	0.89	1.11	1.24	1.33	1.56	1.78	2.22	
	50%	0.40	0.80	1.00	1.12	1.20	1.40	1.60	2.00	ET Factors Omitted by DWR
~	55%	0.36	0.73	0.91	1.02	1.09	1.27	1.45	1.82	Existing landscapes
enc	60%	0.33	0.67	0.83	0.93	1.00	1.17	1.33	1.67	Special Lndsp Areas
ffici	62.5%	0.32	0.64	0.80	0.90	0.96	1.12	1.28	1.60	
ů C	70 %	0.29	0.57	0.71	0.80	0.86	1.00	1.14	1.43	ACWA Proposal
atio	75%	0.27	0.53	0.67	0.75	0.80	0.93	1.07	1.33	
Line in the second seco	80%	0.25	0.50	0.63	0.70	0.75	0.88	1.00	1.25	DWR Proposal
-	85%	0.24	0.47	0.59	0.66	0.71	0.82	0.94	1.18	
	90%	0.22	0.44	0.56	0.62	0.67	0.78	0.89	1.11	
	95%	0.21	0.42	0.53	0.59	0.63	0.74	0.84	1.05	

We recommend establishing the outdoor standard with an ET Factor of 1.0, based on an appropriate weighted plant factor based on horticultural principles and plant watering requirements, that considers existing, predominantly turf landscapes as well as newer landscapes, combined with a reasonable estimate of irrigation efficiency that reflects both existing and new landscapes. DWR's provisional ET Factor of 0.7 does not achieve this.

6. Special Landscape Areas and Recycled Water shall receive an ET Factor of 1.2.

The legislation (10609.9 (e)) recognized that certain landscapes require additional irrigation. Special landscape areas such as golf courses, parks, sports fields and other functional turf areas have higher watering requirements than areas that include a mix of plant material, and are typically irrigated with overhead spray or rotors. Landscapes irrigated with recycled water need additional water to flush salts down and out of the root zone. Expanding the use of recycled water is state policy and establishing an ET factor that is below the requirement would penalize both water suppliers and users that have invested in the expansion of recycled water systems and its use. DWR's provisional recommendation does not specifically account for the higher watering needs of these landscapes. MWELO principles recognize the need for a higher ET Adjustment Factor of 1.0 in the design of these landscapes were installed prior to MWELO being in effect.

We recommend that special landscape areas and areas irrigated with recycled water are given an ET factor of at least 1.2 to be consistent with the principles of MWELO, horticultural and irrigation science, State policy objectives, and expected performance of existing landscapes. Special landscape areas are functional and irrigated areas by definition. Recycled water systems are generally only installed in areas that will be irrigated, and therefore 100% of these areas should be assumed to be irrigated, without limitation.

7. DWR's provisional recommendation of using only 20% of what is termed Irrigable Not Irrigated (INI) area and limiting that to only when a water supplier does not meet its Water Use Objective (WUO) is not consistent with the legislation.

The enabling legislation states that the "The standards shall apply to irrigable lands." (10609.6). It does not limit it to only a portion of the irrigable lands or limit its use to only if a supplier is not meeting its WUO. This provision reflects the fact that landscapes can change over time, and that areas not currently irrigated can become irrigated.

To be consistent with the legislation, we recommend that the outdoor standard be based on one ET factor of 1.0 for irrigable irrigated (II) landscapes and a lower ET factor of 0.55 for all (100%) irrigable not irrigated (INI) areas irrigated with potable water, without limitation.



Bringing Water Together

DWR PROVISIONAL OUTDOOR EFFICIENCY STANDARD

Aug. 17, 2021 2:00 - 3:00 PM

www.acwa.com

Outdoor Water Efficiency Standard Objectives

- Reduce water waste and improve outdoor water use efficiency in California
- Maintain healthy landscapes and landscape value
- Account for new and existing landscapes
- Promote use of recycled water consistent with state policy
- Based on horticultural and irrigation science





FACTORS IN SETTING OUTDOOR STANDARD Landscape Design vs Performance

- The outdoor standard should incorporate the principles of the Model Water Efficient Landscape Ordinance (MWELO)
- It does not need to be based on or meet MWELO irrigation system design standards





FACTORS IN SETTING OUTDOOR STANDARD Applicability of MWELO

- Roughly 80% of California's housing stock was built prior to the establishment of MWELO in 1993
- These pre-existing residential landscapes were not conceived or built to perform to the design standards found in MWELO



4 out of 5 homes built *before* MWELO



Year	1990 (pre-MWELO)	2000	2010	2019
Housing Units	11,182,513	12,214,550	13,680,081	14,235,201

Source: US Census of Population and Housing for California, CA Dept. of Finance housing data from 2019



FACTORS IN SETTING OUTDOOR STANDARD Real-World Irrigation Efficiency

Agency / Organization	Spray Head DU (avg)	Rotating Nozzle DU (avg)	Notes
MWDOC	0.55; 0.58	N/A	Average DU at 1,014 Residential sites; 1,106 Commercial sites
UCDAVIS UNIVERSITY OF CALIFORNIA	0.55	0.68	Range of sites throughout CA, retrofitting existing spray to new rotating nozzles
OWEL	0.50	N/A	DU ranges from 0.40 – 0.70
East Bay MUD	0.48	0.69	Retrofit program results of site going from spray to rotating nozzles.
Coachella Valley Water District	0.58 - 0.60	0.62 - 0.65	DU catch-can results from sites with different sprinkler-types

Distribution Uniformity (DU) Test Results from Across California

- Use of a design standard of 0.8 for Irrigation System Efficiency does not reflect the reality of irrigation efficiency in existing landscapes or how landscapes perform over time
- Retrofitting with high efficiency irrigation equipment does not achieve 0.8



FACTORS IN SETTING OUTDOOR STANDARD Real-World Irrigation Efficiency

- Irrigation system performance degrades over time and suffers from operating issues, like high pressure or blocked/clogged heads
- Curvilinear residential designs negatively affect irrigation efficiency







FACTORS IN SETTING OUTDOOR STANDARD Achievable Irrigation Efficiency

- "Achievable" = pristine controlled environments; not residential yards
- DWR's assumption of 0.8 IE is not achievable with spray sprinklers, which irrigate the majority of residential landscapes





Expected Distribution Uniformity by Sprinkler Type								
Sprinkler Type	Achievable	Target	Historical					
Rotary Nozzle	0.75 - 0.85	0.65 - 0.75	0.55 - 0.65					
Spray Sprinklers	0.65 - 0.75	0.55 - 0.65	0.45 - 0.55					
			1					
Existing Residential Irrigation Systems								



FACTORS IN SETTING OUTDOOR STANDARD Irrigation Efficiency and Plant Requirements

- Proposed ET Factor of 0.7 is calculated from an unrealistic irrigation efficiency assumption (80%) that arbitrarily limits Plant (Landscape) Factors and does not reflect existing landscapes
- Chart calculates the overall landscape plant factor (column D) and the ET Factor (column F) is based on different Irrigation Efficiency values (column E)
- Even a high IE value of 80% results in ETF of 0.84 for existing landscape plant palette

ET Fact	ET Factors Under Different Lansdcape Factor and Irrigation Efficiency Scenarios										
				D		F					
А	В	С		D = avg(A X C)	E	F = D/E					
				Overall							
	Plant Type	% of Area in		Landscape	Irrigation	ET Factor					
Plant Factor	Description	Landscape		Plant Factor	Efficiency (IE)	(based on IE)					
0.3	Low water use plants				0.45	1.49					
0.5	Woody shrubs/trees	35%			0.55	1.22					
0.6	Warm season grass		≻=	0.67	0.625	1.07					
0.8	Cool season grass	60%	'		0.70	0.95					
0.8	Annuals	5%	J		0.80	0.84					

Example: Existing suburban residential landscape Cool season turf mixed landscape, composite plant factor = 0.67

X Target IE of 62.5%, as presented in the previous slide

1.07 ET Factor



FACTORS IN SETTING OUTDOOR STANDARD **Issues with DWR Methodology**

- Back-calculating an Outdoor Standard from applied outdoor use is not based on horticultural principles or irrigation science
- Estimating outdoor water use from eAR data and residential LAM compounds multiple sources of error
- Many residential landscapes irrigated by Dedicated Irrigation Meters; reported eAR residential water use does not include water applied to those landscapes. Result will arbitrarily lower ET Factors.

ET	Factor			Pla	nt/Landsca	pe Factor				
N	latrix	0.20	0.40	0.50	0.56	0.60	0.70	0.80	1.00	
	45%	0.44	0.89	1.11	1.24	1.33	1.56	1.78	2.22	
	50%	0.40	0.80	1.00	1.12	1.20	1.40	1.60	2.00	ET Factors Omitted by DW
~	55%	0.36	0.73	0.91	1.02	1.09	1.27	1.45	1.82	Existing landscapes
enc	60%	0.33	0.67	0.83	0.93	1.00	1.17	1.33	1.67	Special Lndsp Areas
ffici	62.5%	0.32	0.64	0.80	0.90	0.96	1.12	1.28	1.60	
ů c	70%	0.29	0.57	0.71	0.80	0.86	1.00	1.14	1.43	ACWA Proposal
atio	75%	0.27	0.53	0.67	0.75	0.80	0.93	1.07	1.33	
ri 8	80%	0.25	0.50	0.63	0.70	0.75	0.88	1.00	1.25	DWR Proposal
-	85%	0.24	0.47	0.59	0.66	0.71	0.82	0.94	1.18	
	90%	0.22	0.44	0.56	0.62	0.67	0.78	0.89	1.11	
	95%	0.21	0.42	0.53	0.59	0.63	0.74	0.84	1.05	

- DWR omitted considering ET Factors over 1.0. Many reasonable combinations of Irrigation Efficiencies (rows) and Plant/Landscape Factors (columns) produce ET Factors over 1.0.
- ACWA proposal for an ET Factor of 1.0 still aspirational yet informed by realistic and existing landscape and irrigation system performance.



Recycled Water and Special Landscape Areas Additional Water Requirements

- MWELO recognizes the importance and need for providing Special Landscape Areas and areas irrigated with Recycled Water and provides design ET Factor of 1.0
- Actual landscape performance would be a higher ET factor than the design ET factor
- ACWA recommends that Special Landscape Areas and Recycled Water shall receive an ET Factor of 1.2
- Promote use of recycled water consistent with state policy







Irrigable Landscape Landscapes Change Over Time

- Legislation states outdoor standard shall be based on *irrigable* landscape, without limitation
- Provisional recommendation using only 20% of Irrigable Not Irrigated (INI) area and limiting it to only when a water supplier does not meet its Water Use Objective (WUO), is not consistent with the legislation
- Use of irrigable intended to address landscape change over time
- Recommend 0.55 ETF for 100% of INI
- Reevaluate and remeasure INI in 5 years





Summary of ACWA Recommendation Outdoor Efficiency Standard

Based on:

- Principles of MWELO
 - Horticulture and Irrigation Science
- Irrigable landscape
- Irrigation requirements of New and Existing Landscapes
- Real-world landscape performance and plant palettes
- Accounts for higher watering requirements for special landscape areas and recycled water

- 1.0 ET Factor for Irrigable Irrigated (II) LAM
- 0.55 ET Factor for 100% Irrigable Not Irrigated (INI) LAM
- 1.2 ET Factor for Special Landscape Areas and Recycled Water for 100% of II and INI LAM
- Remeasure and reevaluate INI & INA LAM in 5 years





Comments to DWR regarding Residential and Commercial Outdoor Standards

August 19, 2021

To Whom It May Concern:

Moulton Niguel Water District (Moulton Niguel or District) appreciates the opportunity to provide comments to the Department of Water Resources (DWR) on the proposed residential outdoor standards and yet-to-be-proposed commercial outdoor standards related to the Urban Water Use Objective. Comments will be provided on the following:

- 1. The proposed outdoor Supplier-level ET Factor (ETF) standard should be 0.8, not 0.7, for regular areas irrigated with potable water;
- 2. ETF for residential landscapes irrigated by a dedicated irrigation meter (DIM) with potable water should be 0.8 and special landscape areas (SLA) irrigated with potable water should be 1.0.
- 3. ETF for SLAs irrigated with recycled water should be 1.0.
- 4. Calculating the Standard with "Irrigable Irrigated" and "Irrigable not Irrigated."

1. Proposed residential outdoor ETF standard should be 0.8, not 0.7.

DWR has proposed an ETF of 0.7 for "irrigable-irrigated" (II) residential landscapes based on an analysis which utilized an applied water methodology. To support this recommendation, DWR used residential water consumption data from the Electronic Annual Report (EAR), estimates of indoor residential use were derived from the Indoor Residential Water Use Study (IRWUS), and Landscape Area Measurements (LAM) were sourced from DWR's contractor.

Moulton Niguel has a number of concerns regarding the proposed residential landscape standard and how it was derived. These concerns are primarily related to the (a) standard development approach, (b) data concerns in the current approach that affect the proposed residential outdoor standard, (c) assumptions in the methodology that are not supported by field-based data, and (d) MNWD's recommended ETF for regular landscapes irrigated with potable water. These concerns, as well as potential solutions, are detailed below:

a. <u>Standard Development Approach</u>: Moulton Niguel concurs with the validity of using an applied water methodology for the purposes of validating that the proposed ETF is *conceptually reasonable* and *potentially achievable* on an aggregate scale. However, we disagree with the conclusion that an applied water methodology should be used *at this time* as the basis for proposing a standard policy. The applied water methodology would be an appropriate approach for calculating policy standards in cases where the source data are:

- 1. Sufficient to be considered representative;
- 2. Supported by measurements and studies conducted in the field;
- 3. Consistently reported in source databases (i.e., the EAR); and,
- 4. Estimated values and assumptions are limited.

We believe an applied water methodology may be more appropriate in future iterations of the residential outdoor standard policy after many of the existing data issues, omissions, and assumptions are corrected. Given the current limitations of statewide data, we suggest developing a residential outdoor standard based on the historical application of MWELO, which is still consistent with the legislation, until more data can be collected and further studies are conducted.

b. <u>Data concerns in the current applied water methodology that affect the proposed</u> <u>standard</u>:

Below is an enumeration of Moulton Niguel's concerns and proposed solutions or alternatives:

i. DWR performed a data quality screening of the state's 400 EAR datasets. Of those, only 249 had usable datasets. DWR generated ETFs for each agency in the sample and found that 26% of agencies had an ETF greater than 1.0.

To develop the proposed residential outdoor standard, DWR capped the ETFs in their sample to 1.0, but failed to provide a sufficient explanation for why they biased their starting dataset, other than values exceeding 1.0 do not align with MWELO standards. The Conservation Framework legislation states that the development of outdoor standard must consider the principles of MWELO, it does not state that data should be altered to fit the MWELO guidelines prior to analysis. It is essential to include all valid datasets when calculating statewide mean ETF.

In practice, applied water can easily exceed 100% of ETo, particularly considering the average irrigation efficiency (IE) of a residential site is 0.55 - 0.61. For example, a lawn with a mix of warm and cool weather turf grasses has a plant factor of .7. If the site has a 0.6 IE, it's functional ETAF would be 1.7 (see example equation below):

ETAF:Plant Factor/ Irrigation EfficiencyExample ETAF:.7 / .6 = 1.17

¹ Communication from Joe Berg with the Municipal Water District of Orange County (MWDOC). The 0.55 – 0.6 IE values are based on in-field measurements through MWDOC's landscape audit program.

When DWR allowed untrimmed ETF values to be incorporated into the applied water use analysis, they found a range of statewide mean ETFs from 0.76 to 0.79 when effective precipitation was included.

If an applied water methodology must be used to develop a proposed standard, we recommend not "trimming" ETF data from retail water suppliers at 1.0, because an ETF exceeding 1.0 is realistic and common in practice. The range of statewide average ETFs resulting from an untrimmed dataset make a compelling case for an outdoor residential ETF standard of 0.8.

ii. Many retail suppliers report water use associated with DIMs exclusively as "Landscape Irrigation" water, as opposed to "Residential" water, in the Electronic Annual Report (EAR), even if those DIMs serve single-family or multi-family developments. For example, DIMs serving the common landscape areas of Homeowner Associations (HOA) or multi-family complexes would be reported as "Landscape Irrigation" in the EAR.

An applied water methodology uses the total amount of water consumed over an irrigated area to calculate an ETF. DWR used the water volumes reported as "Residential" in the EAR to determine its proposed ETF standard, knowing that these values were not representative of the *actual amount of water applied to residential landscapes in practice*. This approach will act to artificially reduce residential ETFs in an applied water analysis, particularly when combined with the 1.0 cap on ETFs imposed by DWR in the usable dataset.

Many water agencies report DIM water use as "Landscape Irrigation" in the EAR, because of long-standing definitional inconsistencies in state reporting guidelines. Many agencies also face limitations from their billing databases in categorizing water use. In several previous stakeholder sessions, water suppliers have expressed to DWR that their current billing system configuration is unable to differentiate whether a DIM serves a residential or non-residential parcel. Agencies have also voiced that they report all water use associated with DIMs in the "Landscape Irrigation" category in the EAR.

For Moulton Niguel's service area, the majority of landscaped area surrounding apartments, condominium, and townhome complexes are irrigated by a DIM. Moulton Niguel reports its DIM connection count and water consumption in the "Landscape Irrigation" category in the EAR. Additionally, our recycled water DIMs are included in the same category, but separated as recycled.

An example of this scenario is provided below in Figures 1 and 2.



Figure 1: Large multi-family parcel with landscaped area and pool. Parcel area being referenced is in light green.



Figure 2: Same multi-family parcel in Figure 1, but the landscaped area served by several recycled water DIMs is highlighted in taupe, lavender, and peach. The annual water volume associated with these DIMs is reported as "Landscape Irrigation" in the EAR.

The SWRCB EAR Help Tips² provide guidance to Water Suppliers on how to report connections and consumption by Location Type. The Tips suggest that Single Family Residential and Multi-Family Residential are comprised of dwelling units, and that Landscape Irrigation is comprised of "parks, play fields, cemeteries, median strips, golf courses." Notably absent is guidance on landscape areas associated with single or multi-family common areas.

Further, DWR's UWMP Guidebook 2020³, which provides guidance in reporting water use by sector per Water Code Section 10631(d), recommends that Single Family Residential and Multi Family Residential are comprised of dwelling units and the building, and that Landscape [Irrigation] is water solely for landscape irrigation, and that "such landscapes may be associated with multi-family, commercial, industrial, or institutional/governmental sites, but are considered a separate water use sector if the connection is solely for landscape irrigation."

Based on the guidance provided by both the Water Board and the Department, it is logical to conclude that the majority of water suppliers are including all reported DIM connections and their associated water consumption in the EAR's "Landscape Irrigation" category.

Given the known reporting inconsistencies in EAR data, Moulton Niguel contends that these data are not suitable to develop a residential outdoor standard using an applied water approach at this time.

The District is supportive of additional and on-going dialogue between water agencies and DWR to redefine reporting guidelines for residential DIMs in the EAR. Over time, this should result in more accurate data that could later be used in an applied water analysis.

c. Assumptions in the methodology that are not supported by field data.

There are no field data to support the 0.8 irrigation efficiency (IE) value DWR used to develop its proposed residential outdoor standard. In fact, available field data show a much lower IE of 0.55 - 0.6, since residential irrigation systems are predominantly composed of overhead spray irrigation.

 ² EAR Help Tips, State Water Resources Control Board. https://ear.waterboards.ca.gov/Content/2020EARHelp.htm
 ³ Urban Water Management Plan Guidebook 2020. California Department of Water Resources.

https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans/Final-2020-UWMP-Guidebook/UWMP-Guidebook-2020---Final-032921.pdf

Therefore, Moulton Niguel disagrees with DWR's assumption that statewide residential irrigation efficiency could be assumed to meet or surpass 80% IE^{4,5}. That assumption appears to be based on a relatively new design standard, rather than being based on in-field observations. Since the Standards are enforceable, we believe that they should be based on achievable efficiencies.

We suggest that DWR consider the Irrigation Association's guidance on Irrigation Efficiency⁶ for spray sprinklers, which is the predominate method of irrigation technology used in residential landscapes. Specifically, we suggest that if IE assumptions are utilized in an any calculations, that the IE assumption be based on the low end of Achievable values, which is higher than Historical and therefore does encourage further improvements in water efficiency for existing sites.

Sprinkler Type	Achievable	Target	Historical
Rotary Sprinklers	0.75-0.85	0.65-0.75	0.55-0.65
Spray Sprinklers	<mark>0.65-0.75</mark>	0.55-0.65	0.45-0.55

- d. Moulton Niguel recommends that residential landscapes irrigated with potable water should have an ETF of 0.8.
 - i. In 1993, the Model Water Efficiency Landscape Ordinance (MWELO) began requiring a 0.8 ETAF *design standard* for new residential and commercial landscapes irrigated with potable water. The majority of California's residential housing stock pre-dates MWELO and presumably these "legacy landscapes" in practice use more than 80% of ETo. Therefore, if a 0.8 ETF *performance standard* were implemented for residential landscapes, it would still result in significant water savings for the state.

2. ETF for landscapes irrigated by a DIM with potable water should be 0.8 and special landscape areas (SLA) irrigated with potable water should be 1.0.

a. The ETF of 0.7, as proposed by DWR, appears to be specifically for residential landscapes irrigated with potable water. There does not yet appear to be a proposal for DIMs associated with Commercial, Industrial, or Institutional (CII) sites irrigated with potable water or SLAs irrigated with potable water.

⁴ <u>https://cawater.sharepoint.com/sites/dwr-</u>

wusw/Standards%20Methodologies%20and%20Performance%20Measures/Stds%20Workgroup%20Mtg3%206-30-2021/Outdoor Standard Technical Summary Final.pdf

⁵ <u>https://cawater.sharepoint.com/sites/dwr-</u>

wusw/Standards%20Methodologies%20and%20Performance%20Measures/Stds%20Workgroup%20Mtg3%206-30-2021/PRESENTATION%20Outdoor%20use%20Standards%20meeting%2006.30.21.pdf

⁶ "Table 4-1: Expected Low Quarter Distribution Uniformity" as found within the Irrigation Association's *Landscape Irrigation Auditor*, 2nd Edition, 2010.

- b. To be consistent with the principles of MWELO, Moulton Niguel suggests utilizing the same ETF of 0.8 for *all potable DIM*, inclusive of CII DIM and residential DIM, such as multi-family or HOA common areas, but exclusive of SLAs as defined by MWELO. This would simplify the measurements, analyses, and allocations for water suppliers and for DWR. It would also be a more reasonable approach to develop the first iteration of standards, given the data and reporting challenges associated with the EAR described above.
- c. Moulton Niguel suggests providing a 1.0 ETF for SLAs, which also follows MWELO principles. MWELO has historically provided an ETAF of 1.0 to SLAs to allow for a higher percentage of actively used turfgrass. This suggestion is also supported by a UC Study⁷ which noted that even with high distribution uniformity of 75% (which is at the top end of the Irrigation Association's Table 4-1), only 6 of 14 turfgrass sites maintained acceptable quality at a 0.7 ETAF. When actively used turfgrass sites, such as parks and playing fields, fall below an acceptable quality it accelerates long-term damage, such as soil compaction and plant loss which further increases concern for player and child safety.

3. ETF for landscapes irrigated with recycled water should be 1.0.

- a. The ETF of 0.7, as proposed by DWR, appears to be specifically for residential landscapes irrigated with potable water. There does not yet appear to be a proposed residential outdoor standard for residential and commercial landscapes irrigated with recycled water.
- b. Moulton Niguel suggests continuing to follow MWELO principles, which have historically provided an ETAF of 1.0 for sites irrigated with recycled water to provide for the necessary flushing of higher total dissolved solids (TDS) in recycled water. The ability and acceptability for irrigators to flush solids, such as salts, past the root zones is necessary for plant health and the continued acceptance of recycled water as an alternative, sustainable, and drought-resilient supply.

4. Calculating the Standard with "Irrigable Irrigated" and "Irrigable not Irrigated."

a. The legislation is clear that the standard shall be based on irrigable area. However, we understand that the proportionality of Irrigable Not Irrigated (INI) to Irrigable Irrigated (II) can be vastly different between water suppliers and communities, based upon various factors such as: socioeconomic circumstances, rates of growth and development, and the predominate landscape species utilized in the urban environment. That proportionality, paired with an ETF to be finalized, could result in an artificially high or low Urban Water Use Objective for a water supplier.

⁷ UC Study: Hartin J, Oki L, Fujino D, et al. Evapotranspiration Adjustment Factor Study: Final Project Report 2017. DWR Office of Water Use Efficiency, Sacramento, CA

We support Option 4 presented by DWR, where a water agency would be provided with two outdoor standards based on their II and INI landscape areas. Landscapes designated as INI should be allocated an ETF to account for the following sources of uncertainty:

- i. Seasonally or circumstantially irrigated landscapes, such wildland interface landscapes with mature plant stock.
- ii. Uncertainty surrounding the frequency in which DWR, or the water supplier, may update aerial imagery, LAM measurements, and/or irrigation status data.
- iii. Accuracy, and certainty, of the computer model's assumption as to whether a landscape is currently irrigated or only potentially irrigated.
- iv. Growth and turnover rate that exists in the urban landscape. It is known that landscape palettes tend to change over time, and that change can be accelerated by the changes in tenancy and ownership of the property. Some regions may experience a more volatile change in tenancy than others.

The percentage of ETo allocated for INI landscapes should be on-going topic in DWR's working groups and should be supported by field-level data.

Again, we appreciate the opportunity to provide comments and suggestions related to the residential and commercial outdoor standards. The District is seen as a leader in water use efficiency across the state and has successfully managed a water budget based rate structure since 2011. The District supports the state's effort to make Conservation a California Way of Life and District staff have actively engaged in DWR and SWRCB stakeholder sessions on all aspects of the Urban Water Use Objective for several years.

However, we also strive to promote the use of appropriate analytical methodologies and clean, well-managed data in decision-making, particularly in policy development as critical as a statewide standard on outdoor water use. We welcome an opportunity to meet with state leaders and staff to discuss solutions to the above concerns and Moulton Niguel's recommendations.

Sincerely,

Lindsey Stuvick

Lindsey Stuvick Water Efficiency Manager Moulton Niguel Water District



November 24, 2021

Submitted via: <u>WUEStandards@water.ca.gov</u>

Standards, Methods, and Performance Measures Workgroup Water Use & Efficiency Branch Department of Water Resources 901 P Street Sacramento, CA 95814

Re: DRAFT Assessment of Provisional Urban Water Use Standards in Relation to SB X7-7 Statewide Target released by the Department of Water Resources at the Standards, Methods, and Performance Measures Workgroup Meeting on November 12, 2021, including DWR's recommended Outdoor Efficiency (ETF) Standard and the CII Classification System.

Dear Water Use Efficiency Team,

We appreciate the work that Department of Water Resources (DWR) staff and consultants have done to develop the indoor and outdoor efficiency standards and to assess the provisional urban water use standards in relation to the targets established under SBX7-7.

However, DWR's analysis of the provisional urban water use standards in its "DRAFT Assessment of Provisional Water Use Standards in Relation to SBX7-7 Statewide Target" (herein "DRAFT Assessment") <u>is inconsistent with Section 10609.2 (d) of the Water Code</u>. Additionally, the results of the Draft Assessment and related DWR documents indicate that DWR's provisional recommendations are inadequate and must be strengthened to comply with AB 1668/SB 606 (Making Conservation a California Way of Life, herein "Conservation Legislation).

The legislative intent of the Conservation Legislation is to *improve* urban water efficiency across California and to advance the state's goals to mitigate and adapt to climate change. <u>As</u> proposed by DWR, the provisional recommendations will encourage a return to less efficient water-use practices, wasting potable water supplies that are vital to the wellbeing of communities across the State.

Given the current drought and climate crisis facing California, it is vital that the State adopt strong forward-leaning standards that will ensure greater levels of water efficiency beyond that required by SBX7-7, which mandated a 20% reduction in statewide urban water use by 2020

and required retail water suppliers to set individual 20% conservation targets for 2020. We will face more severe droughts and hotter temperatures in the years to come, putting additional pressure on water resources. Robust water efficiency standards will help ensure that the state's potable water supplies are reserved for essential water uses like drinking water and watering shade trees -- not irrigation of non-functional turf.

We offer the following comments and recommendations:

Comments:

1. <u>DWR Misinterprets the "No Backsliding" Provision in AB 1668/SB 606</u>.

AB 1668/SB 606 includes critical legislative direction that the state set long-term water efficiency standards at a level designed to prevent water suppliers from backsliding from their 2020 water conservation targets required by SBX7-7. Specifically, Section 10609.2 (d) of the Water Codes states (emphasis added):

"The long-term standards shall be set at a level <u>designed</u> so that the water use objectives, together with other demands excluded from the long-term standards such as CII indoor water use and CII outdoor water use not connected to a dedicated landscape meter, would exceed the statewide conservation <u>targets</u> required pursuant to Chapter 3 (commencing with Section 10608.16)."

DWR provides its interpretation of what the Water Code section means on page 1 of the DRAFT Assessment: "DWR interprets WC Section 10609.2 (d) to mean that the urban water efficiency standards it recommends to the Water Board must result in statewide objective-based total water use that is less than the 2020 statewide cumulative daily per capita water use **target of 159 GPCD**."

Similarly, DWR explains in its DRAFT Recommendation for the Outdoor Residential Water Use Standard Recommendation, released 15 November 2021, what the Department means when it tests the "SBX7-7 requirement" established by AB 1668/SB 606. DWR writes that the tool they developed to assess the SBX7-7 "...compared the *statewide average objective based* <u>total</u> water use to the *statewide SBX7-7 target* [of 159 GPCD] for different time periods (2023, 2027, 2030)." DWR then asserts that "(t)he results show that the statewide objective based total water use is less than the SBX7-7 target and indicates that DWR's draft recommendations satisfy the SBX7-7 legislative requirement." (emphasis added)

DWR's interpretation is inconsistent with WC Section 10609.2 (d) because DWR relies on a single statewide cumulative target as its "threshold" for evaluating and setting the long-term efficiency standards. <u>But the Water Code clearly refers to conservation "targets</u>", **NOT** a single <u>conservation target</u>. Thus, DWR's assessment of the performance of the proposed long-term efficiency standards should be based on a comparison of each water supplier's water use

objective and its respective SBx7-7 2020 target <u>so that the standards result in each supplier's</u> <u>objective-based total water use being less than its individual daily per capita water use target</u> <u>set pursuant to SBX7-7</u>.

This distinction is vitally important to achieving the legislative goals set by AB 1668/SB 606. The Conservation Legislation intentionally moves beyond a "one size fits all" percentage reduction approach to water conservation that SBX7-7 embodied. The Legislation directs water suppliers to set individual objectives for their efficient water use that are customized to their local conditions AND that exceed their individual SBX7-7 conservation targets.

DWR also effectively concedes that its interpretation of the Water Code doesn't achieve the state's goals when it advises the reader on page 9 "...*not* to use the results in Tables 9 and 10 to estimate the number of suppliers expected to exceed their 2020 target under the provisional standards." DWR then states "Target exceedance is best assessed in terms of expected total use, not objective-based total use. This can be seen by noting that while up to 31% of suppliers have objectives greater than their 2020 targets, currently only 10% of suppliers have water use exceeding their 2020 target." (emphasis added).

Here, too, DWR's analysis and conclusions directly contradict the language in the Water Code that the standards be "designed" to exceed the SBX7-7 targets. Actual or "expected total" water usage by water suppliers has no bearing in DWR's proposed "Threshold Test." However, these data are useful in underscoring that actual urban water use today is more efficient than DWR's provisional long-term efficiency standards and that DWR's recommendations should be designed to promote greater efficiency and in turn, improve climate resilience.

2. <u>DWR's Recommended Standards Fail to Meet the "No Backsliding" Provision in AB</u> <u>1668/SB 606</u>.

Despite DWR's assertion that the performance of the long-term efficiency standards is "best evaluated based on a single statewide target," the DRAFT Assessment compares suppliers' objective-based total water use with their SBX7-7 targets. DWR's analysis found that 31% and 13% of suppliers have water use objectives <u>greater</u> than their 2020 targets before 2025 and after 2030, respectively. In other words, DWR's recommendations would allow many suppliers to increase their total water use to levels above their 2020 targets. It is noteworthy that DWR did not include variances and other adjustments in its analysis, which is likely to further increase the number of suppliers whose water use objectives exceed their individual 2020 conservation targets.

DWR's analysis sent via e-mail on 15 November 2021 clearly shows that <u>strengthening the</u> proposed outdoor residential efficiency standard would greatly reduce the number of retail suppliers whose objective-based total water use exceeds their SBX7-7 targets. For example, an indoor standard of 55 gpcd and an outdoor standard of 0.7 applied only to irrigable irrigated
lands would reduce the number of suppliers whose objective-based total water use exceeds their SBX7-7 targets from 31% to 17% before 2025.

Even with more robust standards, there may be suppliers whose objective-based total water use exceeds their SBX7-7 targets. More information is needed about which suppliers are affected and the drivers of these exceedances. Is it, for example, because the irrigable irrigated and/or irrigable non-irrigated landscape area estimates for a given supplier are too high? Is it because of some of the assumptions about tree canopy or other factors that would effectively increase the outdoor objective? Or, on the flipside, is it because their SBX7-7 target was very low, or because it excluded process water and recycled water? This information is needed to inform the final recommendation on where the state should set the water efficiency standards.

3. <u>DWR's Provisional Outdoor Long-Term Efficiency Standard Fails to Promote Climate</u> <u>Resilient Landscapes and Will Encourage Significant Additional Water Waste.</u>

Outdoor usage provides the greatest opportunity to save water and to make California communities more climate resilient. DWR's revised provisional outdoor water use standard are a significant step backwards and will result in more outdoor inefficiency and greater waste of potable water. This is especially problematic given that more severe droughts and hotter temperatures will put an upward pressure on outdoor water use. It is vital that DWR's long-term outdoor efficiency standards incentivize climate resilient landscapes, including reduced use of non-functional lawns and greater use of climate-appropriate plantings and shade trees.

DWR's revised provisional outdoor residential long-term standard <u>is inconsistent with its own</u> <u>studies</u> on actual outdoor water use. In addition, there are several assumptions embedded in the provisional standard that contribute to wasteful water use, including the failure to incorporate MWELO non-irrigation best practices, such as the application of mulch for healthy soils, use of climate appropriate plants, and improved tree irrigation practices. The effect of DWR's recommendations is to lock in irrigation of non-functional lawns and other landscapes that are not climate resilient.

At a July 2021 meeting, DWR proposed a provisional evapotranspiration factor (ETF) of 0.7. For clarity, the ETF is applied to net evapotranspiration (i.e., reference evapotranspiration minus effective precipitation) to adjust for plant composition and irrigation efficiency. DWR stated that its proposed ETF of 0.7 would apply to 100% of irrigable irrigated (II) area and 20% of irrigable not irrigated (INI) residential landscape area.

In response to retail suppliers' request, DWR then re-analyzed the landscape area measurement (LAM) data, resulting in an increase in irrigable irrigated (II) area. DWR's analysis shows that the increase in II area resulted in a <u>reduction</u> in mean ETF -- from 0.76 to 0.74 -- in the mean ETF. DWR did not provide data on the effect of adding 20% INI to the mean ETF, however, we note that the net effect of this <u>change would be to reduce the mean ETF further</u>.

Yet, at its October 25th workshop, DWR proposed **increasing** the provisional outdoor residential standard from 0.7 to 0.8 until 2030, at which time the standard would decline to 0.65. DWR also recommends that this new standard be applied to both II areas and 20% of INI areas consistent with the recommendation they made in July.

We offer the following recommendations for strengthening the outdoor standards:

- A. Outdoor Water Efficiency Standard (ETF) for Existing Landscapes: The outdoor standard should be based on the current mean ETF and should apply only to the irrigable irrigated area (II). DWR's current data shows that the current ETF for irrigated residential landscape is 0.74; that is the standard the state should adopt for 2025.
- B. **ETF for New Developments:** Over time, water suppliers will need to adjust the amount of II area in their water objectives to account for new development. The ETF for these new landscapes should be 0.55 based on the current MWELO requirements and consistent with the ACWA August 2021 recommendation. To adjust the estimate to account for new development, water suppliers should be required provide evidence from the required annual MWELO reports.
- C. Treatment of irrigable-not irrigated (INI) landscapes: We do not support inclusion of 20% of INI in the outdoor water use objective because it is based on weak and inconclusive data. For example, the data presented by DWR suggests only a weak correlation between ETF and the ratio of irrigated to irrigable area, with an R-squared of 0.13. Among other issues, there are few data points near the origin such that simply extending the line to the intercept is inappropriate.

Further, applying a relatively high outdoor standard, i.e., one based on II area, to the INI areas is inappropriate. We do not support inclusion of INI in the outdoor water use objective. However, should those areas be included, the mean ETF should be recalculated based on inclusion of these areas, and the outdoor standard for II and any proportion of INI included should be based on the recalculated mean ETF.

If there is a concern that the INI contains land that is in fact being irrigated, then the appropriate way to address this concern is for DWR to recommend a process by which water suppliers can document and request adjustments to the estimated landscape area to address any flaws in the current landscape data measurements.

D. Phased Step-Down of Outdoor Water Efficiency Standard for Existing Landscapes: We support ramping down the outdoor standard to encourage climate resilient landscapes for California. This is consistent with the approach taken for the indoor standard and is essential given the current drought and the mounting climate crisis. We do not support DWR's recommendations for these efficiency standards which are not consistent with the principles of MWELO. We recommend reducing the outdoor standard from the

current mean ETF (0.74) through 2025, 65% from 2025 to 2030, and 55% in 2030 and beyond.

4. <u>More Information is Needed about a Proposed Cap on Near Term Water Use</u> <u>Objectives.</u>

DWR has raised concern that some suppliers may need to significantly reduce their water use to comply with their water use objectives. Before recommending a cap on the required water use reductions, DWR needs to provide data on which suppliers are affected and why, whether the existing variance mechanisms can adequately address these concerns, and if not what the appropriate course for each supplier should be. We oppose the recommendation of a cap without adequate documentation of the problem.

5. <u>Commercial, Industrial, and Institutional (CII) Classification System Is Inconsistent with</u> <u>EPA ENERGY STAR Portfolio Manager.</u>

A consistent water-use classification system for the CII sector is essential for water planning and management across California. We strongly support development of a comprehensive classification system that covers the full range of water uses and users and is useful across water planning and management functions for water service providers and various levels of government. AB 1668/SB 606 requires the classification system to capture "significant uses of water," and we urge the state to develop a classification system that is broad enough to capture significant uses of water today and in the future.

At the 17 November 2021 workshop, DWR proposed a CII classification system consisting of 19 categories. We are supportive of a statewide classification system but urge the state to adopt the classification system used by the Environmental Protection Agency (EPA) in its ENERGY STAR Portfolio Manager. The Portfolio Manager is already used by 25% of U.S. commercial building space, and large building owners in California are required to use this classification system when reporting their energy use to the California Energy Commission. Moreover, the City of Los Angeles, in its Existing Buildings Energy and Water Efficiency Ordinance, requires privately-owned buildings that are 20,000 square feet or more (including commercial, residential, industrial buildings, structured parking, and condominium) to track and report whole-building energy and water use annually with ENERGY STAR Portfolio Manager.

Creating a new classification system used only by California water suppliers is unnecessary. Building on an existing classification system is sensible and could support future opportunities to assess, for example, the relationship between water and energy use. It could also support water suppliers in adopting ordinances like the City of Los Angeles.

6. <u>The Proposed Methodology for Calculation the Potable Reuse Credit is Unclear.</u>

We, along with representatives from WateReuse California, Irvine Ranch Water District, and Las Virgenes Municipal Water District, met with DWR consultants to present our agreed-upon proposal for the methodology to calculate the potable reuse credit. Based on the 17 November 2021 presentation and supporting materials, it is unclear whether DWR has adopted our proposal. We ask that DWR use our proposed methodology to determine the potable reuse credit.

In summary, we offer the following recommendations:

- Use a "threshold test" consistent with Water Code Section 10609.2(d) by comparing individual water suppliers' objective-based water use with their 2020 conservation targets.
- Design long-term water efficiency standards to ensure there is no backsliding from the 2020 baseline, consistent with Water Code Section 10609.2 (d). Evaluate supplier water use data to address core questions as to why some supplier water use objectives are not more efficient than their existing 2020 conservation targets.
- 3. Promote climate resilient landscapes by applying an outdoor standard equivalent to mean ETF solely to irrigable irrigated landscape areas and reducing the standard to 0.65 from 2025 to 2030 and 0.55 in 2030 and beyond.
- 4. Conduct additional analysis and provide more information to determine whether a cap on the near-term water use objectives is needed.
- 5. Adopt a CII classification system consistent with EPA ENERGY STAR Portfolio Manager.
- 6. Adopt our proposed methodology for calculating the potable reuse credit that was presented to DWR consultants on 2 September 2021.

As California faces more severe droughts and hotter temperatures, it is vital that the State adopt strong, forward-leaning water efficiency standards to reduce water waste and protect potable supplies for our communities. The future of our state, our people, our ecosystems, and our economy depend up on it.

Thank you again for this opportunity to provide comments.

Regards,

/S/ Heather Cooley

Heather Cooley Director of Research

Pacific Institute

/S/ Tracy Quinn

Tracy Quinn Director, California Urban Water Policy Natural Resources Defense Council

/S/ Martha Davis Martha Davis Davis Consulting

CC:

Eric Oppenheimer, Chief Deputy Director, State Water Resources Control Board

Kris Tjernell, Deputy Director, Integrated Watershed Management, Department of Water Resources



July 30, 2021

Submitted via: WUEStandards@water.ca.gov

Standards, Methods, and Performance Measures Workgroup Water Use & Efficiency Branch Department of Water Resources 901 P Street Sacramento, CA 95814

Re: Outdoor Water Use Standard Recommendation – Standards, Methods, and Performance Measures Workgroup

Dear Water Use Efficiency Team,

We appreciate the work Department of Water Resources (DWR) staff and consultants have done to collect and analyze data on indoor and outdoor water use, as well as landscape area, and to pull these data together into an outdoor recommendation.

At the Standards, Methods, and Performance Measures Workgroup meeting on July 1, 2021, DWR indicated that it had considered five options for the outdoor standard:

- 1. A single outdoor standard based on irrigable area;
- 2. A single outdoor standard based on irrigated area;
- 3. Outdoor standards based on a sliding scale;
- 4. Two outdoor standards (one for irrigated and one for irrigable non-irrigated areas); and
- 5. A single outdoor standard based on irrigated area and a buffer based on irrigable area, if needed.

Below we have provided recommendations to improve the effectiveness of the outdoor standard:

INI Buffer

At the July meeting, DWR reaffirmed its support of Option 5, which relies on an Evapotranspiration Adjustment Factor (ETAF) based on irrigated area and adds a "buffer" of additional potential irrigated lands if the supplier fails to meet the overall objective.

We have several concerns with the proposed buffer. First, we are concerned that the basis for estimating the fraction of "irrigable non-irrigated" (INI) included in the buffer, i.e., 20% of INI, is weak and based on inconclusive data. The data presented suggests only a weak correlation between ETAF and irrigated area, with an R-square of 0.17.

Second, applying a relatively high outdoor standard, i.e., one based on irrigated area, to the areas covered in the buffer would result in a much higher outdoor objective. DWR asserts that water is currently being applied to some of the INI areas. This suggests that those areas should be included in the calculation of the ETAF, which would effectively lower the ETAF. DWR's proposed approach, however, excludes those areas from calculation of the ETAF, resulting in a higher ETAF. Adding those areas as a buffer and then applying a relatively high ETAF inflates the outdoor objective.

Third, allowing the use of a buffer when a supplier does not meet the overall objective is too broad and effectively weakens all the efficiency standards. This unfairly penalizes those water suppliers that have effectively reduced indoor water use and water losses.

It is important to remember the legislative history and the reasons that INI was to be defined through additional study: (1) water suppliers were concerned that the aerial imagery taken during the drought would not appropriately "count" brown lawns that would likely be irrigated again when the drought ended; and (2) water suppliers were concerned that landscapes in new development would not be appropriately included in their water use objective on a timely basis, potentially causing them to fall out of compliance with the conservation regulation.

New information is available that effectively addresses these concerns. The state has announced that high-quality aerial imagery will be procured every two years and will be made available to public agencies at no cost. The availability of these data will ensure that the outdoor objective for suppliers is based on timely updated estimates of irrigated landscape area, obviating the need for the buffer. In summary, DWR's proposal to add a buffer to a water supplier's objective in the event that the supplier fails to meet its overall objective simply weakens the outdoor efficiency standard and promotes water waste. If the option of a buffer is to be offered, the Department needs to provide more compelling justification.

We recognize in the first few years of the conservation regulation, some water suppliers may be concerned about the accuracy of irrigated area measurements for parcels that have been added since the completion of DWR's aerial imaging. If the aerial imaging has not been updated, we offer the following recommendations for a buffer that addresses this issue:

- Provide a buffer of a minimum of 5% and up to 15% to account for <u>newly added</u> <u>irrigated areas</u> due to (1) new development and (2) irrigation of previously unirrigated landscapes. To increase the buffer beyond the 5% minimum threshold (and up to 15%), the water supplier would need to provide evidence that newly irrigated areas exceed the 5% minimum threshold, which can be obtained from annual MWELO reports or other sources.
- Use the current MWELO standard for residential landscapes for all areas included in the buffer.
- Allow the water suppliers to use a buffer only if they are demonstrate that they are meeting the water loss standard and residential indoor water use standard.
- Discontinue use of the buffer should more recently updated data on irrigated area become available.

Improving Outdoor Efficiency Over Time

Another key concern is the failure to reduce the outdoor standard over time as a mechanism to encourage greater outdoor efficiency. Maintaining the ETAF at 0.7, combined with providing a buffer to water suppliers and allowing them to increase their outdoor objective in response to higher evapotranspiration rates, would potentially significantly increase the outdoor objective and outdoor water use over time.

This is inconsistent with the intent of AB 1668 and SB 606, and more importantly, increases California's vulnerability to climate change. Because of climate change, droughts are becoming more frequent and more severe. The current drought, for example, began just 3 years after the 2012-2016 drought ended. Dry conditions and extreme temperatures are quickly intensifying this drought. Just two years in, drought conditions are far worse than in the second year of the previous drought. Moreover, climate change is reducing runoff – because more water is lost through evaporation and retained by a parched landscape.

The failure to ramp down the outdoor standard locks in outdoor water usage at current levels of efficiency – which we know are not sufficient given the water challenges we face. To reduce this risk, we recommend that the outdoor standard be reduced over time, as has been done for both the indoor and water loss standards. Specifically, we recommend that the ETAF be ramped down to 0.55 by 2030.

Peer Review and Validation

Finally, we recommend that a peer-review process be used to validate the assumptions and methods used to develop the outdoor standard, including the irrigated area, ETAF, and buffer if one is developed. This process would increase stakeholder confidence in the standards.

Thank you again for your work. If you have any questions, please do not hesitate to reach out to us.

Regards,

/S/ Heather Cooley

Heather Cooley Director of Research Pacific Institute

/S/ Tracy Quinn Tracy Quinn Director, California Urban Water Policy Natural Resources Defense Council

/S/ Martha Davis Martha Davis Davis Consulting

CC: Art Hinojosa, Chief, Division of Regional Assistance, Department of Water Resources Bekele Temesgen, Ph.D., Chief, Land and Water Use Section, Department of Water Resources



April 1, 2021

Submitted via: WUE @water.ca.gov

Standards, Methods, and Performance Measures Workgroup Water Use & Efficiency Branch Department of Water Resources 901 P Street Sacramento, CA 95814

Re: Outdoor Water Use Standard Recommendation – Standards, Methods, and Performance Measures Workgroup

Dear Water Use Efficiency Team,

We appreciate the effort put into developing the five options for the new outdoor water use standard recommendation presented at the Standards, Methods, and Performance Measures Workgroup (hereafter Standards Workgroup) meeting on February 24, 2021. The information presented on the effect of the landscape assumptions on the evapotranspiration factor (ETF) was a good example of the type of information needed to support an informed discussion about the outdoor standard recommendation.

We also appreciate all the work that Department of Water Resources (DWR) staff and consultants have done to collect and analyze the available data on indoor and outdoor water use, as well as landscape area. These efforts, while challenging to develop, will help to ensure that the recommended standards are based on the best-available science. We agree with the many retail agencies that have emphasized the need to use best-available science as the guiding principle in the development of the outdoor efficiency standards recommendation.

At the February meeting, DWR asked for feedback on the following five options for development of the outdoor standard recommendation:

- 1. A single outdoor standard based on irrigable area;
- 2. A single outdoor standard based on irrigated area;
- 3. Outdoor standards based on a sliding scale;
- 4. Two outdoor standards (one for irrigated and one for irrigable non-irrigated areas); and
- 5. A single outdoor standard based on irrigated area and a buffer based on irrigable area, if needed.

We agree with DWR that there should be a single outdoor efficiency standard based on the use of irrigated area and recommend Option 2. We believe this is the only option whereby the standard would provide an indication of how efficiently landscapes are being irrigated.

DWR affirmed at the Standards Workgroup's February meeting that the agency has more confidence in the accuracy of the areas identified as irrigated landscapes, while the "irrigable non-irrigated" estimates are more problematic. Also, at the Standards Workgroup February meeting, DWR reported that the mean ETF for irrigated area was 0.8, while the mean ETF for the combined irrigated and "irrigable non-irrigated" was only 0.5.

An ETF of 0.8 is a better indicator of the current level of efficiency of water being applied to residential landscapes for several reasons. First, it is consistent with pre-2015 MWELO requirements. Second, it is consistent with current scientific understanding of plant water requirements of less-efficient plants typically used in existing residential landscapes (e.g., cool-season turf and non-native plantings). Finally, the 0.8 ETF allows for a reasonable path for

reducing ETF over time to encourage more efficiency, consistent with the regulation DWR adopted in the post-2015 MWELO standards.

Option 1 creates equity issues among the diverse water suppliers in the state because using a larger landscape area that includes both irrigated and "irrigable not irrigated" would ultimately result in a lower ETF. In practice, this would unfairly penalize those water suppliers whose "irrigable not irrigated" areas were relatively low. Those urban water suppliers with limited irrigable non-irrigated areas could, in fact, be applying more efficiently but would still find it difficult to meet an outdoor standard based on irrigable area.

The remaining options are also problematic in our view. Options 3 and 4 have the same issues with unreasonable expanding the area qualifying for irrigation as Option 1 and simply add more confusion to the proposed outdoor standard. There is no scientific basis on which to base a "sliding scale," nor is there evidence of what would be a reasonable amount of water to include in the recommended "irrigable non-irrigated" area standard for areas that may someday be irrigated. Options 1, 3, and 4 would result in DWR recommending an "efficiency" standard that is demonstrably inefficient.

Option 5 relies on irrigated area, which we think is the right approach for the reasons stated above. However, Option 5 also adds a "buffer" of additional potential irrigated lands based on an estimate of the potentially irrigable area. We are concerned about this buffer because there is no basis for estimating the fraction of "irrigable non-irrigated" that should be pulled into the outdoor objective. Moreover, pulling that area into the objective and applying a relatively high outdoor standard, i.e., one based on irrigated area, would serve to build in inefficient water use.

We propose an alternative for you to consider. We recommend developing the outdoor standard based on irrigated area, as recommended in Option 2. We also support allowing water agencies to increase the irrigated area to account for newly added irrigated areas due to new development or irrigation of previously unirrigated landscapes. The ETF for these new landscapes should be based on the current MWELO standard of 0.55. To bring new irrigated

3

areas into the standard, the water agency would need to provide evidence of newly irrigated areas, which water agencies can obtain from annual MWELO reports.

Finally, we support updating the landscape analysis more frequently. California recently announced that high-quality statewide aerial imaging will be procured every two years, with 2018 and 2020 images likely available by mid-summer to state agencies, including DWR and the SWRCB. The 2022 images would be available in 2022/23. We anticipate that the State's commitment to continued procurement of these data will likely address the retail agency concerns that their water objectives be based on accurate irrigated landscape measurements.

Thank you again for your work. If you have any questions, please do not hesitate to reach out to us.

Regards,

/S/ Heather Cooley

Heather Cooley Director of Research Pacific Institute

/S/ Tracy Quinn Tracy Quinn Director, California Urban Water Policy Natural Resources Defense Council

/S/ Martha Davís Martha Davis Davis Consulting

CC: Art Hinojosa, Chief, Division of Regional Assistance, Department of Water Resources Bekele Temesgen, Ph.D., Chief, Land and Water Use Section, Department of Water Resources



Sean Bigley, Chair Dan York. Vice Chair

Members

California American Water Carmichael Water District Citrus Heights Water District Del Paso Manor Water District El Dorado Irrigation District Elk Grove Water District Fair Oaks Water District Folsom, City of Golden State Water Company Lincoln, City of Orange Vale Water Company Placer County Water Agency Rancho Murieta Community Services District Roseville, City of Sacramento, City of

Sacramento County Water Agency

Sacramento Suburban Water District

San Juan Water District

West Sacramento, City of

Yuba City, City of

Associates

County of Placer

El Dorado County Water Agency

Sacramento Area Flood Control Agency

Sacramento Municipal Utility District

Sacramento Regional County Sanitation District

Regional Water Authority Building Alliances in Northern California

October 22, 2021

Water Use Efficiency Branch **Department of Water Resources** WUEStandards@water.ca.gov

Re: Provisional Outdoor Standard

Dear Water Use Efficiency Branch,

The Regional Water Authority (RWA) appreciates the opportunity to provide comments to the Department of Water Resources (DWR) on the provisional outdoor standard. We appreciate DWR's willingness to incorporate stakeholder feedback as witnessed by the revised standard released on October 21, 2021 prior to the stakeholder meeting on October 25, 2021. RWA is a joint powers agency representing 20 public water suppliers in Sacramento, Placer, El Dorado, Yolo, and Sutter Counties. RWA's mission is to "serve, represent and align the interests of regional water providers and stakeholders for the purpose of improving water supply reliability, availability, quality and affordability." To meet our mission, one primary function is to aid members in achieving the human right to water.

5620 Birdcage Street

Citrus Heights, CA 95610

Suite 180

RWA is concerned the provisional outdoor standard will not be feasible for our member suppliers and their customers to achieve and will have unintended impacts on our state and region's landscape and tree health. For this reason, RWA urges the DWR to revise the provisional outdoor standard, most recently presented at the August 25th stakeholder meeting, to align with the Association of California Water Agencies (ACWA)'s outdoor standard recommendations submitted to DWR on August 17th as follows (Attachment 1):

> 1.0 ET Factor for Irrigable Irrigated (II): An ET Factor (ETF = Plant • Factor/Irrigation Efficiency) of 1.0 considers horticultural science and realistic irrigation efficiency and delivery systems for both new and existing landscapes, as shown in Table 1. This represents a balance between higher water use plants such as turf which are predominant in existing landscapes and lower water use or drought tolerant plants. It also assumes a reasonable balance between existing irrigation efficiency, overhead spray and more efficient drip and high-efficiency rotary nozzles.

Table 1

ET Factors Under Different Lansdcape Factor and Irrigation Efficiency Scenarios

-						
				D		F
А	В	С		D = avg(A X C)	E	F = D X E
				Overall		
	Plant Type	% of Area in		Landscape	Irrigation	ET Factor
Plant Factor	Description	Landscape		Plant Factor	Efficiency (IE)	(based on IE)
0.3	Low water use plants)		0.45	1.49
0.5	Woody shrubs/trees	35%			0.55	1.22
0.6	Warm season grass			0.67	0.625	1.07
0.8	Cool season grass	60%			0.70	0.95
0.8	Annuals	5%	J		0.80	0.84

Tel: (916) 967-7692 Fax: (916) 967-7322 www.rwah2o.org

- **0.55 ET Factor for 100% Irrigable Not Irrigated (INI):** We propose a lower ET factor of 0.55 for INI since any newer plantings and irrigation systems would be expected to be more efficient than existing systems.
- **1.2 ET Factor for Special Landscape Areas and Recycled Water for 100% of** *II and INI area:* This reflects the additional water requirements for functional, special landscape areas, areasirrigated with recycled water, and actual irrigation system performance rather than a designstandard.
- **Remeasure and reevaluate in 5 years:** There is significant uncertainty about INI areas, including how much irrigation water is required, and the rate of change from INI to II areas. To address this uncertainty, we recommend that the II and INI Land Area Measurements (LAM) be remeasured and the ET Factor for INI be reevaluated in 5 years.

RWA staff and member water agency staff have been active participants in the ACWA outdoor regulation workgroup that has developed these recommendations and believe that the recommendations have broad consensus from suppliers across the state including the Sacramento region.

Furthermore, the assumption of 0.8 irrigation efficiency in the provisional standard is not realistic and does not reflect existing data and research. For example, a literature review (Attachment 2) by RWA's partner, Land IQ, concluded that "There are relevant literature resources from the state of California and other irrigated regions that conflict with the (DWR's) current assumption for (irrigation efficiency) IE. The value assumed for IE of 0.8 is not supported by scientific studies and is higher than reviewed literature values. Evaluated studies indicate that average existing IE in Californian landscapes ranges from 0.49 to 0.55, with values approaching 0.65 in best case scenarios." Additionally, a recent UC Davis study commissioned by DWR (Evapotranspiration Adjustment Factor Study - Agreement #4600008156) revealed a similar average distribution uniformity (proxy for irrigation efficiency) of 0.68, which was derived from the evaluation of irrigation on numerous turf landscape sites throughout California by certified irrigation specialists (Attachment 3). It should be noted that the provisional outdoor standard is targeted for implementation by residential customers not irrigation professionals. It is extremely unlikely that the average homeowner will be able to reach and maintain irrigation efficiency levels above what certified irrigation professionals are able to achieve even with extensive education and outreach efforts. RWA recommends an irrigation efficiency of 0.625, which is reflective of what is achievable while still making progress towards the state's goal of more efficient urban water use.

These findings are further supported by on-the-ground business and non-profit partners. RWA has hosted several partner informational meetings on the state's landscape regulation and **our nursery partner**, **Green Acres Nursery and Supply**, **and non-profit partner**, **Sacramento Tree Foundation (among others)**, **are concerned that DWR's recommendation for the provisional outdoor standard will ultimately lead to unhealthy residential landscapes and diminished tree health in the Sacramento region.** Unhealthy landscapes limit our region's ability to mitigate climate change impacts such as urban heat island effect. In addition to the ACWA recommendations, the effective rainfall calculation currently included in DWR's provisional outdoor standard should be completely omitted from the final outdoor standard. The governing legislation does not specifically call for its inclusion but rather generally states "The guidelines and methodologies shall address, as necessary, all of the following...precipitation data...." We do not believe it is necessary to include effective rainfall in the outdoor standard calculation for the following reasons: 1) rainfall is not equitably applied across a service area and "effective" rainfall even less equitably. Rainstorms don't uniformly drop moisture across an entire service area and can't ensure every house gets the same amount of rainfall. Furthermore, what makes rainfall "effective" is based on multiple factors such as landscape slope, soil type, precipitation duration, etc., which also vary within a service area. 2) calculating effective rainfall adds additional uncertainty to an already uncertain outdoor standard. The use of mass-produced landscape areas measurements, generalized plant material ratios (trees versus turf grass versus shrubs), and unrealistic irrigation efficiency factors in DWR's provisional outdoor standard produce compounded errors even without the unnecessary addition of effective rainfall. Including effective rainfall will only exacerbate existing error.

In conclusion, we are concerned that DWR's provisional outdoor standard is not based on widely documented horticultural science findings, is not implementable by the average residential homeowner even with water supplier provided education and incentives, and will cause harm to landscape and tree health. DWR's provisional outdoor standard is setting up suppliers and their residents for failure both in the short (noncompliance) and long term (climate change impacts).

We appreciate your consideration of these comments and we are committed to collaborating with DWR and the State Water Board to successfully implement Making Water Conservation a California Wayof Life. Sincerely,

fin Pique a Nesti

James Peifer Executive Director

Regional Water Authority

Ashley Rossi Principal Green Acres Nursery & Supply

Jessila Sanders

Jessica Sanders **Executive Director** Sacramento Tree Foundation

Attachment 1





August 17, 2021

WUEStandards@water.ca.gov

Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 1416 9th St, Sacramento, CA 95814

Re: Provisional Outdoor Standard

Dear Water Use Efficiency Branch,

The Association of California Water Agencies (ACWA) and California Municipal Utilities Association (CMUA) appreciate the opportunity to provide comments to the California Department of Water Resources (DWR) on the *provisional outdoor standard presented at the June 30 Standards and Methodologies workshop*. ACWA represents over 460 public water agencies that deliver approximately 90 percent of the water used for residential, commercial and agricultural purposes in California. CMUA represents over 50 water agencies that deliver water to nearly 75 percent of Californians. The Water Code recognizes that our members, local urban retail water suppliers, have the responsibility of meeting the urban water use objective which is comprised of the standard-based water use targets. We additionally note that water agencies are at the forefront of preparing for and managing the impacts of climate change, including longer and more intense droughts. As many of California's regions enter a second consecutive dry year and drought, much has been learned and improved on following California's historic 2012 – 2016 drought.

We recognize that DWR, in coordination with the State Water Resources Control Board (State Water Board), has a statutory requirement to conduct necessary studies and investigations, and recommend no later than October 1, 2021, a standard for outdoor residential and dedicated irrigation meters. However, we have significant concerns regarding DWR's approach to develop a provisional outdoor standard. DWR's provisional standard proposes an ET factor (ETF) of 0.7 for Irrigated Irrigable landscapes. Water suppliers that do not meet their Water Use Objective can also include 20 percent of Irrigable Not Irrigated landscapes in their calculation, also using an ETF of 0.7. DWR's provisional standard applied outdoor water. We recognize the importance of developing feasible and implementable outdoor water efficiency standards to help meet the State's long term water use efficiency goals and, therefore, we offer the following comments on DWR's provisional outdoor standard.

ACWA recommends that the outdoor standard be developed based on the principles of MWELO to achieve efficient outdoor use, and not based on design standards that do not reflect actual performance. The outdoor standard should consider real-world performance of irrigation systems and existing landscapes to result in an efficiency standard that is feasible and implementable. Developing the

outdoor standard by back-calculating it using estimates of outdoor applied water (derived from estimates of residential indoor water use) does not reflect optimal irrigation for landscape health, and is subject to multiple sources of error. With these considerations in mind, ACWA recommends that the outdoor standard be established based on the horticultural and irrigation principles of MWELO as follows:

• **1.0 ETF for Irrigable Irrigated (II):** An ET Factor of 1.0 considers horticultural science and realistic irrigation efficiency and delivery systems for both new and existing landscapes, as shown in Table 1. This represents a balance between higher water use plants such as turf which are predominant in existing landscapes and lower water use or drought tolerant plants. It also assumes a reasonable balance between existing irrigation efficiency, balancing overhead spray and more efficient drip and high-efficiency rotary nozzles.

Table 1	
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Α	В	C		D = ayg(A X C)	F	F
				Overall		T-DAL
	Plant Type	% of Area in		Landscape	Irrigation	ET Factor
Plant Factor	Description	Landscape		Plant Factor	Efficiency (IE)	(based on IE)
0.3	Low water use plants		h		0.45	1.49
0.5	Woody shrubs/trees	35%			0 55	1.22
0.6	Warm season grass			0.67	0.625	1.07
0.8	Cool season grass	60%			0.70	0.95
0.8	Annuals	5%	J		0.80	0.84

ET Factors Under Different Lansdcape Factor and Irrigation Efficiency Scenarios

- **0.55 ET Factor for 100% Irrigable Not Irrigated (INI):** We propose a lower ET factor of 0.55 for INI since any newer plantings and irrigation systems would be expected to be more efficient than existing systems.
- **1.2 ET Factor for Special Landscape Areas and Recycled Water for 100% of II and INI area:** This reflects the additional water requirements for functional, special landscape areas, areas irrigated with recycled water, and actual irrigation system performance rather than a design standard.
- **Remeasure and reevaluate in 5 years:** There is significant uncertainty about INI areas, including how much irrigation water is required, and the rate of change from INI to II areas. To address this uncertainty, we recommend that the II and INI LAM be remeasured and the ET Factor for INI be reevaluated in 5 years.

Detailed explanations and the supporting data for these outdoor standard recommendations is provided in Attachment A.

We urge DWR to ensure that the final recommended outdoor standard meets the intent of the *Making Water Conservation a California Way of Life.* We have significant concern that the provisional recommendation of a 0.7 ET Factor for the outdoor standard is not a reasonable efficiency standard and will undermine the intent of *Making Water Conservation a California Way of Life*, which was to allow agencies to cost-effectively and flexibly implement water use efficiency. Furthermore, the provisional recommendation would not allow for healthy landscapes and shade trees, which help mitigate climate change impacts like urban heat island effect that disproportionately impact disadvantaged communities.

We appreciate your consideration of these recommendations and are committed to collaborating with DWR and the State Water Board to successfully implement *Making Water Conservation a California Way of Life.* To discuss these comments, please contact Chelsea Haines at <u>chelseah@acwa.com</u>.

Sincerely,

Chiles Ha

Chelsea Haines Regulatory Relations Manager Association of California Water Agencies

Attachment A

1. The outdoor standard should incorporate the <u>principles</u> of the Model Water Efficient Landscape Ordinance (MWELO), but it does not need to be based on MWELO irrigation system design standards.

While the enabling legislation calls for the outdoor standard to be based on the principles of the Model Water Efficiency Landscape Ordinance (MWELO), it does not require that the MWELO irrigation system design standards be used, or that the outdoor standard be capped based on current MWELO design requirements. Performance of existing irrigation systems cannot be expected to be the same as an irrigation design standard for new or renovated landscape. There are numerous reasons why in-ground irrigation system performance and applied water diverges from design standards, such as the growth of plant material that blocks irrigation over time. Installation not according to the design plan also results in degradation of the irrigation system from the original design that negatively affects actual performance.

The legislation calls for the <u>principles</u> of MWELO to be incorporated. Principles that are based on horticultural and irrigation science, including ET Adjustment Factors (a product of Plant Factor <u>and</u> Irrigation System Efficiency) and reference evapotranspiration, should guide the development of the outdoor standard as they are most relevant to existing landscapes. In MWELO, landscape designers are required to calculate the Maximum Applied Water Allowance (MAWA), which is a theoretical/optimal volume of water that might be applied on a landscape, given a known area, plant factor and evapotranspiration rate.

Thus, in developing the outdoor efficiency standard, the plant factor and irrigation system efficiency should not be back-calculated based on an estimated landscape area and estimated applied water; the underlying horticultural and irrigation science of existing landscapes should be used to develop the outdoor efficiency standard. Although the ET Adjustment Factor in MWELO is based on the parcel level, the science and <u>principles</u> can be expanded to multiple parcels or aggregated landscape area using assumptions of the mix of plant material in typical established landscape plant palettes and data on average irrigation efficiency from manufacturers and real-world distribution uniformity (DU) catch-can tests.

We recommend that DWR use horticultural principles and irrigation system data to develop an appropriate and reasonable outdoor standard that considers both existing and new landscapes and actual performance of existing in-ground irrigation systems.

2. 80% of California's housing stock was built prior to the establishment of MWELO in 1993; these pre-existing residential landscapes were not conceived or built to perform to the design standards found in MWELO.

The legislation requires that the outdoor standard consider both new and existing landscapes. Based on housing data for California, from the 2010 US Census and 2019 CA Dept. of Finance, there were over 11 million housing units built before 1990 that were never subject to MWELO. Since 1990, just over 3 million additional housing units have been constructed. Only one in five houses built in California were potentially subject to MWELO design standards. Since 80% of California's housing

stock pre-dates MWELO, it is unreasonable to assume that MWELO's design standards are the operating conditions found in homes, landscapes, and irrigation systems built before 1990. The chart below summarizes the housing stock by decade during which MWELO has been in effect.

Year	1990 (pre-MWELO)	2000	2010	2019			
Housing Units	11,182,513	12,214,550	13,680,081	14,235,201			

Sources: US Census of Population and Housing for California (<u>web link</u>) and CA Department of Finance housing data from 2019 (<u>web link</u>)

Of the 20% of homes that have been built since MWELO has been in place, typically MWELO only applies to developer installed landscaping, which is usually the front yard, and often not applicable to back-yards. Further, the enforcement of MWELO is only as effective as the land-use regulating agency permitting new homes. Additionally, lack of enforcement of MWELO further weakens its effectiveness, even as a design standard in homes that are subject to it. The review and approval of MWELO landscapes has been non-existent for years and only recently have the approving agencies began to enforce MWELO, although it is still not widely enforced. In addition, the post installation inspection of these new landscapes is virtually non-existent, thus ensuring that these new MWELO landscapes are not installed as designed. Data from East Bay Municipal Utility District (East Bay MUD) data show that sites that were designed to meet MWELO 2010 and 2015 design standards perform above 150% of reference evapotranspiration.

3. Use of a design standard of 0.8 for Irrigation System Efficiency does not reflect the reality of irrigation efficiency in existing landscapes or in how landscapes perform over time.

Water Purveyors throughout the State have accumulated data on actual irrigation system performance through the various landscape programs implemented over ten plus years. The Municipal Water District of Orange County (MWDOC) has conducted distribution uniformity (DU) catch-can tests at 1,014 residential and 1,106 non-residential sites as part of its water use efficient landscape incentive programs. The average distribution uniformity for residential landscapes is 0.55 and for non-residential sites is 0.58. Data from Qualified Water Efficient Landscaper (QWEL) catch can audits conducted in the Bay Area between 2019-2020 by certified irrigation auditors show DUs ranging from 0.40 to 0.70, with an average DU of 0.50.

These field measurements of DU that are significantly lower than 0.80 are corroborated by recently completed field studies by UC Davis (Evapotranspiration Adjustment Factor Study (Agreement #4600008156). Certified irrigation specialists performed DU tests pre and post irrigation system improvements at existing mature turf landscapes throughout California and found average DU results of 0.55 pre-retrofit and 0.68 post-retrofit. While irrigation system performance improved after installing the most efficient rotating nozzles on the market, average DU was still below 0.70.

Additionally, DWR's proposed irrigation efficiency factor of 0.8 does not reflect the true operating ranges of irrigation efficiency that irrigation equipment manufacturers associate with their products.

The Irrigation Association (IA) provides the following ranges of expected DUs for rotary and spray sprinklers.

Sprinkler Type	Achievable	Target	Historical
Rotary Nozzles	0.75 – 0.85	0.65-0.75	0.55-0.65
Spray Sprinklers	0.65 – 0.75	0.55-0.65	0.45-0.55

The Irrigation Association notes the following important caveat regarding the expected range of DU's:

"the shape of the area covered by the sprinkler system will influence the spacing and pattern of the sprinklers. This directly affects the ranges of DU that can be expected. The higher achievable values are obtained when the sprinklers have consistent spacing between them and the rows of sprinklers are also consistent. Many residential properties have smaller and curvilinear shapes that do not allow for consistent sprinkler patterns, so distribution uniformity is compromised even when the design, installation, and maintenance is the best that can be expected."

Manufacturers calculate irrigation efficiency in a highly controlled environment (e.g. perfect operating pressures, little to no wind, perfect head-to-head coverage, etc.) and assume that the system is installed "perfectly" according to their specifications. The reality is that once a system goes from design on paper to "in the ground" there is a natural and expected loss of efficiency. The "Achievable" and "Target" ranges are based on controlled, environments with optimal landscape design and installation. This is not the case, especially in the residential sector and the "Historical" ranges are actually representative of typical installed landscapes. This real-world data needs to be considered in establishing any assumed Irrigation Efficiency. Irrigation science and real-world data demonstrate that DWR's assumption of an Irrigation Efficiency of 0.8 is not achievable.

Although frequently used interchangeably, irrigation efficiency is influenced by distribution uniformity (DU). Efficient irrigation is when water is beneficially used compared to the amount of irrigation water applied. DU is a metric utilized to characterize the evenness of application of water to the planted area.

DU is often used as a proxy for irrigation efficiency since it is readily measurable. Catch-can measurements for DU are the recommended practice for quantifying system uniformity (Irrigation Association, 2013). When considering irrigation management that is less than 100% efficient, Irrigation Efficiency only decreases any given DU value. For example, a DU of 0.60 multiplied by an irrigation management efficiency of 80% results in an Irrigation Efficiency value of 48%. For this reason, assuming an Irrigation Efficiency of 80% requires an unrealistically high DU performance value. Existing landscapes do not perform to these unattainable standards, and even when retrofitted with more efficient irrigation equipment cannot achieve a DU of 80%.

To illustrate this, East Bay MUD conducted a program that retrofitted landscapes irrigated by spray nozzles with efficient rotating nozzles. The average DU of the landscapes at the 17 sites before the retrofit was 0.48. While the retrofit significantly improved the performance, the average DU of the all the sites post-retrofit was 0.69. The Coachella Valley Water District has conducted similar DU catch-can tests at residential sites in its service area and has found DU for spray heads and rotating nozzles to range from 0.58-0.60 and 0.62-0.65, respectively.

We recommend that the outdoor standard be based on an Irrigation Efficiency reflects actual irrigation performance that is measured in the field and supported by irrigation manufacturer specifications, which ranges from 0.55 to 0.65.

4. DWR's provisional ET Factor of 0.7 is calculated from an unrealistic irrigation efficiency assumption (80% IE) that arbitrarily limits Plant (Landscape) Factors, such that it does not reflect existing landscapes.

The proposed ET Factor of 0.7, when combined with an irrigation efficiency of 0.8, results in an average plant factor of 0.56. (ET Factor = Plant Factor/Irrigation Efficiency or 0.7 = 0.56/0.8). This does not consider the plant watering requirements for existing landscapes, many of which are predominantly turf grass. In fact, cool season grasses or annuals, with a plant factor of 0.8, and an irrigation efficiency of approximately 0.55, would require an ET factor of 1.45 to ensure maintenance of healthy landscape.

The table presented below is an exploration of what the ET Factor (column F) would be for a typical pre-MWELO suburban residential landscape using different Irrigation Efficiency (column E) assumptions. The yard is predominantly comprised of cool season grass and annuals, which both have a plant factor of 0.8 (65% of landscaped area, combined). The remaining 35% of landscaped area is woody shrubs and trees with a plant factor of 0.5. The composite landscape Plant Factor would be 0.67 (Column D). The resulting ET Factor ranges are all over the DWR provisional outdoor standard of 0.7, even with an unrealistically high IE assumption of 80%. In fact, the most likely ET Factor is over 1.0 given real world Irrigation Efficiency and performance of existing landscapes.

				D		F
A	В	С		D = avg(A X C)	E	F = D X E
				Overall		
	Plant Type	% of Area in		Landscape	Irrigation	ET Factor
Plant Factor	Description	Landscape		Plant Factor	Efficiency (IE)	(based on IE)
0.3	Low water use plants				0.45	1.49
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0.8	Cool season grass	60%			0.70	0.95
0.8	Annuals	5%	J		0.80	0.84

ET Factors Under Different Lansdcape Factor and Irrigation Efficiency Scenarios

We recommend that the outdoor standard be based on an Irrigation Efficiency of 0.625 that reflects in-field irrigation performance and based on a plant factor that takes into account typical plant palettes.

5. Back-calculating an outdoor standard from estimated applied outdoor use embeds multiple sources of error and is not based on horticultural principles or irrigation science.

Back-calculating an outdoor standard from estimates of indoor use, estimates of landscape area and estimates of applied outdoor water use incorporates multiple sources of error and is not based on horticultural science or the principles of MWELO. It embeds multiple sources of potential error and fails to consider on-site and in-field conditions, such as plant type and health, source water, and watering requirements.

The estimates of indoor use developed by DWR incorporate errors based on the fact that residential meters combine indoor and outdoor use. Assumptions of population and how much of the actual use is indoor versus outdoor includes levels of error. This is compounded by the fact that the eAR data used by DWR is based on water supplier billing data. Water suppliers billing data for residential account classifications do not align well with the parcel-based data used by DWR in developing residential landscape area measurements (LAM). As a result, the landscape area and billing data do not align and have sources of error. In particular, dedicated irrigation meters and mixed-use meters are frequently mis-categorized by DWR in the residential LAM data, resulting in overstated residential LAM. Consequently, any assessment of applied water, using a larger irrigated area than is actually the case, would result in DWR significantly under-estimating applied water on existing landscapes. In the case of Irvine Ranch Water District, DWR's estimate of residential LAM is overstated by 19%.

Another source of error in back-calculating an ET factor based on estimated applied water is that the approach does not consider the actual plant watering requirements. It assumes that applied water is the appropriate amount of water to maintain healthy landscapes, when many residential landscapes may be deficit irrigated, and therefore not maintained at an optimal level for plant health. The University of California has developed plant factors for many urban and ornamental landscapes, based on horticultural science. We recommend that DWR use WUCOLS data and estimates of existing plant palettes and typical ranges of irrigation efficiency to develop recommendations for the outdoor standard, rather than rely on estimates of applied water that are subject to multiple sources or error and is inconsistent with the principles of MWELO.

Another concern with DWR's approach is the data trimming of calculated ET Factors from the analysis to limit it to a range of 0.1 to 1.0, which does not reflect the reality of existing landscape use. An existing predominantly turf landscape, with an Irrigation Efficiency of 0.55, could be expected to have an ET factor of 1.45. The legislation requires that the standard consider existing as well as new landscapes.

DWR's data trimming approach fails to consider existing landscapes. While turf replacement and other outdoor programs can improve efficiency, the legislation clearly did not require existing landscapes to be replaced. The outdoor standard needs to be set so that both existing and new landscapes can be maintained in a healthy way. DWR's overall approach of back-calculating an ET Factor based on estimations of applied water is not appropriate and is not consistent with the principles of MWELO, and the problem is further compounded by data trimming landscape ET Factors that the legislation clearly states must be considered.

The ET Factor Matrix, below, highlights in light green all the ET Factors that DWR has omitted from considering by narrowly considering only an IE of 80% and a Plant (landscape) Factor of 0.56. Existing residential landscapes can have ET Factors of over 1.0, given many reasonable and expected operating conditions (e.g. an IE of 55% and Plant/Landscape Factor of 0.56 results in an ET Factor of

1.02). Special Landscape Areas and sites that use recycled water should be expected to have an ET Factor of 1.0 or greater (indicated by dark green cells), given the requirements to maintain such sites (e.g. sports fields) while being irrigated by overhead rotor irrigation. ACWA's recommendation for an ET Factor of 1.0 is still an aspirational target that better reflects existing real-world landscape and irrigation system performance than does DWR's proposal of a 0.7 ET Factor that is based on design standards and assumptions of Irrigation Efficiency that are not found in the field.

ET	Factor	Plant/Landscape Factor								
N	Aatrix	0.20	0.40	0.50	0.56	0.60	0.70	0.80	1.00	
	45%	0.44	0.89	1.11	1.24	1.33	1.56	1.78	2.22	
	50%	0.40	0.80	1.00	1.12	1.20	1.40	1.60	2.00	ET Factors Omitted by DWR
~	55%	0.36	0.73	0.91	1.02	1.09	1.27	1.45	1.82	Existing landscapes
enc	60%	0.33	0.67	0.83	0.93	1.00	1.17	1.33	1.67	Special Lndsp Areas
ffici	62.5%	0.32	0.64	0.80	0.90	0.96	1.12	1.28	1.60	
ů L	70%	0.29	0.57	0.71	0.80	0.86	1.00	1.14	1.43	ACWA Proposal
atio	75%	0.27	0.53	0.67	0.75	0.80	0.93	1.07	1.33	
rig.	80%	0.25	0.50	0.63	0.70	0.75	0.88	1.00	1.25	DWR Proposal
-	85%	0.24	0.47	0.59	0.66	0.71	0.82	0.94	1.18	
	90%	0.22	0.44	0.56	0.62	0.67	0.78	0.89	1.11	
	95%	0.21	0.42	0.53	0.59	0.63	0.74	0.84	1.05	

We recommend establishing the outdoor standard with an ET Factor of 1.0, based on an appropriate weighted plant factor based on horticultural principles and plant watering requirements, that considers existing, predominantly turf landscapes as well as newer landscapes, combined with a reasonable estimate of irrigation efficiency that reflects both existing and new landscapes. DWR's provisional ET Factor of 0.7 does not achieve this.

6. Special Landscape Areas and Recycled Water shall receive an ET Factor of 1.2.

The legislation (10609.9 (e)) recognized that certain landscapes require additional irrigation. Special landscape areas such as golf courses, parks, sports fields and other functional turf areas have higher watering requirements than areas that include a mix of plant material, and are typically irrigated with overhead spray or rotors. Landscapes irrigated with recycled water need additional water to flush salts down and out of the root zone. Expanding the use of recycled water is state policy and establishing an ET factor that is below the requirement would penalize both water suppliers and users that have invested in the expansion of recycled water systems and its use. DWR's provisional recommendation does not specifically account for the higher watering needs of these landscapes. MWELO principles recognize the need for a higher ET Adjustment Factor of 1.0 in the design of these landscapes were installed prior to MWELO being in effect.

We recommend that special landscape areas and areas irrigated with recycled water are given an ET factor of at least 1.2 to be consistent with the principles of MWELO, horticultural and irrigation science, State policy objectives, and expected performance of existing landscapes. Special landscape areas are functional and irrigated areas by definition. Recycled water systems are generally only installed in areas that will be irrigated, and therefore 100% of these areas should be assumed to be irrigated, without limitation.

7. DWR's provisional recommendation of using only 20% of what is termed Irrigable Not Irrigated (INI) area and limiting that to only when a water supplier does not meet its Water Use Objective (WUO) is not consistent with the legislation.

The enabling legislation states that the "The standards shall apply to irrigable lands." (10609.6). It does not limit it to only a portion of the irrigable lands or limit its use to only if a supplier is not meeting its WUO. This provision reflects the fact that landscapes can change over time, and that areas not currently irrigated can become irrigated.

To be consistent with the legislation, we recommend that the outdoor standard be based on one ET factor of 1.0 for irrigable irrigated (II) landscapes and a lower ET factor of 0.55 for all (100%) irrigable not irrigated (INI) areas irrigated with potable water, without limitation.

TECHNICAL MEMORANDUM



LITERATURE SUMMARY AND EVALUATION OF ASSUMPTIONS USED FOR THE PROPOSED OUTDOOR RESIDENTIAL WATER USE STANDARD

PREPARED FOR:	Amy Talbot/Regional Water Authority
PREPARED BY:	Mica Heilmann and Stephanie Tillman/Land IQ
DATE:	August 11, 2021

SUMMARY

This memorandum evaluates the assumptions used in the proposed Outdoor Residential Water Use (ORWU) Standard presented by California Department of Water Resources (CA DWR) in June 2021 and relevant scientific literature on the related factors used for landscape water use calculation. The proposed ORWU standard is intended to be consistent with the Model Water Efficient Landscape Ordinance (MWELO) provisions, including evapotranspiration adjustment factors [ETAF or ETF, which are comprised of plant factor (PF) and irrigation efficiency (IE)], landscape area (LA), maximum applied water allowance (MAWA), reference evapotranspiration (ETO), and special landscape areas. The values assumed for these variables and how they are used are described and compared against values found in scientific literature and public agency publications. The following conclusions and recommendations were drawn from this evaluation:

- 1. There are relevant literature resources from the state of California and other irrigated regions that conflict with the current assumption for IE. The value assumed for IE of 0.8 is not supported by scientific studies and is higher than reviewed literature values. Evaluated studies indicate that average existing IE in Californian landscapes ranges from 0.49 to 0.55, with values approaching **0.65** in best case scenarios. Because it is used as a denominator in calculating ETAF and ETF, overestimating IE results in an underestimation of ETAF and ETF that is not reflective of current, or possibly even achievable, conditions. University of California (UC) studies funded by CA DWR and others highlight the difference between *potential* irrigation efficiency and *existing* irrigation efficiency, and the difference between current and future conditions. Though landscape irrigation efficiency can be improved with careful observation and maintenance of irrigation systems, residential landscape systems typically operate under less-than-optimal conditions in which improper design and operational inconsistencies are the norm and not the exception. While future conditions could include higher irrigation efficiencies where better technologies and management systems are used, 0.8 IE is not reflective of average current or even average improved conditions based on reviewed literature. The feasibility of improvements and estimates for achievable improved irrigation efficiency in urban landscape applications should be evaluated if they are to be explored as variables for MAWA calculation. The ORWU standard should more closely reflect current conditions as required in MWELO 10609.09.
- 2. The individual PF values for plant communities (used as a component of ETAF and ETF), are reasonable values documented in literature; however, some assumptions are made in developing ETAF or ETF that may not reflect conditions in all regions of the state. If the proportion of turf

landscape area deviates from the proposed assumptions (25% turf comprised of 50/50 warm/cool season grasses), the resultant combined PF may not adequately reflect required water use in that agency. A range of PF values representing conditions across the state is likely a more accurate reflection of water use. Additionally, UC studies funded by CA DWR highlighted the relationship between ETAF plant factors and IE, demonstrating that improvements in distribution uniformity (DU) and IE lower ETAF. Lower ETAF is difficult to achieve without good DU and high IE.

EXPLANATION OF VARIABLES AND EQUATIONS USED IN THE ORWU STANDARD

The following information from Rolston et al. (2008) describes the relationship between variables used to calculate plant water use in the ORWU.

Reference crop ETo is evapotranspiration from a reference surface that is well-watered. Calculating accurate and effective ETo-based water budgets and irrigation schedules requires multiplying ETo by a reliable **adjustment factor (AF)**.

The AF corrects the ETo value to account for the water needs of the specific plant. However, the typical urban landscape does not conform to the standard conditions under which ETo and crop coefficients (Kc) are defined and estimated. Water needs of non-turf landscape plants are more appropriately defined as the percentage of ETo required to maintain their appearance and intended function. Therefore, to optimize the efficiency of water use in the urban landscape, ETo adjustment factors for landscape plants should define the minimum irrigation a plant needs to maintain acceptable aesthetics and defined landscape function. This adjustment factor is properly termed a **plant factor (PF)** rather than a Kc because of the emphasis on plant appearance rather than optimum growth and yield.

The **evapotranspiration adjustment factor (ETAF)** is the factor used (on a parcel basis) to convert ETo to landscape plant water use. It accounts for both the PF and the application efficiency with which irrigation is applied. According to the ORWU, an urban landscape's water budget, also known as its maximum applied water allowance (MAWA), is calculated for each parcel using the following equation:

MAWA = (ETo-Peff)*0.62*ETAF*LA (Eq. 1)

Where:

Peff = effective precipitation

ETo = Reference ET

0.62 = unit conversion factor

LA = landscape area

ETAF = PF/IE

For water suppliers, the ETAF becomes the evapotranspiration factor (ETF), which is the same as ETAF except that it represents the supplier level ETAF, which accounts for the overall PF of multiple landscape areas, based on proportions of different types of landscape species and overall irrigation application efficiency. DWR uses the following equation to calculate ETF for different landcovers to apply to the ORWU Standard:

ETF = (Pc*PFc + Pnc*PFnc)/IE (Eq. 2)

Where:

Pc = statewide percentage of canopied area

PFc = plant factor for canopied area

Pnc = statewide percentage of non-canopied area

PFnc = plant factor for non-canopied area

IE = Irrigation efficiency

The ORWU is thus calculated as:

 $ORWU = (ETo - Peff)^*(0.62)^*(ETF)^*(LAs)$ (Eq. 3)

Where:

LAs = landscape areas

SCIENTIFIC LITERATURE OVERVIEW OF MAWA FACTORS

The following evaluation applies to the equations noted above and their corresponding components.

LITERATURE OVERVIEW OF EVAPOTRANSPIRATION ADJUSTMENT FACTORS AND THEIR COMPONENTS: PLANT FACTOR AND IRRIGATION EFFICIENCY.

The ETAF and ETF variables include the components of PF and IE. Both PF and IE have a significant influence on the adjustment factors and are discussed separately below.

PLANT FACTOR

Literature supports the individual PF values for plant communities (used as a component of ETAF and ETF). However, some assumptions are made in developing ETAF or ETF that may not reflect conditions in all regions of the state.

Using ETo × Kc has been an effective tool for scheduling irrigation in turfgrass because turfgrass closely mimics the standard conditions of ETo estimation. Crop coefficients have been developed for minimum and optimum performance of cool-season grasses (64% and 80% of ETo, respectively) and warm-season grasses (36% and 60% of ETo, respectively) (Rolston et al. 2008). In some specific areas, the PF is likely higher or lower, depending on regional differences in climate and landscaping species and practices. For example, a typical landscape water budget for a new landscape allows for 80 percent of reference ET (Rancho Water).

As a result of CA DWR's analysis for the proposed ORWU standard, the proposed ETF assumes 25% of landscape area is turf with 50/50 cool/warm season grasses. If proportions of turf in landscape deviates from 25%, or if cool or warm season grasses exceed 50% in an agency then the resultant combined plant factor may not adequately reflect required water use in that agency.

One University of California CA DWR-funded study was conducted in response to the legislative mandate for a UC study to determine the impact of reducing ETAF from 0.8 to 0.7 (a 19% reduction) on plant health, function, and appearance. Results of this study are summarized in Hartin et al. (2019). Researchers monitored these factors and the water use of 30 large landscapes (parks, school grounds, private grounds, business parks and golf courses) with a wide variety of species, microclimates, densities, irrigation schedules and technologies in six climatic zones throughout the state. The results were documented as follows:

- Of the 30 sites, 21 performed adequately at 0.7 ETAF *after implementing best practices* that improved irrigation system functioning and decreased water loss, legitimizing the proposed ETAF reduction, which took effect Jan. 1, 2010.
- Cool-season species did not meet the 0.7 ETAF standard since they are less drought resistant than warm-season species. All 24 shrub sites used considerably less water than the turf sites, although 10 of them *increased water use* the second year (ETAFs of 0.58 and 0.61, respectively) due to malfunctioning valves and management turnover that led to a lack of continuity in site maintenance.
- Results suggest that drip-irrigated and mulched areas of plants with a mix of medium, low and very low water needs, and small areas of warm-season turf can perform adequately at 0.7 ETAF.
- The results of this study underscored the importance of the MWELO exemptions for special landscape areas. In the absence of an exemption for recreational turf, 0.7 ETAF was found to be inadequate to maintain plant health, function, and appearance. The options to meet the 0.7 ETAF included reducing the acreage of cool-season turf species or replacing cool-season species with warm-season species.
- Some of the greatest water savings in the study came from improving distribution uniformity and irrigation efficiency. *With those improvements,* warm-season turfgrasses met the 0.7 ETAF standard without impairment to plant health, plant function or aesthetics. It is uncertain if warm season turf would meet standards at typical, unimproved irrigation efficiencies.

IRRIGATION EFFICIENCY

Relevant literature resources from the state of California and other irrigated regions conflict with the current assumption for IE of 0.8. Evaluated studies indicate that average existing IE in California landscapes is substantially lower than this value, even in best case scenarios.

Irrigation efficiency or irrigation application efficiency is a measure of how much applied water is beneficially used by the plants being irrigated. Irrigation efficiency is never 100% because of these four factors (Amador, undated):

- 1. Evaporative losses (losses typically from 1 to 30%)
- 2. Spray losses (losses typically from 1 to 4%)
- 3. Run off
- 4. Deep percolation

Distribution uniformity (DU) is a measure of how uniformly irrigation water is applied. It depends on the irrigation system and is one of the chief components of irrigation efficiency.

Therefore, it depends on both the irrigation system and how irrigation is managed. In the 7-year Evapotranspiration Adjustment Factor Study (Agreement #4600008156) that University of California, Davis researchers conducted for DWR from 2009 to 2016, average distribution uniformity of irrigation turf landscapes in 14 locations throughout different climate regions of California was 0.68 after professional adjustment of residential irrigation systems and 0.55 before (Fujino, 2021). The 68% value likely represents the upper limit of irrigation efficiency for the following reasons (Fresno State Center for Irrigation Technology):

- There must be good distribution uniformity before there can be good irrigation efficiency, if the crop is to be sufficiently watered.
- Good distribution uniformity is no guarantee of good irrigation efficiency.

• If the whole field is to be sufficiently watered, then *the distribution uniformity becomes the theoretical upper limit* to irrigation efficiency.

Baum et al. (2005) also reported low DU in residential landscape systems in Central Florida, reporting that average DU was 0.45. The authors noted, as above, that irrigation can be uniform and inefficient because of mismanagement, such as overirrigating, but it cannot be nonuniform and efficient. Included in their literature review are summaries of the following studies on residential irrigation system DU:

- Pitts et al. 1996: California study on residential sprinkler systems. Average DU was 0.49 for residential lawns. More than 40% of tested systems had a DU less than 0.4.
- Aurasteh 1984: Utah study on residential solid set and movable systems. Average DU was 0.3 for hand-move and 0.37 for solid set systems.
- Micker 1996: Florida mobile irrigation lab tests. Average DU ratios from residential irrigation systems of turf in various counties in Florida acquired from annual reports within the last decade show averages from seven locations (1993-2002) ranging from 0.38 to 0.71, for a total average of 0.55.

Numerous other scientific literature sources report relatively low efficiency on landscape irrigation, including:

- Up to 60% of water applied by overhead sprinklers is lost due to runoff from soil surfaces, deep percolation below root zones and soil evaporation (Hartin et al. 2019).
- Landscape irrigation sprinklers are often installed at sites where the system pressure is higher than recommended for the sprinkler nozzle, thus resulting in system inefficiencies, including excessive flow rates, misting, fogging, and uneven coverage. Approximately 63 percent of irrigation systems operate at pressures higher than the recommended operating pressure of sprinkler nozzles (EPA, 2017).
- Irrigation efficiency tended to be less than 50% on homes and on plot-based studies where "typical" time clock schedules were used. Optimizing time clock programming with a rain sensor could increase efficiency. Smart controllers such as soil moisture sensor (SMS) or evapotranspiration (ET) controllers could result in irrigation efficiency above 70% (Dukes 2011, referencing Haley et al. 2007).
- According to the American Water Works Association Research Foundation's outdoor end use study, households that manually water with a hose typically use 33 percent less water outdoors than the average household. The study also showed that households with in-ground sprinkler systems used 35 percent more water, those with automatic timers used 47 percent more water, and those with drip irrigation systems used 16 percent more water than households without these types of systems. These results show that in-ground sprinkler and drip irrigation systems must be operated properly to be water-efficient (EPA 2002).
- The typical home irrigation system is only about 40-50% efficient (Region of Waterloo, undated).
- Between 2003 and 2015, UC received CA DWR funding to conduct two studies to further refine
 provisions within AB 1881. Both studies involved identifying the relative importance and impact
 of specific best practices such as conducting sprinkler equipment performance audits and
 scheduling irrigations based on climate and plant water needs that maintain the health,
 performance, and aesthetics of large-scale public and private landscapes under reduced water

budgets. The first study examined major causes of water loss on 30 park, school district, commercial and golf course sites in Los Angeles, Riverside and San Bernardino counties.

 Results identified that over 70% of applied water was lost, due mainly to leaks, sunken heads, improper head tilt, unmatched sprinklers, broken or worn parts, overspray, deflected spray, and improper pressure and line or head placement. The results validated the importance of including best practices targeting irrigation system installation and maintenance in water conservation legislation recommended by the AB 2717 task force.

The studies cited above demonstrate that IE in residential landscapes is far below the 0.8 value assumed in the proposed ORWU standard. Considering the equations above, the result of overestimating IE at 0.8 instead of more realistic values that likely approach 0.65, at best, is that the ETF is too low and does not reflect current conditions. Importantly, principles of the MWELO are applicable to "the establishment or determination of the amount of water necessary to efficiently irrigate both new and existing landscapes" (MWELO 10609.09). There does not appear to be any justification, or any support in the scientific literature, to confirm the assumption that residential landscape irrigation systems operate at an IE of 0.8.

REFERENCES

Amador, S. Undated. Irrigation Evaluation and Maintenance. Modesto Junior College Irrigation Technology. <u>https://www.mjc.edu/instruction/agens/irrigationtech/dupresentation.pdf</u>

Baum, M.C., M.D. Dukes, and G.L. Miller. 2005. Analysis of Residential Irrigation Distribution Uniformity. Journal of Irrigation and Drainage Engineering. July/August 2005: 336-341.

Brouwer, C. and M. Heibloem. 1986. Irrigation Water Needs. Irrigation Water Management Training Manual No. 3. Food and Agriculture Organization of the United Nations, Rome, Italy. California State University, Fresno, Center for Irrigation Technology. Irrigation Performance Measurements - Distribution Uniformity and Irrigation Efficiency. <u>http://www.fao.org/3/s2022e/s2022e08.htm#4.1%20introduction</u>

Dukes, M.D. 2011. How Efficient is Landscape Irrigation? <u>https://www.irrigation.org/IA/FileUploads/IA/Resources/TechnicalPapers/2011/HowEfficientIsLandscap</u> <u>elrrigation.pdf</u>

EPA 2002. Water-Efficient Landscaping: Preventing Pollution & Using Resources Wisely. <u>https://www3.epa.gov/npdes/pubs/waterefficiency.pdf</u>

EPA. 2017. Water Efficiency Management Guide Landscaping and Irrigation. 832-F-17-016b November 2017. <u>https://www.epa.gov/sites/default/files/2017-12/documents/ws-commercialbuildings-waterscore-irrigation-landscape-guide.pdf</u>

Fujino, D. Personal communication. July 29, 2021. Evapotranspiration Adjustment Factor Study (Agreement #4600008156).

Haley, M.B., M. D. Dukes, and G. M. Miller. (2007). Residential irrigation water use in Central Florida. Journal of Irrigation and Drainage Engineering, 133(5):427-434.

Hartin J, Oki L, Fujino D, Reid K, Ingels C, Haver D, Baker W. 2019. UC ANR research and education influences landscape water conservation and public policy. Calif Agr 73(1):25-32. http://calag.ucanr.edu/Archive/?article=ca.2018a0041

Rancho Water. <u>https://www.ranchowater.com/DocumentCenter/View/235/Water-Using-Technology---</u> Landscape-Water-Use-Efficiency

Region of Waterloo. Undated. Irrigation2153566. <u>https://www.regionofwaterloo.ca/en/living-here/resources/Documents/water/Landscape____Irrigation2153566-v1.pdf</u>

Rolston St. Hilaire, Michael A. Arnold, Don C. Wilkerson, Dale A. Devitt, Brian H. Hurd, Bruce J. Lesikar, Virginia I. Lohr, Chris A. Martin, Garry V. McDonald, Robert L. Morris, Dennis R. Pittenger, David A. Shaw, and David F. Zoldoske. 2008. Efficient Water Use in Residential Urban Landscapes. HortScience Vol. 43 Issue 7: 2081-2092

Styles, S. and D. Howes. 2010. Analysis and Annual Plant Required Water Values for Crops within the FCGMA. Task 2.1. Irrigation and Training Research Center. http://www.fcgma.org/images/FCGMA Task 2.1 Report Final 090810.pdf

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COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES DIVISION OF AGRICULTURE AND NATURAL RESOURCES AGRICULTURAL EXPERIMENT STATION COOPERATIVE EXTENSION OFFICE OF THE DEAN AND DIRECTOR OF PROGRAMS (530) 752-0108 (Main Office) (530) 752-0049 (Fax)

July 29, 2021

Ms. Amy Talbot Water Efficiency Program Manager Regional Water Authority

RE: Turf Distribution Uniformity (D.U.) Results

Dear Amy:

As per our discussion, here is a table representing our Distribution Uniformity tests for turf landscapes conducted in different climate regions throughout California. This data was part of our Evapotranspiration Adjustment Factor Study (Agreement #4600008156) for DWR.

- 1. Study from 2009 2016.
- 2. Mature turf sites in various CA climate regions.
- 3. D.U. cup test performed by certified irrigation specialists.
- 4. Target D.U. % = 75% for start of turf performance study.

	Initial	Final	%	Initial	Final
Location	D.U. %	D.U. %	Increase	P.R.	P.R.
1	34	63	29	1.12	0.36
2	67	69	2	0.59	0.60
3	43	68	25	0.33	0.36
4	60	67	7	1.55	0.62
5	40	62	22	1.10	1.00
6	44	64	20	1.60	0.40
7	56	67	11	2.02	0.70
8	54	70	16	0.62	0.56
9	73	70	-3	0.71	0.53
10	56	77	21	0.82	0.87
11	76	79	3	0.37	0.40
12	58	70	12	0.90	1.04
13	69	60	-9	0.71	0.59
14	40	71	31	1.17	0.90
AVERAGE=	55	68			

If you should have any questions regarding our study, please feel free to contact me. Thanks for your interest.

Sincerely,

Davíd W. Fujíno

David W. Fujino, Ph.D. Executive Director CA Center for Urban Horticulture CHARLES T. GIBSON SAUNDRA F. JACOBS JUSTIN MCCUSKER BETTY H. OLSON, PH.D FRANK URY

DANIEL R. FERONS GENERAL MANAGER

November 24, 2021

Santa Margarita Water District

WUEStandards@water.ca.gov

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch,

Santa Margarita Water District (District) appreciates the opportunity to submit written comments to the California Department of Water Resources (DWR) on the recently released Water Conservation Legislation material. The District recognizes the significant workload to develop, assess, and refine the water conservation standards to meet the legislative intent of SB 606 and AB 1668.

The District is committed to investing in infrastructure and programs that strengthen water resiliency and conserve the State's water resources. To that end, the District nearly doubled its required SBx7-7 per capita water use reduction goal, achieving a 39% reduction through implementation of cost-effective efficiency programs for its customers, strategic recycled water development and conversions, and the implementation of a water-budget based tiered rate structure.

In the spirit of developing an aspirational, yet achievable, Water Use Objective for urban water purveyors the District submits the following comments ahead of DWR finalizing recommendations to the State Water Resources Control Board.

A. Data Used (and Omitted) to Develop the Outdoor Water Use Standard (OWUS)

 Irrigation Efficiency (IE) Assumption of 80% Is Not Realistic: DWR has been provided empirical evidence, academic research, and irrigation manufacturer specifications which clearly document that existing and new irrigation systems cannot achieve, and do not perform with, an IE of 80%. Actual IE performance is lower¹ and DWR's assumption of an unreasonable and unrealistic 80% IE number

¹ See UC Davis' Evapotranspiration Adjustment Factor Study (Agreement #4600008156), commissioned by DWR, which documents existing IE performance in landscapes throughout California.
has the effect of creating a lower than reasonable expectation of what the ET Factor can be (see Comment B1).

2. Arbitrary Limit on Water Purveyor Water Use Information to Establish ET Factor: DWR surveyed existing water purveyor water use information using annual Electronic Annual Reports (EAR) to establish its recommendation for the ET Factor to be used in the OWUS. In doing so, DWR chose to use data from those agencies with an ET Factor of 0.1 to 1.0, omitting from its sample size water use information that broadly represents how water is used throughout California's disparate geography, climate, and socio-demographic composition. DWR decided to keep extremely low data (ET Factors of less than 0.25) without fully vetting how those low water uses were achieved, while omitting reasonable actual water uses with ET Factors beyond 1.0. In short, DWR arbitrarily limited the dataset to drive the OWUS lower than need be. This has unintended consequences (See Comment C).

B. Methodology of Establishing the OWUS

- 1. Ratcheting Down the residential ET Factor From 0.8 to 0.65 by 2030 Is Not Feasible or Defensible: As mentioned above, much of the analysis to arrive at the ET Factors being recommended are based off flawed assertions of Irrigation Efficiency and arbitrary sampling of water use throughout California. As proposed, the recommendation to lower the residential ET Factor to 0.65 by 2030 is contradicted by DWR's own analysis for commercial landscapes which asserts that an "ETF of 0.7 is not supported" based on real-world data². If an ETF of 0.7 is not practical at the commercial level, where landscapes can be professionally managed, then asserting that residential landscapes are, or can be, more efficiently managed to achieve an ETF of 0.65 is not realistic. Note that DWR's own analysis indicates that an OWUS based on a 0.8 ET Factor does exceed the water conservation goals of SBx7-7³ – so why the need to use arbitrary and unrealistic data to push efficiency past what is legislatively called for?
- 2. OWUS Should Reflect MWELO Principles: The OWUS needs to apply MWELO principles to all landscapes existing and new. This can be achieved by recognizing real-world performance data of installed irrigation systems and landscapes not paper-based design standards. Considering that 4 out of 5 homes in California were built *before* MWELO design standards were established (circa 1993), it is extremely unrealistic to expect 80% of California residential landscapes to *perform* to design standards not yet introduced. Creating an OWUS that requires existing landscapes to meet infeasible design standards sets water purveyors, and ultimately their customers, up for failure with compliance.

² Standards, Methodologies and Performance Measures Working Group PPT. California Department of Water Resources. October 25, 2021. Slide 46.

³ Standards, Methodologies and Performance Measures Working Group PPT. California Department of Water Resources. November 12, 2021. Slides 9-33.

Moreover, it has unintended consequences to the environment and urban communities (Comment C).

- **C.** Unintended Consequences of the OWUS: It is critical that DWR, in setting the OWUS, and those implementing it, discuss and minimize potential unintended consequences related to plant health (particularly trees) as well as disproportionate impacts to disadvantaged communities. While the implementation of DWR's proposed OWUS is intended to apply to a water purveyor in the aggregate, a purveyor's compliance with the OWUS necessarily involves efficiency at the parcel level.
 - 1. Plant Health and Shade Tree Impacts: When the proposed ET Factor ratchets down to 0.65 in 2030, water purveyors will ultimately be tied to the behavior and decisions its landowners make with their properties and landscapes. The changes homeowners will make are varied but ultimately come down to decisions to either invest in low water-use plants and efficient irrigation equipment, or to keep the existing landscaping they have. If they decide to keep their existing landscape, they may have to under-water or fallow their landscape to use less water. This can have deleterious impacts to plant and tree health, and may exacerbate heat island effects.
 - 2. Affordability of Landscape Change: A residential landscape renovation can cost between \$5-30 dollars per square foot. Tenants and landowners in disadvantaged communities may be hard-pressed to invest in such renovations. The alternative is to reduce watering to or fallow their landscapes. The decision to fallow a landscape or under-water a landscape can add stress to shade-trees, particularly if done over multiple months and years as chronic stress begins to weaken trees, making them more susceptible to opportunistic diseases. Put enough parcels that have chosen to under-water or fallow their landscapes together in a contiguous area and incidences of heat-island effects are to occur and worsen the effects of climate-change on people and the environment.
 - 3. DWR Irrigable Area Analysis Disproportionately Impacts Disadvantaged Communities: As proposed, only 20% of a water purveyors "Irrigable Not Irrigated" (INI) landscape area is eligible to be added to "Irrigable Irrigated" (II) landscape to calculate that water purveyor's total landscape area. As discussed above, for landowners who have decided to under-water their landscapes and let their lawns go brown, 80% of their landscaped area has been discounted by DWR and not considered into an agency's total OWUS.
 - This issue may become worse in the future as more residents and landowners in disadvantaged communities fallow landscapes to save water out of civic duty and cost control. The additional brown lawns and fallowed landscapes would increase a community's Irrigable Not Irrigated (INI) landscape area, meaning that for every square foot a community that lets its lawns go brown, DWR would only acknowledge 0.2 square feet in return.
 - DWR should develop a map that overlays Irrigable Not Irrigated (INI) areas with disadvantaged communities, as designated by CalEPA at the census block or tract level. An analysis of how "INI" landscape areas align

and spatially correlate with the DAC layers needs to be considered. Additionally, this analysis would be good to continue to track into the future to see how and where INI areas change. If over time INI area expand in DAC communities, these communities would have the misfortune of "losing" previously categorized Irrigated Irrigable (II) landscaped areas.

- 4. Cost of Water: We all need to be careful that the OWUS does not compel water purveyors to provide financial incentives for landscape programs that are beyond what is cost-effective to that utility. In the case of turf removal rebates, it might be cost-effective for an agency to contribute \$1 per square foot of turf removed. Considering that a landscape renovation costs anywhere from \$5 to \$30 per square foot, it's only those landowners who can afford to make a landscape change that would be in the position to participate in an incentive or rebate program. However, all ratepayers, including those ratepayers who cannot afford or do not participate in said incentive programs, fund the incentive program through their increasing rates.
- D. Existing Trends and Pace of Landscape Change & Limited Water Purveyor Authority:
 - Role and Authority of a Water Purveyor is Limited: A water purveyor's role is to deliver water to an end-user; it has no land-use authority to affect or control where water flows once it passes through the meter. Water purveyors can develop programs to incentivize landscaping changes (e.g. turf removal rebates) but are entirely dependent on homeowners to take the initiative and make a change.
 - 2. OWUS Not Feasible Given the Pace and Cost of Landscape Change: For nearly a decade, turf removal rebates have been provided and promoted to District customers, with the rebate ranging from \$0.50 to \$3⁴ per square foot of turf removed. In 10 years, approximately 1,000 residents have participated only 3% of the District's single-family residential parcels. Given that the average turf removal project in the District's service area is 853 square feet and costs the homeowner \$7,592 (@ \$8.90/sq.ft.), District customers have cumulatively spent over \$7.5 million to retrofit 1,000 homes. Conservatively, over \$1.25 million dollars in public funds have been provided as incentives to achieve this.
 - At this pace, it will take 60+ years for another 8,000 homes to participate so that ¼ of the District's homes are converted to low-water use landscapes. Moreover, it will cost \$80+ million dollars of customer and public agency investment to fund this amount of landscape change for just this District.
 - DWR and the State needs to better assess and evaluate the public and private costs required to change to the degree and scope needed for future compliance with DWR's proposals.

⁴ Incentive funding for the turf removal rebate has varied over the years based on availability of different funding sources which has included contributions from the District and its water wholesalers, the Municipal Water District of Orange County and the Metropolitan Water District of Southern California, and various State and Federal grants.

- E. Alternative Data Requirements Should be Modified for "Public Process," Rather Than Require a Public Hearing:
 - 1. Water Code Section 10609(b)(2)(D) provides for the use of alternative sources of data if alternative sources are shown to be as accurate as, or more accurate than, the data provided by the Department. The Draft Outdoor Recommendation proposed some general requirements to allow agencies to use alternative data. The District is concerned with the requirement that "Water supplier's Board of Director's Resolution, or its equivalent," is required to "approve the use of alternative data, after conducting at least one public hearing."⁵ DWR should modify this requirement to allow the use of alternative sources of data through a public process, rather than a public hearing. The requirement to hold public hearings would impose additional administrative burdens on water suppliers that are not necessary to achieving the goal of ensuring high quality data. For those agencies, like the District, who have invested significant time and funding in developing irrigable areas at the parcel level for use in budget-based rate structures, this alternative data is equivalent and/or superior to DWR-provided data and is vetted through a public process.

The District thanks DWR for their ongoing effort to support the efficient use of water in California and the opportunity to provide input on this effort. You can reach me at (949) 459-6533 or <u>NateA@SMWD.com</u> if you have any questions.

Sincerely,

atilla

Nathan Adams Water Reliability Planning Manager Santa Margarita Water District

⁵ Outdoor Residential Water Use Standard Draft Recommendation. California Department of Water Resources. Nov. 15, 2021. Page 5.







November 24, 2021

WUEStandards@water.ca.gov

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch,

The Association of California Water Agencies (ACWA), California Municipal Utilities Association (CMUA) and California Water Association (CWA) appreciate the opportunity to submit written comments to the California Department of Water Resources (DWR) on the recently released Water Conservation Legislation material. ACWA represents over 460 local public water agencies that supply water for domestic, agricultural, and industrial uses to over 90 percent of California's population. CMUA represents over 50 water agencies that deliver water to nearly 75 percent of Californians. CWA represents water agencies that provide drinking water to just over 15 percent of the State and are subject to the jurisdiction of the California Public Utilities Commission. ACWA, CMUA and CWA's public agency members are entrusted with the responsibility of supplying the public with safe and reliable drinking water and will be tasked with implementing and complying with *Making Water Conservation a Way of Life*.

ACWA, CMUA and CWA look forward to continuing to collaborate with DWR to address the following input prior to finalizing recommendations to the State Water Resources Control Board. Our comments include input on the:

- A. Guidance and Methodologies
- B. Outdoor Residential Water Use Standard Draft Recommendation
- C. Commercial Outdoor Landscape Area with DIM Standard Recommendation

A. Guidance and Methodologies

ACWA, CMUA and CWA strongly encourage the State to consider the resources necessary for water suppliers to successfully implement the Water Conservation Legislation. Partnership between local water agencies and the State to secure additional funding to support incentive and education programs necessary to catalyze water savings will be essential for water agencies to cost-effectively meet their water use objectives. Additionally, ACWA, CMUA and CWA strongly encourage the State to provide technical assistance to water suppliers that are not meeting their targets, but may be eligible to receive variances and are struggling to apply.

B. Outdoor Residential Water Use Standard Draft Recommendation

1) <u>ACWA, CMUA and CWA Appreciate DWR Staff's Coordination and Consideration of</u> <u>Stakeholder Comments.</u>

ACWA, CMUA and CWA appreciate DWR staff's coordination with public water agencies in developing the Outdoor Residential Water Use Standard Draft Recommendation (Draft Outdoor Recommendation). As noted in DWR's Draft Outdoor Recommendation, "stakeholder comments and suggestions of the provisional standard were considered in revising the [Draft Outdoor Recommendation] and designing a new approach that addressed the immediate impacts on retail water suppliers and improved long-term outlook for water conservation."¹

ACWA, CMUA and CWA expressed significant concerns with DWR's June 30, 2021 provisional recommendation of an evapotranspiration factor (ETF) of 0.7. Our concerns were that the 0.7 provisional recommendation would not be feasible for suppliers to meet, would not support existing and healthy landscapes, would have unintended consequences, excluded relevant and credible data, and was based on a design standard (MWELO) rather than a performance standard. DWR staff met with ACWA, CMUA, CWA and our members over the past several months to better understand and vet these concerns.

ACWA, CMUA and CWA continue to have concerns with the revised Draft Outdoor Recommendation and the challenges that many agencies will incur to meet the initial ETF of 0.8 and an ETF of 0.65 by 2030. However, we appreciate DWR's consideration of our input, as reflected in the revised Draft Outdoor Recommendation.

2) We Are Concerned that an ETF of 0.65 by 2030 is not Feasible and Strongly Urge DWR to Modify its Recommendation to set the ETF of 0.65 by 2035, or a Later Date.

We do not believe achieving an ETF of 0.65 by 2030, as DWR is currently proposing, would be feasible. DWR's recommendation is inconsistent with its own findings presented at the October 25, 2021 Standards, Methodologies and Performance Measures Working Group Meeting, that an "ETF of 0.7 is not supported,"² based on real-world data for existing CII landscape water use efficiency for some efficient water suppliers, and preliminary study data from UC Davis. While the data presented was for CII DIM landscapes, residential landscapes are usually smaller and therefore more difficult to irrigate as efficiently. Additionally, residential landscapes are less likely to be professionally managed, and as a result do not perform as efficiently as CII landscapes. Absent significant advancements in cost-effective irrigation technology and costly upgrades to existing landscapes that would be necessary, it is unclear why the proposed ETF of

¹ Outdoor Residential Water Use Standard Draft Recommendation. California Department of Water Resources. Nov. 15, 2021. Page 4.

² Standards, Methodologies and Performance Measures Working Group PPT. California Department of Water Resources. Oct. 25, 2021. Slide 46.

0.65 would be feasible by 2030. Further, we note that the 2018 legislation intended for DWR to propose a single standard for outdoor residential use and outdoor irrigation of landscape areas with dedicated irrigation meters in connection with CII water use for water suppliers to calculate their objective water use by January 1, 2024. The legislation did not envision a phased-in approach, as proposed by DWR.

Should DWR continue with a proposed phased-in approach, we urge DWR to provide additional time for water suppliers to meet the significantly reduced standard of 0.65 ETF. As noted, we believe reducing outdoor use to meet an ETF of 0.65 by 2030 is infeasible and would result in unintended impacts, including to healthy landscapes and disadvantaged communities (see Comment 5). The recommendation should provide for at least an additional five years, or at a later more appropriate date. It is likely that the outdoor residential water use will not be the only element that water suppliers will need to focus on to achieve their water use objective. The additional time requested could enable water suppliers and the State to secure the funding needed for landscape retrofits, build partnerships and allow for necessary technology advancements that would support a responsible shift from a 0.8 to 0.65 ETF. We note that this change in date would still satisfy the SB X7-7 legislative requirement.

3) <u>The Assumption of a 0.8 Irrigation System Efficiency Is Not Realistic.</u>

ACWA and CMUA provided additional data and outlined significant concerns in our August 17, 2021 comment letter regarding the assumption of a 0.8 irrigation efficiency (IE). **0.8 IE does not reflect the reality of IE in existing landscapes or how landscapes perform over time.** ACWA and CMUA recommended that an outdoor residential water use efficiency standard be based on an IE that ranges from 0.55 to 0.65. Our recommendation was based on accumulated data from water purveyors on actual irrigation system and performance through the various landscape programs implemented over ten plus years, recently completed field studies by UC Davis (Evapotranspiration Adjustment Factor Study (Agreement #4600008156)), and data by the Irrigation performance measured in the field and supports irrigation manufacturer specifications.

DWR's Draft Outdoor Recommendation indicated "IE was assigned based on MWELO's IE numbers for spray heads and drip systems. Average ETF was then calculated."³ ACWA, CMUA and CWA remain concerned that this is an aspirational and infeasible assumption that <u>does not</u> <u>reflect real-world data</u> and presents a skewed expectation of what is feasible. As noted above in Comment 2, DWR's own analysis reached the same conclusion. We encourage DWR to

³ Outdoor Residential Water Use Standard Draft Recommendation. California Department of Water Resources. Nov. 15, 2021. Page 4.

reconsider and include the data presented in ACWA and CMUA's August 17, 2021 comment letter.

4) <u>ACWA, CMUA and CWA Note Additional Ongoing Concerns with the Draft Outdoor</u> <u>Recommendation</u>.

The Draft Outdoor Recommendation of a 0.8 ETF from 2023 – 2029 and 0.65 ETF by 2030 would impose significant challenges to many water suppliers that are ultimately responsible for complying with the Water Conservation Legislation. We have encouraged DWR to develop a Draft Outdoor Recommendation that considers <u>real-world performance</u> of irrigation systems and <u>existing</u> landscapes to ensure a standard that is feasible and implementable for the millions of existing landscapes in California. Many of the concerns that we have expressed throughout the development of the Draft Outdoor Recommendation remain and should be addressed <u>prior</u> to DWR finalizing its recommendation to the State Water Resources Control Board.

- <u>Recognition of Existing Housing Stock</u>: DWR should recognize that 80 percent of California's housing stock was built prior to the establishment of MWELO in 1993 and these existing residential landscapes were not conceived or built to perform to the design standards found in MWELO. Of the 20 percent of homes that have been built since MWELO has been in place, MWELO only applies to developer installed landscaping, which is usually the front yard, and often not applicable to back-yards.
- <u>Recognition of Water Suppliers' Limited Authority</u>: DWR's recommendation must recognize that most water suppliers do not have land use authority and cannot directly control land-use decisions at the parcel level. Water suppliers only have the ability to offer financial incentives. However, ACWA, CMUA and CWA are concerned that compliance with the Draft Outdoor Recommendation requires significant customer investment and behavior changes that water suppliers cannot control. Additionally, absent from the discussion is the availability of State funding and technical assistance to support any Outdoor Recommendation, which will be essential to help customers reduce residential outdoor water use.
- <u>Accurate Quantification of Existing Landscapes</u>: DWR excluded existing landscape data that was outside of the range of a 0.1 to 1.0 ETF. ACWA, CMUA and CWA raised concerns that the exclusion of this data has skewed the reality of existing landscapes and urged DWR to include all applied water data in its analysis. Including the omitted data will provide a more accurate baseline to inform the Draft Outdoor Recommendation.

 Differentiation between Design and Performance: ACWA, CMUA and CWA have expressed strong concerns that DWR based the proposed Draft Outdoor Recommendation on MWELO design standards, rather than the principles of MWELO as directed in Water Code Section 10609.9. MWELO standards are intended for use in the technical design of landscapes and are not performance standards. A number of factors affect actual landscape performance: the designs must be installed exactly according to plans and landscapes must be well maintained over time in order to achieve performance that is close to initial design over time. DWR has no enforcement authority to ensure that MWELO is implemented as intended. It is inappropriate for DWR to propose an outdoor standard for water suppliers based on unenforced design standards over which they generally have no authority. The outdoor standard should be based on landscape performance standards and factor in cost-effectiveness and implementation feasibility. The cost to upgrade the majority of existing landscapes into compliance with the MWELO technical design standards in order to be able to comply with the Draft Outdoor Standard far exceeds the cost-effectiveness to water suppliers and property owners.

5) <u>DWR Should Minimize the Potential for Adverse Unintended Impacts</u>.

It is important that DWR, in setting the Draft Outdoor Standard, and those implementing it, discuss and minimize the potential unintended consequences. As proposed, ACWA, CMUA and CWA note the potential to adversely impact shade trees and disproportionately impact disadvantaged communities.

- <u>Shade Trees</u>: ACWA, CMUA and CWA are concerned that residents, in an effort to reduce their outdoor water use, will under-water or fallow their landscape, which would adversely impact shade trees. If done over multiple months and years, this chronic stress would weaken trees and make them more susceptible to opportunistic diseases. Shade trees offer significant benefits to communities, including improved air quality, mitigating urban heat island effects, cooling benefits, and improved quality of housing and communities. Shade trees are one of our best resources to address climate change. If enough parcels in a contiguous area under-water or fallow their landscapes, this would significantly impact shade trees and the benefits their canopies provide.
- <u>Disadvantaged Communities Individual Parcels</u>: The implementation of DWR's Draft Outdoor Recommendation is intended to apply to a water supplier in the aggregate; however, compliance will require outdoor water use efficiency improvements at the individual parcel level. Water suppliers estimate that landscape renovation can cost between \$5-30 per square foot. To comply with the standard, water suppliers will need to offer incentives and rebates to incentive landscape change. The cost-effectiveness of landscape renovation programs for water suppliers is typically in the \$1-2 per square

foot range. Property owners would need to cover any difference. There is the potential that landowners who can afford to make a landscape change will utilize incentive programs that all ratepayers, including those in disadvantaged communities, must fund through their increasing rates. This issue may become more pronounced as more residents and landowners in disadvantaged communities might not be able to cover the cost of landscape upgrades and as a result fallow landscapes to help achieve water savings.

Disadvantaged Communities – Landscape Area Methodology: DWR's proposed calculation of what constitutes landscaped area unintentionally and disproportionately affects disadvantaged communities. As proposed, only 20 percent of a water purveyors "Irrigable Not Irrigated" (INI) landscape area is eligible to be added to "Irrigable Irrigated" (II) landscape to make up that water purveyor's total landscape area. As discussed above, for landowners who have decided to under-water their landscapes and let their lawns go brown, 80 percent of their landscaped area has been discounted by DWR and is not considered into an agency's total outdoor water use standard. This issue becomes even more pronounced in the future as more in disadvantaged communities might fallow landscapes, as previously described. The additional brown lawns and fallowed landscapes would increase a community's INI landscape area, meaning that for every square foot a community lets its lawns go brown, DWR would only acknowledge 0.2 square feet in return.

ACWA, CMUA and CWA recommend that DWR use a map of disadvantaged communities designated by CalEPA at the census block or tract level to better understand how the clustering of single-family residential parcels designated as having high INI align and spatially correlate with the DAC layers. Additionally, DWR should track this analysis into the future to see how and where INI areas change. If over time INI area expands in DAC communities, these areas would not have prior landscaped areas recognized as such by DWR.

 <u>Cost of Water/ Affordability</u>: Proposition 218 prohibits public agencies from charging one class of ratepayers more than the cost of providing service in order to provide water service to another class of customers at a lower, subsidized rate. The State should carefully consider and ensure that the Draft Outdoor Standard would not require water suppliers provide financial incentives beyond what is cost-effective, as those costs will be passed on to ratepayers and limit water agencies' ability to fund other essential water reliability and infrastructure projects and programs that could more effectively prepare for climate change impacts.

6) <u>The Inclusion of Effective Precipitation Will Further Challenge Feasibility and Create</u> <u>Uncertainty.</u>

ACWA, CMUA and CWA are concerned with the inclusion of effective precipitation in the Draft Outdoor Standard, which results in reductions to the proposed ETFs. DWR's Draft Outdoor Recommendation proposed a reduction of up to 25 percent for effective precipitation. Enacting legislation does not require the inclusion of effective precipitation. DWR is directed to include it only as necessary. Water Code 10609.16 directs that "The guidelines and methodologies shall address, <u>as necessary</u>, all of the following... Incorporating precipitation data and climate data into estimates of an urban retail water supplier's outdoor irrigation budget for its urban water use objective." It should be noted that MWELO does not require effective precipitation be used in determining efficient outdoor use; it is optional. We recommend effective precipitation be omitted from the Draft Outdoor Recommendation.

7) <u>Alternative Data Requirements Should be Modified to Allow for "Public Process," rather</u> than Require a Public Hearing.

Water Code Section 10609(b)(2)(D) provides for the use of alternative sources of data if alternative sources are shown to be as accurate as, or more accurate than, the data provided by the Department. The Draft Outdoor Recommendation proposed some general requirements to allow agencies to use alternative data. ACWA, CMUA and CWA are concerned with the requirements "Water supplier's Board of Director's Resolution, or its equivalent," is required to "approve the use of alternative data, after conducting at least one public hearing."⁴ DWR should modify this requirement to allow the use of alternative sources of data through a public process, rather than a public hearing. The requirement to hold public hearings would impose additional administrative burdens on water suppliers that are not necessary to achieving the goal of ensuring high quality data.

C. Commercial Outdoor Landscape Area with DIM Standard Recommendation

1. <u>DWR's Recommended Threshold for Converting to DIM is Problematic.</u>

ACWA, CMUA and CWA recognize that Water Code Section 10609.1 requires DWR to establish a threshold recommendation for converting to dedication irrigation meters (DIM) and to evaluate and recommend technologies that could be used in lieu of requiring DIMs. To inform a recommendation, on April 12, 2021, ACWA submitted *Recommendations for CII Performance Measures and Conversion of Mixed CII Meters* to DWR requesting CII performance measures that focus on actions that will result in actual water savings and are cost-effective. ACWA noted

⁴ Outdoor Residential Water Use Standard Draft Recommendation. California Department of Water Resources. Nov. 15, 2021. Page 5.

the following concerns and challenges with establishing a threshold recommendation for converting CII mixed use meters (MUM) to DIMs:

- <u>Failure to guarantee water savings</u>: The action of converting a CII MUM does not guarantee water savings. It simply serves as a tool to allow property owners and suppliers to track irrigation water use. To achieve water savings, additional investments and water savings behavior is essential, such as procurement of professional water management services, on-site water audits, opting into a web-based platform for tracking usage to a water budget, etc.
- <u>Cost-effectiveness of water savings</u>: The conversion of CII MUM is frequently cost ineffective for CII customers without an incentive. Water agencies that incentivize splitting a CII meter, have found that customers often do not take advantage of the program. Often the return on investment for the agency measured as the avoided cost of water does not merit the project installation. This is due to the offset of significant costs to split the meter.
- <u>Feasibility and complexity of converting meters</u>: Retrofitting an existing CII facility presents significant challenges. Each meter conversion project is unique and has site-specific constraints. Existing piping configuration, hardscape, and other obstructions can add excessive cost or deem the conversion infeasible. Potential complexities that may make meter conversion infeasible include customer property side irrigation layout and potential tie-ins, unavoidable obstruction such as mature trees and existing buildings, service lateral delivery adequacy, and local/municipal requirements.
- <u>Additional financial burden for customers</u>: Retrofitting an existing CII facility with an additional water meter will require the customer to begin paying additional "fixed charges." Fix charges range in cost based on the size of the water meter, and adding an additional meter will result in a customer paying what could be up to two times the amount than they would have for a single meter.

At its October 25, 2021, Stakeholder Meeting, DWR presented on its preliminary recommendations and findings recharging CII landscape area. ACWA, CMUA and CWA appreciated DWR's consideration of stakeholder input and DWR's recognition that "difficulties may exist when converting MUM to DIM," including "that it may not be feasible to implement DIMs or a DIM-equivalent technology" and "DIMs or a DIM-equivalent technology may not be a cost-effective option."⁵ Additionally, we appreciated that DWR recognized that, "the function of a DIM is to provide measurements for water use." In-lieu technologies qualified here may not need to provide the same function of a DIM (unlike DIM-equivalent technologies) but should **address the end goal of efficient use of water**. This is consistent with the language in Water

⁵ Standard for CII Landscape Irrigation with Dedicated Meters and two related BMPs. Department of Water Resources. October 25, 2021. Page 6.

Code Section 10609.10(b)(2) that the implementation of the technology will result in increased water use efficiency for CII landscape.

However, ACWA, CMUA and CWA have significant concerns with DWR's proposed recommendation of 20,000 square feet of irrigated landscape area as the threshold for CII MUM conversion to DIM or Equivalent Technology. We are concerned that 20,000 square feet would not be a cost-effective threshold and would create undue burden on waters suppliers and CII customers. Installation of DIM meters are not often shown to be cost-effective for irrigated landscapes of 20,000 square feet, even when irrigation reductions are estimated between 10 and 20 percent. Rather, some feasibility studies have shown that positive return on investments for agencies can be achieved, even after providing capital cost offsets, when irrigated area approaches an acre, water savings are anticipated between 10 and 20 percent, and where only a single lateral tie-in to the meter is warranted. Further, based on the "Estimated Cumulative CII Potential Landscape Area Distribution" chart presented by DWR on October 25, 2021, the cumulative total of potential CII landscape area increases only slightly by approximately 0.1 % when CII size threshold is lowered to 20,000 square feet from an acre (43,560 ft²).

2. ACWA, CMUA and CWA Recommend Alternative for a Threshold for Converting to DIM.

ACWA, CMUA and CWA have provided an alternative proposal for a threshold recommendation for converting to DIMs for DWR's consideration. We believe that this approach would achieve DWR's goal to increase water use efficiency but would provide a more cost-effective and flexible pathway to compliance to water suppliers and CII customers. We would like to discuss this alternative with DWR staff prior to DWR finalizing its recommendation to the State Water Board.

The recommendation includes the five steps outlined below, with the goal to measure progress towards water use efficiency. The alternative would set a threshold for converting MUMs (Threshold MUMs) as (1) parcels that are two acres or greater, (2) that are irrigating an acre (43,560 ft²) or greater and (3) with water use greater than the outdoor water use efficiency standard. A diagram of this proposal can be found in Appendix A of this letter.

- <u>Step 1</u>: Water suppliers to locate and identify all MUM and associated parcels. Deliverable: Water suppliers to provide DWR a list of MUMs and the size of associated parcels to DWR by 2024.
- <u>Step 2</u>: Water suppliers to measure the landscape area for all MUM parcels over two acres. *Deliverable: Water suppliers to provide DWR with the associated landscape area by 2027*.
- <u>Step 3</u>: Water suppliers, relying on the measurements developed in Step 2, would identify MUMs irrigating one acre or greater. For these meters, water suppliers would estimate the annual outdoor water use and compare it with the outdoor water use

efficiency standard. MUMs with an outdoor water use greater than the outdoor water use efficiency standard shall be considered the "Threshold MUMs." *Deliverable: Water Suppliers to provide DWR a list of Threshold MUMs by 2030*.

- <u>Step 4</u>: Water suppliers to develop a Compliance Plan for Threshold MUMs. The Compliance Plan would identify how a water supplier would, by 2035, reduce water demand of Threshold MUMs to meet the water use efficiency standard by converting to DIMs, a DIM Equivalent Technology, or through In-Lieu Technologies. *Deliverable: Water suppliers to submit Compliance Plan to DWR by 2030.*
- <u>Step 5</u>: Water suppliers to annually report on Threshold MUM compliance for MUM compliance and progress towards meeting the standard. Every five years, agencies will reevaluate water use of the MUMs identified in Step 3 to determine and update Threshold Mums. *Deliverable: Water suppliers to report to DWR annually after 2030.*

Any MUMs that cannot be converted to a DIM should fall under the same best management practices (BMPs) provisions for all other CII customers. Water agencies would then work with those customers to reduce water usage, implement BMPs as appropriate, and take further action consistent with DWR's CII standards.

3. <u>CII Classification: Make State Data Available to Water Suppliers and Changes to Frequency</u> of Reclassifying Customer Data.

4.3 of the *Recommendation and Performance Measure for CII Water Use Classification System* would require urban retail agencies to periodically review and update their CII water use classifications. This process likely will require each water supplier to procure updated business listing data with NAICS codes. This data would then be used to update business classifications. There are dozens of business listing data providers and data quality can vary greatly among providers. ACWA, CMUA and CWA request that DWR provide this business listing data for the entirety of California. This would allow water suppliers to rely on the same high-quality dataset and avoid needing to procure this information separately.

Additionally, the requirement 4.3.1 would require significant labor every two years to reclassify customer data. ACWA, CMUA and CWA recommend changing this updating requirement to every five years instead of every two years.

ACWA, CMUA and CWA appreciate the opportunity to provide input to DWR on this effort. Please do not hesitate to contact me at <u>ChelseaH@acwa.com</u> or (916) 441-4545 if you have any questions regarding our input. Sincerely,

Chilsea Hano

Chelsea Haines Regulatory Relations Manager Association of California Water Agencies

Andrea Abergel Senior Regulatory Advocate California Municipal Utilities Association

Inf M Capitolo

Jennifer Capitolo Executive Director California Water Association

CC:

The Honorable Karla Nemeth, Director, California Department of Water The Honorable Joaquin Esquivel, Chair, State Water Resources Control Board Mr. Ryan Bailey, Water Use Efficiency Branch Manager, Department of Water Resources

Mr. Dave Eggerton, Executive Director, Association of California Water Agencies Ms. Cindy Tuck, Deputy Executive Director for Government Relations, Association of California Water Agencies,

Appendix A

ACWA, CMUA and CWA Recommended Alternative -CII Mixed Use Meter Conversion Requirements

"Threshold **Step 1**: Water suppliers to locate and identify MUMS" all MUMs and associated parcels. Parcel > 2 acres **Deliverable:** Provide list of MUMs and size of associated parcels to DWR by 2024. Irrigating > 1 acre + Water Use > WUE Standard **Step 2:** Water suppliers to measure the landscape area for all MUM parcels > 2 acres. Abbreviations: **Deliverable:** Provide associated lanscape area to DWR by MUM = Mixed 2027. use meter DIM = Dedicated **Step 3:** Water suppliers (using Step 2 data) to irrigation meter identify MUM irrigating > 1 acre . Compare esimated outdoor water use to the outdoor WUE WUE = Water standard. use efficiency **Deliverable**: Provide a list of "Threshold MUMs" and comparison of outdoor water use to outdoor WUE standards by 2030. **Step 4**: Water suppliers to develop Compliance Plan for "Threshold MUMs" to reduce water demand to meet the WUE Standard by converting to DIM, DIM Equivalent Technology, or In-Lieu Technologies. **Deliverable:** Submit Compliance Plan to DWR by 2030.

> **Step 5**: Water suppliers to annually report on "Threshold MUM" progress toward meeting the WUE standard. Every 5 years, suppliers to reevaluate and update "Threshold MUMs."

Deliverable: Provide Compliance Plan to DWR by 2035.



November 24, 2021

Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 1416 9th Street Sacramento, CA 95814 <u>WUEStandards@water.ca.gov</u>

RE: Provisional Outdoor Standard

To Whom It May Concern:

Agricultural Council of California ("Ag Council") appreciates the opportunity to comment on the Provisional Outdoor Standard. Ag Council represents approximately 15,000 farmers across California, ranging from small, farmer-owned businesses to some of the world's best-known brands. Our membership includes farmer-owned businesses in the nursery industry that collaborate with cities and local governments in providing nursery stock for urban forestry projects and healthy landscapes which aid in climate moderation, community enrichment and fire protection. Thank you for the opportunity to comment.

As a farm organization, Ag Council recognizes the need to conserve water due to the current and future droughts. California needs to rethink water use from a management, storage and efficiency prospective. We agree with rethinking our approach and also recognize there are significant challenges in determining our future course of action.

Ag Council urges the Department of Water Resources ("DWR") to prioritize plants and healthy landscapes to prevent heat islands, improve air quality, conserve energy and assist with climate mitigation. For example, the benefits of shade trees on local communities are numerous. Specifically, shaded areas may be 15-20 degrees cooler than unshaded locations in highly urbanized areas.¹ Additionally, trees can improve air quality and remove air pollution by up to 50% inside houses and around sidewalks.² Furthermore, on hot days, air conditioning becomes less effective and homes with shade trees have the advantage of experiencing reduced exposure from the sun. Residences with shade trees can benefit from significant energy savings.³ Utilizing shade trees and healthy landscapes can be a cost-effective practice benefitting high heat communities and can be especially helpful in high density locations and disadvantaged communities.

¹ National Integrated Heat Health Information System. <u>https://nihhis.cpo.noaa.gov/Urban-Heat-Islands/Understand-Urban-Heat-Islands</u>

 ² Maher, B.A., Ahmed, I.A., Davison, B., Karloukovski, V., & Clarke, R. (2013). Impact of roadside tree lines on indoor concentrations of traffic-derived particulate matter. Environmental science & technology, 47(23), 13737-13744.
 ³ Residential cooling loads and the urban heat island – the effects of albedo (Taha et. al., Building and Environment). https://heatisland.lbl.gov/publications/residential-cooling-loads-and-urban

Acknowledging Feasibility in the Regulation

According to the Association of California Water Agencies ("ACWA") and the California Municipal Utilities Association:

"80% of California's housing stock was built prior to the establishment of MWELO in 1993; these pre-existing residential landscapes were not conceived or built to perform to the design standards found in MWELO."⁴

Ag Council is concerned that the Provisional Outdoor Standard does not reflect this reality and not feasible to achieve. We support giving water agencies flexibility in determining how to manage water within their districts, however, many water agencies are subject to preexisting land use decisions, which ultimately dictate how and where water should be used. Reducing water use in an attempt to achieve an infeasible standard could create a haphazard management approach and unintended consequences, such as the creation of heat islands and reduce the benefits of urban forestry programs and the state's climate mitigation efforts.

While DWR is currently assessing a suite of alternate management options, Ag Council requests DWR to add additional analysis to the regulation to determine potential impacts to urban areas including possible increases in heat indexes and the creation of heat islands. We must protect the investments that we have made in urban forestry and other urban greening projects to ensure they are sustained to mitigate against climate impacts in urban and residential communities.

Furthermore, widespread adoption of technology that may be required to implement this regulation may be slow due to cost and other challenges. This issue may impact the feasibility of this regulation. In several of California's regulations and Executive Orders that set goals with an unclear outlook in the marketplace, feasibility language is routinely added in an effort to incentivize innovation while simultaneously recognizing unforeseeable constraints during the development and deployment process of new technologies. Governor Newsom added feasibility language in his Executive Order pertaining to Zero Emission Vehicles (Executive Order N-79-20):

"It shall be a goal of the State that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035. It shall be a further goal of the State that 100 percent of medium- and heavy-duty vehicles in the State be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks. It shall be further a goal of the State to transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible."

Similar language has been added in SB 1383 (Short Lived Climate Pollutants). In both of these cases (Zero Emission Vehicles and SB 1383), authority is left to the governing body to determine next steps when achieving the goals are not feasible. We ask DWR to consider adding equivalent feasibility language to recognize potential challenges in getting new or updated technologies to market.

⁴ Association of California Water Agencies and California Municipal Utilities Association in letter to DWR Water Use Efficiency Branch, Attachment A., page 4. August 17, 2021.

Assessing and Planning for Climate Risk and Wildfire Mitigation

Ag Council also recommends DWR create climate-smart urban planning procedures as part of this process. Seeking analysis from CalFire as to potential wildfire threat to atrisk communities should be foundational in this effort. If water agencies have little flexibility to manage water due to land use and other preexisting circumstances, we could be inadvertently increasing wildfire risk for certain regions. As Californians, we have witnessed the value of healthy greenspace in protecting regions from wildfire in the Bay Area and other locations. According to the Greenbelt Alliance, greenspace, vineyards and golf courses assisted in wildfire defense efforts in the Tubbs and Kinkade Fires in Sonoma County.⁵

Well planned landscapes are a part of the state's defense against wildfire in urban areas. CalFire provides recommendations for homeowners in creating defensible space, hardening your home and maintaining fire-resistant landscaping as part of its wildfire education and preparedness efforts.⁶ CalFire also calls attention to legal requirements for high risk areas outlined in AB 3074 (Friedman, 2020), requiring residents in these areas to create a defensible space from approximately 5 to 30 feet around a building, and to create an ember-resistant zone within 5 feet of buildings, based on regulations promulgated by the State Board of Forestry and Fire Protection. CalFire goes on to link to an online National Tree Benefit Calculator that estimates air quality, energy conservation and CO2 reduction benefits of most trees in any neighborhood.⁷ The benefits of healthy trees and plants are plentiful.

The key to all of this work is that while we must conserve water, landscapes also need to be healthy to provide these benefits. We must be thoughtful in our approach toward water conservation and think about wildfire defense as part of these efforts.

For communities with wildfire risk, human health and safety language could be added to the regulation to allow for protecting healthy greenspace in necessary areas. The State Water Resources Control Board ("SWRCB") routinely utilizes human health and safety language in its curtailment regulations. One example includes the "Emergency Curtailment Order Due to Lack of Water Availability in the Sacramento-San Joaquin Delta Watershed," which gives SWRCB authority to exclude certain uses of water from the regulation for minimum human and health and safety needs:

"Minimum human health and safety needs refers to the amount of water necessary for prevention of adverse impacts to human health and safety, for which there is no feasible alternate supply. Minimum human health and safety needs to include..."

The regulation then goes on to list certain uses of water that could qualify for this definition within the SWRCB Curtailment Order. The human health and safety water use listed in the Curtailment Order would not automatically translate to the Provisional

⁶CalFire website: <u>https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/defensible-space/</u>

⁵ The Greenbelt Alliance, The Critical Role of Greenbelts in Wildfire Resistance, <u>https://www.greenbelt.org/wp-</u> content/uploads/edd/2021/06/The-Critical-Role-of-Greenbelts-in-Wildfire-Resilience.pdf. June, 2021.

⁷ National Tree Benefit Calculator: <u>http://www.treebenefits.com/calculator/index.cfm</u>

Outdoor Standard because the two regulations are unique, however DWR could create some potential priorities and flexibilities within the regulation utilizing a similar regulatory tool.

Incentivizing Transformation in Our Communities

Because 80% of California's residential communities were built prior to 1993 and prior to this legislation, a comprehensive transformation may have to materialize in water management to get certain residences into compliance with the Provisional Outdoor Standard. In order to encourage more climate friendly landscapes and technology, incentive dollars should be provided to allow older communities to meet the needs of the Provisional Outdoor Standard.

While we have concerns about Provisional Outdoor Standard, we do support the phasedin approach proposed by DWR. A phased-in approach will allow water agencies and other stakeholders time to implement the regulation as we work to achieve these goals.

As outlined above, Ag Council urges DWR to consider creating a more well-rounded regulation as part of the Provisional Outdoor Standard. Feasibility language, climate-smart urban planning analysis, human health and safety protections and incentive dollars should be considered as part of the effort to fully transform water use in outdoor spaces. We look forward to working with DWR and SWRCB in this effort to conserve water throughout California.

Thank you for your consideration of our comments. Should you have any comments or questions, please do not hesitate to contact me at (916) 443-4887 or at <u>emily@agcouncil.org</u>.

Sincerely,

miles Rooney-

Emily Rooney President

November 12, 2021

Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 1416 9th St Sacramento, CA 95814

Dear Water Use Efficiency Branch,

On behalf of the California Landscape Contractors Association (CLCA) and the CLCA's Resource Management Committee, I would like to thank you for the opportunity to comment on the California Department of Water Resources (DWR) on the proposed outdoor standards presented at the October 25th meeting to solicit additional feedback from workgroup members and interested parties on key topics related to the DWR Water Use Efficiency Standard Recommendations to the State Water Resources Control Board.

Founded in 1952, CLCA represents over 1,000 licensed landscape contractors and landscape industry professionals which span across the entire state of California. Our landscape contractors install new and maintain existing landscapes covered by the state's 460 water agency service areas. These landscapes will be impacted by the proposed standard changes.

We recognize that DWR, in coordination with the State Water Resources Control Board (State Water Board), has provided proposed recommendations for an outdoor water use standard and Commercial, Industrial, and Institutional (CII) outdoor landscape area with dedicated irrigation meters standard. While we recognize setting the Evapotranspiration factor (ETf) to .8 for irrigated irrigable landscapes is a decision to promote savings and be consistent with the Model Water Efficient Landscape Ordinance (MWELO), we do not think this target is achievable on the state's millions of existing landscapes in California - especially older ones. In 2008, when DWR was finalizing the update to MWELO, we pointed out this number was controversial amongst our membership. Many reasonable landscape professionals disagreed on its impact, and we were not entirely convinced that property owners could achieve the goal envisioned by the ordinance, without significantly limiting the choice of plant palette. At that time, we also expressed that our members could adapt to lower design standards (which they have with fervor) to contribute to reducing the state's outdoor water consumption. In 2021, we feel the current proposed ETf to .8 will present similar challenges to existing landscapes, especially in more economically, disadvantaged areas. Therefore, we offer the following comments regarding DWR's proposed outdoor standard.

CLCA recommends the outdoor standard be developed based on the principles of MWELO to achieve efficient outdoor water use, and not on design standards that do not reflect actual performance. The outdoor standard should consider real-world conditions, real-world performance of irrigation systems and the overall inefficiency of existing landscapes – especially those installed prior to the 2010 MWELO.

California Landscape Contractors Association, Inc. | 1491 River Park Drive, Suite 100 | Sacramento CA 95815-8899 (916) 830-2780 | (916) 830-2788 fax | info@clca.org | clca.org



President Paul Hansen Southwest Landscape, Inc. (714) 545-1084

President-Elect Megan Rios Rios Design Studio, LLC (661) 835-9259

Immediate Past President Regan Barry Coastal Evergreen Co., Inc. (831) 438-4747

Secretary-Treasurer Alex Salazar Groundcare Landscape Company (818) 768-8594

> Director of Education Lindsay Ono Bakersfield College (661) 395-4938

Director of Events Elizabeth Burns Zone 24 Landscaping, Inc (310) 831-6132

Director of Legislation Jay Martinez JVM Landscape Construction, Inc. (916) 549-8895

Director of Membership **Eric Santos**, CLT BrightView Landscape Services (925) 525-3645

Associate Member Director Chris McNairy Hunter Industries/FX Luminaire (707) 933-0488

Director of Resource Management Tom Sweeney, CWM Landscape Care Company (925) 372-7973

> Director of CPC, North Evan Moffitt, CLT SiteOne Landscape Supply (805) 616-9858

Director of CPC, South Edward L. Wallace Midwest Landscaping (562) 755-9914

Executive Director Sandra Giarde, CAE CLCA Headquarters (916) 830-2780 We believe that a new outdoor efficiency standard should be carried out slowly in careful segments. We propose a phased-in approach to reach the goal of an ETf of .65 by 2035 would be the most appropriate method for the new outdoor standard. This approach would set the outdoor standard at an ETf of 1.0 from 2024-2027, move to .8 from 2028-2035 and eventually .65 thereafter. We feel at each phase of the process, reviewing consumption data on existing sites would be crucial prior to moving to the next phase. Furthermore, we feel this phased-in approach will benefit our landscape contractors by allowing for more time to make the necessary conversions to plant palette, installation of more efficient irrigation methods and an overall acceptance of a "new normal" landscape by property owners of these existing landscapes. It is our belief that conservation works best when people want to participate, not when they are mandated to do so. We also believe more time will be beneficial for water agencies, responsible for the consumption targets, to implement more incentives and rebate programs that will help them meet these standards.

Additionally, we see further challenges, even with a phased-in approach, without additional financial incentives from DWR to assist water agencies with turf rebates and other water use efficiency programs. As stated earlier, property owners and water agencies will find it difficult to achieve these standards without significantly limiting the choice of plant palette. We urge you to strongly consider funding to ensure success by the agencies tasked with complying with a new outdoor standard.

We encourage DWR to ensure that the final recommended outdoor standard reflects the goals expressed in Making Water Conservation a California Way of Life. We have significant concern that the provisional recommendation of a 0.8 ET factor in 2023 for the outdoor standard is not a reasonable efficiency standard at this time.

We appreciate your consideration of these comments, recommendations and remain committed to collaborating with DWR and the State Water Board to successfully implementing a final outdoor standard. To discuss these comments in further detail, please feel free to contact me at davidsilva@clca.org.

Sincerely,

David Silva, CWM, CLIA, QWEL Resource and Water Programs Manager California Landscape Contractors Association

andra

Sandra Giarde, CAE Executive Director California Landscape Contractors Association



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Executive Director Sandra Giarde, CAE CLCA Headquarters (916) 830-2780

California Landscape Contractors Association, Inc. | 1491 River Park Drive, Suite 100 | Sacramento CA 95815-8899 (916) 830-2780 | (916) 830-2788 fax | info@clca.org | clca.org





- TO:Water Use Efficiency Branch
California Department of Water Resources
- **FROM:** Lisa Cuellar, Senion Program Manager California Water Efficiency Partnership

Christopher Tull, Project Manager California Data Collaborative

DATE: November 24, 2021

SUBJECT: CII-DIM Performance Measures Comments

The California Water Efficiency Partnership (CalWEP) is a statewide non-profit member-based organization representing over 220 California water agencies, businesses, and other organizations. Collectively our water agency members provide services to over 6.6 million connections across the state. With a mission and commitment to maximize water efficiency, CalWEP has a deep history working on customer side conservation and efficiency programs. We believe that data-driven conservation and efficiency are paramount to ensuring that California has a reliable and resilient water future.

The California Data Collaborative (CaDC) is a statewide non-profit founded by water managers to facilitate data-centric policy and operational decisions that enable a sustainable water future for all. The CaDC helps its member agencies improve the reliability and sustainability of their water supply by producing sophisticated data analytics tools to address some of the most pressing water use efficiency issues facing suppliers.

CalWEP and CaDC appreciate the opportunity to review and comment on the CII-DIM performance measures considerations presented most recently by DWR as part of the water conservation legislation. In a collaborative effort CalWEP and CaDC have prepared the attached technical memo that offers a limited economic feasibility analysis for the splitting of mixed-use meters (MUMs) on CII accounts by installing DIMs. The results of the analysis were produced using an Excel-based Feasibility Tool for splitting MUMs produced by the California Urban Water Conservation Council (now CalWEP) in 2013. The tool accounts for applied irrigation, capital costs of installation, water and sewer rates, and agency funded DIM program incentives, amongst other factors. Ultimately, the results contained in our technical memo can help identify conditions under which splitting MUMs at CII accounts is cost-effective for a water agency.

Please note that this feasibility analysis was initiated following the October 25, 2021 DWR meeting where a CII DIM threshold of 20,000 square feet was first introduced. This allowed only 21 working days to gather and analyze data. However, given this relatively narrow window to conduct the analysis, both CalWEP and CaDC are confident that the output generated by the Feasibility Tool is sufficient to provide baseline economic feasibility data for split meter programs.

CalWEP and the CaDC recommend that DWR review and consider these findings to inform the CII-DIM threshold currently under consideration by the Department and prior to recommending a threshold for splitting meters on CII accounts as required by $WC \ 10609.10 \ (b)(2)$.

Please contact either of us if you have any questions regarding this information.

Lisa Cuellar lisa@calwep.org (916) 287-9837

Christopher Tull <u>chris@thecadc.org</u> (805) 651-8751

cc: Charlotte Ely, California State Water Resources Control Board

Economic Feasibility of CII DIM Installations

Prepared by the California Water Efficiency Partnership and California Data Collaborative November 2021

This memo discusses the results of using the California Water Efficiency Partnership's (CalWEP) Dedicated Irrigation Meter (DIM) Feasibility Tool to explore the cost-effectiveness of installing DIMs to split the water demand from mixed-use meters (MUMs) into indoor and outdoor volumes at individual commercial, industrial and institutional (CII) accounts. Different model assumptions and thresholds for landscape size are examined, and outstanding questions with regards to meter splitting are summarized based on the Feasibility Tool results.

We find that, in most of the scenarios examined for CII landscapes of 20,000 square feet, meter splitting does not appear to be cost-effective at the parcel level from an avoided water cost perspective. This result is site and agency specific and varies in the magnitude of economic infeasibility. In some instances, sites that are large (40,000 square feet), where splitting requires minimal construction on the customer side, and where DIM installation reduces irrigation water use, meter splitting may be a cost-effective approach.

This memo does not consider the feasibility of equivalent or in-lieu technologies as defined by the California Department of Water Resources (DWR) during the October 25, 2021 Water Use Efficiency Standards Meeting.

Feasibility Tool Background

The DIM Feasibility Tool is an Excel-based worksheet created in 2013 by the California Urban Water Conservation Council (now the California Water Efficiency Partnership) with lead technical support from Matt Lyons, Director of Planning and Conservation for the Long Beach Water Department (retired). The tool was designed for agency staff looking to assess the cost-effectiveness of an incentive program for splitting MUMs at CII accounts by installing DIMs. By conducting an economic analysis, the tool helps practitioners identify scenarios where the benefit to an agency that comes from conserving water (accounted for as the avoided cost of water) is greater than the costs (accounted for as incentives) to an agency. The Feasibility Tool performs the analysis at the individual CII parcel level, although the data can be compiled manually to perform an aggregate analysis for multiple CII accounts. The tool was vetted by volunteers that served on the Council's Utility Operations Committee and was approved by the Council Board as an acceptable tool for conservation best management practice (BMP) reporting.

By estimating an agency's net present value (NPV) over a project life typically spanning 15 to 20 years, and under different CII parcel conditions and cost scenarios, the tool enables users to identify candidate sites for splitting meters. The NPV calculation takes into account a diverse

array of factors including:

- The estimated water saved, based on the size of the landscape and average applied irrigation.
- Benefits to the agency in terms of avoided water costs and reduced runoff.
- One-time costs to the customer to install the new meter and connect their irrigation system.
- Recurring costs and benefits to the customer caused by a change in rates and addition of new service and backflow charges.
- One time and recurring costs to the agency to manage the program, as well as to incentivize the customer to achieve an attractive return on investment. Incentives include subsidies to a CII customer's water bill and/or capital cost offsets for DIM installation.

A split meter conversion that is modeled to have a positive NPV is determined to be economically feasible, while a conversion with a negative NPV is determined to be economically infeasible.

Economic Feasibility for Area Thresholds:

On October 25, 2021, during a Water Use Efficiency Standards Meeting, DWR suggested a landscape area threshold for DIM installation on CII accounts of 20,000 square feet. Using a set of standard assumptions (see Tables 1 and 2 below), CalWEP utilized the Feasibility Tool to assess DIM installation feasibility for theoretical CII accounts of 20,000 and 40,000 square feet.

Input	Value				
Discount Rate	2.5%				
Water Rate	\$3.00 / HCF				
Vol. Sewer Charge	\$0.33 (85% assessed)				
DIM Daily Service Charge	\$0.60				
Annual Sewer Fee Reduction	-\$100				
Avoided Cost of Water	\$700				
SW Benefit	\$20 / AF conserved				
Program Costs + Account Mgmt.	\$2,500				

Table 1: General Model Inputs

Table 2: Customer Cost Model Inputs

Input	Value
Meter Installation Fee	\$5,000
Backflow Device Installation	\$100
Capital Cost per Tie-in	\$4,000
Permit Inspection Fee	\$100
Backflow Inspection Fee	\$200

In addition, the California Data Collaborative (CaDC) ran separate DIM installation feasibility analyses in Python[™], using the same algorithms from the Feasibility Tool, for three California water suppliers located in geographically distinct regions: 1) Northern Coast 2) East Bay and 3) Southern Coast. Each agency submitted data inputs based on best available cost and CII irrigation data (See Appendix A for model data). Similar to the theoretical example, CaDC's analyses were performed for CII accounts of 20,000 and 40,000 square feet.

<u>Methodology</u>

Forty-eight model iterations were conducted for both a 20,000 and 40,000 square foot CII landscape area in the theoretical trials as well as the three water provider trials and in accordance with the scenarios presented in Table 3. The theoretical results were independently verified by CaDC. CalWEP also spot-checked select iterations from CaDC's Python[™] analysis using the Feasibility Tool.

Model results were generated at three levels of applied annual irrigation on CII accounts post DIM installation and equal to 50, 70 and 90 inches. Two project life periods of 15 and 20-years were assessed and are based on agencies' reported periods for meter inspection and changeout. Percent of irrigation water savings post-DIM installation was evaluated at 10 and 20 percent. Finally, individual iterations were run for various irrigation lateral tie-ins to the new DIM: 1, 2, 3, and 10 tie-ins.

The NPV was generated using a fixed 20 percent rate of return (5-year payback period) and a 10 percent reduction on water bills for the CII account. In order to achieve these benefits, the model adjusts agency costs in the form of incentives as either water bill subsidies, capital cost offsets or both.

Landscape Area	20,000 & 40,000 square feet															
Irrigation	50, 70, 90 inches															
Project Life	15 yr 20 yr															
% Savings	10% 20% 10% 20%															
No. Laterals	1	2	3	10	1	2	3	10	1	2	3	10	1	2	3	10

Table 3: Feasibility Tool Model Scenarios

<u>Results</u>

Theoretical CII-DIM Feasibility Results

In total, forty-eight model iterations were completed for two theoretical 20,000 square foot and 40,000 square foot CII landscapes. Select findings are provided below in Graphs 1 to 4. See Table 4 for a breakdown of scenarios presented in each of the graphs.

Graph No.	10% Reduction	20% Reduction	1 Lateral	2 Lateral
1	✓		✓	
2		\checkmark	✓	
3	✓			\checkmark
4		\checkmark		\checkmark

Table 4: Scenarios Presented in Graphs 1 - 4

Graphs 1 and 2 below compare the net present value in dollars over a **15-year** project life for two theoretical CII landscape areas of 20,000 and 40,000 square feet respectively and assuming an avoided cost of water of \$700.





The following observations can be made from the data presented in Graph 1:

• For **40,000** square feet of CII landscape area, and an assumed 10% irrigation reduction from DIM installation, NPV's are only **positive** for accounts with more than **80 inches** of applied irrigation.

• For **20,000** square feet of CII landscape area, and an assumed 10% irrigation reduction from DIM installation, NPV's are **negative** for **ALL** accounts regardless of the amount of irrigation water applied.



Graph 2: NPV comparison of 40,000 and 20,000 CII landscape area with variable applied landscape irrigation representing a 20% reduction in water use and one tie-in to the DIM

The following observations can be made from the data presented in Graph 2:

- For **40,000** square feet of CII landscape area, and an assumed 20% irrigation reduction post DIM installation, NPV's are **positive** for **ALL** scenarios of applied irrigation water.
- For **20,000** square feet of CII landscape area, and an assumed 20% irrigation reduction post DIM installation, NPV's are **negative** for **ALL** scenarios of applied irrigation water.
- For **20,000** square feet of CII landscape area, and an assumed 20% irrigation reduction post DIM installation, positive NPV's can be achieved for sites that apply more than **90 inches** of irrigation water.

Graphs 3 and 4 below compare the net present value in dollars over a **15-year** project life for two CII landscape areas of 20,000 and 40,000 square feet respectively and assuming an avoided cost of water of \$700. However, unlike Graphs 1 and 2, Graphs 3 and 4 assume two lateral tie-ins to the DIM. As the data shows, NPV's decline further when two-tie ins are considered in the economic analysis.

Graph 3: NPV comparison of 40,000 and 20,000 CII landscape area with variable applied landscape irrigation representing a 10% reduction in water use and two tie-ins to the DIM



The following observations can be made from the data presented in Graph 3:

- For **40,000** square feet of CII landscape area, and an assumed 10% irrigation reduction from DIM installation, NPV's are **negative** for **ALL** scenarios regardless of the amount of irrigation water applied.
- For **40,000** square feet of CII landscape area, and an assumed 10% irrigation reduction post DIM installation, positive NPV's can be achieved for sites that apply more than **100 inches** of irrigation water.
- For **20,000** square feet of CII landscape area, and an assumed 10% irrigation reduction from DIM installation, NPV's are **negative** for **ALL** scenarios regardless of the amount of irrigation water applied.

Graph 4: NPV comparison of 40,000 and 20,000 CII landscape area with variable applied landscape irrigation representing a 20% reduction in water use and two tie-ins to the DIM



The following observations can be made from the data presented in Graph 4:

- For **40,000** square feet of CII landscape area, and an assumed 20% irrigation reduction post DIM installation, NPV's are **positive** for scenarios approaching **60 inches** of applied irrigation water.
- For **20,000** square feet of CII landscape area, and an assumed 20% irrigation reduction post DIM installation, NPV's are **negative** for **ALL** scenarios of applied irrigation water.
- For **20,000** square feet of CII landscape area, and an assumed 20% irrigation reduction post DIM installation, positive NPV's can be achieved for sites that apply well above **100 inches** of irrigation water.

Additional Theoretical Findings

The following additional findings are for scenarios evaluated at a **15-year** project life:

- There was only one iteration under which the NPV was **positive** for 3 lateral tie-ins: 40,000 square feet, 90 inches of annual irrigation representing a 20% irrigation reduction.
- All scenarios for 10 lateral tie-ins had a **negative** NPV and ranged from approximately \$36,000 to -\$47,000.

The following additional findings are for scenarios evaluated at a **20-year** project life:

- There was only one iteration under which the NPV was **positive** for a 20,000 square foot landscape: one lateral tie-in, 90 inches of annual irrigation representing a 20% irrigation reduction.
- Above 50 inches of applied irrigation water representing 20% irrigation reductions, NPVs were **positive** for 3 lateral tie-ins for 40,000 square feet of landscape area.

Supplier CII-DIM Feasibility Results

In total, forty-eight model iterations were completed for two 20,000 square foot and 40,000 square foot CII landscapes for three geographically distinct water suppliers in CA. Select findings are summarized and presented in Graphs 5 -10 below. See Table 5 for a breakdown of scenarios presented in each of the graphs (see Appendix B for additional graphs).

Graph No.	Provider	10% Reduction	20% Reduction	1 Lateral	2 Lateral
5	Northern Coast	✓		✓	
6	East Bay	\checkmark		✓	
7	Southern Coast	\checkmark		✓	
8	Northern Coast		\checkmark	✓	
9	East Bay		\checkmark	\checkmark	
10	Southern Coast		\checkmark	\checkmark	

Table 5: Scenarios as presented in Graphs 5 - 8

A comparison of the approximate annual inches of irrigation applied *prior* to DIM installation to **20,000 square feet** of landscape area that would result in a positive NPV for splitting meters is presented in Table 6 below. The following conditions apply to these results:

- 15-year period
- One or two lateral tie-ins to the DIM
- **10 %** reduction in irrigation (since smaller sites tend to have less on-site water management).

Table 6: Comparison of annual applied MUM irrigation in inches on **20,000 square feet** of landscape area required to achieve a **positive NPV** for meter splitting with one or two lateral tie-ins to the DIM for different suppliers.

Agency	Landscape Area	1 Lateral	2 Laterals
Northern Coast	20,000 ft ²	>77 inches	>77 inches
East Bay	20,000 ft ²	>93 inches	>99 inches
Southern Coast	20,000 ft ²	*Never positive	*Never positive
Theoretical	20,000 ft ²	*Never positive	*Never positive

A comparison of the approximate annual inches of irrigation applied *prior* to DIM installation to **40,000 square feet** of landscape area that would result in a positive NPV for splitting meters is presented in Table 7 below. The following conditions apply to these results:

- 15-year period
- One or two lateral tie-ins to the DIM
- **20** % reduction in irrigation (since larger sites are more likely to have on-site water management).

Table 7: Comparison of annual applied MUM irrigation in inches on **40,000 square feet** of landscape area required to achieve a **positive NPV** for meter splitting with one or two lateral tie-ins to the DIM for different suppliers.

Agency	Landscape Area	1 Lateral	2 Laterals
Northern Coast	40,000 ft ²	>48 inches	>48 inches
East Bay	40,000 ft ²	>72 inches	>84 inches
Southern Coast	40,000 ft ²	*Never positive	*Never positive
Theoretical	40,000 ft ²	>100	>144

The differences in cost effectiveness between the three water suppliers analyzed is driven primarily by differences in their wastewater rates. In particular, the Northern Coast supplier has a relatively high variable wastewater charge, while the Southern Coast supplier has no variable wastewater charge, and the East Bay supplier falls in the middle. This translates into greater savings on customer water bills after meter splitting for suppliers with higher variable wastewater charges, and a correspondingly smaller incentive required from the supplier to meet the specified payback thresholds for the customer.

Secondary drivers for differences between the suppliers include the retail cost of water, the avoided cost of produced water, and the capital costs for meter splitting.

Graphs 5-7: NPV comparison of 40,000 and 20,000 CII landscape area for three CA water suppliers with variable landscape irrigation applied representing a **10% reduction** in water use and **one tie-in** to the DIM. Note that graphs are staggered to align the red threshold of positive NPV.



Graph 7: Southern Coast

Graphs 8-10: NPV comparison of 40,000 and 20,000 CII landscape area for three CA water suppliers with variable landscape irrigation applied representing a **20% reduction** in water use and **one tie-in** to the DIM. Note that graphs are staggered to align the red threshold of positive NPV.



Graph 10: Southern Coast

Discussion and Additional Considerations

We find that, in most of the scenarios examined for CII landscapes of 20,000 square feet, meter splitting does not appear to be cost effective from a pure avoided water cost perspective. That said, determining feasibility is always site and agency specific, and there are many factors that ultimately determine whether a project makes sense, including an agency's avoided cost of water estimates. Under the assumptions considered in this analysis, it appears that sites that are large (40,000 square feet and above), where splitting requires minimal construction on the customer side, and where irrigation water is reduced, meter splitting may be a cost-effective approach.

One of the largest uncertainties in the analysis presented here is around the amount of water saved when splitting a meter. Two scenarios were examined here: 10 and 20 percent reductions in irrigation water use. Exactly how large water savings are likely to be is unknown, but the consensus among experts consulted is that a 20 percent reduction is very large, and is very unlikely to occur just because of a meter split and the additional information on water demand that split metering provides to account owners. Expert opinion was that 20 percent savings would only be achievable through substantial additional investment on top of the meter split, such as the application of water budget-based rates, water management plans, or other best management practices. Further, the data presented in Tables 6 and 7 seem to suggest that some candidate sites for cost-effective DIM installation would require additional water savings beyond 10 or 20 percent in order to be considered efficient, based on the 50 inches of average annual plant water required in California for cool season turf with a plant factor of 1.0.

One way to provide empirical evidence for the amount of water savings that could be expected purely from DIM installation would be to look at studies on the effect of switching from unmetered billing to metered billing. This is an analogous situation in which account owners gain additional feedback about their water use in terms of information and prices. One could assume that meter splitting would probably have a smaller effect than the initial move from unmetered to metered because account owners subject to a meter split already have some feedback about their water use and are gaining only a proportional increase in the amount of information they have. Two studies from the UK provide some measurements of the water saved when moving to metered billing, with <u>one finding 22% savings¹</u> and <u>another finding 12.5% savings²</u>. If the assumption is correct that meter splitting (in the absence of additional BMPs) would result in lower savings than a switch to metered billing, then one can expect to see somewhat less than 12-22% savings, though exactly how much less is unknown. Note however, that this assumption is suppositional at best and additional data is necessary to confirm these assumptions.

¹ Ornaghi, C., & Tonin, M. (2021). The effects of the universal metering programme on water consumption, welfare and equity. *Oxford Economic Papers*, *73*(1), 399-422.

² Herrington, P. (2007). Waste not, want not, sustainable water tariffs. *World Wildlife Fund. Godalming. UK*.
Another area for further research would be into the value of additional benefits from having a DIM in place. The analysis here counts only two benefits: the value of avoided water costs, and the value of reduced runoff from overirrigation. There are several other benefits of DIMs not included because of the difficulty in quantifying their benefit. These include, but are not limited to:

- Compatibility with budget-based irrigation rates
- Easier enforcement of irrigation restrictions during a water shortage
- Compatibility with recycled water or other non-potable water products
- Increased standardization of CII customers for more accurate benchmarking and rate setting
- Increased accuracy and durability from the use of more appropriately sized meters.
- Other unforeseen benefits provided by better and more granular data

Finally, it is worth reiterating that the analysis here assumes that water suppliers will reimburse customers for one-time and recurring costs of DIM installation, up to the point where the conversion makes economic sense for the customer on a 5-year payback period. This is a largely untested assumption in reality, and it remains to be seen what sorts of mandates and incentives are likely to result in effective meter splitting programs.

APPENDIX A

Feasibility Tool Input Data for 3 California Water Agencies

Supplier Feasibility Tool Inputs

	Northern				Southern	
Tool Input	Coast		East Bay		Coast	
Discount Rate		2.50%		2.50%		2.50%
Useful Life		15, 20		15, 20		15, 20
Water Rate (HCF)	\$	4.74	\$	5.37	\$	3.59
Irrigation Rate/ Water Rate		96%		100		100%
Volume Sewer (HCF)	\$	11.31	\$	6.87	\$	-
% of Water Use		50%		50%		0%
DIM Volume Sewer (HCF)	\$	-	\$	-	\$	-
DIM Rate/ Water Rate	\$	-	\$	-	\$	-
Annual Sewer Reduction	\$	-	\$	-	\$	-
CII Annual Water Use (inches)		50, 70, 90		50, 70, 90		50, 70, 90
Overwatering %		10, 20		10, 20		10, 20
Landscape Area (square feet)		20K, 40K		20K, 40K		20K, 40K
SW benefit/ AF		\$0		\$0		\$20
Avoided Cost of Water	\$	1,000	\$	750		\$1,143
Agency Program Costs	\$	2,000	\$	1,500	\$	1,500
Agency Account Mgmt. Costs	\$	1,500	\$	1,000	\$	1,000
DIM size (inches)		1.5		1.5		1.5
Ave. daily DIM service fee		\$1.99	\$	4.03	\$	1.70
Annual backflow fee		\$139.00		\$121.95	\$	50.00
No. DIM installed		1		1		1
Bill reduction %		10%		10%		10%
Customer ROI %		20%		20%		20%
Meter installation fee	\$	2,475	\$	15,500	\$	1,095
Meter permits and inspection	\$	2,253	\$	-	\$	800
Backflow installation	\$	1,000	\$	-	\$	100
Discrete areas		1,2,3,10		1,2,3,10		1,2,3,10
Capital per discrete area tie-in	\$	5,000		5000	\$	10,000
Capital planning & mgmt.	\$	1,500	\$	500	\$	20,000

APPENDIX B

Model Results Presented in Graphs



1.) Theoretical CII-DIM Feasibility Analysis







2.) Northern Coast CII-DIM Feasibility Analysis











3.) East Bay CII-DIM Feasibility Analysis









4.) Southern Coast CII-DIM Feasibility Analysis







Nov. 24, 2021



Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

WUEStandards@water.ca.gov

RE: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch,

The Carlsbad Municipal Water District (CMWD) appreciates the opportunity to submit written comments to the California Department of Water Resources (DWR) on the recently released information on the water use efficiency standard. The CMWD covers an area of 20,682 acres, approximately 32 square miles, and provides potable and recycled water to most of the city of Carlsbad. Water users within CMWD's service area are residential, commercial, industrial, agricultural, and irrigation. In 2020, our residential water users accounted for 53% of total demands while commercial accounted for 12% of total demands.

In general, CMWD requests that DWR consider the resources needed to develop and implement the water use efficiency standards. The CMWD recommends that technical assistance and financial resources be made available to water suppliers. The CMWD offers you the following comments.

Guidance and Methodology

- 1. Provide technical assistance for calculating standard targets. This includes aiding in measuring landscapes for dedicated landscape meters.
- 2. Provide technical assistance for variance applicability and acceptance. CMWD may be eligible to apply for the following variances:
 - a. Significant landscaped areas with recycled water having high levels of total dissolved solids (TDS); and
 - b. Significant fluctuations in seasonal populations

Outdoor Residential Water Use Standard Draft Recommendations

- 1. The CMWD appreciates the increase of the proposed Evapotranspiration (ET) Factor from a 0.7 standard to 0.8, and the higher ET Factor for recycled and special landscape areas.
- 2. The ET Factor of 0.65 proposed for 2030 will not support healthy irrigation practices for many existing landscapes. At a minimum, the date for compliance with the lower ET factor should be shifted to 2035, or a later more appropriate date, to allow water suppliers and the state time to secure funding, build partnerships, and allow for technical advances needed for landscape retrofits.

Carlsbad Municipal Water District

5950 El Camino Real | Carlsbad, CA 92008 | 760-438-2722 | www.carlsbadca.gov

3. Due to existing irrigation equipment and the age of landscaping, 0.80 and 0.65 Evapotranspiration Adjustment factor (ETAF) will have a significant impact on the existing landscapes in our area. Much of the development in our area occurred prior to MWELO being implemented. Requiring the quick and complete replacement of this landscape will put an undue burden on our community. For communities like ours, CMWD asks that consideration be given to the age and makeup of existing landscapes and the ETAF be raised to keep our landscapes healthy and given our residents who have already reduced their per capita water use by 48%. At this point our underserved communities will bear the burden.

Commercial, Industrial, and Institutional (CII) Recommendations

- 1. DWR's proposed recommendation of 20,000 square feet as a threshold for mixed use meter conversion does not consider that dedicated meters do not guarantee water savings and is frequently not cost effective. Converting meters can also be infeasible and require significant on-site retrofits. The CMWD supports the alternative compliance recommended by the Association of California Water Agencies (ACWA). The ACWA proposal requires the conversion of meters only if they are irrigating more than an acre and using more water than the outdoor water use efficiency standard. It also allows an alternative compliance plan to reduce water use to meet the water use efficiency standard.
- 2. The CMWD also requests technical assistance for our agency as CMWD implements the proposed CII classification. Guidance on the businesses in each category will be needed and the CMWD also requests DWR recommend NAICS codes be made available to suppliers.

Thank you again for the opportunity to comment. If you require additional information, please contact Vicki Quiram, General Manager at 760-603-7307, <u>vicki.quiram@carlsbadca.gov</u>.

Sincerely,

Matt Hall

Matt Hall Carlsbad Municipal Water District Board President

cc: Scott Chadwick, Executive Director Geoff Patnoe, Assistant Executive Manager Paz Gomez, Deputy City Manager Robby Contreras, Assistant General Counsel Keri Martinez, Utilities Senior Engineer Mario Remillard, Meters and Customer Service Supervisor



Ronald Davis Director Division 1

Mark R. Emmerson Director Division 2

Jeff Nelson Director Division 3

November 23, 2021

Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 1416 9th St, Sacramento, CA 95814 WUEStandards@water.ca.gov

7837 FAIR OAKS BOULEVARD CARMICHAEL, CALIFORNIA 95608 TELEPHONE: (916) 483-2452 FAX: (916) 483-5509 Ron Greenwood Director Division 4

Paul Selsky Director Division 5

Cathy Lee General Manager

Subject: Water Conservation Legislation Comments - Provisional Outdoor Standard

Dear Water Use Efficiency Branch,

The Carmichael Water District (CWD) has reviewed the provisional outdoor standard (provisional standard), and appreciates the opportunity to provide written comments to the California Department of Water Resources (DWR). CWD recognizes the effort DWR has made in developing the provisional standard and the willingness to incorporate stakeholder feedback.

Although inroads have been made to develop an equitable and feasible provisional standard, CWD still has ongoing concerns that need to be addressed. CWD urges DWR to consider the following:

- The assumption of 0.8 irrigation efficiency (IE) in the provisional standard is not realistic for the community which CWD serves since it does not reflect real world IE in existing landscapes. In order to achieve an IE of 0.8, significant investment by CWD in education and incentives will need to be made, along with homeowner's individual investments in landscape upgrades. Even with these efforts, it remains unlikely that homeowners within Carmichael will be able to achieve an irrigation efficiency level that is difficult for even landscape professionals to attain. CWD agrees with the Regional Water Authority's (RWA) recommendation of an IE of 0.625 as presented in their October 22, 2021 comment letter. A 0.625 IE is reasonable, obtainable and progresses toward the state's goal of greater efficiency in urban water use.
- The challenges our residential customers face with irrigation and landscape performance issues
 related to efficiency improvements require extensive water user education, time commitment,
 and considerable financial investment. Our customers are enduring economic challenges from
 both the pandemic and hyperinflation, and CWD recommends that a more modest provisional
 standard be implemented at this time. CWD's housing stock consists of homes primarily built

before the establishment of the Model Water Efficient Landscape Ordinance (MWELO) in 1993. In fact, 89% of homes in Carmichael were constructed prior to 1990. Given that the provisional standard is based on the MWELO design standards, the majority of residential landscapes with the CWD service are at a disadvantage in reaching requirements presented in DWR's provisional standard. In order to aid in addressing this issue, CWD requests that the current provisional standard, a beginning ETF of 0.8 and an ETF of 0.65 by 2030, be changed to an ETF of 0.65 by 2035 or later. This would enable CWD and homeowners a more achievable timeframe to both budget for and implement programs necessary for modifications to current landscapes.

Like the majority of water suppliers in California, CWD does not have land use authority which . significantly impacts the ability to enforce the provisional standard. The only tool that is available to CWD would be financial incentives which itself would increase customer costs through higher rates to support incentive programs. State level funding must be considered within the contexts of implementing the provisional standard. Absent the ability to enforce parcel level requirements combined with nonexistence State funding, CWD faces additional hurdles in implementing the provisional standard.

In addition to the above concerns, CWD would like DWR to consider the potential adverse effects the provisional standard may have on beneficial landscape elements such as shade trees. Like many communities in California, Carmichael experienced a great loss of healthy trees during the recent droughts, due to cutbacks in outdoor water use. In an effort to reach the goals set in the provisional standard, homeowners are likely to repeat theses cutbacks leading to unhealthy landscapes and declining tree health. When setting the standard, DWR should include discussions on how to mitigate these potential adverse effects.

CWD appreciates your consideration of these comments. We look forward to continuing to work with DWR towards practical and balanced water efficiency standards.

Sincerely,

Cathy Lee

General Manager



COACHELLA VALLEY WATER DISTRICT

Established in 1918 as a public agency

GENERAL MANAGER Jim Barrett ASSISTANT GENERAL MANAGER Robert Cheng

ASSISTANT GENERAL MANAGER Dan Charlton

CLERK OF THE BOARD Sylvia Bermudez

November 23, 2021

Via Email WUEStandards@water.ca.gov

Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

Subject: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch:

Coachella Valley Water District (CVWD) welcomes the opportunity to provide comments to the California Department of Water Resources (DWR) on the recently proposed DWR recommendations on water use efficiency standards. CVWD serves approximately 300,000 residents in its 1,000 square-miles of service area ranging from the San Gorgonio Pass to the Salton Sea, mostly within the Coachella Valley area of Riverside County, including small areas within Imperial and San Diego counties.

In 2008, CVWD implemented budget-based tiered rates, which allow each individual property in our service area to have a personalized water use efficiency target. This is our strongest conservation tool. Subsequently, CVWD believes this approach toward Water Use Efficiency is both effective and equitable if the right data is used in the calculations.

CVWD looks forward to continuing to collaborate with DWR to address the following input prior to finalizing recommendations to the State Water Resources Control Board, and would like to extend an opportunity for DWR to visit or meet with our agency. This would allow an opportunity to review the landscape area measurement tools used to determine water budgets, and observe how using budget based tiered rates has been successful for the District. CVWD strongly supports that these standards be implemented successfully and is happy to offer its expertise in facilitating and realizing that success. CVWD is grateful to have participated in the various DWR working groups throughout this process.

We appreciate DWR's consideration of our input, as reflected in the revised Draft Outdoor Recommendations. CVWD respectfully submits the following comments on DWR's Water Conservation Legislation material:

• CVWD successfully uses dedicated irrigation meters (DIMs). CVWD would be supportive of a DIMs threshold. However, CVWD is supportive of a 40,000 square foot threshold based off the California Urban Water Conservative Council (currently known as the California Water Efficiency Partnership or CalWEP) recommendations. Recognizing that a recent analysis done by CalWEP and the California Data Collaborative shows that 40,000 square feet is economically feasible in most scenarios, but still fluctuates on an agency-by-agency basis.

Water Use Efficiency Branch Department of Water Resources November 23, 2021 Page 2

- CVWD has reservations about the way that Irrigable Not Irrigated (INI) areas were calculated for desert landscaping in the Landscape Area Measurement assessment, for example intentionally planted areas along driveways were considered INI. CVWD also has concerns over the rate of change from INI to Irrigable Irrigated (II) area, and the fact that INI does have some irrigation requirements. CVWD suggests that 20% of INI be considered for all user types. Landscapes change frequently; allowing for 20% INI will lead to greater accuracy over time.
- As referenced in the Association of California Water Agencies (ACWA) and California Municipal Utilities Association (CMUA) letter, CVWD would like to draw attention to the concerns related to irrigation efficiency being measured via design standards versus performance standards as identified in section B, item 3 and the last point of item 4.
 - DWR is recommending an irrigation efficiency (IE) of 0.8, which does not reflect what we have found during field studies and site audits, nor is it supported by irrigation manufacturer specifications. CVWD uses a 0.7 IE in its budget calculations and has found it to be successful.
 - Approximately 80% of California's housing stock was built prior to the establishment of MWELO in 1993, and these existing residential landscapes were not conceived or built to perform to the design standards found in MWELO. CVWD requests that DWR recognize the importance of this timeline. Of the 20 percent of homes that have been built since MWELO has been in place, typically MWELO only applies to developer installed landscaping, which is usually the front yard, and often not applicable to back-yards.
 - CVWD has strong concerns that DWR based the proposed Draft Outdoor Recommendations on MWELO design standards, rather than *the principles of MWELO* as directed in Water Code Section 10609.9. MWELO standards are intended for use in the technical design of landscapes, and are not performance standards. A number of factors affect actual landscape performance: the designs must be installed exactly to plan and landscapes must be maintained over time in order to achieve performance that is close to initial design. DWR has no enforcement authority to ensure that MWELO is implemented as intended.
 - It is inappropriate for DWR to propose an outdoor standard for water suppliers based on unenforced design standards over which they generally have no authority. The outdoor standard should be based on landscape performance standards, factoring in cost-effectiveness and implementation feasibility. The cost to upgrade the majority of existing landscapes into compliance with the MWELO technical design standards in order to be able to comply with the Draft Outdoor Standard far exceeds the cost-effectiveness to water suppliers and property owners.

- As mentioned in the ACWA/CMUA letter, CVWD would like to echo the comments made regarding the disproportionate effects of these standards on disadvantages communities found in Section B, item 5.
- CVWD has significant concerns with the revised Draft Outdoor Recommendations and the challenges that many agencies will incur to meet the initial evapotranspiration factor (ETF) of 0.8 and an ETF of 0.65 by 2030. Specifically:
 - CVWD is concerned with the intent of the gradual implementation of the ETF. At the time of the passage of AB 1668/SB 606, many agencies found issue with the Water Board's desire to have ongoing authority to adopt new water standards. The result of these discussions, codified in Water Code Section 10609(b)(4)(C), and also Section 10609.2, states that the legislation provided the Water board "one-time-only authority to the department and board to adopt water use efficiency standards" and any further "authorization to update the standards shall require separate legislation."
 - That being stated, CVWD opposes the proposed 0.65 ETF or other standards mentioned that go past the explicitly identified June 30, 2022 date in the legislation and abovementioned Water Code sections.

Coachella Valley Water District appreciates the opportunity to provide comments and looks forward to continued collaboration with DWR and the State Water Board to successfully implement *Making Water Conservation a California Way of Life*.

Additionally, CVWD has signed onto a letter by ACWA and CMUA, and is in support of their larger set of comments.

Please do not hesitate to contact me at (760) 398-2651, extension 2353, with any questions about this letter or its comments. Additional staff contacts are Jenna Shimmin, Conservation Manager, at extension 3405, or Victoria Llort, Government & Regional Affairs Coordinator, at extension 3564.

Sincerely,

Katie Evans Director, Communications and Conservation

 $\label{eq:scalar} K:\COMMLEGI\Victoria\Conservation\ Way of Life (SB 606 \& AB1668)\Letters\November 2021 File: 1150.112$



Christopher McKinney Deputy City Manager 201 North Broadway, Escondido, CA 92025 Phone: 760-839-4631 <u>cmckinney@escondido.org</u>

November 24, 2021

WUEStandards@water.ca.gov

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch,

The City of Escondido appreciates the opportunity to submit written comments to the California Department of Water Resources on the recently released information on the water use efficiency standard. Escondido is a full-service urban water supplier with over 26,000 connections. In general, we request that DWR consider the resources needed to develop the water use efficiency standard and recommend that technical assistance and financial resources be made available to water suppliers as they work to implement the proposed standards. We offer you the following comments.

Guidance and Methodology

- 1. Provide technical assistance for calculating standard targets. This includes aiding in measuring landscapes for dedicated landscape meters.
- 2. Our agency is not anticipating that we will require any variances at this time, but if that situation changes, we would request assistance in collecting the required data.

Outdoor Residential Water Use Standard Draft Recommendations

- 1. We appreciate the increase of the proposed ET Factor from a 0.7 standard to 0.8, and the higher ET Factor for recycled and special landscape area.
- 2. The ET Factor of 0.65 proposed for 2030 will not support healthy irrigation practices for many existing landscapes. At a minimum, the date for compliance with the lower ET factor should be shifted to 2035, or a later more appropriate date, to allow water suppliers and the state time to secure funding, build partnerships, and allow for technical advances needed for landscape retrofits.
- 3. Due to existing irrigation equipment and the age of landscaping, 0.80 and 0.65 ETAF will have a significant impact on the existing landscapes in our area. Most of the development in our area occurred prior to MWELO being implemented. Requiring the replacement of such a large amount of landscape will put an undue burden on our community. For communities like ours, we ask that consideration be given to the age and makeup of existing landscapes and the ETAF be raised to keep our landscapes healthy.

DWR Comment Letter November 24, 2021 Page 2

Commercial, Industrial, and Institutional (CII) Recommendations

- 1. DWR's proposed recommendation of 20,000 square feet as a threshold for mixed use meter conversion does not consider that dedicated meters do not guarantee water savings. Converting meters can be infeasible, can require significant on-site retrofits, and is frequently not cost effective. We support the alternative compliance recommended by ACWA. The ACWA proposal requires the conversion of meters only if they are irrigating more than an acre and using more water than the outdoor water use efficiency standard. It also allows an alternative compliance plan to reduce water use to meet the water use efficiency standard.
- We also request technical assistance for our agency as we implement the proposed CII classification. Guidance on the businesses in each category will be needed and we also request DWR recommend NAICS codes be made available to suppliers.

Thank you again for the opportunity to comment. If you require additional information, please contact Elisa Marrone, Environmental Programs Specialist, 760-839-4075 or <u>emarrone@escondido.org</u>.

Sincerely,

Chustopher W. M.K.

Christopher W. McKinney Deputy City Manager/Director of Utilities



8280 Willow Oaks Corporate Drive, Suite 630 | Fairfax, VA 22031 Tel: 703.536.7080 | Fax: 703.536.7019 www.irrigation.org

November 24, 2021

Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 1416 9th St Sacramento, CA 95814

Dear Water Use Efficiency Branch,

On behalf of the approximate 1,300 member companies of the Irrigation Association, we appreciate having the opportunity to comment on the California Department of Water Resources' proposed Water Use Efficiency Standard Recommendations. The IA is writing to provide information to DWR on the agency's assumed Irrigation Efficiency when calculating ETF, the revised recommendation that would implement a phase-in approach and the benefits of healthy landscapes to the residents of California and the natural environment.

The irrigation industry is at the cutting edge of developing technologies and practices that are designed to significantly reduce the amount of water used in landscapes across the United States, while ensuring that Americans continue to enjoy all the benefits that managed landscapes have to offer. The IA and industry partners work closely with water providers and government entities like the Environmental Protection Agency's WaterSense program to promote the most efficiency products to consumers.

The IA has long been supportive of efforts in California to improve irrigation efficiency and is generally supportive of the water budget-based approach these standards are intending to take. It is also clear that additional water reduction needs to take place in California as the state has gone in and out of major drought over the last several years.

IA and its members have worked closely with DWR as the Model Water Efficient Landscape Ordinance evolved over the past decades and was supportive of the California Energy Commission's rulemaking process to require pressure regulating spray sprinkler bodies. Each effort now provides significant water and energy savings across the state that reduces water use in the managed landscape while also allowing California's citizens to experience the benefits that healthy landscapes provide.

Irrigation Efficiency Assumptions

In the draft recommendation, DWR has utilized an assumed Irrigation Efficiency of 0.8 in their calculations to determine the 2023 and 2030 requirements. According to DWR documents, this is a blending of the MWELO design standard for both drip (.81 IE) and sprinkler (0.75) irrigation systems. MWELO, as created, is a design standard that new development must meet. In DWR's August 25, 2021, presentation to the OWRUS technical workgroup, DWR stated it "believe[s] IE of 0.80 is the right

number to use because the 2018 water conservation legislation is meant to promote more water use efficiency."

Since the ultimate ETF goal can be calculated by multiplying IE by the plant factor, there are in theory two paths that can be taken to get a water provider to the ETF goal: increase the overall irrigation efficiency across the water providers service area and/or reduce the plant factor or plant palette. Our first recommendation is to urge DWR to pursue a balanced methodology as it plans to meet the state's long-term water efficiency objectives that balances both irrigation efficiency and plant selection.

IE is "irrigation water beneficially used [by the plant] compared to the amount of irrigation water applied or supplied to the site."¹ In addition to the design characteristics of irrigation systems, there are number of other factors that significantly influence how much water can be beneficially used including the organic content of the soil, plant type, potential runoff, irrigation scheduling, sprinkler uniformity, and evaporation. Each can have varying degrees of influence on the theoretical irrigation efficiency of a landscape.

These factors do not include the efficiency of the actual irrigation system itself, which is where the MWELO design standard comes into play. The irrigation industry innovates, designs and manufactures products that apply targeted water to landscape as efficiently as possible. Irrigation contractors design and install the most efficient systems for a particular property. The property owner, however, is responsible for properly maintaining the system and managing the water schedule. As with all things, irrigation systems degrade over time and proper maintenance can play an increasingly large factor in the efficiency of the system. Even the most efficient irrigation systems cannot overcome a property owner that does not follow professionally prepared irrigation schedules or does not properly maintain and repair systems as needed.

IE is a complex figure, and each factor is interdependent of each other in a highly dynamic landscape system. The IA is concerned that DWR is oversimplifying IE when it uses the MWELO design standard of 0.8 IE to base its ETF calculation on and is therefore proposing an ETF based upon an unrealistic IE. Additional concerns are raised if DWR pegs IE to the MWELO design standard due to the uneven enforcement of MWLEO across jurisdictions in California.

The IA and its members stand ready to help property owners install, replace or retrofit their irrigation systems to meet any proposed standard. However, by utilizing an IE of 0.8, improving irrigation efficiency cannot offer a full solution for meeting this proposal. If irrigation efficiency can't reach 0.8, the changes to plant selection must make up the rest of the equation. While the IA is generally unbiased when it comes to plant selection, we must emphasize that an unrealistic irrigation efficiency built into the standard will ultimately lead to an increased need for landscape and planting modifications. This will be above and beyond what DWR built into their model as what should be expected because there will be the need to achieve an even lower plant factor that, when combined with real-world IE, will meet the proposed 0.8 ETF. IA encourages DWR to review the assumptions made in its draft standard and

¹ https://www.irrigation.org/IA/Advocacy/Standards-Best-Practices/Landscape-Irrigation-BMPs/IA/Advocacy/Landscape-Irrigation-BMPs.aspx?hkey=93b546ad-c87a-41b8-bf70-8c4fd2cff931

consider whether it should base its IE assumptions at a more achievable and realistic level that takes into account the multitude of factors that can ultimately influence an irrigation system's ability to provide water efficiency.

Phase-In Approach

The IA was pleased to hear that DWR moved towards a phase-in approach that recognizes the ability for water providers to improve their ETF as time moves forward. Water Providers have limited ability to directly impact their ETF because they currently lack enforcement authority on the landscape choices and irrigation systems within their service area. Phasing in the standard over several years gives water providers the needed time to implement targeted rebate and incentive programs that will affect their ETF.

Ultimately, whether an IE of 0.8 is used to calculate the ETF standard or a more realistic IE is used, this standard will require some property owners to make changes to their irrigation systems and/or plant modifications. We are concerned that this law places the responsibility to meet ETF standards on the water providers without additional financial support this change. This disconnect will only serve to undermine the goals of the standard and will make it difficult to achieve these standards. For water providers that have further to go to meet these standards, they may have limited financial resources to provide additional incentives without state support or may serve customers that lack the financial resources to make these changes.

While we understand that the underlying legislation doesn't change what authorities water providers can exercise or provide the financial resources to incentivize change, DWR should understand these limitations will ultimately affect the success of meeting these standards. The phase-in approach, however, is a positive change in the recommended standard that will help water providers meet the requirements. The IA would encourage DWR to conduct a thorough review of data on water use across the state before moving toward the next phase in the standard to ensure that original assumptions and plans have taken effect. As we approach 2030, if water providers are struggling to meet the current standards, we must reassess whether it makes sense to move to even more stringent standards.

Benefits of Healthy Landscapes

Healthy landscapes have a bevy of beneficial qualities to the environment and to the residents of California. Healthy plants produce oxygen, stabilize soil, filter stormwater, aid in groundwater recharge, sequester carbon and can help contribute to a lower heat island effect. Due to recent droughts, California has unfortunately seen a vicious cycle of drought, wildfires and soil degradation during heavy rain events leading to mudslides and other stormwater runoff calamities. While a healthy landscapes across the state will not solve all these problems, they can help mitigate them by helping keep the soil intact and limiting the soil loss during volatile weather events. As the wildland-urban interface continues to grow, healthy landscapes can also help alleviate the associated damage to life and property when wildfires do occur, ultimately making these communities more resilient.

Healthy landscapes also improve the quality of life by providing open space, recreational and business opportunities and enhanced property values to the local community. During the COVID-19 pandemic, we have all seen the benefit of being able to spend time outside in our natural environment. Research has shown that "greater land-cover greenness within a 250 m radius around a respondent's postcode was important in predicting higher levels of mental wellbeing."² The cooling effect of a healthy landscape also cannot be overlooked, with the average size lawn providing the equivalent of 9 tons of air conditioning, almost triple the capacity of the average home's air conditioning system.³ Urban areas with fewer grasses and landscape plants are 10 to 15 percent warmer than their rural neighbors.⁴

Regardless of plant selection, irrigation systems can efficiently provide the water a healthy landscape requires. The IA encourages DWR to review the underlying IE assumptions in this standard of a phased-in approach to changing ETF to ensure this regulation doesn't inadvertently lead to a reduction in healthy landscapes.

On behalf of the members of the Irrigation Association, we appreciate the opportunity to provide comments on the proposed Water Use Efficiency Standard Recommendations and we look forward to continuing to work together to promote efficient irrigation.

Sincerely,

Coleman Garrison Government and Public Affairs Director

CC: Deborah Hamlin, IA CEO

² https://pubmed.ncbi.nlm.nih.gov/33668228/

³ https://www.stma.org/eight-benefits-of-natural-grass/

⁴ https://bookstore.ksre.ksu.edu/pubs/MF2940.pdf

BOARD OF DIRECTORS: FRANK I. HILLIKER PETE JENKINS STEVE JOHNSON EILEEN NEUMEISTER STEVE ROBAK

November 24, 2021



BRETT SANDERS GENERAL MANAGER

> GREG MOSER ATTORNEY

DEXTER WILSON ENGINEER

WUEStandards@water.ca.gov

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch,

Lakeside Water District appreciates the opportunity to submit written comments to the California Department of Water Resources on the recently released information on the water use efficiency standard. Lakeside Water District is a small water district in east San Diego County serving a population of 35,500 through 6,950 meters. In general, we request that DWR consider the resources needed to develop the water use efficiency standard and recommend that technical assistance and financial resources be made available to water suppliers as they work to implement the proposed standards. Also we believe that multiple meters for residential lots is <u>not</u> a viable solution, as this proposed regulation will face significant opposition and protests. We offer you the following comments.

Guidance and Methodology

- 1. Provide technical assistance for calculating standard targets. This includes aiding in measuring landscapes for dedicated landscape meters.
- 2. Our agency may require a variance for all lots less that than 10 acres and will require assistance in collecting the required data.

Outdoor Residential Water Use Standard Draft Recommendations

- 1. We appreciate the increase of the proposed ET Factor from a 0.7 standard to 0.8, and the higher ET Factor for recycled and special landscape area.
- The ET Factor of 0.65 proposed for 2030 will not support healthy irrigation practices for many existing landscapes. At a minimum, the date for compliance with the lower ET factor should be shifted to 2035, or a later more appropriate date, to allow water suppliers and the state time to secure funding, build partnerships, and allow for technical advances needed for landscape retrofits.
- 3. Due to existing irrigation equipment and the age of landscaping, 0.80 and 0.65 ETAF will have a significant impact on the existing landscapes in our area. Most of the development in

our area occurred prior to MWELO being implemented. Requiring the replacement of a significant portion of the community's landscape will put an undue burden on our property owners. For communities like ours, we ask that consideration be given to the age and makeup of existing landscapes and the ETAF be raised to keep our landscapes healthy.

Commercial, Industrial, and Institutional (CII) Recommendations

- 1. DWR's proposed recommendation of 20,000 square feet as a threshold for mixed use meter conversion does not consider that dedicated meters do not guarantee water savings and is frequently not cost effective. Converting meters can also be infeasible and require significant on-site retrofits. We would support alternative compliance which requires the conversion of meters only if they are irrigating more than 1.5 acres and using more water than the outdoor water use efficiency standard. It also allows an alternative compliance plan to reduce water use to meet the water use efficiency standard.
- 2. We also request technical assistance for our agency as we implement the proposed CII classification. Guidance on the businesses in each category will be needed and we also request DWR recommend NAICS codes be made available to suppliers.

Thank you again for the opportunity to comment. If you require additional information, please contact me at 619-443-3805.

Sincerely,

ett Insdan

Brett Sanders General Manager Lakeside Water District BrettS@LakesideWater.org

Appendix A

Recommended Alternative: CII Mixed Use Meter Conversion Requirements

Step 1: Water suppliers to locate and identify all MUM and associated parcels.

Deliverable: Provide list of MUMs and size of associated parcels to DWR by 2028.

Step 2: Water suppliers to measure the landscape area for all MUM parcels > 3 acres.

Deliverable: Provide associated lanscape area to DWR by 2027.

Step 3: Water suppliers, using Step 2 data, identify MUM irrigating > 1.5 acre (Threshold MUMs). Compare esimated outdoor water use to the outdoor WUE standards.

Deliverable: Provide a list of Threshold MUMs and comparison of outdoor water use to outdoor WUE standards by 2035.

•Step 5: Water supplires report annually on Threshhold MUMs outdoor water use compared to outdoor WUE standard and progress towards compliance for MUMs not meeting standard.

Deliverable: Report to DWR annually after 2035.

Step 4: Water suppliers to develop Compliance Plan for Threshhold MUMs irrigating > outdoor WUE standard. Compliance plan should identify how water supplier will convert MUMs to DIMs, or work with customer to reduce water demand to meet efficiency standard by 2040.

Deliverable: Provide Compliance Plan to DWR by 2035.

Threshold for MUMS:

Parcel > 3 acres and Irrigating > 1.5 acre

Abbreviations:

MUM = Mixed use meter

DIM = Dedicated irrigation meter

WUE = Water use efficiency
Eric Garcetti, Mayor



BUILDING A STRONGER L.A.

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Martin L. Adams, General Manager and Chief Engineer

November 24, 2021

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

Dear Water Use Efficiency Branch,

Subject: Final Recommendations for Residential Outdoor and Commercial, Industrial, and Institutional with Dedicated Irrigation Meters Outdoor Standards, CII Classification System, and the Guidelines and Methodology

The Los Angeles Department of Water and Power (LADWP) appreciates the opportunity to provide comments to the California Department of Water Resources (DWR) on the Final Recommendations for Residential Outdoor and Commercial, Industrial, and Institutional (CII) with Dedicated Irrigation Meters (DIM) Outdoor Standards (Recommended Standards), CII Classification System (Classification System), and the Guidelines and Methodology (Guidelines). The Recommend Standards, Classification System, and Guidelines provide the basis, scope and final recommendations for implementation to the State Water Resources Control Board (SWRCB), which resulted from the public stakeholder process.

LADWP has significant concerns with the Recommended Standards, Classification System, and Guidelines, particularly concerning the methodology, timelines, achievability, and reporting requirements recommended. Our concerns and comments for each of these items are highlighted below, but we would also like to emphasize the limited opportunity for review and input stakeholders have had throughout the development of said items with infrequent stakeholder meetings and the limited timeline from DWR Final Recommendation proposals to comment submission deadline. Mr. Bailey Page 2 November 24, 2021

Residential Outdoor Standard

Residential Data Review

LADWP received the Residential Landscape Area Measurement (LAM) dataset from DWR on February 19, 2021, which contained over 580,000 residential parcels. LADWP reviewed the large dataset to the best of its ability, given the relatively short amount of time to review and the size of the dataset, and provided comments and revisions to DWR by the deadline of June 30, 2021. LADWP has not received the revised dataset and takes great concern with DWR recommending a standard based upon data that may contain many errors and not reflect the reality of LADWP's service area. LADWP is also concerned with similar circumstances being experienced by other urban retail water suppliers (suppliers), yet the Residential Recommended Standard is still moving forward to the SWRCB without suppliers being provided any feedback on their comments in June of 2021 from the initial LAM dataset provided by DWR.

Furthermore, the Residential Recommended Standard requires additional DWR provided information such as the reference evapotranspiration and effective precipitation. DWR references the California Irrigation Management Information System (CIMIS) and California Simulation of Evapotranspiration of Applied Water (Cal-SIMETAW) datasets, but has not elaborated on the values or methodologies to be used by suppliers. For instance, LADWP's service area has multiple reference evapotranspiration (ETo) zones ranging from approximately 39 inches per year to 47 inches per year, according to historical CIMIS data. This data is critical in determining a supplier's water use objectives, but has not been specifically identified by DWR, nor discussed with stakeholders on the methodology for implementation.

- LADWP requests that DWR provide all suppliers with their final LAM dataset for review prior to providing final recommendations to the SWRCB so suppliers have an opportunity to understand how comments on the initial LAM dataset will be addressed by DWR in the development of the residential Recommended Standard.
- LADWP requests that DWR provide the methodologies and data for determining the Reference Evapotranspiration and Effective Precipitation and requests that additional time be given to review these methodologies and data prior to providing final recommendations to the SWRCB in order to evaluate proposed impact and provide meaningful stakeholder feedback to DWR prior to adoption and rulemaking.

Mr. Bailey Page 3 November 24, 2021

Proposed Evapotranspiration Factors and Schedule for Residential Recommended Standard

On November 15, 2021, DWR published the Residential Recommended Standard to the working group members and held a public workshop on November 16, 2021. DWR proposed near- and long-term evapotranspiration factor (ETF) values of 0.8 from 2023 to 2030 and 0.65 after 2030.

Overall, LADWP supports the need for strong water conservation efforts, especially in light of climate change impacts on water resources and is committed to advancing water conservation throughout its service area. LADWP targets the outdoor water use category as the next frontier for water conservation potential savings for our customers. Hence, LADWP supports DWR's recommendation of a milestone-based approach to the Residential Recommended Standard and the proposed ETF value of 0.8 as a near-term standard. However, the proposed long-term standard of 0.65 ETF will be a challenge to achieve within a seven-year timeframe as recommended. The LADWP Water Conservation Potential Study (WCPS) identified that in the single-family and multi-family residential sector, approximately 83% and 75% of landscapes, respectively, have nonconserving irrigation. Through 2035, the WCPS identifies maximum cost-effective potential savings for landscape irrigation improvements in the single- and multi-family sectors to be 43% and 23% of the total sector savings, respectively. It is important to note that the scenario of the WCPS requires maximized customer participation in LADWP's water conservation programs through 2035. Additionally, when compared to water savings from indoor water fixture replacement, outdoor savings take additional time for achievement given not only implementation timing, but also establishment periods required for droughttolerant landscaping to succeed through prolonged dry periods similar to those California is experiencing now.

Although there is no descriptive date for long-term compliance, setting long-term compliance at a further time horizon would allow suppliers to adequately implement optimized and cost-effective customer programs to achieve the long-term objective. It is key to keep in mind that the outdoor sector is a more capital-demanding area and implementation of water conservation measures will take not only time, but also additional resources to provide equitable access. Although LADWP has aggressive rebates and incentives available to its customers, the accelerated pace of implementation for long-term compliance may require additional investments on the supplier side.

Similarly, by requiring long-term compliance over a reduced timeline, customers may not be financially able to implement the necessary conservation measures even with suppliers' rebates and incentives. Furthermore, there is a potential for disadvantaged communities to be directly affected because of constraining economic factors leading to deteriorated and diminished green spaces. The rebates and incentive programs provided by water suppliers usually require the customer to perform the landscaping/conversions themselves before Mr. Bailey Page 4 November 24, 2021

receiving any benefits. This puts disadvantaged communities in a position where they cannot participate in these incentive programs because they do not have the up-front resources needed to start the process. Given the potential economic burdens that customers and suppliers' water conservation programs may face, the State may alleviate impacts through an annual water use efficiency grant program to supplement water conservation programs or financial relief directly to customers.

- LADWP recommends that DWR maintain the proposed ETF values for the Residential Recommended Standard, but extend the long-term compliance deadline until 2035, at a minimum.
- LADWP recommends that the DWR consider establishing a financial mechanism to supplement suppliers' water conservation programs and/or provide relief directly to customers that implement outdoor water conservation measures.

New Development Data Requirements for Residential Sector

On November 16, 2021, DWR held a public workshop describing the Residential Recommended Standard, introducing a new component of the standard centered on new developments and suggesting an ETF of 0.55 to align with the current version of the Model Water Efficient Landscape Ordinance (MWELO) applicable to new developments post-2019.

The new development component of the Residential Recommended Standard has not had an adequate public process since first being introduced to stakeholders in mid-November 2021. To date, there has not been any clarifying information from DWR on data needs and requirements for this new development category, nor acknowledgement of long-term supplier burden such as parcel-level MWELO compliance verification. Hence, the impact and contribution of the new development component of the Residential Recommended Standard to the overall Urban Water Use Objective cannot be properly assessed at this time. Stakeholder input must be considered before the new development component is provided to the SWRCB as part of the Residential Recommended Standard.

 LADWP recommends postponing the incorporation of the new development component of the Residential Recommended Standard until adequate stakeholder engagement process is completed. Mr. Bailey Page 5 November 24, 2021

CII with DIM Outdoor Standards

Proposed Evapotranspiration Factors and Schedule for CII with DIM Recommended Standard

Similar to the Residential Recommended Standards, DWR published the CII with DIM Recommended Standard to the working group members on November 15, 2021 and held a public workshop on November 16, 2021 proposing near- and long-term evapotranspiration factor (ETF) values of 0.8 from 2023 to 2030 and 0.65 after 2030. The CII with DIM public process has not been as robust as the residential LAM counterpart. It is important to note that LADWP is currently in the process of developing the CII with DIM LAM dataset required to evaluate the CII with DIM Recommended Standard. Therefore, the impact and contribution of the CII with DIM Recommended Standard to the overall Urban Water Use Objective cannot be properly assessed at this time, nor has there been appropriate stakeholder input provided.

However, as mentioned before, LADWP supports the need for strong water conservation efforts and supports DWR's recommendation of a milestone-based approach to the CII with DIM Recommended Standard and the proposed ETF value of 0.8 as a near-term standard. The proposed long-term standard of a 0.65 ETF will be challenging to achieve within the planned seven-year timeframe. Through 2035, the WCPS identifies maximum cost-effective potential savings for landscape irrigation improvements in the CII sector to be approximately 15% of the total sector water savings. It is important to note that the scenario of the WCPS requires maximized customer participation in LADWP's water conservation programs through 2035. Similar to the Residential Recommended Standard, the CII with DIM Recommended Standard would require additional time and resources to motivate customers to participate in the available water conservation programs to achieve the level of reduction required by the long-term standard.

As of FY 2020-21, there are approximately 2,800 DIMs within the LADWP service area, encompassing 655 CII accounts. As a result, there will be challenges associated with verifying the status and measurement of the associated landscape for LADWP CII accounts with DIM, which is still in progress. Furthermore, customer account management and in field-verification of CII with DIM LAM will be resource-intensive, especially for the narrow compliance window proposed by the CII with DIM Recommended Standard.

Additionally, achieving the goals required in the standards will be hindered by customer non-participation. Section 3.1.2.1 of the CII with DIM Recommended Standard states that achieving the goals of the standard will require coordination between various parties, including property owners and building managers. It is likely that some customers will face significant challenges in meeting outdoor water use limitation requests, unless there is a legal obligation that requires them to do so. For example, many businesses may not have the resources or personnel available to coordinate with a supplier on irrigation efficiencies

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and other outdoor best management practices as they work to comply with the operational requirements associated with COVID-19. As suppliers, we hold no authority to force our customers to participate in our programs. There must be enough time to allow suppliers to conduct these programs and the outreach needed for them.

- LADWP recommends that DWR maintain the proposed near-term ETF values of 0.8 for the CII with DIM Recommended Standard, but extend the long-term ETF value of 0.65 compliance deadline until at least 2035.
- LADWP recommends that the DWR consider establishing a financial mechanism to supplement suppliers' water conservation programs and/or provide relief directly to customers that implement outdoor water conservation measures.

New Development Data Requirements for CII with DIM

DWR introduced a new component of the CII with DIM Recommended Standard centered on new developments and suggesting an ETF of 0.45 to align with the current version of the Model Water Efficient Landscape Ordinance (MWELO) applicable to new developments post-2019. As mentioned above for the Residential Recommended Standard, there has not been adequate stakeholder engagement regarding the inclusion of new developments for the CII with DIM, which may present significant resource and data challenges.

 LADWP recommends postponing the incorporation of the new development component of the CII with DIM Recommended Standard until an adequate stakeholder engagement process is completed.

CII Classification System

DWR presented the final recommendation of the CII Classification System (Classification System) on November 17, 2021 in a public stakeholder meeting. LADWP acknowledges the importance of a consistent, statewide classification system of such a diverse sector in California. In general, LADWP supports the 19 categories proposed and the five-year implementation schedule indicated in Section 4.1 of the Classification System documentation. However, as identified in Section 4.2.1, jurisdiction of current data on CII occupancy/uses is typically not held by the supplier, but rather by land use authorities. A statewide policy should be established between suppliers and land use authorities to ensure coordination and delivery of relevant data.

Moreover, the intent of the Classification System is to provide insight and decision-making tools for suppliers. The Classification System has the potential to provide usage trends over time to show progress in program implementation. Currently, Section 4.3.1 suggests a review frequency of the Classification System of every other year. However, a longer

Mr. Bailey Page 7 November 24, 2021

timeframe for frequency of review would allow for a more robust trends establishment. A frequency of review every three years would provide a reasonable timeframe for trend establishment for account mapping.

- LADWP recommends the implementation of statewide policy to facilitate the data exchange between land use authorities and suppliers required for the performance measure.
- LADWP recommends revision of the frequency of account mapping to every three years.

Mixed-Use Meter Conversion Threshold and Schedule

On October 25, 2021, DWR held a public workshop presenting its recommendation of a 20,000 square foot landscape threshold to convert mixed-use meters (MUMs) into DIMs to be subject to the CII with DIM Recommended Standard or subject to the in-lieu technologies performance measure.

Splitting a MUM is a resource-intensive best management practice (BMP) that allows customers and suppliers to have better access to their water usage by separating outdoor from indoor uses, but can be cost prohibitive and infeasible depending on each customer's unique system. However, implementation of this BMP would also require most suppliers to measure all landscaped areas for the CII sector. The recommended threshold itself is established without baseline data to support the rationale. Ultimately, a higher threshold of oneacre (43,560 square feet) of irrigated area for CII properties to be evaluated for MUM conversion would allow suppliers to identify and engage customers that may benefit in some form from MUM conversion, albeit with significant effort by suppliers.

Lastly, as mentioned earlier, MUM conversions are complex BMPs to implement, which the customer would be responsible to pay for. Providing ample time for suppliers to reach out, engage and work with customers on feasibility is necessary. A phased approach to MUM conversion should consist of identification of supplier MUM sites and associated irrigated area by 2024, an outreach plan for qualifying sites for conversion or in-lieu technology implementation by 2027, a MUM plan of implementation through 2035, and annual progress reporting.

As of FY 2020-21, there are approximately 5,210 CII accounts with MUM's that have a landscape greater than 20,000 square feet in the LADWP service area. If the threshold stays at this recommended level, there will be a greater number of qualifying accounts to convert than at a one-acre threshold. Thus, the lower 20,000 square foot threshold will take an extended amount of time and resources to complete the outreach, engagement, and conversion process for qualifying accounts. Even then, there is a strong possibility that customers will not want to cooperate, further delaying the timeline for meeting this

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requirement. Again, this process would become more streamlined if the threshold for MUM conversion were set to one-acre of irrigated area.

- LADWP recommends setting the threshold for MUM conversion to CII sites that are irrigating at least one acre and have a higher outdoor water use than the CII with DIM Recommended Standard.
- LADWP recommends that a phased compliance approach be considered for MUM conversion including MUM site and associated irrigated area identification by 2024, outreach plan for qualifying sites conversion or in-lieu technology implementation by 2027, and MUM conversion by 2035.

Guidelines and Methodology

DWR presented the outline of the Guidelines and Methodology (Guidelines) recommendations being developed on November 17, 2021 as part of the public stakeholder process. The Guidelines present data requirements for calculating the various objectives. In Section 4.2.6, the Guidelines present that the residential landscape area—both irrigable, irrigated and irrigable, not irrigated—is data provided by DWR. However, the Guidelines do not specify the frequency or responsibility of providing subsequent landscape area measurement (LAM) datasets, as was provided and commented on earlier this year.

DWR should provide the required frequency to update the Residential Recommended Standard, such as the LAM, to maintain consistency with the original LAM dataset provided by DWR to maintain the framework of the Residential Recommended Standard development process. LADWP recommends updated residential LAM datasets should be provided by DWR to suppliers at least every three years. Similarly, for the CII with DIM Recommended Standard, LAM datasets should be generated by suppliers every three years. However, additional data required for both the Residential Outdoor and CII with DIM Recommended Standards, such as the effective precipitation and reference evapotranspiration, should be provided on an annual basis for suppliers' calculation and reporting requirements.

Moreover, DWR has not provided suppliers with guidelines to perform the CII with DIM LAM assessments that would satisfy the regulatory requirements of the CII with DIM Recommended Standard. Given the nature of this type of assessment, the timeline to execute the CII with DIM LAM is dependent on the supplier's resource availability and definition of CII with DIM LAM scope. Hence, it is incumbent upon DWR to provide specifications and requirements needed as soon as possible for suppliers to fulfill the CII with DIM LAM assessment.

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- LADWP recommends that DWR continue to provide updates to the residential LAM data for the duration of the regulations at a three-year frequency and should propose a three-year frequency for suppliers to provide updates to the CII with DIM LAM data.
- LADWP recommends that DWR publish draft guidance for the CII with DIM LAM assessment for stakeholder input as soon as possible.

Conclusion

LADWP's mission is to support the vitality and sustainability of the City of Los Angeles by providing our customers and the communities we serve with reliable, high quality and competitively priced water services in a safe, publicly and environmentally responsible manner. Thus, LADWP recognizes the need for progressive water conservation efforts and regulations. However, there are several items associated with the recently released Final Recommendations that should be addressed prior to delivering the recommendations to the SWRCB. LADWP looks forward to continuing meaningful engagement and dialogue with DWR to develop an effective strategy and methodology to continue making water conservation a California way of life.

Should you have any questions, please contact me at (213) 367-4270, or Ariel Flores, Water Conservation Regulatory Supervisor, at (213) 367-9956.

Sincerely,

Teneme Milanty

Terrence McCarthy Water Resources Policy Manager

AF:tm

c: David Pettijohn, Water Resources Director Delon Kwan, Water Resources Assistant Director Ariel Flores, Water Conservation Regulatory Supervisor Ryan Bailey, Water Use Efficiency Branch Manager - DWR Sabrina Cook, DWR Water Use Efficiency Implementation Section Chief - DWR



THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Office of the General Manager

November 23, 2021

Mr. Ryan Bailey Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 1416 9th St. Sacramento, CA 95814

Dear Mr. Bailey:

Response to DWR's Draft Water Conservation Legislation Recommendations

The Metropolitan Water District of Southern California (Metropolitan) recognizes the efforts of the California Department of Water Resources (DWR) to draft the Water Conservation Legislation Recommendations (Draft Recommendations) for the State Water Resources Control Board (SWRCB) and Legislature. Metropolitan is supportive of the *Making Conservvation a California Way of Life* legislation, and is submitting comments focusing on the feasibility for urban water suppliers to comply with components of the Draft Recommendations along with other considerations that should be addressed before formal adoption.

The Outdoor Residential Water Use Standard (ORWUS)

Several stakeholders and urban water retailers expressed concern that an initial outdoor water use standard based on a supplier level evapotranspiration factor (ETF) of 0.8 declining to 0.65 by 2030 was unattainable. The implicit assumptions and methodology implied that most agencies are currently or will be within an achievable range for compliance. This proposed water use objective was based on assumptions for efficiency measures that may fall short of optimal performance due to human and mechanical factors.

Urban water suppliers will likely need to attain substantial turf replacement to meet these standards without sufficient financial resources or enforcement methods. Such levels of turf replacement would place a significant administrative and economic burden on urban water suppliers. In addition, the need to enforce turf replacement to achieve these goals would place a burden on underserved communities. DWR and SWRCB should revisit this concern or, at least, consider financial support for program implementation.

Variances

The proposed flexibility for urban water use suppliers to apply for variances is appreciated. However, agencies with lower technical or managerial capacity may lack the ability to conduct surveys and site assessments required to support a variance application. A streamlined process Mr. Ryan Bailey Page 2 of 2 November 23, 2021

would benefit both the urban water use supplier that applies for a variance and the State departments reviewing the requests.

In addition to refining the application requirements for variances, it is important that DWR and the SWRCB consider special uses of water cumulatively rather than individually with respect to the significance threshold required to obtain a variance. When assessed independently, a special use of water may fall just short of a significance threshold and may not capture the effects on an urban water supplier's demand. When all variances are assessed together, the extent of impact that special uses have on a supplier's demand become clearer to which a more accurate allowance may be appropriated to alleviate special uses on demand.

The CII Classification System

Creating a statewide CII classification system is a considerable undertaking given the variety of classifications that now exists within the billing systems of the State's nearly 400 urban water use suppliers. Many suppliers will have issues conforming to this system because they lack the necessary information to recategorize their CII customers. Urban water use suppliers generally do not have immediate access to documentation such as land-use records or business permits needed to confirm the correct category. This lack of information will also have consequences for maintaining the integrity of the CII classification system as changes in property ownership or business operations occur over time. We recommend that agencies classify properties with a design similar to the DWR proposal that works for their circumstances and submit it for approval.

In sum, Metropolitan appreciates DWR's efforts to develop the Draft Recommendations and recommends that DWR revisit the areas of concern that we raised before the standards are provided to the Legislature.

Very truly yours,

Brad Coffy

Brad Coffey / Manager, Water Resources Management

JAM:vsm

cc: T. Blair K. Donhoff K. Guerrero R. Jay B. McDonnell L. McPhail J. Morgutia



Street Address: 18700 Ward Street Fountain Valley, California 92708

Mailing Address: P.O. Box 20895 Fountain Valley, CA 92728-0895

> (714) 963-3058 Fax: (714) 964-9389 www.mwdoc.com

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Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 1416 9th St, Sacramento, CA 95814

Subject: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch,

The Municipal Water District of Orange County (MWDOC) appreciates the opportunity to provide comments to the California Department of Water Resources (DWR) regarding the Draft Water Conservation Legislation Recommendations presented by DWR on November 16 & 17, 2021.

MWDOC provides imported water service to 3.2 million residents through 27 retail water suppliers throughout Orange County. MWDOC also leads implementation of a broad variety of water use efficiency programs regionally, on behalf of our water agencies. The Water Code recognizes that our members, local urban retail water suppliers, have the primary responsibility of meeting standard-based water use targets. However, because of our regional role as an imported water wholesaler and lead agency implementing water use efficiency programs we are very concerned with the indoor standard, as proposed and wish to convey the following comments collaboratively, developed in partnership with our member agencies.

Our comments include significant areas of concern along with recommendations that make the standards more attainable, while ultimately meeting the proposed standards as well as responses to the four items DWR requested Discussion & Feedback on at the October 25 Standards, Methodologies and Performance Measures Workgroup Meeting.

Significant Areas of Concern include:

1. The Evapotranspiration Adjustment Factor (ETF) schedule is too aggressive for residential and commercial landscapes and should be extended, especially because the UC Cooperative Extension Study commissioned by DWR, concluded that existing large landscapes could not achieve an ETF of 0.65. To achieve the proposed ETF of 0.65 by 2030 will require significant investments in efficiency improvements of consumers' irrigation equipment, plant palate, knowledge and practices. Water agencies can influence and even accelerate efficiency improvements by offering incentive programs for things like Smart Irrigation Timers, Turf Removal, Low-Precipitation Rate Sprinkler Nozzles and Spray Irrigation Conversions to Drip Irrigation. In fact, MWDOC has been implementing these programs since 2004 (more than 17 years) and

we intend to continue implementation of these programs indefinitely but we are at the mercy of the customers to participate.

Using our Smart Irrigation Timer Rebate Program as an example, there is a substantial amount of time that is required to implement such programs. Since 2004, 17,542 single-family homes have participated in the Smart Timer Rebate Program. That represents 3.9% of the single-family homes in the MWDOC service area. That translates to 0.002% of single-family homes in the MWDOC service area per year of program implementation. We have only seen a small portion of homes participate in the Smart Timer Rebate Program.

Using our Turf Removal Rebate Program as another example, there is a substantial amount of time that is required to implement such programs. Since 2010, 10,096 single-family homes have participated in the Turf Removal program. That represents only 2.2% of the single-family homes in the MWDOC service area. That translates to 0.002% of the single-family homes in the MWDOC service area per year of program implementation. These homes have removed 10,080,823 square feet of turf grass at a total cost of more than \$63.8 million. MWDOC Turf Removal rebate incentives total more than \$38 million, excluding staff time to process rebates. With these significant investments of time and energy, we still have only seen a small portion of homes participate in the Turf Removal Rebate Program.

Orange County has demonstrated a unwavering commitment to offer all consumers a comprehensive menu of irrigation efficiency programs for more than 17 years, but these programs take time to implement and we cannot require consumers to participate.

We ask DWR to consider a more gradual, glide path, to ultimately land on an ETF of 0.65 as presented in the table below. At the November Workgroup meeting, DWR staff acknowledged that the proposed 0.65 ETF was considered to be the ultimate standard and maximum level attainable for landscape water efficiency. A more gradual glide path will allow for continually increasing water savings throughout the extended glide path and provide many more water suppliers an opportunity to effectively comply with the standard.

Year	Current DWR Proposed Standard	MWDOC Recommended Standard
2023	0.80	0.80
2030	0.65	0.75
2035		0.70
2040		0.65

2. The threshold for Converting Mixed Use Meters (MUM) to Dedicated Irrigation Meters (DIM) needs to be based on what is locally cost effective to avoid financial harm to urban water suppliers and MUM customers. As stated by DWR staff at the November Workgroup Meeting, the proposed threshold of 20,000 square feet of irrigated area is a straw proposal and intended to initiate stakeholder discussion and revision. It is MWDOC's opinion that the threshold should be based on what is cost effective to convert from MUM to DIM. The California Urban Water Conservation Council, now the California

Water Efficiency Partnership (CalWEP), developed a comprehensive economic model called the BMP 1.3 Mixed Use Meter Feasibility Worksheet that evaluates the cost effectiveness of these conversions. Results of this model are indicating that landscapes of one acre and larger start to become cost effective depending on the complexities of the site. As a result, we recommend the following:

- a. Urban Water Suppliers utilize the Mixed Use Meter Feasibility Worksheet (MUMFW) for metered service areas with one acre of irrigated area and larger. When the MUMFW shows it is cost effective, water suppliers will convert those sites to DIM. Agencies could start using the calculator on the largest sites, those most likely to be cost effective MUM to DIM conversions. Eventually, as they use the calculator to analyze smaller and smaller sites there will be a point of diminishing returns and the threshold at which site conversion is no longer cost effective. This approach allows for a systematic way of managing the effort and staff time to evaluate and prioritize MUM to DIM conversions.
- b. For sites less than one acre and for sites not shown to be cost effective to convert to DIM using the MUMFW, water suppliers will offer "equivalent Technologies" known to produce water savings. These technologies should include, but not be limited to, Smart Irrigation Timers, Turf Removal Rebates, Spray to Drip Irrigation Rebates, and Low Volume Sprinkler Nozzle Rebates.

Comments regarding DWR's requested October 25 Workgroup Meeting Discussion & Feedback items:

1. Can the CII-DIM standard be implemented on the same recommended schedule being proposed for the ORWUS? (0.8 in 2023 and 0.65 in 2030)

No, the schedule does not provide sufficient time for agencies to measure, review and finalize CII-DIM measurements by the end of 2023. Assuming the Water Board adopts the Standards by July, 2022, water suppliers will have less than 18 months to finalize measurements for all CII-DIMs and calculate their Water Use Objective. This is especially true for agencies with large numbers of DIMs. Smaller cities will have an especially difficult time due to their limited staffing and technical resources. Once measurements have been finalized, our member agencies have estimated that they will need approximately 6 months to compile and match their water use data to measured landscape area, and calculate their Water Use Objective.

We suggest a phased approach, such as measuring a minimum of 25 percent of CII-DIMs each year so that 100 percent of CII-DIMs are measured and included in the Water Use Objective within 4 years or by 2027.

Additionally, the ET adjustment factors for ORWUS and CII-DIM should be the same and scaled down on the same schedule to minimize confusion and simplify Water Use Objective calculations. We support the expanded definition of Special Landscaped Area (SLA), however Fuel Modification Zones at the urban and wildland interface should be added to SLA since they are required to be vegetated and irrigated for public safety and protection of property. Urban water suppliers can easily identify these areas by working with their local fire authorities who have already mapped these areas and conduct regular

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

inspections to ensure these fuel modification zones are being properly maintained.

2. As currently proposed, in-lieu technologies need to demonstrate increased water efficiency for CII outdoor landscape use and this can be accomplished with combining additional PMBs, procedures and practices. Any additions/subtractions/modifications to this view? Are there additional concepts of in-lieu technologies we should include in consideration?

Our observation is that the first option will be limited to a small but potentially growing number of agencies that have the political will of their governing boards to implement Budget-Based Rates.

The second option is feasible and could save water based on MWDOC's experience implementing our Landscape Performance Certification Program that included an irrigation audit and monthly performance monitoring. Water savings was achieved so long as the urban water supplier can maintain the appropriate contact information for the ever-changing critical parties, such as HOA Board members, property managers, and landscape maintenance contractors; we call these critical parties the loop of accountability and without their active participation, initial savings following intervention by the water provider is easily lost.

The last option, "Equipment replacement or retrofit for enhanced function and performance" is reasonable and the option that the majority of agencies can and are currently implementing. However, water agencies cannot require customer participation in these programs; it will be up to the consumers to voluntarily participate.

3. For meeting the CII DIM standard in the timetable specified, what assistance programs(s) may need to be in place?

We believe the following assistance will be very beneficial to the majority of urban water suppliers and help achieve compliance with the WUE Standards:

- a. Funding for:
 - i. Consultant services to build internal data gathering and warehousing in billing and GIS systems to help streamline annual reporting
 - ii. Technical Assistance which may include area measurement consultant services
 - iii. High resolution aerial imagery and LiDAR for mapping of DIM and MUM meters.
- 4. Should water use on exempt landscapes be reported as part of the CII-DIM or just documented in the Annual UWUO Report?

Since exempt landscapes are not included as part of the UWUO, there should not be a reporting requirement. Urban water suppliers will already be burdened with such a significant amount of detailed reporting annually, the State should not overly complicate or unnecessarily increase reporting requirements by including any sort of reporting on exempt landscapes.

Again, we appreciate the opportunity to provide comments regarding the proposed outdoor standards for CII and MUM landscape meters. Should you have any questions regarding these comments, I welcome phone calls at (714) 593-5008 or e-mail to <u>jberg@mwdoc.com</u>.

Sincerely,

Joseph Berg

Joseph M. Berg Director of Water Use Efficiency



November 24, 2021

Submitted via: <u>WUEStandards@water.ca.gov</u>

Standards, Methods, and Performance Measures Workgroup Water Use & Efficiency Branch Department of Water Resources 901 P Street Sacramento, CA 95814

Re: DRAFT Assessment of Provisional Urban Water Use Standards in Relation to SB X7-7 Statewide Target released by the Department of Water Resources at the Standards, Methods, and Performance Measures Workgroup Meeting on November 12, 2021, including DWR's recommended Outdoor Efficiency (ETF) Standard and the CII Classification System.

Dear Water Use Efficiency Team,

We appreciate the work that Department of Water Resources (DWR) staff and consultants have done to develop the indoor and outdoor efficiency standards and to assess the provisional urban water use standards in relation to the targets established under SBX7-7.

However, DWR's analysis of the provisional urban water use standards in its "DRAFT Assessment of Provisional Water Use Standards in Relation to SBX7-7 Statewide Target" (herein "DRAFT Assessment") <u>is inconsistent with Section 10609.2 (d) of the Water Code</u>. Additionally, the results of the Draft Assessment and related DWR documents indicate that DWR's provisional recommendations are inadequate and must be strengthened to comply with AB 1668/SB 606 (Making Conservation a California Way of Life, herein "Conservation Legislation).

The legislative intent of the Conservation Legislation is to *improve* urban water efficiency across California and to advance the state's goals to mitigate and adapt to climate change. <u>As</u> proposed by DWR, the provisional recommendations will encourage a return to less efficient water-use practices, wasting potable water supplies that are vital to the wellbeing of communities across the State.

Given the current drought and climate crisis facing California, it is vital that the State adopt strong forward-leaning standards that will ensure greater levels of water efficiency beyond that required by SBX7-7, which mandated a 20% reduction in statewide urban water use by 2020

and required retail water suppliers to set individual 20% conservation targets for 2020. We will face more severe droughts and hotter temperatures in the years to come, putting additional pressure on water resources. Robust water efficiency standards will help ensure that the state's potable water supplies are reserved for essential water uses like drinking water and watering shade trees -- not irrigation of non-functional turf.

We offer the following comments and recommendations:

Comments:

1. <u>DWR Misinterprets the "No Backsliding" Provision in AB 1668/SB 606</u>.

AB 1668/SB 606 includes critical legislative direction that the state set long-term water efficiency standards at a level designed to prevent water suppliers from backsliding from their 2020 water conservation targets required by SBX7-7. Specifically, Section 10609.2 (d) of the Water Codes states (emphasis added):

"The long-term standards shall be set at a level <u>designed</u> so that the water use objectives, together with other demands excluded from the long-term standards such as CII indoor water use and CII outdoor water use not connected to a dedicated landscape meter, would exceed the statewide conservation <u>targets</u> required pursuant to Chapter 3 (commencing with Section 10608.16)."

DWR provides its interpretation of what the Water Code section means on page 1 of the DRAFT Assessment: "DWR interprets WC Section 10609.2 (d) to mean that the urban water efficiency standards it recommends to the Water Board must result in statewide objective-based total water use that is less than the 2020 statewide cumulative daily per capita water use **target of 159 GPCD**."

Similarly, DWR explains in its DRAFT Recommendation for the Outdoor Residential Water Use Standard Recommendation, released 15 November 2021, what the Department means when it tests the "SBX7-7 requirement" established by AB 1668/SB 606. DWR writes that the tool they developed to assess the SBX7-7 "...compared the *statewide average objective based* <u>total</u> water use to the *statewide SBX7-7 target* [of 159 GPCD] for different time periods (2023, 2027, 2030)." DWR then asserts that "(t)he results show that the statewide objective based total water use is less than the SBX7-7 target and indicates that DWR's draft recommendations satisfy the SBX7-7 legislative requirement." (emphasis added)

DWR's interpretation is inconsistent with WC Section 10609.2 (d) because DWR relies on a single statewide cumulative target as its "threshold" for evaluating and setting the long-term efficiency standards. <u>But the Water Code clearly refers to conservation "targets</u>", **NOT** a single <u>conservation target</u>. Thus, DWR's assessment of the performance of the proposed long-term efficiency standards should be based on a comparison of each water supplier's water use

objective and its respective SBx7-7 2020 target <u>so that the standards result in each supplier's</u> <u>objective-based total water use being less than its individual daily per capita water use target</u> <u>set pursuant to SBX7-7</u>.

This distinction is vitally important to achieving the legislative goals set by AB 1668/SB 606. The Conservation Legislation intentionally moves beyond a "one size fits all" percentage reduction approach to water conservation that SBX7-7 embodied. The Legislation directs water suppliers to set individual objectives for their efficient water use that are customized to their local conditions AND that exceed their individual SBX7-7 conservation targets.

DWR also effectively concedes that its interpretation of the Water Code doesn't achieve the state's goals when it advises the reader on page 9 "...*not* to use the results in Tables 9 and 10 to estimate the number of suppliers expected to exceed their 2020 target under the provisional standards." DWR then states "Target exceedance is best assessed in terms of expected total use, not objective-based total use. This can be seen by noting that while up to 31% of suppliers have objectives greater than their 2020 targets, currently only 10% of suppliers have water use exceeding their 2020 target." (emphasis added).

Here, too, DWR's analysis and conclusions directly contradict the language in the Water Code that the standards be "designed" to exceed the SBX7-7 targets. Actual or "expected total" water usage by water suppliers has no bearing in DWR's proposed "Threshold Test." However, these data are useful in underscoring that actual urban water use today is more efficient than DWR's provisional long-term efficiency standards and that DWR's recommendations should be designed to promote greater efficiency and in turn, improve climate resilience.

2. <u>DWR's Recommended Standards Fail to Meet the "No Backsliding" Provision in AB</u> <u>1668/SB 606</u>.

Despite DWR's assertion that the performance of the long-term efficiency standards is "best evaluated based on a single statewide target," the DRAFT Assessment compares suppliers' objective-based total water use with their SBX7-7 targets. DWR's analysis found that 31% and 13% of suppliers have water use objectives <u>greater</u> than their 2020 targets before 2025 and after 2030, respectively. In other words, DWR's recommendations would allow many suppliers to increase their total water use to levels above their 2020 targets. It is noteworthy that DWR did not include variances and other adjustments in its analysis, which is likely to further increase the number of suppliers whose water use objectives exceed their individual 2020 conservation targets.

DWR's analysis sent via e-mail on 15 November 2021 clearly shows that <u>strengthening the</u> proposed outdoor residential efficiency standard would greatly reduce the number of retail suppliers whose objective-based total water use exceeds their SBX7-7 targets. For example, an indoor standard of 55 gpcd and an outdoor standard of 0.7 applied only to irrigable irrigated

lands would reduce the number of suppliers whose objective-based total water use exceeds their SBX7-7 targets from 31% to 17% before 2025.

Even with more robust standards, there may be suppliers whose objective-based total water use exceeds their SBX7-7 targets. More information is needed about which suppliers are affected and the drivers of these exceedances. Is it, for example, because the irrigable irrigated and/or irrigable non-irrigated landscape area estimates for a given supplier are too high? Is it because of some of the assumptions about tree canopy or other factors that would effectively increase the outdoor objective? Or, on the flipside, is it because their SBX7-7 target was very low, or because it excluded process water and recycled water? This information is needed to inform the final recommendation on where the state should set the water efficiency standards.

3. <u>DWR's Provisional Outdoor Long-Term Efficiency Standard Fails to Promote Climate</u> <u>Resilient Landscapes and Will Encourage Significant Additional Water Waste.</u>

Outdoor usage provides the greatest opportunity to save water and to make California communities more climate resilient. DWR's revised provisional outdoor water use standard are a significant step backwards and will result in more outdoor inefficiency and greater waste of potable water. This is especially problematic given that more severe droughts and hotter temperatures will put an upward pressure on outdoor water use. It is vital that DWR's long-term outdoor efficiency standards incentivize climate resilient landscapes, including reduced use of non-functional lawns and greater use of climate-appropriate plantings and shade trees.

DWR's revised provisional outdoor residential long-term standard <u>is inconsistent with its own</u> <u>studies</u> on actual outdoor water use. In addition, there are several assumptions embedded in the provisional standard that contribute to wasteful water use, including the failure to incorporate MWELO non-irrigation best practices, such as the application of mulch for healthy soils, use of climate appropriate plants, and improved tree irrigation practices. The effect of DWR's recommendations is to lock in irrigation of non-functional lawns and other landscapes that are not climate resilient.

At a July 2021 meeting, DWR proposed a provisional evapotranspiration factor (ETF) of 0.7. For clarity, the ETF is applied to net evapotranspiration (i.e., reference evapotranspiration minus effective precipitation) to adjust for plant composition and irrigation efficiency. DWR stated that its proposed ETF of 0.7 would apply to 100% of irrigable irrigated (II) area and 20% of irrigable not irrigated (INI) residential landscape area.

In response to retail suppliers' request, DWR then re-analyzed the landscape area measurement (LAM) data, resulting in an increase in irrigable irrigated (II) area. DWR's analysis shows that the increase in II area resulted in a <u>reduction</u> in mean ETF -- from 0.76 to 0.74 -- in the mean ETF. DWR did not provide data on the effect of adding 20% INI to the mean ETF, however, we note that the net effect of this <u>change would be to reduce the mean ETF further</u>.

Yet, at its October 25th workshop, DWR proposed **increasing** the provisional outdoor residential standard from 0.7 to 0.8 until 2030, at which time the standard would decline to 0.65. DWR also recommends that this new standard be applied to both II areas and 20% of INI areas consistent with the recommendation they made in July.

We offer the following recommendations for strengthening the outdoor standards:

- A. Outdoor Water Efficiency Standard (ETF) for Existing Landscapes: The outdoor standard should be based on the current mean ETF and should apply only to the irrigable irrigated area (II). DWR's current data shows that the current ETF for irrigated residential landscape is 0.74; that is the standard the state should adopt for 2025.
- B. **ETF for New Developments:** Over time, water suppliers will need to adjust the amount of II area in their water objectives to account for new development. The ETF for these new landscapes should be 0.55 based on the current MWELO requirements and consistent with the ACWA August 2021 recommendation. To adjust the estimate to account for new development, water suppliers should be required provide evidence from the required annual MWELO reports.
- C. Treatment of irrigable-not irrigated (INI) landscapes: We do not support inclusion of 20% of INI in the outdoor water use objective because it is based on weak and inconclusive data. For example, the data presented by DWR suggests only a weak correlation between ETF and the ratio of irrigated to irrigable area, with an R-squared of 0.13. Among other issues, there are few data points near the origin such that simply extending the line to the intercept is inappropriate.

Further, applying a relatively high outdoor standard, i.e., one based on II area, to the INI areas is inappropriate. We do not support inclusion of INI in the outdoor water use objective. However, should those areas be included, the mean ETF should be recalculated based on inclusion of these areas, and the outdoor standard for II and any proportion of INI included should be based on the recalculated mean ETF.

If there is a concern that the INI contains land that is in fact being irrigated, then the appropriate way to address this concern is for DWR to recommend a process by which water suppliers can document and request adjustments to the estimated landscape area to address any flaws in the current landscape data measurements.

D. Phased Step-Down of Outdoor Water Efficiency Standard for Existing Landscapes: We support ramping down the outdoor standard to encourage climate resilient landscapes for California. This is consistent with the approach taken for the indoor standard and is essential given the current drought and the mounting climate crisis. We do not support DWR's recommendations for these efficiency standards which are not consistent with the principles of MWELO. We recommend reducing the outdoor standard from the

current mean ETF (0.74) through 2025, 65% from 2025 to 2030, and 55% in 2030 and beyond.

4. <u>More Information is Needed about a Proposed Cap on Near Term Water Use</u> <u>Objectives.</u>

DWR has raised concern that some suppliers may need to significantly reduce their water use to comply with their water use objectives. Before recommending a cap on the required water use reductions, DWR needs to provide data on which suppliers are affected and why, whether the existing variance mechanisms can adequately address these concerns, and if not what the appropriate course for each supplier should be. We oppose the recommendation of a cap without adequate documentation of the problem.

5. <u>Commercial, Industrial, and Institutional (CII) Classification System Is Inconsistent with</u> <u>EPA ENERGY STAR Portfolio Manager.</u>

A consistent water-use classification system for the CII sector is essential for water planning and management across California. We strongly support development of a comprehensive classification system that covers the full range of water uses and users and is useful across water planning and management functions for water service providers and various levels of government. AB 1668/SB 606 requires the classification system to capture "significant uses of water," and we urge the state to develop a classification system that is broad enough to capture significant uses of water today and in the future.

At the 17 November 2021 workshop, DWR proposed a CII classification system consisting of 19 categories. We are supportive of a statewide classification system but urge the state to adopt the classification system used by the Environmental Protection Agency (EPA) in its ENERGY STAR Portfolio Manager. The Portfolio Manager is already used by 25% of U.S. commercial building space, and large building owners in California are required to use this classification system when reporting their energy use to the California Energy Commission. Moreover, the City of Los Angeles, in its Existing Buildings Energy and Water Efficiency Ordinance, requires privately-owned buildings that are 20,000 square feet or more (including commercial, residential, industrial buildings, structured parking, and condominium) to track and report whole-building energy and water use annually with ENERGY STAR Portfolio Manager.

Creating a new classification system used only by California water suppliers is unnecessary. Building on an existing classification system is sensible and could support future opportunities to assess, for example, the relationship between water and energy use. It could also support water suppliers in adopting ordinances like the City of Los Angeles.

6. <u>The Proposed Methodology for Calculation the Potable Reuse Credit is Unclear.</u>

We, along with representatives from WateReuse California, Irvine Ranch Water District, and Las Virgenes Municipal Water District, met with DWR consultants to present our agreed-upon proposal for the methodology to calculate the potable reuse credit. Based on the 17 November 2021 presentation and supporting materials, it is unclear whether DWR has adopted our proposal. We ask that DWR use our proposed methodology to determine the potable reuse credit.

In summary, we offer the following recommendations:

- Use a "threshold test" consistent with Water Code Section 10609.2(d) by comparing individual water suppliers' objective-based water use with their 2020 conservation targets.
- Design long-term water efficiency standards to ensure there is no backsliding from the 2020 baseline, consistent with Water Code Section 10609.2 (d). Evaluate supplier water use data to address core questions as to why some supplier water use objectives are not more efficient than their existing 2020 conservation targets.
- 3. Promote climate resilient landscapes by applying an outdoor standard equivalent to mean ETF solely to irrigable irrigated landscape areas and reducing the standard to 0.65 from 2025 to 2030 and 0.55 in 2030 and beyond.
- 4. Conduct additional analysis and provide more information to determine whether a cap on the near-term water use objectives is needed.
- 5. Adopt a CII classification system consistent with EPA ENERGY STAR Portfolio Manager.
- 6. Adopt our proposed methodology for calculating the potable reuse credit that was presented to DWR consultants on 2 September 2021.

As California faces more severe droughts and hotter temperatures, it is vital that the State adopt strong, forward-leaning water efficiency standards to reduce water waste and protect potable supplies for our communities. The future of our state, our people, our ecosystems, and our economy depend up on it.

Thank you again for this opportunity to provide comments.

Regards,

/S/ Heather Cooley

Heather Cooley Director of Research

Pacific Institute

/S/ Tracy Quinn

Tracy Quinn Director, California Urban Water Policy Natural Resources Defense Council

/S/ Martha Davis Martha Davis Davis Consulting

CC:

Eric Oppenheimer, Chief Deputy Director, State Water Resources Control Board

Kris Tjernell, Deputy Director, Integrated Watershed Management, Department of Water Resources

STEVE VAUS, Mayor BARRY LEONARD, Deputy Mayor CAYLIN FRANK, Councilmember DAVE GROSCH, Councilmember JOHN MULLIN, Councilmember

City of Poway



November 24, 2021

WUEStandards@water.ca.gov

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch,

The City of Poway appreciates the opportunity to submit written comments to the California Department of Water Resources on the recently released information on the water use efficiency standard. The City of Poway is a small agency located in the San Diego County region and supplies potable water to under 50,000 customers. As a small agency, we request that DWR consider the resources needed to develop the water use efficiency standard and recommend that technical assistance and financial resources be made available to water suppliers as they work to implement the proposed standards. We offer you the following comments.

Guidance and Methodology

- 1. Provide technical assistance for calculating standard targets. This includes aiding in measuring landscapes for dedicated landscape meters.
- 2. Our agency may require a variance for horse corals and special use landscaping and will require assistance in collecting the required data.

Outdoor Residential Water Use Standard Draft Recommendations

- 1. We appreciate the increase of the proposed ET Factor from a 0.7 standard to 0.8, and the higher ET Factor for recycled and special landscape area.
- The ET Factor of 0.65 proposed for 2030 will not support healthy irrigation practices for many existing landscapes. At a minimum, the date for compliance with the lower ET Factor should be shifted to 2035, or a later more appropriate date, to allow water suppliers and the state time to secure funding, build partnerships, and allow for technical advances needed for landscape retrofits.
- 3. Due to existing irrigation equipment and the age of landscaping, 0.80 and 0.65 ETAF will have a significant impact on the existing landscapes in our area. Most of the development in our area occurred prior to MWELO being implemented. Requiring the replacement of approximately 60% of our landscape will put an undue burden on our community. For communities like ours, we ask that consideration be given to the age and makeup of existing landscapes and the ETAF be raised to keep our landscapes healthy.

November 24, 2021 City of Poway Page 2

Commercial, Industrial, and Institutional (CII) Recommendations

- DWR's proposed recommendation of 20,000 square feet as a threshold for mixed use meter conversion does not consider that dedicated meters do not guarantee water savings and is frequently not cost effective. Converting meters can also be infeasible and require significant on-site retrofits. We support the alternative compliance recommended by ACWA. The ACWA proposal requires the conversion of meters only if they are irrigating more than an acre and using more water than the outdoor water use efficiency standard. It also allows an alternative compliance plan to reduce water use to meet the water use efficiency standard.
- 2. We also request technical assistance for our agency as we implement the proposed CII classification. Guidance on the businesses in each category will be needed and we also request DWR recommend NAICS codes be made available to suppliers.

Thank you again for the opportunity to comment. If you require additional information, please contact our Utilities Administrator, Jessica Parks at (858) 668-4703; jparks@poway.org.

Sincerely

Éric Heidemann Director of Public Works City of Poway



Sean Bigley, Chair Dan York, Vice Chair

Members

California American Water Carmichael Water District Citrus Heights Water District Del Paso Manor Water District El Dorado Irrigation District

Elk Grove Water District

Fair Oaks Water District

Folsom, City of

Golden State Water Company

Lincoln, City of

Orange Vale Water Company

Placer County Water Agency

Rancho Murieta Community Services District

Roseville, City of

Sacramento, City of

Sacramento County Water Agency

Sacramento Suburban Water District

San Juan Water District

West Sacramento, City of

Yuba City, City of

Associates

County of Placer

El Dorado County Water Agency

Sacramento Area Flood Control Agency

Sacramento Municipal Utility District

Sacramento Regional County Sanitation District

Regional Water Authority Building Alliances in Northern California

November 24, 2021

Water Use Efficiency Branch Department of Water Resources P.O. Box 942836 1416 9th St, Sacramento, CA 95814 WUEStandards@water.ca.gov

Re: Provisional SB 606 and AB 1668 Standards

Dear Water Use Efficiency Branch,

The Regional Water Authority (RWA) appreciates the opportunity to provide comments to the Department of Water Resources on the provisional SB 606 and AB 1668 standards. RWA is a joint powers agency representing 20 public water suppliers in Sacramento, Placer, El Dorado, Yolo, and Sutter Counties. RWA's mission is to "serve, represent and align the interests of regional water providers and stakeholders for the purpose of improving water supply reliability, availability, quality and affordability." To meet our mission, one of our primary functions is to aid our members in achieving the human right to water.

In addition to the comments submitted in our previous comment letter dated October 22, 2021, RWA urges the Department of Water Resources (DWR) to consider the following new comments:

- The proposed 0.65 ET Factor is inconsistent with DWR's findings presented at its • October 25, 2021, Standards, Methodologies and Performance Measures Working Group meeting stating "ETF of 0.7 is not supported" based on real-world data for existing commercial, industrial and institutional (CII) landscapes from several efficient water suppliers, and preliminary study data from UC Davis. While the data presented was for CII dedicated irrigation metered landscapes, residential landscapes are usually smaller, less likely to be professional managed and more difficult to irrigate efficiently, which combined typically produces poorer overall efficiency performance compared to CII landscapes. If 0.7 is not supported for CII landscapes, then it is certainly not supported for residential landscapes. We recommend replacing the proposed .65 ET Factor with a higher, more residential appropriate factor. We also recommend performing an assessment of existing/previous years' residential landscape budget compliance before any changes or ramping down of the budget calculation components are required.
- RWA supports ACWA's Commercial Outdoor Landscape Area with Dedicated . Irrigation Meters Standard and CII Classification Recommendations as outlined in their comment letter submitted on November 24, 2021.
- DWR staff presented information at the November 16th and 17th workshops showing that in almost all scenarios regarding the currently proposed standards, the state will

Tel: (916) 967-7692 Fax: (916) 967-7322 Citrus Heights, CA 95610 www.rwah2o.org

5620 Birdcage Street

Suite 180

exceed the goal of the SB 606/AB 1668 legislation to produce more savings than the SBx7-7 legislation. Therefore, it seems reasonable to incorporate the modifications RWA, ACWA and other suppliers are requesting in good faith as part of the state's requirement for public process.

- Lastly, RWA has attended numerous SB 606/AB 1668 standard related DWR public workshops over the last couple years and listened to feedback from a variety of stakeholders. Some common concerns have emerged across numerous stakeholder groups including:
 - Maintaining healthy landscapes is one effective strategy for mitigating climate change impacts such as urban heat island effect. There is shared concern that these provisional outdoor standards will lead to unhealthy landscapes and diminished tree health that will exacerbate, not mitigate, climate change.
 - For example, a California Natural Resources Agency report cites Sacramento lost 8% of it's tree canopy and another 11% were in poor condition after the 2021-2016 drought, during which outdoor watering was significantly reduced.¹
 - The provisional outdoor standards are not based on widely documented horticultural science findings. Stakeholders including RWA and ACWA have already submitted a variety of relevant and credible reports and research to DWR to document this concern.
 - The provisional outdoor standard will be difficult to implement by the average residential homeowner even with educational messaging and incentives. Stakeholders that regularly engage with the general public have provided a range of "on-the-ground" examples to support this concern.

Multiple stakeholder perspectives across the state including academia, tree centric non-profits, nurseries, water suppliers, irrigation professionals, and irrigation manufacturers are all echoing these same common concerns in their public comments because they are valid and need to be fully addressed by the state before the regulation can be successfully implemented. RWA, ACWA and others have already provided DWR with specific detailed recommendations on how to address these concerns.

We appreciate your consideration of these comments and are committed to collaborating with DWR and the State Water Board to successfully implement *Making Water Conservation a California Wayof Life*.

Sincerely,

in Pelee

James Peifer Executive Director Regional Water Authority

¹ California Natural Resources Agency. "Report to the Legislature on the 2012-2016 Drought." March 2021. Page 41. <u>https://drought.unl.edu/archive/assessments/CNRA-Drought-Report-final-March-2021.pdf</u>



24 November 2021

Department of Water Resources Water Use Efficiency Branch; <u>WUEStandards@water.ca.gov</u>

RE: Water Conservation Legislation Comments

Dear DWR and the Standards, Methodologies, and Performance Measures Workgroup:

ReScape is a nonprofit organization that educates about and advocates for a whole systems regenerative approach to landscaping that works in harmony with the natural world and addresses the changing environment. Our work advances our 8 Principles which conserve water, foster soil health, sequester carbon and protect valuable resources while reducing waste and preventing pollution. All qualification trainings include modules about MWELO compliance; we provide MWELO advanced workshops as well.

AB 1668 & SB 606 require DWR and the Water Board to develop recommendations for standards, performance measures, variances, guidelines, and methodologies for urban water agencies to adapt to climate change and longer, more intense droughts. This framework provides water use objectives by aggregating estimated efficient water use across water sectors (residential, landscape, CII). With that as DWR and the Water Board's core mission,

ReScape recommends the following for the revised outdoor residential water use standard for ETF:

- o 0.70 starting in 2025
- o 0.63 starting 2030
- o 0.55 starting in 2035
- Revisions to 2030 and 2035 ETF be made upon research and analysis of MWELO compliant landscapes and the conclusion that those objectives cannot be met.

Additional recommendations:

- o Include a penalty for non-compliance with MWELO.
- DWR provide resources and funding for urban water agencies, cities, and counties to help water customers use water more efficiently in their landscapes.

This recommendation is based on the following:

- The California constitution requires water to be used beneficially and efficiently.
- DWR states that longer, more intense droughts will occur, and urban water agencies need to adapt to these climatic events.





- Almost half of all urban water use goes to landscape irrigation and one percent of the State's electricity is used for this water.
- DWR has implemented water-efficient landscape and irrigation regulations based on best management practices since 1990 with no enforcement and little to no training and/or education.
- Since 2015, every city and/or county must adopt MWELO or a local ordinance that is at least as effective. Yet less than half are in compliance: 267 out of 542. This means cities and counties have failed to enforce these requirements that would ensure that new and renovated landscapes use water efficiently. And as a result, 169 (42% percent) of the urban water agencies identified by DWR as not able to meet their landscape water objective would by default need to "require MWELO landscapes" starting in 2025. This is plenty of time to enact, enforce and/or support regulations that have been in place for more than thirty years.
- o The Water Board has shown that even less agencies would be impacted by starting at 0.7.
- Urban water agencies have been aware of MWELO and have been required to implement Demand Management programs including water-efficient landscaping as part of their Urban Water Management Plans.
- Many water agencies across the state offer rebates and/or free training for water-saving irrigation and landscaping.
- DWR established the ETF at 0.70 based on MWELO principles and horticultural and irrigation standards. DWR staff are extremely knowledgeable and worked with experts in the landscape field to develop this formula.
- This residential landscape objective is just one part of the urban water agency's overall "water budget." They can choose to reduce water in other areas such as indoor or CII to make up the difference.

It is past time for the landscape industry, cities, counties, and urban water agencies to take regenerative and climate resilient landscaping and irrigation seriously to protect our valuable drinking water for beneficial use. Property owners must be educated on the importance of these types of regenerative landscapes and provided with tools and resources to properly design, install, maintain, and manage them. The lowering of the ETF is necessary to protect water supply availability and reliability in the face of known and impending climate events such as drought, flooding, and fires.

Respectfully,

milena fine

Milena Fiore, Executive Director ReScape



1008 General Kennedy Ave, Ste 210, San Francisco, CA 94129 info@rescapeca.org | 415.766.0191



November 24, 2021

Carlsbad Municipal Water District City of Del Mar City of Escondido City of National City City of Oceanside City of Poway City of San Diego Fallbrook Public Utility District Helix Water District Lakeside Water District Olivenhain Municipal Water District Otay Water District Padre Dam Municipal Water District Camp Pendleton Marine Corps Base Rainbow Municipal Water District Ramona Municipal Water District Rincon del Diablo Municipal Water District San Dieguito Water District Santa Fe Irrigation District South Bay Irrigation District Vallecitos Water District Valley Center Municipal Water District Vista Irrigation District Yuima Municipal Water District

MEMBER AGENCIES

OTHER REPRESENTATIVE

County of San Diego

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

Sent via email to: WUEStandards@water.ca.gov

RE: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch:

The San Diego County Water Authority (Water Authority) is a wholesale water supplier made up of 24 member agencies. Together, the Water Authority and its member agencies serve 3.3 million residents and sustain a \$253 billion regional economy through providing a safe and reliable water supply. Since the early 1990s, our community has invested in water use efficiency through a broad range of programs that include water saving devices, education, and outreach. We appreciate the enormous effort that the Department of Water Resources (DWR) has put into the development of long-term water use efficiency, and the willingness of your staff to meet with stakeholders and listen to our concerns. We have reviewed the current proposals put forth by DWR most recently and have the following comments.

Guidance and Methodology

We request that DWR recognize the resources needed to comply with the proposed legislation. Before meeting any water use efficiency targets, water suppliers must first collect information and calculate targets. This will include measuring landscape for dedicated irrigation meters, locating special landscapes and those irrigated by recycled water, and collecting data for specific applicable variances. To do this work, most water suppliers within our region are contemplating hiring new staff or using consultants to assist in calculating targets. This expense would be in addition to funding any resources needed to meet targets. We ask that any DWR recommendations include a recommendation for funding and technical assistance specifically for developing and verifying water use efficiency targets for individual water suppliers.

Outdoor Residential Water Use Standard Draft Recommendations

Thank you for considering water supplier comments about the use of a 0.7 ET factor. We appreciate that you are recommending a current ET factor of 0.8 and providing additional time for water suppliers to transform landscape to meet a lower factor of 0.65, but feel that the proposed time frame is not adequate, and request that the 2030 compliance date be pushed out to 2035 or later. We also ask that for water suppliers with a significant amount of landscape installed prior to any landscape ordinances being put into place, a higher ET factor of 1.0 or higher be used.

Water Use Efficiency Branch November 24, 2021 Page 2

Commercial, Industrial, and Institutional (CII) Recommendations

Converting mixed use meters and classifying commercial, industrial, and institutional water use is another area of concern to water suppliers in the San Diego region. Both these recommended best practices will be resource intensive with no immediate water savings benefit. We ask that DWR move away from the threshold of 20,000 sf for splitting mixed use meters and instead use the recommendation provided by The Association of California Water Agencies (ACWA). The state should provide NAICS codes for water supplier use and clarification about which business type is included in each classification. DWR should also recommend that technical and financial assistance be made available to water suppliers for completing these tasks. With no immediate water savings or other quantifiable benefits, it is difficult for projects like these to qualify for most funding opportunities.

In addition to the above comments, we strongly support an extended compliance deadline for water suppliers with water use significantly over the water use efficiency standards. Additional time will be required for water suppliers to develop and implement programs to reduce great amounts of water demand. We also support and participated in the development of the comments made by ACWA, California Municipal Utilities Association, and California Water Association.

Technical support and financial assistance will be key for the successful implementation of the conservation legislation, and we ask again that they be included in your recommendation. Thank you for all of your hard work in developing these recommendations. We appreciate your consideration of our comments. If you need any additional information or have any questions, please contact Elizabeth Lovsted at 858-522-6749 or elovsted@sdcwa.org.

Sincerely,

Kelley Gage

Kelley Gage Director of Water Resources



November 24, 2021

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

Sent via email to: WUEStandards@water.ca.gov

RE: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch:

Thank you for the opportunity to provide comments on the materials presented in the recent sessions on proposed Department of Water Resources (DWR) recommendations on methodologies for the State Water Resources Control Board (Board) to adopt water use efficiency standards. We appreciate the hard work and long hours that DWR staff and consultants have dedicated to this effort – which is a complex undertaking, given the diversity of California's climate zones and urban development patterns.

Fortunately, as the data presented by DWR at the November 12 session showed, existing use patterns are well below the 2020 statewide conservation target mandated by 2009's SB X7-7. As noted at that session, the 2020 SB X7-7 target is the minimum efficiency that must be achieved by the 2022 water use efficiency standards to be adopted by the Board. Within our own retail service area at San Juan Water District, 2020 use was 9% below our 2020 SB X7-7 target, and was 16% below 2013 use levels, which is also a comparison often used, that is related to the 2015 urban water conservation regulations. San Juan continues to be focused on assisting its customers to use water efficiently. We support the development of effective new standards that were statutorily authorized, are feasible, and that meet the goal of the 2018 conservation legislation of achieving at least the requirements of SB X7-7.

San Juan supports the comments provided by the Association of California Water Agencies, the California Municipal Utilities Association and the California Water Association, dated November 24, 2021. The comments provided below complement the comments from these associations and provide more detail on certain topics.

Intent of 2018 Legislation

The intent of the 2018 conservation legislation (AB 1668 and SB 606) was to ensure the efficient use of water in existing and planned urban development. See specifically Section

Directors Edward J. "Ted" Costa Marty Hanneman Kenneth H. Miller Dan Rich Pamela Tobin

> General Manager Paul Helliker

SJWD Comments to DWR on November 2021 Session Materials November 24, 2021

10609(a) of the Water Code. As DWR notes in its "Basic Framework for Setting the Residential Outdoor Standard" dated August 25, 2021,

"The 2018 water conservation legislation did not direct DWR to adopt policies to influence already installed plant palettes." (p. 9)

Given this direction from the Legislature, any proposed standards that would require retrofits of existing landscapes go beyond the scope authorized in the statute. Furthermore, water suppliers do not have the legal authority to mandate any such retrofits, so any such standards proposed by DWR that would require such retrofits will be unenforceable by water suppliers.

Future Changes in Standards

The 2018 legislation includes phased standards for indoor water use, starting with 55 gpcd, and dropping to 52.5 gpcd and 50 gpcd in 2025 and 2030, respectively. There is no authority provided in statute for DWR to propose, nor for the Board to adopt, any other phased standards – Section 10609.2 clearly states that the Board shall adopt by June 30, 2022 standards for outdoor residential use, outdoor irrigation of landscape areas with dedicated irrigation meters in connection with CII water use, and a volume for water loss. These standards are to be used by water suppliers to calculate by January 1, 2024 their water use objective, and then report annually thereafter on how their annual water deliveries comport with that objective. In fact, the Legislature explicitly reserved only to itself the authority to direct the Board to adopt any potential future changes to the 2022 standards–see Water Code 10609(b)(4)(C), specifying "one-time only" to adopt standards in 2022.

Not only is DWR's proposed 2030 Evapotranspiration Factor (ETF) of 0.65 unachievable, as further discussed below, it also fails to comport with the direction given by the Legislature to allow for a one-time only standard in 2022. DWR's rationale for the phased-in approach appears to be described on pages 3 and 4 of their document entitled "revised outdoor Residential Water Use Standard" dated October 21, 2021, including these statements:

"First, it reduces the number of suppliers that need to cut back outdoor water use and the amount by which they need to cut back starting in 2023... Second, the phase-in approach will address stakeholders' comment that the outdoor water use standard needs to ramp down over time as suppliers adjust their water use and make water conservation a California way of life."

As noted above, current water use already meets the goal defined in the 2018 legislation, so there is no basis for recommending a mandate for any water user to cut back even more starting in 2023, nor for proposing standards that ramp down over time. More importantly, such a ramp-down beyond the 2022 standards is not within the current statutory authority conferred on DWR and the Board by the Legislature.

Draft DWR Recommendation for Outdoor Water Use Standard in 2022

The Association of California Water Agencies (ACWA) and the California Municipal Utilities Association (CMUA) provided extensive comments about the proposed outdoor standards

SJWD Comments to DWR on November 2021 Session Materials November 24, 2021

for residential and commercial landscapes on August 17, 2021, specifically addressing the ETF proposed by DWR. Those comments remain germane to the latest revision proposed by DWR. Specifically, DWR's estimate of the efficiency of irrigation systems is significantly overstated, as evidenced by the many examples of field studies provided by ACWA and CMUA, which demonstrate that, even with newly-installed irrigation systems, efficiencies are 25-40% lower than estimated by DWR. ACWA and CMUA recommended that DWR revise its proposed ETF to 1.0, and that recommendation still pertains to the latest proposal by DWR of an ETF of 0.8 in 2022.

The practical consequence of DWR recommending and the Board adopting an outdoor standard based on an ETF of 0.8 would be that residential and commercial landscape customers of water suppliers would face the need to retrofit their landscapes to reduce their plant factors (e.g., install a combination of hardscape and drought-tolerant plants), which is costly to do, and which was never intended by the 2018 legislation. ACWA and CMUA are providing information in their current comment letter about the costs of such landscape retrofits, and the small amount of funding that water suppliers can justify offering for such projects.

Variances

DWR proposes a limitation on the use of variances, by defining the "material effect" to specify that each variance meet a minimum threshold of 5% of the supplier's water use objective before the Board should consider approval of the variance. There is no mechanism proposed by DWR for suppliers to combine the amounts of their variance requests such that the total additional supply provided by the variances would be greater than 5% of the use objective, even if the total requested by the variances far exceeds an additional 5%. Given that DWR has proposed to delete the uses for which variances are defined from the supplier's baseline calculation of its water use objective, this further limitation is arbitrary and unwarranted.

DWR also proposes to recommend that the Board not approve a variance request for ponds and lakes that sustain wildlife, unless the waterbody is required to be maintained "per regulatory requirement". This requirement, which is not proposed by DWR to be applied to other water features which are allowed to be included in baseline water use objectives, is also arbitrary and unwarranted – and could result in loss of important habitat value.

Thank you again for the opportunity to provide these comments.

Sincerely,

Paul Helliker

Paul Helliker General Manager

November 24, 2021

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch,

Santa Fe Irrigation District (SFID) appreciates the opportunity to submit written comments to the California Department of Water Resources on the recently released information on the water use efficiency standard. Established in 1923, SFID is a special district in northern San Diego County. We provide water and recycled water services to approximately 6,500-meter connections and an additional 1,000 fire meter connections, a requirement for the large lot size of approximately 2/3 of our service area. Most of our community is completely built out, and most homes were built prior to the 1990s. In general, we request that DWR consider the resources needed to develop the water-use efficiency standard and recommend that technical assistance and financial resources be made available to water suppliers as they work to implement the proposed standards. SFID is a small agency comprised of about 50 employees, and 85 percent of staff are operations and maintenance crews. Like other small agencies, we have one person responsible for our water-use efficiency standards, reporting and education, but their responsibilities also include a variety of other duties such as administering agriculture programs, school education, general outreach, and all communications across digital and traditional platforms. To meet the reporting requirements for these standards, SFID is evaluating the use of consultants as well as the addition of a fulltime position. This will be at a significant ongoing cost, which will be borne by our ratepayers. Affordability is a critical concern of our ratepayers, and as members of the community, our elected Board and staff work diligently to provide efficient services. We offer you the following comments:

Guidance and Methodology

- 1. DWR to provide additional technical assistance for calculating standard targets. This includes aiding in measuring landscapes for dedicated landscape meters.
- 2. Given the topography and nature of the SFID service area, our agency may require a variance for livestock, fluctuations in seasonal populations and water to supplement ponds and wildlife and will require assistance in collecting the required data.

Outdoor Residential Water Use Standard Draft Recommendations

- 1. We appreciate the increase of the proposed ET Factor from a 0.7 standard to 0.8, and the higher ET Factor for recycled and special landscape area.
- 2. The ET Factor of 0.65 proposed for 2030 will not support healthy irrigation practices for many existing landscapes. At a minimum, the date for compliance with the lower ET factor should be shifted to 2035, or a later more appropriate date, to allow water suppliers and the
state time to secure funding, build partnerships, and allow for technical advances needed for landscape retrofits.

3. Due to existing irrigation equipment and the age of landscaping, 0.80 and 0.65 ETAF will have a significant impact on the existing landscapes in our area. Most of the development in our service area occurred prior to MWELO being implemented. Requiring the replacement of approximately 2/3 of our service area landscape will put an undue burden on our community. For communities like ours, we ask that consideration be given to the age and makeup of existing landscapes and the ETAF be raised to keep our landscapes healthy. In addition, our community is a fire-prone area and landscapes need to be watered and maintained to a certain level, as required by the fire department, for safety reasons. We also have no enforcement capabilities to ensure our customers are meeting these requirements. MWELO standards are established by the County of San Diego, not the water agencies that report water use to the state.

Commercial, Industrial, and Institutional (CII) Recommendations

- 1. DWR's proposed recommendation of 20,000 square feet as a threshold for mixed use meter conversion does not consider that dedicated meters do not guarantee water savings and is frequently not cost effective. Converting meters can also be infeasible and require significant on-site retrofits. We support the alternative compliance recommended by ACWA. The ACWA proposal requires the conversion of meters only if they are irrigating more than an acre and using more water than the outdoor water use efficiency standard. It also allows an alternative compliance plan to reduce water use to meet the water use efficiency standard.
- 2. We also request technical assistance for our agency as we implement the proposed CII classification. Guidance on the businesses in each category will be needed and we also request DWR recommend NAICS codes be made available to suppliers.

Thank you again for the opportunity to comment. If you require additional information, please contact Teresa Penunuri, Public Communications Officer, at <u>tpenunuri@sfidwater.org</u>.

Sincerely,

aun

Albert C, Lau, P.E. General Manager Santa Fe Irrigation District



General Manager Brian C. Wright Executive Leadership Team Joe Horvath, Electric Utility Director/ AGM Shanna Kuhlemier, District Clerk Steven Poncelet, PIO & Strategic Affairs Director Michael Salmon, Chief Financial Officer Board of Directors Joseph Aguera Jeff Bender Christa Finn Tony Laliotis Kim Harris

November 24, 2021

Comment letter submitted via e-mail to WUEStandards@water.ca.gov

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch,

Truckee Donner Public Utility District (TDPUD) appreciates the opportunity to provide written public comment to the California Department of Water Resources (DWR) on the recently released Water Conservation Legislation material. Additionally, the TDPUD greatly appreciates the significant effort that DWR has undertaken to reach out to stakeholders through the working groups and the extensive public workshops held before the Thanksgiving holidays. TDPUD did provide some public input during the workshops and is following up with these written comments.

With regards to DWR's efforts to finalize recommendations to the State Water Resources Control Board (SWRCB), TDPUD has been working closely with the California Municipal Utilities Association (CMUA) and the Association of California Water Agencies (ACWA) to review and understand the impacts of the proposed regulations for Water Use Efficiency (WUE). TDPUD supports the efforts of CMUA and ACWA to work collaboratively with DWR and strongly encourage DWR, and eventually SWRCB, to consider the comments submitted on August 17, 2021 and November 24, 2021. The comments submitted by CMUA and ACWA represent the experience and input of hundreds of water agencies who are committed to help the State conserve water in a way that maximizes the benefits in the most efficient way.

In addition to supporting the comments of CMUA and ACWA, TDPUD would like to focus specifically on two key areas: the use of population to determine the indoor residential standard and the proposal for a 5% impact threshold on the overall WUE standard for a variance to be considered.

TDPUD has a long history of needing to address 'real population' against the full-time population often used by SWRC and DWR to determine efficient use. TDPUD's service territory full-time population is listed at a little over 16,000 but our actual population (or occupancy) is much higher. The main driver of this increase is the fact that TDPUD's customer base consists of over 60% second homes (seasonal residents). This number is well documented as TDPUD's electric utility includes a primary resident (P10) and secondary resident (S10) electric rate. The S10 rate is over 60% of TDPUD's residential customers. Amplifying this transient population is the dramatic increase in short-term rentals for both full-time and second-home owners due to alpine recreation and tourism. Furthermore, TDPUD has seen a dramatic





increase in full-time population during COVID-19, however the long-term impact is still unknown at this point in time.

TDPUD's actual 'real population' has previously been documented to the State during the previous emergency drought declarations when the mandatory drought conservation targets were provided to water utilities. TDPUD, based on an initial calculation of "official" full-time population divided by water production, was given the highest drought conservation target in the State of 36%. TDPUD, however, was able to document that our actual population (occupancy) when considering full-time plus transitory (i.e. Seasonal), is over 32,000 (a factor of 2X full-time population). As a result of this fact, the State reduced TDPUD's conservation target accordingly. Copies of TDPUD's comment letters regarding drought targets and population, along with the States acknowledgement of TDPUD's significant seasonal population, are available upon request.

Given that TDPUD's customer base is primarily residential, using full-time population to establish the indoor residential efficient use targets will again result in a dramatically inappropriate standard. TDPUD appreciates the current proposal to apply for variances, including for seasonal population, and will almost certainly be applying for the variance. It should be noted that, while TDPUD has some population data along with the State Department of Finance data, understanding true population will be a challenge for many water utilities with significant transient populations. DWR and SWRCB will need to invest in technical resources and support to make sure accurate information on real population is available.

TDPUD would also like to comment on the proposal for a threshold of 5% impact on the overall WUE standard to qualify for a variance. While we appreciate the desire to focus on significant variances and avoid the processing of small variances, TDPUD is concerned about the overall equity to a given class of customers if a significant variance (i.e. 25% or greater) in one of the four standards making up the overall WUE standard is not considered. For example, as documented above, TDPUD's seasonal population changes overall population by a factor of 2X. While unlikely that this variance would not impact the overall WUE standard by less than 5%, it would not seem fair to keep an existing standard if it was documented to have a significant impact on that component of the overall WUE standard. TDPUD would like DWR to consider individual variances, regardless of overall impact, if the variance for that class is significant.

We again thank DWR staff and Board for engaging with the water utilities and we are eager to work collaboratively to create an effective path to the efficient use of water. Please feel free to reach out to TDPUD's Steven Poncelet (stevenponcelet@tdpud.org) or myself if you have questions or if we can be of any assistance.

Regards,

Brian Wright General Manager Truckee Donner Public Utility District 530-582-3957, <u>brianwright@tdpud.org</u>

CC: Steven Poncelet, Truckee Donner Public Utility District





Andrea Abergel, California Municipal Utilities Association Chelsea Haines, Association of California Water Agencies







VALLEY CENTER MUNICIPAL WATER DISTRICT

A Public Agency Organized July 12, 1954

November 23, 2021

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

Subject: Comments on Water Use Efficiency Regulation Sent Via E-mail to <u>WUEStandards@water.ca.gov</u>

Dear DWR Water Use Efficiency Branch;

Though it was a very compressed timeframe, we appreciated the opportunity to comment on DWR's recommendations concerning the proposed Water Use Efficiency Regulations. We understand and appreciate that you have all worked very hard to manage an unimaginable workload, within an impossible timeframe, under tremendous pressure from all stakeholders.

As a retail water agency, we are committed to water stewardship and use efficiency. Our usage levels for 2021 are still more than 30% below where they were in 2013, the baseline for the 2014-2017 drought response. As recently documented in our 2020 UWMP, our usage is 60% of our SB X 7-7 target level. Even though we have an abiding commitment to water stewardship and improving water use efficiency, we have some serious reservations about many aspects of what is being recommended by DWR to the SWRCB, as follows:

Compliance with SB X7-7 and the Indoor Standards

Even with the current indoor standards it is projected that statewide, the new regulations will comply with SB X7-7. Then why is there a need to drive the indoor standards even lower, 55 gpcd, 47 gpcd, and 42 gpcd, prior to determining if the current statutory standards can be implemented and will be embraced by the public? Further, how can DWR recommend the lower standards prior to fully analyzing the economic impacts on homeowners as well as the operational impacts for water and wastewater agencies, as required by statute.

Legislative compliance with SB X7-7 coupled with the current statutory indoor standards, there is no compelling reason to further lower the indoor standards in the draconian fashion as proposed. The current statutory standards should be held in place to be evaluated for a reasonable period to time prior to contemplating and implementing lower standards.

UWUO – Accuracy of Data

Our GIS staff detected and submitted 3,800 requests to DWR for corrections to its LAM data. We are now informed that retail agencies will not receive responses to their requests for correction until the end of the calendar year. This would indicate that there is a large volume of data errors and requested corrections being processed by DWR staff. This is especially significant when one considers that only 57% of the retail water agencies submitted data correction requests.

DWR staff also stated that the 43% of the retail agencies not submitting corrections must have found their respective LAM data accurate. An alternative perspective is that many of the smaller retail water agencies do not have the staff resources and/or technical expertise to analyze the LAM data and detect corrections, and likely had to accept data as presented. DWR should take no comfort in the fact that almost one-half of the retail water agencies did not submit requests for corrections.

The issues with the LAM data accuracy should give serious pause for DWR and SWRCB. The LAM data is the foundation for the outdoor regulation which governs the vast majority of water used in the state. How can the SWRCB promulgate specific and enforceable regulation on a retail water agency, substantially based on LAM data that is obviously limited in its accuracy and as such is, unreliable? Either the data gathering mechanism needs to be enhanced, or the state needs to reconsider the basis for establishing standards for individual agencies. An SB X7-7 style, "30% by 2030" might be a more reasonable, manageable, and enforceable approach given the obvious flaws and inaccuracies in the current data collection mechanism.

OWUO – ETF Standard

As you have heard and will hear continue to hear repeatedly from water agency professionals, an ETF of .8 will not sustain healthy landscapes. Lowering the ETF to .65 after 2029, (which is not authorized in the current law), would essentially require a wholesale change out of all residential landscapes, which is highly unlikely to happen. Water utilities do not have the authority to force a customer to change their existing landscape nor do they have the funding to provide sufficient rebate programs to replace all existing landscapes. Lowering the ETF in 2030 to .65 would place an undue economic burden on customers, especially those in disadvantaged communities. Remembering that MWELO standards are a design standard and not a performance standard, adopting an ETF of .55 for new construction presumes that homeowners have been certified in landscape design and irrigation management, which is typically not the case.

A regulatory agency should seek to set standards which are practical, affordable, can be accepted by the public and can be successfully implemented by retail water agencies. The recommendation to drop to the ETF to .65 in 2030 and setting the standard for new construction at .55 is impractical, will not be supported by the public, cannot be successfully implemented, and frankly, could be viewed as punitive.

Please set the outdoor residential water use standard at .8 and take an adequate period of time to evaluate the implementation results prior to seeking the legislative authority needed to change the standard at some point in the future.

UWUO - Frequency of LAM Data Update

During the recent meeting the frequency of the LAM data update was discussed by DWR staff. It was stated at that time the frequency of the LAM data update was yet to be determined because of budgetary limitations, and could be as infrequent as every five years.

A five-year cycle would not be frequent enough to capture changes in the retail water agency's service areas; it should be every two years. Moreover, DWR / SWRCB should not implement a regulatory regime that cannot be supported by the state going forward. Water agencies are already under the fiscal stress of reduced revenues, making increased CIP investments to reduce water loss and all while trying to maintain affordable rates. Water agencies should not have to fund more frequent data collection to support a water use efficiency regime they did not ask for and did not support.

Variances – Material Effect on Urban Water Supplier's UWUO

DWR has interpreted a "material effect" as each variance having to meet a threshold of 5% of the water agencies UWUO. DWR has also determined that even if a water agency has several variances that could cumulatively exceed 5% of the UWUO, no variance credit will be allowed. The possibility of a water agency having cumulative variances to the degree of having a material effect on the UWUO, without credit given seems unfair and unreasonable. Further, agencies would have to continuously expend a significant amount of staff time and effort to track variances in hopes of meeting that 5% threshold.

This interpretation seems arbitrary and lacking an understanding of the variability and unique nature of water use in a wide range of retail water agency service areas. It also could be viewed as a regulatory approach to dissuade a retail water agency from even going through the effort to evaluate the volume of variances for accuracy.

Retail water agencies should be allowed to apply for variances if the cumulative amount of the variances exceeds the 5% threshold.

Again, we want to thank the DWR Water Use Efficiency Branch for the opportunity to comment on the Water Conservation Recommendations being sent to SWRCB. While we understand the demands placed on the Branch to meet the deadlines in the legislation, we feel that requesting and taking additional time to consider these comments prior to forwarding the recommendations on to the SWRCB would have been prudent, worthwhile and would have resulted in more effective regulation.

Sincerely;

Gary Arant General Manager

29300 Valley Center Road • P.O. Box 67 • Valley Center, CA 92082 (760) 735-4500 • FAX (760) 749-6478 • www.VCMWD.org • e-mail vcwater@valleycenterwater.org

Board of Directors

VISTA IRRIGATION DISTRICT

1391 Engineer Street • Vista, California 92081-8840 Phone (760) 597-3100 • Fax: (760) 598-8757 www.vidwater.org Patrick H. Sanchez, *President* Paul E. Dorey Jo MacKenzie Marty Miller Richard L. Vásquez

Administrative Staff

Brett L. Hodgkiss General Manager Lisa R. Soto Board Secretary

November 24, 2021

WUEStandards@water.ca.gov

Water Use Efficiency Branch California Department of Water Resources P.O. Box 942836 Sacramento, CA 95814

RE: Water Conservation Legislation Comments

Dear Water Use Efficiency Branch:

Vista Irrigation District (District) appreciates the opportunity to submit written comments to the California Department of Water Resources (DWR) on the recently released recommendations to calculate water-use efficiency standards. After reviewing the Recommendations on Guidelines and Methodologies for Calculating Urban Water Use Objectives, we offer you the following comments.

Guidance and Methodology

Provide training and technical assistance to urban water agencies to calculate standard targets. This includes aiding in measuring landscapes for dedicated landscape meters and CII Water Use Classification.

Outdoor Residential Water Use Standard Draft Recommendations

- 1. The District appreciates the increase of the proposed Evapotranspiration Factor (ETF) from a 0.7 standard to 0.8, and the higher ETF for recycled and special landscape areas.
- 2. The ETF of 0.65 proposed for 2030 will not support healthy irrigation practices for many existing landscapes due to the age of the landscapes and irrigation systems. Most of the residential development in our service territory occurred prior to Model Water Efficient Landscape Ordinance (MWELO) being implemented. For communities like ours, the District asks that consideration be given to the age and makeup of existing landscapes and that the ETF be adjusted appropriately to enable residential landscapes to remain healthy. At a minimum, the date for compliance with the lower ETF should be shifted to 2035, or a later more appropriate date, to allow water suppliers and the state time to secure funding, build partnerships, and allow for technical advances needed for landscape retrofits that will meet the proposed lower ETF.

Commercial, Industrial, and Institutional (CII) Recommendations

DWR's proposed recommendation of 20,000 square feet as a threshold for mixed-use meter conversion is a random number that is not based upon data that demonstrates water savings by adding a dedicated irrigation meter to this size area of landscaping. Additionally, adding a dedicated meter does not guarantee water savings and would not be cost effective for most landscapes, especially landscapes with an area that are near the proposed threshold. The <u>minimum</u> cost for a customer to add an irrigation meter in our service territory is \$17,423 plus on-going monthly/bimonthly service fees. The previously mentioned cost does not include any costs associated with necessary private side irrigation system retrofits.

Considering the high cost and potentially limited benefits of adding dedicated irrigation meters to mixeduse accounts, the District supports the alternative compliance recommended by the Association of California Water Agencies (ACWA). The ACWA proposal requires the conversion of meters only if they are irrigating more than an acre and using more water than the outdoor water-use efficiency standard. It also allows an alternative compliance plan to reduce water use to meet the water-use efficiency standard.

Thank you again for the opportunity to provide comments. If you require additional information, please contact Brent Reyes at (760) 597-3107 or by email at breyes@vidwater.org.

Sincerely,

Brett Hodgkiss General Manager



November 24, 2021

Karla Nemeth Director Department of Water Resources 1416 9th Street, Sacramento, CA

Subject : Comment Letter - Draft WUE Recommandations : High TDS Variance

WateReuse California appreciates the opportunity to provide comments on the California Department of Water Resources (DWR) draft Water Use Efficiency (WUE) implementation recommendations. We would first like to thank DWR for the work that has gone into this process. Much of the work on the high TDS recycled water variance dates to 2018 and the Model Water Efficiency Landscape Ordinance (MWELO) update. WateReuse CA is supportive of the draft recommendations for the high TDS recycled water variance. We do have two small, suggested changes.

First, we ask that the upper limit of the variance be moved from 2,000 mg/l to 1,600 mg/l and the lower limit be moved from 1,000 mg/l to 900 mg/l. While 1,000 mg/l is the upper MCL for TDS for drinking water based in the California Code of Regulations, Title 22, Division 4, Chapter 15, Article 16, the **recommended** regulatory level is 500 mg/l. Reducing the upper and lower limits of the variance is a small change that is representative of what is required to maintain plant health.

Our second request is that agencies be allowed to use the DWR landscape study at the parcel level for calculating landscape area.

We appreciate the opportunity to provide comments on DWR's Draft WUE recommendations. We look forward to working with DWR and the State Water Board throughout the process. If you have any questions regarding this letter, please contact Charles LaSalle at (916) 216-6015 or clasalle@watereuse.org.

Sincerely,

Charles LaSalle Legislative and Regulatory Affairs Manager WateReuse CA