California
Department of Water Resources

Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan

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State of California

Natural Resources Agency

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State of California

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List of Acronyms and Abbreviations

AB	Assembly Bill
Act	Urban Water Management Planning Act
Baseline	base daily per capita water use
BMP(s)	best management practice(s)
CBDA	California Bay-Delta Authority[1]
CEQA	California Environmental Quality Act
CII	commercial, industrial, and institutional
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
CWSRF	Clean Water State Revolving Fund
DIRWM	Division of Integrated Regional Water Management
DMM(s)	demand management measure(s)
DOST	DWR online submittal tool
DWR	California Department of Water Resources
GHG	greenhouse gas
GPCD	gallons per capita per day
IRWM	Integrated Regional Water Management
IRWMP(s)	Integrated Regional Water Management Plan(s)
Method 4	Urban Water Use Target Method 4
MOU	Memorandum of Understanding
Plan (or UWMP)	Urban Water Management Plan
SB	Senate Bill
State Water Board	State Water Resources Control Board
USC	Urban Stakeholders Committee
USBR-MP	United States Bureau of Reclamation – Mid-Pacific Region
UWMP (or Plan)	Urban Water Management Plan
VWS	Verification of Water Supply
WSA	Water Supply Assessment

[1] The California Bay-Delta Authority has been replaced by the Delta Stewardship Council.

Use of This Guidebook

Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan (Guidebook) has been developed by the California Department of Water Resources (DWR) to assist urban water suppliers in complying with requirements of the Urban Water Management Planning Act (the UWMP Act) and the Water Conservation Bill of 2009. It is meant to help suppliers better understand UWMP Act requirements, but water suppliers are solely responsible for ensuring they've complied with the requirements of the UWMP Act or applicable laws.

For the purposes of this Guidebook and the UWMP Act, urban water suppliers with 3,000 or more service connections or supplying 3,000 or more acre-feet of water per year are to prepare a UWMP every five years.

Guidebook Organization

The Guidebook is organized into two parts.

- Part I: Preparing a UWMP — specific guidance for addressing stated Urban Water Management Plan (UWMP) requirements identified in the California Water Code (CWC).
- Part II: UWMP Supporting Information — detailed discussion of specific subjects or supporting documents related to preparing a UWMP.

Guidebook cross-references provide internal linkages to other locations where related information occurs.

Throughout this Guidebook, internal cross-references have been created to identify for the user other locations within this Guidebook where pertinent additional information is located. In the printed versions of the Guidebook, these cross-references occur as gray call-out boxes located in the left margin of the document. In the on-line version of this Guidebook (located at http://www.water.ca.gov/urbanwatermanagement/), these cross-references include links.

Additional documents and tools referenced in this Guidebook, but not included, can be accessed at the UWMP website at http://www.water.ca.gov/urbanwatermanagement/.

Guidebook Objectives

The Guidebook objectives focus on providing information on how to complete the required components for preparing an Urban Water Management Plan (referred to as UWMP or Plan). Specifically, the objectives are:

- Inform water suppliers of the UWMP requirements identified in the CWC.
- Describe the interrelationship between UWMP legislation and other regulations, including Senate Bill (SB) 610 Water Supply Assessments and SB 221 Written Verifications of Water Supply, Assembly Bill (AB) 1420 (implementation of

water demand management measures [DMMs]), and SBX7-7 Water Conservation Bill of 2009.
- Provide specific guidelines for developing base daily per capita water use, urban water use targets, and interim water use target to support compliance with the Water Conservation Bill of 2009.
- Discuss how climate change could impact water management planning and how it could be incorporated into a UWMP
- Describe how to electronically submit a completed 2010 UWMP

Urban Water Management Planning Background

The UWMP Act (California Water Code §10610 et seq.) requires urban water suppliers to report, describe, and evaluate:

- Water deliveries and uses
- Water supply sources
- Efficient water uses
- DMMs, including implementation strategy and schedule

Establishing baseline and target values is discussedin Part II, Section D. Incorporating baseline and target values into a UWMP is discussed in Part I, Section 3.

In addition, the Water Conservation Bill of 2009 requires urban water suppliers to report in their UWMPs base daily per capita water use (baseline), urban water use target, interim urban water use target, and compliance daily per capita water use.

The UWMP Act directs water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies are available to meet existing and future demands (CWC 10612 (b)). Urban water suppliers (see definition in Part II, Section P: Glossary) are required to assess current demands and supplies over a 20-year planning horizon and consider various drought scenarios. The UWMP Act also requires water shortage contingency planning and drought response actions be included in a UWMP.

See the definition of "urban water suppliers," along with other terms, in Part II, Section P.

UWMPs are to be prepared every five years by urban water suppliers with 3,000 or more service connections or supplying 3,000 or more acre-feet of water per year. Public and private utilities with multiple service areas within their districts should follow the guidelines below.

- Public utilities above the UWMP submittal threshold should include all service areas regardless of size.
- For private utilities, if a utility's district is above the threshold then all the service areas within that district should be included. If the utility district is below the UWMP threshold, a UWMP is not required for that district.
- One urban water use target should be determined for each UWMP.

The normal UWMP submittal cycle requires that they be prepared and submitted in December of years ending in five and zero. However, because of recent changes in UWMP requirements, State law has extended the deadline for the 2010 Plans to

July1, 2011. Although submitted in 2011, 2010 UWMPs will be referred to as 2010 UWMPs because they include 2010 water data and to retain consistency with the five-year submittal cycle.

The portion of the Water Conservation Bill of 2009 that applies to urban water conservation is included in Part II, Section L.

Based on legislative changes resulting from the November 2009 passage of SBX7-7 (hereafter referred to as the Water Conservation Bill of 2009), development of UWMPs will also enable water agencies and, in turn, the State of California to set targets and track progress toward decreasing daily per capita urban water use throughout the state. The portion of the Water Conservation Bill of 2009 that applies to urban water conservation is included in Part II, Section L, of this Guidebook.

A UWMP, including discussion of the status of a water supplier's implementation of DMMs, is required for an urban water supplier to be eligible for a water management grant or loan administered by DWR, the State Water Resources Control Board (State Water Board), or the Delta Stewardship Council (CWC §10631.5(a)). A current UWMP must also be maintained by the water supplier throughout the term of any grant or loan administered by DWR.

Changes to California law that apply to State water grant and loan eligibility are described in Part II, Section B.

Changes to California law require that, beginning in 2016, water suppliers comply with water conservation requirements established by the Water Conservation Bill of 2009 in order to be eligible for State water grants or loans. These changes are discussed further in Part II, Section B: Changes in Urban Water Management Plan Requirements Since 2005.

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Part I: Preparing a UWMP

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Part I: Preparing a UWMP

The UWMP Act and relevant portions of the Water Conservation Bill of 2009 are included in Part II, Sections K and L.

Part I of the Guidebook contains specific instructions for completing a UWMP based on the requirements identified in the UWMP Act (Part II, Section K) and the Water Conservation Bill of 2009 (Part II, Section L). It groups the requirements by topic and presents the topics in the order in which a water supplier may consider including them in a UWMP. Each section includes the legislative justification for the requirement, what is required for compliance, and tables the water supplier may consider including in its UWMP to provide required/requested data. Suggested information a water supplier may include in its UWMP, but that is not necessarily required by legislation, is also identified.

See Part II, Section I, for a checklist of the legislative requirements.

The legislative requirements for a 2010 UWMP are included in Part II, Section I, as a checklist[2]. Within Part I, the legislative requirements are numbered and correlate to the same numbers in the checklist. The numbers are based on the sequential occurrence within the legislation. Because the legislation is organized differently than the topics presented in this Guidebook and the recommended UWMP organization, the requirement numbers are not sequential.

UWMP Organization

DWR recommends, but does not require, that an urban water supplier use the general organization outlined below to prepare its 2010 UWMP. Part I of the Guidebook uses this same organization. Also listed below with each subheading are the specific legislative requirements included within each section.

Part I is organized as follows:

- **UWMP Section 1 — Plan Preparation**
  - Coordination (Checklist #4, #6, #54–#56)
  - Plan Adoption, Submittal, and Implementation (Checklist #7, #57–#60)
- **UWMP Section 2 — System Description**
  - Service Area Physical Description (Checklist #8, #9)
  - Service Area Population (Checklist #10–#12)
- **UWMP Section 3 — System Demands**
  - Baselines and Targets (Checklist #1)
  - Water Demands (Checklist #25, #34)
  - Water Demand Projections (Checklist #33)
  - Water Use Reduction Plan (Checklist #2)
- **UWMP Section 4 — System Supplies**
  - Water Sources (Checklist #13)
  - Groundwater (Checklist #4, #15–#21)
  - Transfer Opportunities (Checklist #24)

[2] Two versions of the checklist are included in Part II, Section I — one organized by legislative occurrence and the other by general subject.

  - Desalinated Water Opportunities (Checklist #31)
  - Recycled Water Opportunities (Checklist #44–#51)
  - Future Water Projects (Checklist #30)
- **UWMP Section 5 — Water Supply Reliability and Water Shortage Contingency Planning**
  - Water Supply Reliability (Checklist #5, #23)
  - Water Shortage Contingency Planning (Checklist #37–#42, #52)
  - Drought Planning (Checklist #22, #35, #36, #43, #53)
- **UWMP Section 6 — Demand Management Measures**
  - DMMs (Checklist #26–#29)
- **UWMP Section 7 — Climate Change (optional)**
- **UWMP Section 8 — Completed UWMP Checklist (optional)**

Retailer and Wholesaler Requirements

The CWC indicates that both urban wholesale and retail water suppliers are to prepare UWMPs. Wholesale and retail suppliers are also to coordinate and provide water use and supply information to each other during preparation of their respective UWMPs. Generally, the UWMP Act refers to "urban water suppliers," and the Water Conservation Bill of 2009 indicates that "all water suppliers increase efficiency," thus supporting the UWMP efforts of both wholesale and retail urban water suppliers. There are several instances within the CWC, though, where the requirements for wholesale and retail urban water suppliers differ. These include:

See Part II, Section E, for additional DMM discussion.

- DMMs: Wholesale suppliers provide documentation for DMMs C, D, J, K, and L (see Part II, Section E). Retail suppliers provide documentation for each DMM except J (see Part II, Section E).

See Part I, Section 3, and Part II, Section D, for additional baseline and target discussion.

- Baselines and Targets: Only retail urban water suppliers are required to develop base daily per capita use, interim urban water use target, and urban water use target values.
- Water use reduction: Wholesale suppliers are to provide "an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions" (CWC §10608.36). Retail suppliers are to "conduct at least one public hearing" that includes general discussion of "the urban retail water supplier's implementation plan for complying with" the Water Conservation Bill of 2009 (CWC §10608.26 [a]).

See Part II, Section I, for a checklist of the legislative requirements and Part II, Section K, for the UWMP Act reqirements.

- Lower income housing: Only retail urban water suppliers are required to address the lower income water supply projections required by CWC 10634(a) (see also Checklist #34).

UWMP Development Overview

A water supplier may be in one of several situations as the 2010 UWMP cycle begins. The water supplier could:

1. Have an existing UWMP to be updated with recent data and expanded to address new requirements
2. Have an existing UWMP that the water supplier may choose to restructure for various reasons
3. Be preparing a UWMP for the first time

The approach an urban water supplier uses in each of these situations will vary. Each situation is discussed briefly below. Then, the proposed UWMP outline and key issues are discussed, arranged by subject.

An urban water supplier should consider the following questions to help decide which of the three situations best fits the preparation of its UWMP:

- Have water supply or demand conditions, or both, changed since the preparation of the 2005 UWMP?
- Will known or upcoming water demand or supply changes occur within the 20-year UWMP planning horizon?
- Have there been modifications in the water system, such as annexations, divisions, or water supply contract changes?
- Have economic impacts from the recession changed water supply and demand issues for the urban water supplier?
- Did the 2007-2009 drought in California affect the water supply outlook for the urban water supplier?
- Has the water supplier's water shortage contingency plan included in the 2005 UWMP been updated to address both the 2007-2009 drought and the Urban Drought Guidebook 2008 Updated Edition (DWR 2008)?
- Is it the urban water supplier's intent to have the UWMP also support or meet the requirements for Water Supply Assessment (WSA) or Verification of Water Supply (VWS), or both? Guidebook Part II, Section F: Related Programs, has additional discussion on these related programs.

Information on the Water Supply Assessment and Verication of Water Supply programs is in Part II, Section F.

Specific changes to the California legislation directly addressing preparation of UWMPs is discussed in Guidebook Part II, Section B: Changes in Urban Water Management Plan Requirements Since 2005. The majority of these legislative changes are additional items to be included in the 2010 UWMPs. In general, an urban water supplier can consider that everything that was required to be included in the 2005 UWMPs is still required to be included in the 2010 UWMPs.

Changes to California legislation addressing the preparation of UWMPs is in Part II, Section B.

Some useful approaches for a UWMP preparer to take when planning 2010 UWMP preparation are:

- Use the DWR online submittal tool (DOST). It will help generate data tables to be included in a UWMP. It will also facilitate and prioritize the DWR review process.

The DOST User's Manual is included in Part II, Section H.

The UWMP checklist is included in Part II, Section I.

- Include the completed UWMP checklist (Part II, Section I). The DWR Review Sheet is not to be included in the water supplier's UWMP presented to a board for adoption.
- Ask for guidance or clarification. If there is a question about what to include in a UWMP prior to adoption, please contact a DWR regional team member. This could avoid the need to have additional information requested by DWR during the review process and the subsequent need to adopt an addendum or amendment.
- Describe why a UWMP requirement does not apply. If an urban water supplier considers that a UWMP requirement does not apply to it, a useful approach is to identify the requirement and provide a brief description of why the requirement does not apply. If a required element is not discussed, it could result in the UWMP not being determined to be 'complete'.

Updating an Existing UWMP

If an urban water supplier has an existing (2005) UWMP that has successfully met its needs since it was submitted, an urban water supplier may consider revising it as an initial step in preparing its 2010 UWMP. These considerations include:

- Having a completed 2005 UWMP
- Minimal changes to the 2005 UWMP components3, although additional requirements have been codified
- Whether the 2005 UWMP document has supported water supply efforts since it was prepared
- Whether there have been few changes to the urban water supplier's water system since 2005

If an urban water supplier does plan on using its 2005 UWMP as a basis for its 2010 UWMP, it is recommended that the urban water supplier address the following[4]:

- Review and update the urban water supplier's water supply and water demand changes
- Review and update present and future water supply and water demand estimates of suppliers providing water to the supplier, if applicable
- Review and update the Water Shortage Contingency Plan using the Urban Drought Guidebook 2008 Updated Edition as guidance and consider the urban water supplier's actions taken during the 2007-2009 drought, as applicable.
- Review and update the DMM summaries, including receipt of grants or loans, how they were used, and how they affected the urban water supplier
- Use Guidebook Part II, Section D: Baseline and Target Determination, to address the requirements of the Water Conservation Bill of 2009

In Part II, use Section D to determine a retail water supplier's baseline and targets.

[3] CWC Section 10657 expired on January 1, 2006. It was removed from the Urban Water Management Planning Act, but it was replaced by other language addressing funding eligibility.

[4] This list does not identify all items a water supplier would need to update if it is revising an approved 2005 UWMP.

Use Section F to review related programs and address other changes since 2005, use Section G for climate change guidance, and use Section N for UWMP tables.

- Review Guidebook Part II, Section F: Related Programs, and address other new changes that have occurred since 2005 that the urban water supplier should consider for its 2010 UWMP
- Consider addressing climate change issues discussed in Guidebook Part II, Section G: Guidance on Climate Change for Urban Water Management Plans
- Review the remainder of this Guidebook to verify that key points are considered in the 2010 UWMP

The 2005 UWMP tables have been restructured. This addresses some of the comments received by DWR after the 2005 UWMP submittals and the development of DOST. The new tables are included in Part II, Section N: Recommended UWMP Data Tables. If an urban water supplier is updating its 2005 UWMP for 2010, then the preparer may consider updating the existing tables and not developing new ones. The tables are now focused more on specific UWMP requirements and information stored in DOST.

Restructuring an Existing UWMP or Preparing a New UWMP

In preparing a UWMP, an urban water supplier should consider not only what is legally required but also what is needed to make it a comprehensive 20-year water supply planning document. There are required components that must be included in a UWMP which are determined by statutes passed by the Legislature. An urban water supplier has the discretion to present the required components in whatever manner best addresses the needs of the urban water supplier.

An urban water supplier considering extensively revising an existing UWMP or preparing a new one may consider the UWMP outline used in Part 1 of this guidebook. This outline organizes the UWMP requirements by subject matter.

Possible 2010 UWMP Organization

Each section in the proposed 2010 UWMP outline is discussed in the following sections, including:

- Required elements presented in italic text
- UWMP guidance and suggestions in plain text
- Other helpful information
- Suggested tables

Part II, Section I, contains the UWMP checklist.

Under each proposed UWMP section is the pertinent line from the UWMP checklist (Part II, Section I, of this Guidebook). The line retains the original checklist number. Guidance and suggestions from DWR on each line are then included as text or bulleted items. Suggested tables are identified after the checklist line and then again at the end of the section discussion.

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Section 1: Plan Preparation

UWMP Section 1 includes specific information on how the UWMP was prepared, coordinated with other agencies and the public, and adopted. It includes the following subsections:

- Coordination
- Plan Adoption, Submittal, and Implementation

Required Elements — Coordination

#4[5]. Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable (10620(d)(2)).

- Include each agency and organization contacted or involved in preparation, discussion, or coordination of the 2010 UWMP. Using Table 1[6] is an efficient way to indicate the external outreach required for the UWMP effort.
- Copies of outreach documents, comments, etc. may also be used to provide supporting documentation that outreach requirements were met.

#6. Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision (10621(b)).

- Provide documentation that "any city or county within which the supplier provides water supplies" was notified at least 60 days prior to the UWMP public hearing that the plan was being reviewed and changes were being considered.
- The supplier is not required to submit the revised plan to the cities or counties with this notification. The notification required is only that the plan is being reviewed.
- If Table 1 is included in the UWMP, indicate the agencies from which comments were received or where consultation occurred.

#54. The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan (10635(b)).

[5] These numbers refer to the UWMP Checklist included in Part II, Section I.

[6] Tables identified in Sections 1 through 8 refer to the UWMP tables included in Section N.

- Provide written assurance that a copy of the 2010 UWMP will be provided to each city or county within or containing the water supplier's boundary no later than 60 days after its submission to DWR.

#55. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan (10642).

- Provide names of the groups or organizations to which the water supplier reached out during the development and adoption of the UWMP. Information may be included in Table 1 to support this required element.

#56. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area (10642).

- Provide information on the hearing time and place, and notice of the availability of the UWMP for public review.
- Government Code 6066 states that "Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day."

Required Elements — Plan Adoption, Submittal, and Implementation

#7. The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640) (10621(c)).

- If a water supplier makes changes to the UWMP after the plan was adopted by its board of directors, the supplier must hold another public hearing and have its board readopt the plan.

#57. After the hearing, the plan shall be adopted as prepared or as modified after the hearing (10642).

- Include a copy of the adoption resolution in the UWMP.

#58. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan (10643).

- Provide discussion about how the 2010 UWMP will be implemented. Information on how the 2005 UWMP was implemented may also be helpful to provide.

#59. An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption (10644(a)).

- Provide documentation that within 30 days of submitting the UWMP to DWR, the adopted UWMP has been or will be submitted to the California State Library and any city or county to which the supplier provides water.

#60. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours. (10645).

See Part II, Section A, for further discussion of submitting an adopted UWMP.

- Provide documentation that within 30 days of submitting the UWMP to DWR, the adopted UWMP has been or will be available for public review during normal business hours.

Other Helpful Information

- The name of the UWMP preparer and contact information could also be included.

Suggested Table

Part II, Section N, contains blank UWMP tables.

One table (see Part II, Section N, for blank versions of the UWMP tables) is suggested for inclusion in UWMP Section 1.

- Table 1: Coordination with appropriate agencies

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Section 2: System Description

UWMP Section 2 describes the urban water system. It includes a description of the climate, population, and demographics. Also helpful to include are descriptions of the physical system (transmission, treatment, and distribution facilities) to support the Water Conservation Act of 2009 requirements, discussions of changes to the water system, the water supplier's organizational structure, and any issues that affect the water system. It includes the following subsections:

- Service Area Physical Description
- Service Area Population

Required Elements — Service Area Physical Description

#8. Describe the service area of the supplier (10631(a)).

- Provide a description of the physical and political attributes of the area being supplied water.
- Maps, tables, or photographs can be included to support the description of the system.

#9. (Describe the service area) climate (10631(a)).

- Climate data may be presented in tables (similar to 2005) or figures, or can be presented as ranges within the text of the UWMP along with general discussion of seasonal variability.

Required Elements — Service Area Population

#10. (Describe the service area) current and projected population . . . The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier . . . (10631(a)).

- Population estimates may be provided for both the entire urban water supplier and for the urban centers supplied by the water supplier's distribution system. Clearly indicate whether the population estimates are for the urban water supplier or the area directly served by the distribution system.
- Provide the source(s) of the population estimates.
- The population estimate for areas served by the distribution system is to be developed using the process described in Technical Methodology 2: Service Area Population (Part II, Section M).

Part II, Section M, contains technical methodologies.

#11. . . . (population projections) shall be in five-year increments to 20 years or as far as data is available (10631(a)).

- Current and projected population estimates are to be provided for the following years: 2010, 2015, 2020, 2025, and 2030.
- Population estimates may also be provided for 2035, if the water supplier intends to have 20-year water supply and demand estimates available until the completion of the 2015 UWMP. This enables a water supplier to have its 2010 UWMP support WSA and written VWS for five years.

#12. Describe . . . other demographic factors affecting the supplier's water management planning (10631(a)).

- Discussion of demographics should include anything affecting water supply issues that are appropriate and relevant to preparation of the 2010 UWMP, such as:
  - Housing
  - Employment
  - Customer base
  - Industry
  - Disadvantaged communities
  - Restrictions

Other Helpful Information

- Inclusion of maps to show the surrounding region and service area is helpful. Maps could show the urban water supplier boundaries and the service area used to determine the population projections.

Suggested Tables

Part II, Section N, contains blank UWMP tables.

One table (see Part II, Section N, for blank versions of the UWMP tables) is suggested for inclusion in UWMP Section 2:

- Table 2: Population — current and projected

Section 3: System Demands

This section describes the urban water system demands, including calculating its baseline (base daily per capita daily) water use and interim and urban water use targets. It quantifies the current water system demand by category and projects them over the planning horizon of the UWMP. These projections are to include water sales to other agencies, system water losses, and water use target compliance.

When calculating future water demands, a water supplier should be projecting demands based on the assumed reduction in per capita daily use determined from planning for and implementing actions associated with the Water Conservation Bill of 2009.

Part II, Section D, describes the approach and criteria for developing required baselines and targets.

The System Demands section of a UWMP also should include the detailed description of how an urban water supplier calculates its baseline and targets, following the technical methods and methodologies described in Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (For the Consistent Implementation of the Water Conservation Bill of 2009) (DWR 2010a). Background information and approach used to develop baselines and targets are also to be included. The approach and criteria for developing the required baselines and targets are thoroughly described in Part II, Section D: Baseline and Target Determination.

Required Elements — Baselines and Targets

#1. An urban retail water supplier shall include in its urban water management plan . . . due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data (10608.20(e)).

See Part II, Section D, for how to calculate the baselines and targets required under the Water Conservation Bill of 2009.

- See Guidebook Part II, Section D, for how to calculate the targets and baseline values required in the Water Conservation Bill of 2009.
- For determining baseline daily per capita water use, the 2008 recycled water supplied, and the 2008 total urban water supplied are to be provided to determine the number of years the retail water supplier can include in its base period range (10 to 15 years). Also include the actual start and end years for the selected range (Table 13). In Table 14, indicate the population served and water supplied served for each of the years within the 10- to 15-year range. In Table 15, indicate the population served and water supplied for each of the years within the 5-year range.
- The urban water supplier is to include in its UWMP how the values were determined and the sources of data used, consistent with the DWR methodologies (Part II, Section M).
- Indicate whether the baselines and targets are developed individually or regionally. If regionally, indicate the other members of the regional alliance.

See Part II, Section M, for technical methodologies.

- Indicate with method was used to determine the interim and urban water use target.

Required Elements — Water Demands

#25. Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; (I) Agricultural (10631(e)(1) and (2)).

- Provide the information identified in (A) through (F) and (I) using Tables 3 through 7.
- The demand projections provided should be consistent with a supplier's water use targets.
- Provide the names and water demands (actual and projected) of water sold to other agencies (G), using Table 9.
- Provide the actual and projected "other" water demands in Table 10, including those identified in (H) as well as recycled water not accounted for in Tables 3 though 7 and Table 9. Suppliers are encouraged to include in Table 10 as many water demand categories as possible, including water losses, to support subsequent assessment of water savings opportunities.
- Summarize the total water demands from the previous tables in Table 11.
- Discuss technical and economic feasibility of these projected uses, including the potential for the projects to be implemented.

#34. The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier (10631.1(a)).

- This applies to retail urban water suppliers only.
- Provide the estimated lower income water use projections for single-family and multi-family housing units (Table 8) identified in the housing elements of the general plans applicable to the water supplier's service area. The lower income water use projections should be included in the overall water use projections provided in Tables 3 through 7.
- The urban water supplier is to use city, county, or other applicable general plans and any housing element documents (Health & Safety Code §50079.5) to identify the planned lower income housing projects within its service area. The supplier may also rely on Regional Housing Needs Assessment or Regional Housing

Needs Plan information developed by the local council of governments, the California Department of Housing and Community Development. Estimate the single-family and multi-family water demands for 2015, 2020, 2025, and 2030.

- A lower income household is defined as 80 percent of median income, adjusted for family size.

Required Elements — Water Demand Projections

#33. Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c) (10631(k)).

- Retail water suppliers are to provide to DWR the water use projection data provided to each wholesale water agency (Table 12).
- Wholesale water suppliers are to provide to DWR the water supply projections provided to each retail water supplier.

Required Elements — Water Use Reduction Plan

#2. Urban wholesale water suppliers shall include in the urban water management plans . . . an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part (10608.36). Urban retail water suppliers are to prepare a plan for implementing the Water Conservation Bill of 2009 requirements and conduct a public meeting which includes consideration of economic impacts (CWC §10608.26).

- Wholesale water suppliers are required to include in their UWMPs discussions of programs they intend to implement to support water demand reduction goals. Although wholesale water suppliers are not required to determine baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, programs that the wholesale suppliers implement may support the retail water suppliers to attain their goals and targets.
- Retail water suppliers are to develop an implementation plan for compliance with the Water Conservation Bill of 2009. The plan should provide a general description of how the supplier intends to reduce per capita water use to meet its urban water use target. In developing the implementation plan, suppliers should avoid placing a disproportionate burden on any customer sector. The plan should also discuss any potential economic impacts that may result from the water use

reduction program. Suppliers of water to a US Department of Defense military installation should consider federal Executive Orders 13423 (*Strengthening Federal Environmental, Energy, and Transportation Management* (2007) and 13514 (*Federal Leadership in Environmental, Energy, and Economic Performance*), which identifies water use reductions targets for military facilities. The implementation plan should be included in the discussion of the supplier's urban water use target at the urban water management plan public hearing.

Other Helpful Information

The urban water supplier must provide documentation in its UWMP to enable DWR to review compliance with the Water Conservation Bill of 2009. This includes:

- A map of the water supply area, including key points of measurements for the gross water calculations.
- Specific methods and each step of the calculations used to determine the targets and baseline
- The sources of information for population and the method of making population estimates
- Metered or measured flows, including the type and period of measurement or the method of measuring, calculating, or estimating

In addition,

- Consider similar conditions to water supply conditions, to the extent possible.
- Include any other known water system demands or constraints.

Suggested Tables

See Part II, Section N, for blank UWMP tables.

Multiple tables (see Part II, Section N, for blank versions of the UWMP tables) are suggested for inclusion in UWMP Section 3:

- Table 3: Water deliveries — actual, 2005
- Table 4: Water deliveries — actual, 2010
- Table 5: Water deliveries — projected, 2015
- Table 6: Water deliveries — projected, 2020
- Table 7: Water deliveries — projected, 2025, 2030, and 2035
- Table 8: Low-income projected water demands
- Table 9: Sales to other water agencies
- Table 10: Additional water uses and losses
- Table 11: Total water use
- Table 12: Retail agency demand projections provided to wholesale suppliers
- Table 13: Base period ranges
- Table 14: Base daily per capita water use — 10- to 15-year range
- Table 15: Base daily per capita water use — 5-year range

Section 4: System Supplies

This section describes the sources of water available to the urban water supplier. It includes a description of each water source, source limitations (physical or political), water quality, and water exchange opportunities. Discussion can include surface water, groundwater, recycled water, desalinated water, stormwater, geothermal, and any other source water the water supplier considered part of its water supply "portfolio." Include information about planned future water supply projects. Discuss if wholesale water supplies are received from another supplier or provided to another water user. For water obtained from wholesale sources, the retail supplier can include in its UWMP a reference to the wholesalers UWMP and a brief summary of the water supply's origin.

For each water source type, include discussions on origin (there may be multiple origins for a particular water source—for example, desalinated water can be obtained from ocean water, brackish surface water, or brackish groundwater), customers, and use limitations. Provide discussion about average year water supplies and projects to increase water supply. Supply reliability issues are discussed in UWMP Section 5.

See Part I, Section 5, for a discussion of supply reliability issues.

For discussion of water transfers and exchanges, consider both short-term and long-term agreements and opportunities.

Required Elements — Water Sources

#13. Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a) (10631(b)).

- Provide information for each source of water are identified indicate the type and name of the water source for the years 2015, 2020, 2025, and 2030 (Table 17).
- Provide the name of each wholesale water supplier and state whether the amount of water provided in 2010 and projected into the future are provided by the wholesale supplier or determined by the retail agency (Table 16).
- Obtain from each wholesale water supplier the amount of water it projects to provide to the retail urban water supplier.
- Include water reused for municipal purposes that is not treated to Title 22 standards.

Required Elements — Groundwater

#14. (Is) groundwater . . . identified as an existing or planned source of water available to the supplier . . . (10631(b))?

- Indicate whether or not the water supplier directly obtains its own groundwater, or if it plans to develop groundwater resources within the planning horizon of the UWMP.

- If groundwater is, or planned to be, provided to the water supplier from another supplier, indicate the name of the supplier from which it is obtained.
- If the retail water supplier does not itself extract groundwater as a water supply, it does not need to provide the requested groundwater information. The water supplier that directly obtains the groundwater is required to provide that information. The retail water supplier does not have to address checklist numbers 16 through 21.

#15. (Provide a) copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management (10631(b)(1)).

- The copy of the groundwater management plans may be provided electronically on a CD-ROM or in hard-copy format.

#16. (Provide a) description of any groundwater basin or basins from which the urban water supplier pumps groundwater (10631(b)(2)).

- Descriptions are to be provided for each groundwater basin from which groundwater is extracted.
- The description of the groundwater basin may include one or more maps and/or cross sections of the basin, the general location of the wells from which the supplier obtains its groundwater, a description of the depth and type of aquifer material present in the basin, the aquifers from which groundwater is extracted, and a description (and graphs) of changes in groundwater levels.
- Existing resources such as the DWR water data library (http://www.water.ca.gov/waterdatalibrary/) and California's Groundwater Update 2003, Bulletin 118 (available from http://www.water.ca.gov/groundwater/) may provide helpful information for the groundwater basin description. DWR has not updated Bulletin 118 since 2003. It is anticipated that the water supplier may use Bulletin 118 to provide background and general information on its groundwater basins, but also will provide some updated information on groundwater conditions.
- Include discussion of known groundwater quality and quantity issues that may impact present or future use of groundwater.

#17. For those basins for which a court or the board has adjudicated the rights to pump groundwater, (provide) a copy of the order or decree adopted by the court or the board (10631(b)(2)).

- The copy of the adjudication(s) may be provided electronically on a CD-ROM or in hard-copy format.

#18. (Provide) a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree (10631(b)(2)).

- Indicate the volume of water the urban water supplier is legally allowed to pump.

#19. For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition (10631(b)(2)).

- Provide known information about existing or potential groundwater conditions in the basin(s) from which groundwater is extracted. Bulletin 118 (DWR 2003) was the last comprehensive assessment of statewide groundwater conditions. Provide DWR's assessment of overdraft conditions from the 2003 update of Bulletin 118 or more current information if it is available.
- The "detailed description of the efforts being undertaken" to eliminate the long-term overdraft conditions would include discussion of any activities such as groundwater level monitoring, metering or measuring groundwater pumping, groundwater recharge, conjunctive use programs, water conservation, or alternative water supplies.

#20. (Provide a) detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records (10631(b)(3)).

- Indicate the volume of water pumped every year between 2005 and 2010 (Table 18).
- Describe whether there were limitations or challenges obtaining groundwater during this time to indicate the "sufficiency" of groundwater pumped.

#21. (Provide a) detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records (10631(b)(4)).

- Estimate of the volume of water projected to be pumped during the planning horizon of the UWMP (Table 19). The volume for 2010 included in Table 18 should be the same as that included for 2010 in Table 17.
- Provide a description of any changes or expansions planned for the groundwater supply.

Required Elements — Transfer Opportunities

#24. Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis (10631(d)).

- Indicate any planned or potential future water exchanges. Include the volumes estimated to be imported in Table 20. Table 20 should not include any existing exchange or transfer agreements.
- If there are both short-term and long-term exchange or transfer opportunities from a single source, provide them as separate line entries in Table 20.

Required Elements — Desalinated Water Opportunities

#31. Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply (10631(i)).

- List and discuss opportunities for development of desalinated water supplies (from ocean water, brackish surface water, and/or brackish groundwater) and indicate level to which desalination is being considered.
- If the water supplier considers there are no opportunities for development of desalinated water sources within the planning horizon of the 2010 UWMP, the supplier is to discuss why this is the case.

Required Elements — Recycled Water Opportunities

#44. Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area (10633).

- Coordinate with any facility or agency within the urban water supplier's service area regarding the existing and potential availability and uses of recycled water. Each of the types of organizations identified in the urban water management planning act (10633) should also be considered.
- The discussion of recycled water opportunities is to include description of existing recycled water applications within the service area and potential opportunities.
- Other potential sources of recycled water include facilities that may treat and discharge contaminated water.
- See Table I-2 in Part II, Section I, for additional recycled water discussion requirements.

See Table I-2 in Part II, Section I, for recycled water discussion requirements.

#45. (Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal (10633(a)).

- Contact the owners and operators of each wastewater collection and treatment systems in the supplier's service area regarding the amount of wastewater collected and treated by each facility and the type of treatment processes used (Table 21). If multiple wastewater facilities exist, provide the required information for each facility.

#46. (Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project (10633(b)).

- Identify the quantities of wastewater currently being treated to recycled water standards (Title 22) within the urban water user's service area (Table 21).
- Quantify the amount of recycled water that is currently being discharged and is available for use (Table 22).
- If there are limitations on the use of available recycled water, it may be helpful to provide information regarding the limitations and what could be done to address those limitations.

#47. (Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use (10633(c)).

- Quantify the amount of recycled water that is currently being used within the urban water supplier's service area. Provide information regarding the amount and use of the recycled water (Table 23).
- For "other uses," provide the type of use, for example, fire hydrant flushing or dust control.

#48. (Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses (10633(d)).

- Based on the existing recycled water use and planned recycled water projects, estimate the amount of recycled water that is projected to be used within the urban water supplier's service area over the planning horizon of the UWMP (Table 23).
- Discuss technical and economic feasibility of these projected uses, including the potential for the projects to be implemented.

#49. (Describe) the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision (10633(e)).

- From the urban water supplier's 2005 UWMP, provide the 2010 projected estimates of recycled water use. Compare those estimates to the actual 2010 recycled water use (Table 24).

#50. (Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year (10633(f)).

- Describe the approaches the urban water supplier is implementing or is planning to implement to increase or encourage the use of recycled water within its service area. At a minimum, discuss how financial incentives are being implemented.
- Provide estimates of the amount of additional recycled use that could be realized by implementing any of these actions (Table 25).

#51. (Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use (10633(g)).

- If the urban water supplier has prepared a recycled water master plan within the past five years, or similar document, that document may be provided to indicate how recycled water is planned to be implemented. Provide a brief summary of the plan within the text of the UWMP and either provide an electronic version on a separate CD-ROM or include as a printed attachment to the UWMP.
- If the urban water supplier has not prepared a recycled water master plan, provide information on each item specified in CWC 10633(g).

Required Elements — Future Water Projects

#30. (Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program (10631(h)).

- Provide the information indicated in 10631(h). Use Table 26 to summarize the additional water supply quantities planned by implementing each of these projects.

Other Helpful Information

- Use tables to clearly specify the sources of water available, how much is available, how much is used or planned to be used, and physical or timing-related limitations on receiving water from each source.
- Copies of groundwater management plans, adjudications, or recycled water master plans may be provided electronically on a CD-ROM, with pertinent points summarized in the main text of the UWMP.
- Consider developing a subsection for each major water "type" (i.e., surface water, groundwater, recycled water, etc). Then the UWMP requirements can be easily addressed.

Suggested Tables

See Part II, Section N, for blank UWMP tables.

Multiple tables (see Part II, Section N, for blank versions of the UWMP tables) are suggested for inclusion in UWMP Section 4:

- Table 16: Water supplies — current and projected
- Table 17: Wholesale supplies — existing and planned sources of water
- Table 18: Groundwater — volume pumped
- Table 19: Groundwater — volume projected to be pumped
- Table 20: Transfer and exchange opportunities
- Table 21: Recycled water — wastewater collection and treatment
- Table 22: Recycled water — non-recycled wastewater disposal
- Table 23: Recycled water — potential future use
- Table 24: Recycled water — 2005 UWMP use projection compared to 2010 actual
- Table 25: Methods to encourage recycled water use
- Table 26: Future water supply projects

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Section 5: Water Supply Reliability and Water Shortage Contingency Planning

UWMP Section 5:

- Compares projected water supplies and demands
- Assesses the overall reliability of future supplies regardless of drought or emergency conditions
- Discusses how an urban water suppliers water sources can vary as a result of emergency or other external influences such as system or other limitations, as well as the water supplier's planned response
- Describes the drought contingency plan—the water supplier's response and planning for changes or shortages in water supplies.

Specific guidance an urban water supplier should consider in preparing this part of a UWMP include:

- DWRs Urban Drought Guidebook 2008 Updated Edition
- DWRs California Drought Contingency Plan (2010)
- DWRs State Water Project Delivery Reliability Report 2009

Drought planning is to consider water supplies during single-dry and multiple-dry years. Single-dry and multiple-dry year conditions are usually based on historical records of annual runoff from a particular watershed. A multiple-dry year period is generally three or more consecutive years with the lowest average annual runoff. Single-dry and multiple-dry periods should be determined for each watershed (including wholesale sources, the State Water Project, the Colorado River, and the Central Valley Project) from which the water supplier receives a water supply. The information is often presented as a probability of exceedance or probability of occurrence. Many water suppliers have multiple water supply sources. To show how the total supply would be impacted, document the single-dry and multiple-dry year effects for each individual supply. Weather information is available at the National Weather Service website http://www.nws.noaa.gov/. Runoff data are available from DWR (http://cdec.water.ca.gov/), US Geological Survey (http://waterdata.usgs.gov/ca/nwis/sw), and the operators of local dams.

Use the following guidelines for drought conditions:

- *Average Year*[7] — a year or an averaged range of years in the historical sequence that most closely represents median runoff levels and patterns. It is defined as the median runoff over the previous 30 years or more. This median is recalculated every 10 years.

[7] The UWMP Act uses the term "normal." The term "average" is more commonly used to describe "median" conditions. Within this guidebook the terms "normal" and "average" are used interchangeably.

- *Single-dry year* — generally considered to be the lowest annual runoff for a watershed since the water-year beginning in 1903. Suppliers should determine this for each watershed from which they receive supplies.
- *Multiple-dry year period* — generally considered to be the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903. For example, 1928-1934 and 1987-1992 were the two multi-year periods of lowest average runoff during the 20th century in the Central Valley basin. Suppliers should determine this for each watershed from which they receive supplies.

Required Elements — Water Supply Reliability

#5. An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions (10620(f)).

#23. For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable (10631(c)(2)).

- For each of the water supply sources identified in Table 16, identify the potential issues that could result in reduction of the amount of water supply. The urban water supplier may provide any additional name of the source being described (for example, if the water category is “supplier-produced surface water,” the urban water supplier may have multiple surface water sources that have different potential constraints). The urban water supplier may also provide information on the applicable amount of water, such as the volume of a reservoir or a river allocation. Additional information can also be provided on the nature of the limitation indicated in one of the preceding columns (Table 29).

Required Elements — Water Shortage Contingency Planning

#37. Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster (10632(c)).

#38. Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning (10632(d)).

#39. Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply (10632(e)).

#40. Penalties or charges for excessive use, where applicable (10632(f)).

- Identify what actions will be taken by a water supplier if there is a catastrophic reduction in water suppliers, as indicated in 10632(c). If the water supplier has other catastrophic reductions that it has considered in its planning, please identify those. Other catastrophic interruptions to consider could include flooding or fire.
- Indicate mandatory prohibitions in Table 36.
- Indicate consumption reduction methods in Table 37.
- Indicate penalties and charges for violating water shortage restrictions or prohibitions in Table 38.

#41. An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments (10632(g)).

- Assess how responding to water shortages affects revenues and expenditures. Indicate how the water supplier will address these potential impacts. Identify what actions will be taken by a water supplier if there is a catastrophic reduction in water suppliers, as indicated in 10632(c). Identify any other catastrophic reductions the water supplier considered in planning the UWMP. Other catastrophic interruptions could include flooding or fire.

#42. A draft water shortage contingency resolution or ordinance (10632(h)).

- If the water supplier has an approved or adopted water shortage contingency resolution or ordinance, include it in the UWMP. If one has not been approved or adopted, provide a draft version. If there has been any action for or against adoption since the completion of the most recent UWMP, consider including the additional discussion in the 2010 UWMP.

Required Elements — Water Quality

#52. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability (10634).

- Identify known or potential water quality issues that could impact water supplies. Water quality impacts may include natural and human-induced water quality issues in both groundwater and surface water resources. The potential quantitative impacts are to be summarized (Table 30).
- Discuss how these water quality issues will be addressed. Methods can include treatment or identification of additional water supply resources.
- Maps may be helpful to include.

Required Elements — Drought Planning

#22. Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) an average water year, (B) a single dry water year, (C) multiple dry water years (10631(c)(1)).

- Using above guidelines identifying average, single-dry, and multiple-dry water years, identify the specific years that meet the criteria for the urban water supplier (Table 27).
- Identify the actual water supply for each of the years identified in Table 27. Provide that information in Table 28. For each of the dry years, calculate what percentage the dry year water supply was, as compared to the "average/normal" year indicated in the first column of Table 28.

#35. Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage (10632(a)).

- A water supplier's Drought Contingency or Water Supply Reliability Plan should identify the thresholds for implementation of various actions to support conservation. A water supplier may choose to attach its existing plan as an attachment to its 2010 UWMP. If so, briefly describe the different water emergency stages and the criteria for each stage, with a reference to the attachment. If a Drought Contingency or Water Supply Reliability Plan are not attached to the 2010 UWMP, provide sufficient information to describe each water emergency stage and the water conditions that occur for each stage (Table 35).
- Describe the actions a water supplier will perform if water supplies are reduced by 50 percent for a single year.

#36. An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply (10632(b)).

#43. A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis 10632(i).

- Discuss how the water supplier will measure and determine actual water savings by implementing the actions identified in the 2010 UWMP or in a separately prepared Drought Contingency or Water Supply Reliability Plan. If a separate plan is attached to the UWMP, the approach should be summarized in the UWMP.

#53. Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its

customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier (10635(a)).

- The urban water supplier is to determine water supplies and demands for normal (average), single-dry year, and multiple-dry years for 2010, 2015, 2020, 2025, and 2030. 2035 may be included. For the multiple-dry year sequences, the first year of the 3-year sequence should be the years ending in 0 or 5 (Tables 32, 33, and 34).
- The water supplier can determine these supplies and demands with their own analytical tools, if available. If analytical tools are used, then provide background information and a discussion of methodologies.
- If analytical tools are not available, then determine future demands (indicate methodologies) and use the percentage calculations determined in Table 28 and apply them to the supply estimates.
- Determine the difference between supply and demand. Show a negative value for years where demands are higher than supplies. The water supplier should calculate the supply/demand difference as a percentage of the estimated supply and then of the estimated demand.

Other Helpful Information

- Consider including a discussion on how potential climate change issues could affect potential water supplies.

Suggested Tables

See Part II, Section N, for blank UWMP tables.

Multiple tables (see Part II, Section N, for blank versions of the UWMP tables) are suggested for inclusion in UWMP Section 5:

- Table 27: Basis of water year data
- Table 28: Supply reliability — historic conditions
- Table 29: Factors resulting in inconsistency of supply
- Table 30: Water quality — current and projected water supply impacts
- Table 31: Supply reliability — current water sources
- Table 32: Supply and demand comparison — normal year
- Table 33: Supply and demand comparison — single dry year
- Table 34: Supply and demand comparison — multiple dry-year events
- Table 35: Water shortage contingency — rationing stages to address water supply shortages
- Table 36: Water shortage contingency — mandatory prohibitions

- Table 37: Water shortage contingency — consumptive reduction methods
- Table 38: Water shortage contingency — penalties and charges

Section 6: Demand Management Measures

Part II, Section E, describes DMMs.

DMMs are mechanisms a water supplier implements to increase water conservation. Suppliers must provide a description for each DMM listed in the legislation unless they document that is not locally cost effective. CUWCC members have the option of submitting their annual reports in lieu of describing the DMMs. Additional information on the DMMs is provided in Guidebook Part II, Section E: Demand Management Measures and Best Management Practices.

The goal of the DMM section in a UWMP is to provide a comprehensive description of the water conservation programs that are currently implemented and those planned to be implemented. The section should additionally provide general information on the measures the supplier plans to implement to meet its urban water use target.

Wholesale and retail urban water suppliers have different requirements for which DMMs, listed in Checklist #26, should be implemented. DWR requires wholesale urban water suppliers to address C, D, J, K, and L. Retail urban water suppliers are to address all DMMs except J.

Required Elements — DMMs

#26. (Describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) water survey programs for single-family residential and multifamily residential customers; (B) residential plumbing retrofit; (C) system water audits, leak detection, and repair; (D) metering with commodity rates for all new connections and retrofit of existing connections; (E) large landscape conservation programs and incentives; (F) high-efficiency washing machine rebate programs; (G) public information programs; (H) school education programs; (I) conservation programs for commercial, industrial, and institutional accounts; (J) wholesale agency programs; (K) conservation pricing;(L) water conservation coordinator; (M) water waste prohibition; (N) residential ultra-low-flush toilet replacement programs (10631(f)(1) and (2).

#27. A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan (10631(f)(3)).

#28. An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand (10631(f)(4)).

#29. An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to

water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following: (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors; (2) Include a cost-benefit analysis, identifying total benefits and total costs; (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost; (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation (10631(g)).

- For each DMM that is currently being implemented or scheduled to be implemented, provide the following information:
  - The steps necessary to implement the measure.
  - A schedule of implementation.
  - A description of the methods the suppliers will use to evaluate the effectiveness of the DMMs implemented or described.
- The following topics should be considered where applicable in the discussion of each DMM being implemented or scheduled to be implemented. Additional information is encouraged, as necessary, to be provided to support the water supplier's DMM description.
  - How the DMM is or will be marketed or advertised.
  - Describe the measure itself (e.g., what is included in a residential survey, how much is the rebate, what topics are covered in school presentations).
  - Provide quantification (e.g., the number of surveys conducted, toilets rebated, large landscape accounts with budgets).
- For each DMM not implemented, the supplier is to provide the following information:
  - A cost benefit analysis that documents total costs and total benefits.
  - Discussion of economic and noneconomic factors cited above in checklist item #29.
  - Description of available funding available to implement any planned water supply project providing water at a higher unit cost.
  - Description of the water supplier's legal authority and ability to work with other agencies to implement the DMM.
- CUWCC members who are in full compliance with the CUWCC's memorandum of understanding can submit their 2009-2010 reports in lieu of describing the DMMs. Documentation of full compliance must be included on the annual report. See Part II, Section E, for additional discussion of the CUWCC BMP annual reports.

Part II, Section E, has further discussion of the CUWCC BMP reports.

Section 7: Climate Change (optional)

Additional discussion on climate change issues occurs in Part II, Section G.

DWR suggests that an urban water suppler consider in its 2010 UWMP potential water supply and demand effects related to climate change. Specific climate change requirements are included in either the UWMP Act or the Water Conservation Bill of 2009. However, inclusion of potential climate change impacts in a water supply planning document is consistent with other water supply programs and environmental requirements being implemented in California. Potential climate change impacts could also start to be observed and impacting water suppliers within the planning horizon of this document. Part II, Section G, addresses potential climate change issues and actions a water supplier may consider during its UWMP preparation.

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Section 8: Completed UWMP Checklist (optional)

Part II, Section I, contains a UWMP checklist.

The completed UWMP checklist (Part II, Section I) can be used by the water supplier to confirm that the required elements have been included in the UWMP before submittal. In addition, by adding page information to the far left column indicating where the required element can be found within the UWMP, the completed UWMP checklist can be submitted to DWR to support its review of the UWMP. This additional support can be helpful in expediting DWR's review of the submitted UWMP.

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Part II: UWMP Supporting Information

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Part II: UWMP Supporting Information

Part II of the Guidebook contains additional information that discusses or clarifies specific UWMP requirements or topics. It is grouped by subject so that it can be a useful reference for urban water suppliers as they prepare their 2010 UWMPs. The reference sections are:

Section A: 2010 Urban Water Management Plan Schedule, Submittal, and Review
Section B: Changes in Urban Water Management Plan Requirements Since 2005
Section C: Regional Water Planning
Section D: Baseline and Target Determination
Section E: Demand Management Measures and Best Management Practices
Section F: Related Programs
Section G: Guidance on Climate Change for Urban Water Management Plans
Section H: Electronic Submittal
Section I: Urban Water Management Plan Checklist
Section J: DWR Staff UWMP 2010 Review Sheet
Section K: California Water Code, Division 6, Part 2.6: Urban Water Management Planning
Section L: California Water Code, Division 6, Part 2.55: Water Conservation
Section M: Water Conservation Bill of 2009 Technical Methodologies
Section N: Recommended UWMP Data Tables
Section O: References
Section P: Glossary

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Section A: 2010 Urban Water Management Plan Schedule, Submittal, and Review

This section presents key schedule information for both preparing and adopting a UWMP, as well as for DWR submittal and review.

Schedule

The deadline for adoption of a water supplier's 2010 UWMP is July 1, 2011 (CWC §10608.20 (j)). This date is extended from the normal requirement of December 31 in years ending in five and zero (CWC §10621 (a)) to allow additional time for water suppliers to address the UWMP requirements in the Water Conservation Bill of 2009.

During the preparation and adoption of a UWMP, water suppliers must consider required timelines for public notifications and coordination with other water suppliers, agencies, and organizations. Some of these timelines are new for 2010. They are summarized here and included schematically in Table A-1. The time period depends on the date the water supplier adopts its UWMP. If the urban water supplier plans to adopt a UWMP on July 1, 2011, then the dates shown in Table A-1 apply. If the UWMP is adopted prior to July 1, then the other important dates will need to be adjusted accordingly.

Table A-1 Key water supplier dates for UWMP preparation and submittal, assuming a UWMP adoption of July 1, 2011[a]

Action	2011				
	May	June	July	Aug.	Sept.
Release notification for the adoption hearing (May 2, 2011)	◆				
Hold hearing for and adopt UWMP (July 1, 2011)			◆		
Submit UWMP to DWR, State Library, and city/county that receives water from supplier (July 30, 2011)				◆	
Provide copy of UWMP for public review (August 31, 2011)					◆
Provide copies of UWMP to supplied entities (September 30, 2011)					◆

[a] The dates shown for each required action are based on an urban water supplier adopting its UWMP on July 1, 2011. If the UWMP adoption date is not July 1, 2011, then the dates shown will need to be adjusted accordingly.

60 days prior to Review/Adoption Hearing: The UWMP Act requires that a hearing be held prior to adoption of a UWMP (CWC §10642). At least 60 days prior to the hearing in which the UWMP is to be reviewed, a water supplier is to notify any

city or county within which it delivers water (CWC §10621). This notification can take place at any time before the 60-day requirement. *Potential date: May2, 2011*.

Government Code 6066 is specified on Page 1-2 of this Guidebook.

Plan Availability and Public Hearing: The UWMP Act requires the water supplier make the Plan available for public inspection and hold a public hearing pursuant to Government Code 6066 (CWC § 10642). This hearing should also include specific discussion of the plan indicating present and proposed future measures, programs, and policies to help achieve the water use reductions (CWC §10608.26(a) and § 10608.36) to achieve compliance with both the requirements for the public hearing prior to adoption and the public discussion on the supplier's per capita water use reduction goals . *Potential date: 2 weeks prior to board adoption*.

30 days after Adoption: The water supplier must submit within 30 days after the UWMP adoption, the Plan along with copies of changes or amendments to DWR, the California State Library, and any city or county within which it supplies water. (CWC §10644(a)). *Potential date: August 1, 2011 (note: July 31, 2011, is a Sunday).*

30 days after Submission to DWR: The water supplier must provide a copy of the adopted UWMP for public review during normal business hours for the 30 days that follow its submission to DWR (CWC §10645). *Potential date: August 31, 2011*.

60 days after Submission to DWR: The water supplier must provide the reliability section and supply-and-demand section of the adopted UWMP to any city or county within which the supplier provides water within 60 days after submitting the adopted UWMP to DWR (CWC §10635(b)). *Potential date: September 30, 2011*.

Plan Submittal

UWMPs submitted to DWR must have a copy of the signed adoption. If the adoption is not included, a copy of the adoption will be requested. The UWMP will not be considered officially submitted until the copy of the adoption is received by DWR.

Beginning with 2010 UWMPs, the full documents may (but are not required to) be submitted to DWR by uploading them on the Internet. In addition, a water supplier can submit specific information required by the UWMP Act directly into an online data management tool. This online data submission is planned to address multiple objectives:

- Provide a consistent and streamlined mechanism for water suppliers to transmit UWMPs to DWR, which the Legislature and Governor directed with the enactment of Water Conservation Bill of 2009
- Acknowledge the significant electronic improvements that have occurred since UWMPs were submitted in 2005
- Support interagency and public exchange of data that water suppliers are required to submit to multiple State agencies
- Facilitate UWMP review

- Provide data storage to support future submissions
- Provide a mechanism to review data on regional and statewide levels to track progress toward meeting 20x2020 goals (further discussed in Part II, Section F: Related Programs) and recycled water and desalinated water use

In Part II, Section F discusses related programs, and Section H covers electronic submittal.

Online submission consists of two parts: submission of the data supplied in the UWMP and submission of the Plan itself. Specific instructions for data and Plan submittal are included in Part II, Section H: Electronic Submittal.

UWMP Data

In previous years, UWMP data have been submitted to DWR only in tables or within printed reports. With the 2010 UWMP cycle, data can be submitted to DWR through DOST. The water supplier can then use this electronic submission to generate the tables submitted as part of the UWMP.

Urban water suppliers can achieve multiple benefits by supporting the development of the data management system. First, water suppliers can track their submitted information. Second, suppliers can streamline subsequent UWMP submittals because it will not be necessary to re-enter basic information. Third, water suppliers will be able to store, track, and use their own data in a central location. Finally, the data will be easily retrieved and compiled into tables included in the UWMP.

UWMP Document

One printed and one electronic copy of the adopted UWMP are to be submitted to DWR. The date of submittal will be considered the earlier date of the Internet upload or receipt of the printed document.

Part II, Section H, includes instructions for electronic submittal.

The electronic version of the UWMP can be submitted by using DOST, sending a CD-ROM with the printed version, or via e-mail. The DOST electronic submittal instructions are included in Part II, Section H: Electronic Submittal. The printed copy of the UWMP is delivered to:

Department of Water Resources
Statewide Integrated Water Management
Water Use and Efficiency Branch
P.O. Box 942836
Sacramento, CA 94236-0001
Attention: Coordinator, Urban Water Management Plans

If delivered by courier or overnight carrier to DWR, use the following street address instead of the PO Box:

901 P Street
Sacramento, CA 95814

One printed copy of the UWMP is to be submitted to the California State Library at:

California State Library
Government Publications Section
P.O. Box 942837
Sacramento, CA 94237-0001
Attention: Coordinator, Urban Water Management Plans

If delivered by courier or overnight carrier to the California State Library, use the following street address instead of the PO Box:

900 N Street
Sacramento, CA 95814

Required Supporting Documents

The UWMP Act requires submittal of applicable supporting documents. Documents that may be considered a part of a UWMP include:

1. A copy of the resolution adopting the UWMP (CWC §10620(a))
2. A copy of the draft water shortage contingency resolution or ordinance (CWC §10632(h))
3. The CUWCC BMP reports that may be submitted as DMM documentation (CWC §10631.5(b)(e))
4. A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted according to CWC, Division 5, Part 2.75 (commencing with Section 10750) or any other specific authorization for groundwater management (CWC §10631(b)(1))
5. A copy of the order or decree adopted by the court or the State Water Board for adjudicated basins and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree (CWC §10631(b)(2))

The resolutions (Items 1 and 2) and the CUWCC reports (Item 3) must be submitted as integral parts of the UWMP because they are being provided as part of the DMM documentation and, therefore, are required for DMM compliance. Items 4 and 5 may be provided separately from the submitted UWMP in one of three ways:

- Separate electronic (as PDF only) files with the electronic submittal of the UWMP
- Electronic (as Portable Document Format [PDF] only) on a CD accompanying the paper submittal of the UWMP to DWR and the California State Library
- Printed copies with the paper submittal of the UWMP

Because content on the Internet is constantly changing, the submission of a website address alone will not comply with providing the required UWMP elements. Versions of documents in place at the time of the UWMP adoption are required to be submitted with the UWMP.

Plan Review

Part II, Section J, contains DWR review sheets.

DWR will review each UWMP to determine whether each required element is fully addressed according to the CWC. DWR staff will complete the review using 2010 review sheets (see Part II, Section J), which will become part of the UWMP record after the review process is complete. Urban water suppliers may want to go through the review sheets or UWMP checklist as they prepare their UWMPs to confirm that the required components are included in the UWMP to be adopted and then submitted to DWR. The checklist includes a column the water supplier may complete to identify for the DWR reviewer where the required element occurs within the submitted UWMP. The DWR checklist can be incorporated into a UWMP, but the DWR review sheet cannot.

Part II, Section H, contains instructions for electronic submittal.

If an urban water supplier completely submits its UWMP using DOST, there will be a prioritization of UWMP review by DWR. This will be explained further in Part II, Section H: Electronic Submittal.

Because of the linkage of a UWMP and a water supplier's eligibility for grants and loans, DWR makes every effort for timely review of submitted UWMPs. DWR will work with water suppliers and DWR Division of Integrated Regional Water Management (DIRWM) staff to complete the review of UWMPs required for grants and loan applications, depending on staff availability.

Tracking Plan Review

DOST will send water suppliers e-mails at key stages of the review process and enable tracking its progress. E-mail notices will be sent to the water supplier's designated UWMP administrator at the following review steps:

1. Submittal of electronic data through DOST
2. Uploading of a PDF or Word version of a UWMP
3. Assignment of the UWMP to a DWR region and/or reviewer
4. Beginning of the DWR review process
5. Completing the initial DWR review process and either determining that the UWMP meets existing CWC requirements or requesting additional information

It will also be possible to track the stage of the review process by accessing DOST.

DWR Review

CWC section 10644 (b) directs the department to submit a report to the Legislature summarizing the status of plans adopted. In meeting this directive, DWR will review submitted plans to determine if all the requirements of the UWMP Act have been addressed in the plan. After finishing the plan review, DWR will send a letter to the supplier informing it of how DWR will report on the status of its plan to the Legislature. For plans that have not addressed or met specific requirements, DWR will list the requirements that are missing or need to be revised. Missing or additional

information can be added to a plan after it has been submitted to DWR. Adding information to a plan may require that the plan be amended.

Grant Eligibility

DWR's Integrated Regional Water Management (IRWM) and water conservation grants and certain water grants through other state agencies require that a supplier have a complete UWMP to receive funding. The IRWM and water conservation grant programs have defined "complete" to mean meeting all the urban water management requirements of the water code.

Regional Contacts

Contacts to answer questions regarding UWMP preparation, submittal, or review are listed in Table A-2. This list is also available on the DWR UWMP website. Figure A-1 shows the DWR regions.

Table A-2 Urban Water Management Plan DWR contacts[a]

Office	Contact	Phone	e-mail
Northern Region	Jessica Salinas	(530) 529-7355	salinas@water.ca.gov
	Tito Cervantes	(530) 529-7389	cervante@water.ca.gov
North Central Region	Kim Rosmaier	(916) 376-9628	krosmaie@water.ca.gov
South Central Region	Luis Avila	(559) 230-3364	lgavila@water.ca.gov
Southern Region	Sergio Fierro	(818) 543-4652 x247	sergiof@water.ca.gov
	David Inouye	(818) 500-1645 x246	davidi@water.ca.gov
Headquarters	Peter Brostrom	(916) 651-7034	brostrom@water.ca.gov
	Toni Pezzetti	(916) 651-7024	tpezzett@water.ca.gov

[a] See http://www.water.ca.gov/urbanwatermanagement/ for the most current version of the regional DWR contacts.

Online Resources

The UWMP website (http://www.water.ca.gov/urbanwatermanagement) contains extensive reference material, including:

- Frequently Asked Questions (FAQs), which will be updated as new questions and answers occur before July 1, 2011
- Viewable version of the DWR Staff UWMP 2010 Review Sheet
- The 2010 UWMP Guidebook
- Copies of the UWMP Act and Water Conservation Bill of 2009
- A link to the 2005 UWMPs
- Other helpful publications
- Links to the DWR UWMP workshops and webinars

These materials should support the preparers of UWMPs. In addition, the website contains the link for submission of online comments and questions regarding the UWMP process and supporting information. An e-mail can also be sent to UWMP@water.ca.gov.

Figure A-1 California Department of Water Resources regions

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Section B: Changes in Urban Water Management Plan Requirements Since 2005

Part II, Section K, contains relevant portions of the California Water Code.

UWMP preparers are required to comply with the CWC. Numerous changes to relevant State law have occurred since urban water suppliers prepared their 2005 UWMPs. Changes occurred to the UWMP Act (CWC §10610 et seq., included as Part II, Section K) with enactment of the Water Conservation Bill of 2009 (CWC §10608) and other legislation. The Water Conservation Bill of 2009 requires that certain information be included in an urban retail water supplier's UWMP.

Changes to the UWMP Act

The overall intent of the UWMP Act and its requirements are similar to previous years—to describe an urban water supplier's water supplies and conservation efforts. Primary changes to UWMP requirements since 2005 address water conservation (through Water Conservation Bill of 2009) and DMMs (through AB 1420), but there are several other changes. Changes to the UWMP Act are summarized in Table B-1.

Table B-1 Changes[a] in the Urban Water Management Plan Act since 2005

Change	CWC citation	Summary[b]
Notification	10621(b)	*Added*: Provide at least 60 days notification to any city or county within which the supplier provides water for the public hearing required by Section 10642.
DMM Compliance	10631(j)	*Changed*: Members of the CUWCC will be considered in compliance with the DMM evaluation (10631 (f) and (g)) if they comply with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008 and by submitting their CUWCC annual reports.
Wholesale Suppliers Source Water	10631(j)	*Deleted:* Text identifying the specific types of water an urban water supplier may seek information from a wholesaler supplier. The option to seek information from a wholesale supplier is not deleted, just the identification of source water types.
Lower Income housing water use projections	10631.1	*Added:* Water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households (Health and Safety Code Section 50079.5) will be provided. These water use projections are to assist a supplier in complying with Government Code Section 65589.7 to grant priority of the provision of service to housing units affordable to lower income households.
Linkage of DMM to State grant or loan program	10631.5(a)	*Changed:* After January 1, 2009, eligibility for state-funded grants or loans will be conditioned on the implementation of Section 10631 DMMs. If a DMM is not currently being implemented, then the urban water supplier submits to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement.. If a DMM is not locally cost-effective (the present value of the local benefits is less than the present value of local costs to implement the DMM), then the water supplier will submit supporting documentation and the DWR will provide a determination within 120 days of UWMP submittal.

Change	CWC citation	Summary[b]
DMM Compliance	10631.5(b)	*Added:* DWR will consult with other agencies and public input and develop eligibility requirements for meeting compliance with DMM implementation. Determination of DMM compliance will be based on an individual water agencies implementation or participation with a regional group. An individual water agency will not be denied eligibility if another participating regional agency does not comply with each of the DMMs
Determination of Grant and Loan Eligibility	10631.5(c)	*Added:* Grant and loan eligibility, based on DMM compliance, will be included in the funding guidelines.
	10631.5(d)	*Added:* The administering agency will request and eligibility determination from DWR regarding "the requirements of this section". DWR will respond within 60 days.
	10631.5(e)	*Added:* The water supplier may submit copies of its annual reports and other relevant documents to assist DWR in determining implementation or scheduling of the water suppliers DMMs. Water suppliers that are signatories of the CUWCC MOU may submit its annual reports to support its DMM activities.
	10631.5(f)	*Added:* "This section" is in effect only until July 1, 2016, after which it is repealed, unless another statute is enacted.
New DMM Independent Technical Panel	10631.7	*Added:* DWR, with the CUWCC, will convene a technical panel to provide information and recommendations to DWR and the Legislature on new DMMs, technologies, and approaches. There is further language on the panel members and timing.
Potential Recycled Water Uses	10633(d)	*Added:* Indirect potable reuse is to be considered as an option for a potential use of recycled water.
UWMP Distribution	10644(a)	*Added:* A copy of the UWMP will also be submitted to the California State Library no later than 30 days after its adoption
Exemplary UWMP Elements	10644(b)	*Added:* 'Exemplary' elements of individual plans are to be identified in the 2011 Legislative Report
Exemplary UWMP Elements	10644(c)	*Added:* (1), (2), and (3). Clarifying that "exemplary" DMMs are those that achieve water saving significantly above the levels established by DWR to meet the requirements of 10631.7. The results are to be distributed to the panel convened pursuant to Section 10631.7 and the public.
Retail Deadline	144644(j)(1)	*Added:* An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan.
Wholesaler Deadline	144644(j)(2)	*Added:* An urban wholesale water supplier whose urban water management plan . . .is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water supplier and urban retail water suppliers.
	10657	*Deleted.*

[a] Formatting or renumbering changes are not included in this table.

[b] This column provides a general summary of the specific changes in the UWMP Act. See the CWC citation (Part II, Section K) for the exact legislative wording.

UWMP Requirements in the Water Conservation Bill of 2009

The Water Conservation Bill of 2009(SBX7-7) was enacted in November 2009. To increase water use efficiency, it requires reduction of the statewide average per capita daily water consumption by 20 percent by December 31, 2020, and requires "all water suppliers to increase the efficiency of this essential resource" (10608.4(a)).

UWMP references and requirements cited in the Water Conservation Bill of 2009 are included in Table B-2.

Table B-2 UWMP requirements cited in Water Conservation Bill of 2009

CWC Citation	Summary
10608.20(e)	Include the baseline daily per capita water use, urban water use target, interim water use target, and compliance daily per capita water use. Provide basis for determination and supporting data references.
10608.20(g)	The 2015 UWMP can update the 2020 urban water use target.
10608.20(h)(2)	An urban retail water supplier shall use the methods developed by the department in compliance [with methodologies and criteria developed by DWR]
10608.20(j)	Deadline for adoption of a UWMP is extended to July 1, 2011 to allow use of the technical methodologies developed to establish baseline, target, interim target, and compliance daily per capita water use.
10608.36	Wholesale suppliers will provide an assessment of their present and proposed future measures, programs, and policies to achieve water use reduction required in SBX7 7.
10608.40	Urban water suppliers will report progress toward meeting urban water use targets in their UWMPs using a standardized form to be developed by DWR. *Note: This applies only to 2015 and 2020 UWMPs because they will report "progress" toward meeting targets established in this, the 2010 UWMP.*
10608.42	DWR will review the 2015 UWMPs and report to the Legislature the progress toward achieving a 20-percent reduction in urban water use by December 31, 2020.

Required UWMP Components

Part II, Section I, contains a UWMP checklist.

The UWMP Checklist (Part II, Section I) summarizes the required components of a 2010 UWMP and includes the CWC citation. Two checklists are presented, both with identical information but with different organization: one version is organized by CWC; the other by subject.

The checklists also contain a column for the water supplier to provide the page location of the requested/required information within its UWMP. This will support review of the UWMP by DWR staff. It is not required that this column be completed by the water supplier, but the UWMP preparer is more familiar with the specific document that was prepared and should be able to more quickly discern the information location. In addition, it helps the preparer do a final verification that the required information is provided in the UWMP.

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Section C: Regional Water Planning

Water suppliers may work through several mechanisms to regionally develop some or all of the components required for a 2010 UWMP. These options include:

- Preparing a regional UWMP
- Forming a regional alliance to develop interim and urban water use targets

Regional water management groups and preparation of Integrated Regional Water Management Plans (IRWMPs) have created a more cooperative approach to addressing water resources issues. Developing a cooperative 2010 UWMP may be a natural continuation of regional coordination. In support of continued collaboration, both the UWMP Act (Section 10620(d)(1)) and the Water Conservation Bill of 2009 (Section 10608.20(a)(1) and 10608.20) provide the mechanism for supporting development of regional UWMPs and water conservation targets. An urban water supplier can meet the requirements of the law by participating in area-wide, regional, watershed, or basin-wide urban water management and planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

Part II, Section M, contains technical methodologies.

With the expanded requirements of the 2010 UWMPs to address the Water Conservation Bill of 2009, DWR has prepared additional guidance to water suppliers for developing regional plans during the 2010 cycle. Methodology 9: Regional Compliance (see Part II, Section M: Water Conservation Bill of 2009 Technical Methodologies) provides specific instructions for cooperative reporting. Key aspects of the Regional Compliance Technical Methodology are summarized in the remainder of this Guidebook section.

Governing Entities

If a group of water agencies are planning to develop a regional UWMP or form a regional alliance,

- Regional UWMPs must contain a resolution adopted by each participating water supplier
- Regional alliance members must list their participation in the alliance in their individual UWMPs if they are submitting an individual UWMP but developing a regional alliance for the purpose of developing interim and urban water use targets

An interagency agreement may be considered, including contingencies.[8]

Regional UWMP Options

There are two ways to approach the preparation of a regional UWMP. The first is to prepare a single plan for multiple water suppliers. The second way is for each water

[8] DWR will not review or approve the terms of MOUs or legal agreements that water suppliers use to create and manage regional alliances. However, terms of the agreements must be consistent with all applicable sections of the CWC.

supplier to develop an individual UWMP that has some common elements developed and adopted by the group.

Developing a Regional UWMP

In 2005, five regional groups prepared and submitted cooperative UWMPs to DWR. These were from Castaic Lake Water Agency (for the water suppliers within the Santa Clarita Valley), Mojave Water Agency, Metropolitan Water District of Southern California, Inland Empire Utilities Agency, and West Basin Municipal Water District. Many of these regional plans were prepared in addition to UWMPs for individual water suppliers.

The groups that prepared regional UWMPs in 2005 did so under a variety of arrangements. Some were a part of the Integrated Regional Water Management (IRWM) process; others were prepared by the wholesale supplier and its retail agencies. It is the responsibility of the participating water suppliers to determine the best approach for its group. The approach used and the water supplier relationship should be clearly stated in the UWMP.

Preparation of a regional UWMP requires that each participating water supplier adopt the plan. If a single document is prepared and adopted by each water supplier, then documentation from each water supplier adopting the plan must be included in the final UWMP. If a regional plan is prepared and an individual agency also prepares its own submit separate UWMP, then its governing board adopts both the individual and regional plans.

Part II, Section M, contains technical methodologies.

If a regional UWMP is prepared, each water supplier must still comply with the Water Conservation Bill of 2009. Interim and urban water use targets can be determined regionally, if the applicable criteria—discussed below—are met for determining regional targets. See Methodology 9: Regional Compliance (Part II, Section M: Water Conservation Bill of 2009 Technical Methodologies) for additional information.

Common Elements of a UWMP

A group of water suppliers can prepare common elements of a UWMP. For example, each water supplier would prepare its own UWMP, but would prepare a regional Water Shortage Contingency Plan, which would be included (physically or electronically) in each UWMP. Each UWMP would indicate that the Water Shortage Contingency Plan was prepared in cooperation with the other identified water suppliers.

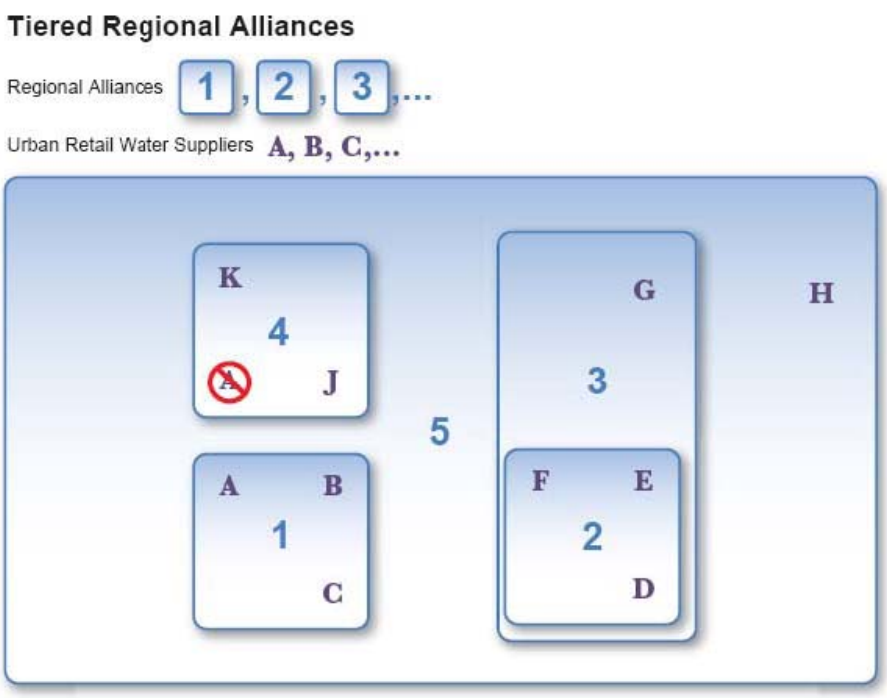
Forming a Regional Alliance for the Water Conservation Bill of 2009

The second condition in which a group of water suppliers can cooperatively participate during the urban water management planning process is related to complying with Water Conservation Bill of 2009 requirements. In this case, the water

suppliers' cooperative participation is referred to as a regional alliance. This allows water suppliers to work toward cooperatively developing programs and meeting water conservation goals, but not necessarily submitting a regional UWMP.

Part II, Section M, contains technical methodologies.

Water suppliers can belong to more than one regional alliance, but these alliances must be tiered meaning the members of the smallest alliances must all be members of the larger alliances. (Figure C-1.) Technical Methodology 9: Regional Compliance (Part II, Section M) provides additional detail regarding the relationships within the tiered structure and how a water agency can participate in multiple regional alliances, as well as its limitations.



Three separate tiered alliances (Alliances 1, 3 and 4) occur within the regional alliance (Alliance 5). In addition, Alliance 3 has a sub-tiered alliance (Alliance 2). Water Agency A is a full member of Tiered Alliance 1. It can participate as a member of Alliance 4, but will not be included in water target calculations to prevent 'double-counting'. (DWR 2010a.)

Figure C-1 Tiered approach to regional alliances

Criteria

To form a regional alliance, the Regional Compliance Technical Methodology indicates water suppliers must meet at least one of the following criteria:

- Are recipients of water from a common wholesale water supplier. For this purpose, the State Water Project and the Central Valley Project are not considered wholesale water suppliers. Wholesale water suppliers are not required to establish

and meet targets for daily per capita water use. Wholesale water suppliers serving in the role of a regional alliance are representing the urban retail water suppliers that are members of the alliance, and compliance with a regional target is on behalf of the member suppliers and not the wholesale water supplier itself.

- Are partners with a common regional agency authorized to plan and implement water conservation.
- Are part of a regional water management group as defined in CWC §10537.
- Are part of an IRWM funding area, which for this purpose means an IRWM planning area formally accepted by DWR through its IRWM Region Acceptance Process.
- Are located within the same hydrologic region, which for this purpose refers to the 10 hydrologic regions as shown in the California Water Plan. For situations where water suppliers may serve areas within more than one hydrologic region, the majority of each water supplier's Service Area Population must be located within the hydrologic region being identified as a regional alliance.
- Have appropriate geographic scales for which methodologies developed by DWR can be applied. For this provision, water suppliers' service area boundaries must be contiguous.

Reporting

Part II, Section M, contains technical methodologies.

Each regional alliance will develop its own set of interim and urban water use targets, which are to be included in each alliance's Regional Alliance Report. Part II, Section M: Water Conservation Bill of 2009 Technical Methodologies describes what is to be included in the Regional Alliance Report. Each water supplier will identify in its UWMP each regional alliance of which it is a member.

Each water supplier that is a member of one or more regional alliances will also report the interim and urban water use target values for each alliance. For example, Water Agency K (see Figure C-1) is a member of a sub-tiered regional alliance with Water Agency H, Tiered Alliance III, and the Regional Water Supplier Alliance. In its UWMP, it will identify each of these alliances, the interim and urban water use target values for each alliance, as well as the interim and urban water use targets for the agency itself.

Withdrawing or Separating from a Regional Alliance

If a water supplier withdraws from or is a member of a regional alliance that is later dissolved, the water supplier must inform DWR and comply individually with interim and urban water use targets. The water suppliers remaining in the regional alliance may either submit revised regional baseline or target data, or dissolve the alliance.

Section D: Baseline and Target Determination

Beginning with the 2010 UWMPs, SBX7-7 (CWC §10608 (e)) requires each urban retail water supplier to include the following in its UWMP.

- **Baseline daily per capita water use —** how much water is used within an urban water supplier's distribution system area on a per capita basis. It is determined using water use and population estimates from a defined range of years.
- **Urban water use target** — how much water is planned to be delivered in 2020 to each resident within an urban water supplier's distribution system area, taking into account water conservation practices that currently are and plan to be implemented.
- **Interim urban water use target** — the planned daily per capita water use in 2015, a value halfway between the baseline daily per capita water use and the urban water use target.

In 2015 and 2020, each water supplier will also determine a compliance daily per capita water use to assess progress toward meeting interim and 2020 urban water use targets. Determining and tracking use levels and targets will support the goal of reducing the state's per capita urban water consumption by 20 percent.

Part II, Section M, contains technical methodologies.

This section provides guidance on how to determine these numbers and what supporting information is to be included in a water suppliers' UWMP. The methodologies themselves are included in Part II, Section M.

Process Overview

The Water Conservation Bill of 2009 describes the overall process by which a water supplier complies with the requirements. It specifically identifies three of the four methods for establishing urban water use target and requires DWR to develop a fourth target method. Additionally, it requires DWR to develop technical methodologies for consistent implementation of the Water Conservation Bill of 2009 requirements. These technical methodologies and the fourth target method were developed in close consultation with the Urban Stakeholders Committee (USC) during spring and summer 2010.

Target methods are the four options an urban water supplier has to determine its urban water use target. They are referred to as Target Method 1, Target Method 2, etc. These methods identify specific steps water suppliers will follow to establish targets. Each urban water supplier (or regional alliance) must use one of the four target methods to perform the required calculations. Technical methodologies are procedures and guidance for conducting some of the specific steps identified in the target methods. There are nine technical methodologies. Multiple methodologies may be needed for completion of a target method calculation. Table D-1 shows the overall relationship between target methods and technical methodologies.

Table D-1 Relationship between target methods and technical methodologies

Technical Methodology	Step 1: Determine base daily per capita water use	Step 2: Determine urban water use target				Step 3: Compare urban water use target to minimum threshold	Step 4: Determine interim water use target	Future step: Compliance daily per capita water use
		Method 1 — 80 Percent	Method 2 - Performance Standards	Method 3 — 95 Percent of Hydrologic Region Target	Method 4 — Water Savings (provisional)			
1.Gross water use	•					•		
2.Service area population	•					•		
3.Base daily per capita use	•					•		
4.Baseline commercial, industrial and institutional water use			•					
5.Indoor residential water use			•					
6.Landscaped area water use			•					
7.Compliance daily per capita use								•
8.Criteria for compliance year adjustment								•
9.Regional Cooperation	•	•	•	•	•	•	•	•

The Water Conservation Bill of 2009 provides flexibility in how an urban water supplier determines the baseline and target numbers for its water service area. It also indicates that water suppliers can cooperatively determine and report progress toward achieving these targets through a regional alliance. A water supplier may determine the targets on a fiscal year or calendar year basis, but must clearly state in its UWMP the basis for its reporting[9].

Although the legislation provides flexibility in how an individual or group of water suppliers approaches baseline and target compliance, it also requires method and methodology consistency over time. So, technical methods and methodologies used by a water supplier to determine use levels and develop targets in 2010 are to be the same as those used in 2015 and 2020. A water supplier may select a different Target

[9] If a water supplier has options, DWR prefers reporting of annual water uses and determination of baseline and target values to be on a calendar year basis to provide consistency with other reporting, such as Public Water System Statistics forms. DWR realizes that this may not be possible for all water suppliers, however.

Method in its 2015 plan, but not in any amended 2015 plans or in 2020 plan. A water supplier has the opportunity to modify its target method during the implementation period, but any changes must be retroactive, as described in Technical Methodology 9: Regional Compliance.

Water Suppliers with Multiple Service Areas

Many water suppliers within the state have service areas that are at a physical distance from each other. This includes private water companies that operate separate water systems in different geographic regions of California, as well as public suppliers that operate multiple, physically separate distribution systems.

Public water suppliers that have multiple service areas can choose to set urban water use targets for each of its service areas, but the same target method must be used for each service area. If a public water supplier sets targets for individual service areas, it must also calculate a single target for the entire area it serves. The entire area target can be the population weighted average of the individual service area targets or calculated based on data from the entire area served.

Private water suppliers with multiple districts should create a UWMP for each district with water supply deliveries or number of connections above the UWMP submittal threshold. If a district has multiple service areas, the private suppliers can, similar to the public suppliers, set individual targets for each service area within a single district. Private suppliers are also to use the same target method for calculating individual service area targets within a single district. Private water suppliers that set individual targets for service areas within a district must also calculate a single urban water use target for the entire district. The district target can either be a weighted average of the individual service area targets or calculated based district wide data.

Baseline Periods

Two baseline periods are to be determined during the calculation of the base daily per capita water use. The legislation provides some flexibility in what actual periods of time are used to establish these baselines. This accounts for short-term water demand variations resulting from weather influences, as well as acknowledging the advances of water suppliers that have already begun using recycled water to reduce potable demands. The two baseline periods are:

- 10- to 15-year base period. This is a 10-year or 15-year continuous period used to calculate baseline per capita water use
- 5-year base period. This is a continuous 5-year period used to determine whether the 2020 per capita water use target meets the legislation’s minimum water use reduction requirements of at least a 5 percent reduction per capita water use.

If the urban retail water supplier’s base daily per capita water use calculated using the 5-year base period is 100 gallons per capita per day (GPCD) or less, then the urban

water supplier is exempt from the 5 percent minimum required reduction. It must document in subsequent UWMPs in 2015 and 2020 that it has maintained the 100 GPCD compliance.

Meeting Water Conservation Bill of 2009 Requirements

There are four overall steps a water supplier completes to meet the 2010 UWMP requirements indentified in the Water Conservation Bill of 2009:

- Step 1: Determine Base Daily Per Capita Water Use
- Step 2: Determine Urban Water Use Target
- Step 3: Compare Urban Water Use Target to the 5-year Baseline
- Step 4: Determine Interim Urban Water Use Target

Part II, Section D, describes the approach for determining baseline and target information. Part II, Section H, includes instructions for electronic submittal.

These steps are shown in Figure D-1. The figure shows the overall approach to developing baseline and target values as well as which methodology to apply for each step of the process. Figure D-2 shows the specific actions to be completed in determining the baselines and targets required by the Water Conservation Bill of 2009. Part II, Section D: Baseline and Target Determination, describes the overall approach to each step. Detailed description of each step and how to interface with DOST is provided in Part II, Section H: Electronic Submittal.

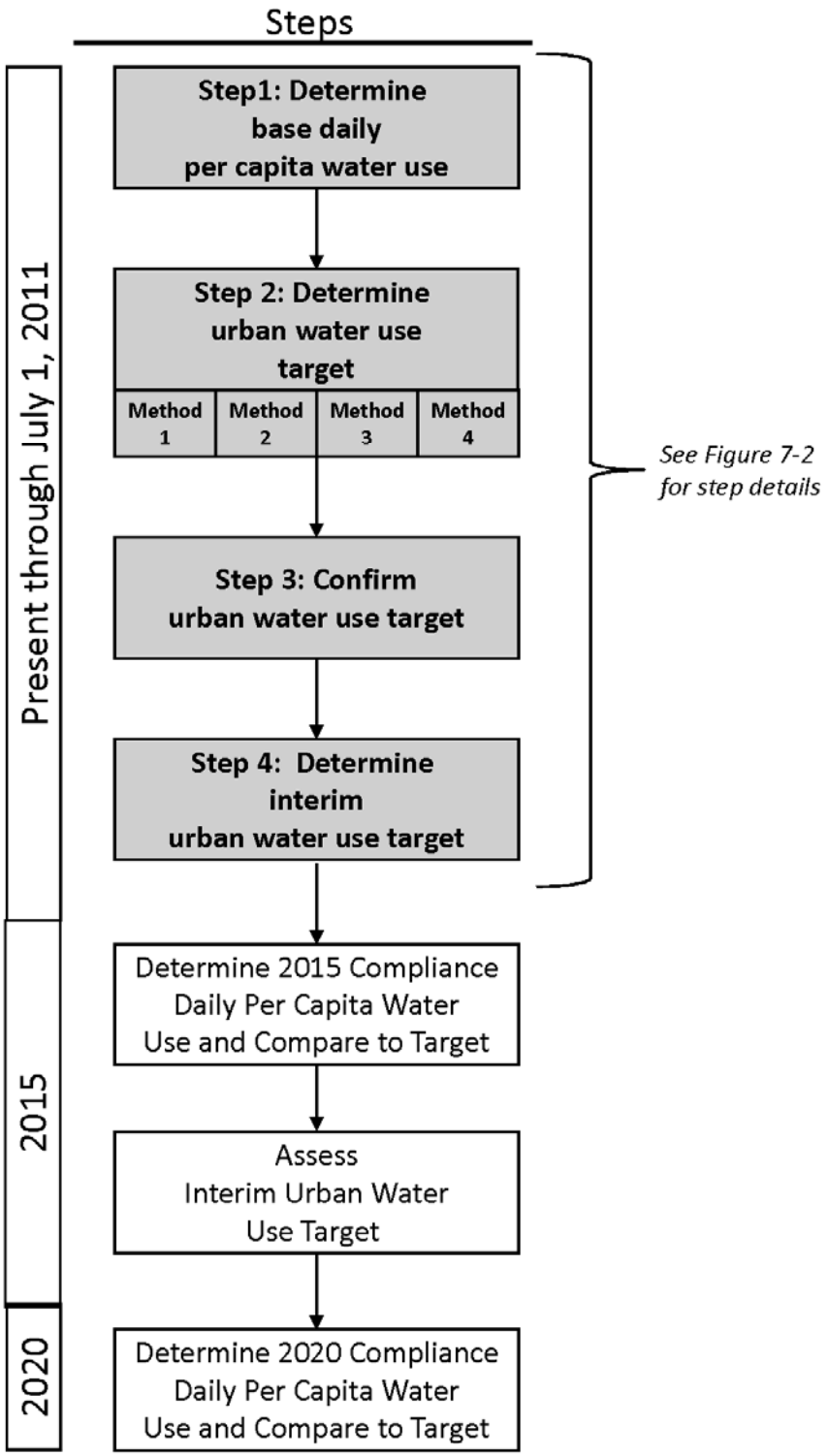


Figure D-1 General overview of developing water suppliers' SBX7-7 conservation goals

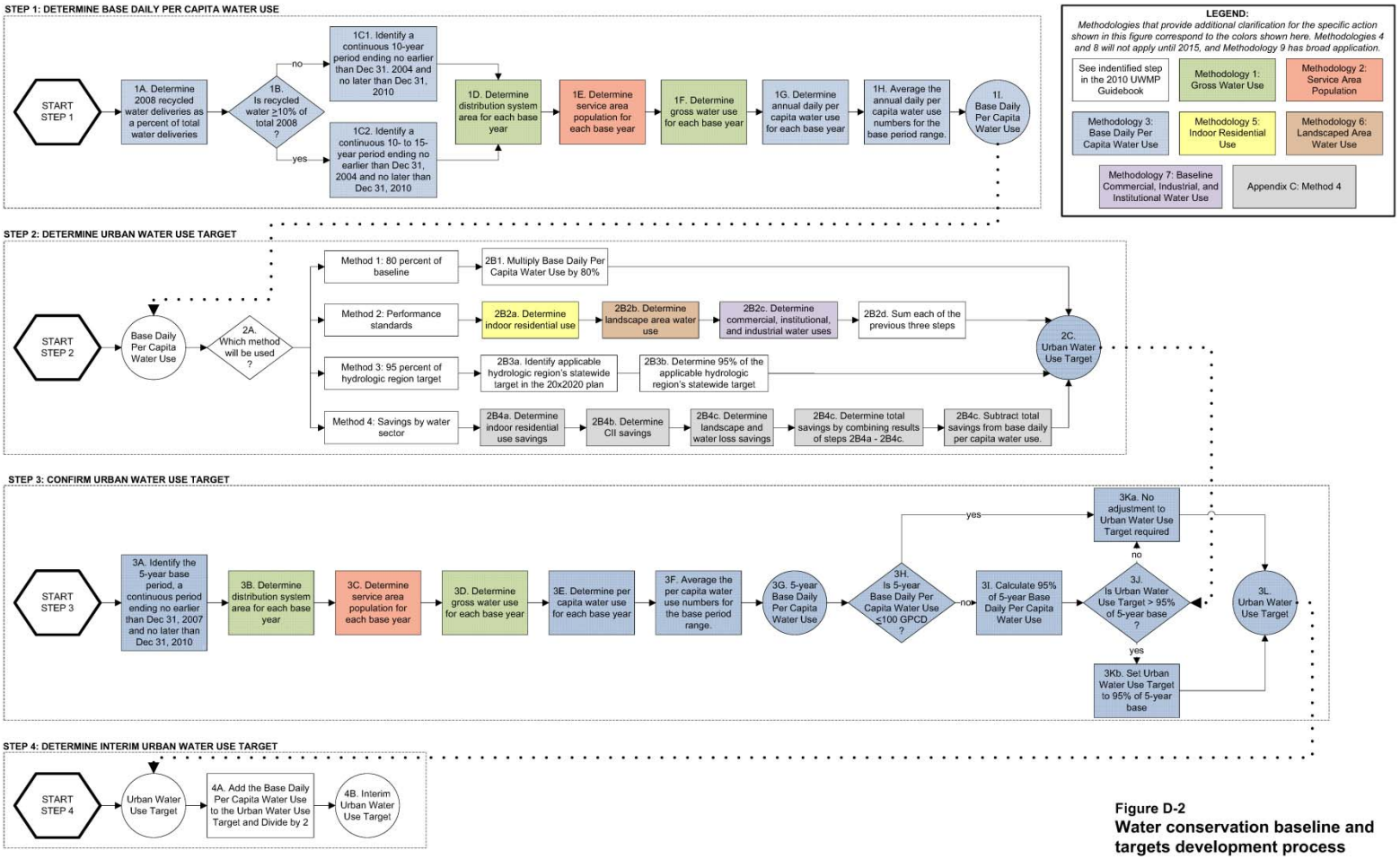


Figure D-2 Details of developing SBX7-7 conservation goals (large format 11x17 available online)

Step 1: Determine Base Daily per Capita Water Use

The Water Conservation Bill of 2009 requires each urban retail water supplier to include in its UWMP an estimate of base daily per capita water use. Base daily per capita water use, measured in GPCD, is established for an initial period of time, which is referred to as the 10- to 15-year base period.

Three technical methodologies have been developed to support a water supplier in determining its base daily per capita water use:

- Technical Methodology 1: Gross Water Use
- Technical Methodology 2: Service Area Population
- Technical Methodology 3: Base Daily Per Capita Water Use

Part II, Section M, describes technical methodologies.

Figure D-2 shows the overall approach to determining the base daily per capita water use using these technical methodologies. The base daily per capita water use Technical Methodologies are included in Section M.

(Figure D-2 is also available formatted as an 11-by-17 figure online at http://www.water.ca.gov/urbanwatermanagement/guidebook/.)

Step 1A: Determine Supplier 10- to 15-year and 5-year Base Periods

Using Methodology 3 (Base Daily Per Capita Water Use), determine the percentage of recycled water to total water deliveries for the year 2008.

Step 1B: Decision — 2008 Recycled Water Percentage

Using Methodology 3 (Base Daily Per Capita Water Use) and the results from Step 1A, determine if the percentage of recycled water to total water deliveries for the year 2008 is 10 percent or greater. If yes, proceed to Step 1C2. If not, proceed to Step 1C1.

Steps 1C1 and 1C2: Determine 10- and 15-Year Base Period Ranges

Using Methodology 3 (Base Daily Per Capita Water Use), determine base period ranges for calculating the base daily per capita water use. For both steps 1C1 and 1C2, this is a continuous period of years with the end of the range ending between December 31, 2004, and December 31, 2010.

For Step 1C1, the range must be 10 years.

For Step 1C2, the range must be at least 10 years, but it may be as long as 15 years. It is acceptable to have a range somewhere between 10 and 15 years, but the range must be in full-year increments. In other words, a range of 12 years and 6 months is not acceptable.

Step 1D: Estimate Distribution System Area

The service area identifies the physical extent for which both the population and gross water use will be determined and, ultimately, the base daily per capita water use. For the purposes of implementing this legislation, the service area is equivalent to a water supplier's distribution system.

Using Step 2 of Methodology 1 (Gross Water Use), delineate the distribution system boundary for each of the base period years. A map is to be included in the UWMP that shows the Distribution System Boundary and any changes that occurred in the boundary during the base period. This map may be a single page using shading or various line types to show system area changes over the identified base period.

Step 1E: Estimate Service Area Population

Using Methodology 2 (Service Area Population), determine the service area population for each year of the baseline periods by using the estimates for the Distribution System Boundary during each of the years in the base period.

Step 1F: Calculate Gross Water Use

Using Steps 3 through 12 of Methodology 1 (Gross Water Use), complete the process for calculating gross water use. Steps 3 through 12 are to be performed for each of the base period years.

When calculating gross water use, industrial process water may be excluded in certain situations[10]. An urban retail water supplier may exclude up to 100 percent of process water use from its gross water use if any one of the following criteria is met in its service area:

(a) Total industrial water use is equal to or greater than 12 percent of gross water use.

(b) Total industrial water use is equal to or greater than 15 gallons per capita per day.

(c) Non-industrial water use is equal to or less than 120 gallons per capita per day if the water supplier has self-certified the sufficiency of its water conservation program with DWR under the provisions of Section 10631.5 of the CWC.

(d) The population within the supplier's service area meets the criteria for a disadvantaged community.

[10] These exclusions are specified in the emergency regulation for industrial process water, which will expire in June 2011. DWR is currently working on having a permanent regulation in place before the expiration of the emergency regulation. The permanent regulation is not expected to differ substantially from the emergency regulation. However, agencies are strongly encouraged to check the Web page for the process water regulations for the full language of the regulation, all accompanying documents, and progress of these regulatory actions: http://www.water.ca.gov/wateruseefficiency/sb7/committees/urban/u5/.

Step 1G: Determine Annual Daily Per Capita Water Use

Using Table 4 of Technical Methodology 3, calculate the daily per capita water use for each base period year. Units are to be in GPCD.

Step 1H: Determine Base Daily Per Capita Water Use

Using Technical Methodology 3, calculate the base daily per capita water use for the entire base period by averaging the annual daily per capita water use values identified in Step 1G. Units are to be in GPCD.

Step 1I: Base Daily Per Capita Water Use

The base daily per capita water use value determined in Step 1H becomes the water supplier's base daily per capita water use value. It will be used in subsequent steps for identifying future water targets and estimating progress towards reducing per capita water use identified in the Water Conservation Bill of 2009.

Step 2: Determine Urban Water Use Target

The water supplier has four different methods to be considered for determining the urban water use target. Methods 1 through 3 were established by the Legislature in the Water Conservation Bill of 2009. Urban Water Use Target Method 4 (Method 4) subsequently was prepared by DWR and an advisory committee according to the requirements provided in the CWC (§10608.20(b)(4)). The four methods are:

- Method 1: 80% of Base Daily Per Capita Water Use (Step 2B1)
- Method 2: Performance Standards (Step 2B2)
- Method 3: 95% of Regional Target (Step 2B3)
- Method 4: Water Savings (provisional)[11] (Step 2B4)

Three technical methodologies have been developed to support a water supplier in determining its urban water use target, if Method 2 is used. These are:

- Technical Methodology 5: Indoor Residential Use
- Technical Methodology 6: Landscaped Area Water Use
- Technical Methodology 7: Baseline Commercial, Industrial, and Institutional Water Use

Method 4 was developed after the release of the Water Conservation Bill of 2009 Technical Methodologies (see Section M). Its development and application are presented in detail within Appendix D of Section M.

[11] Method 4: Water Savings is considered provisional because it will be updated in 2014, as required by CWC 10608.20(d).

Step 2A: Decision — Method Determination

Step 2A is the decision point a water supplier uses to identify which of these four methods it will use to determine the urban water use target.

Step 2B: Urban Water Use Target Methods

Step 2B1: Method 1 — 80% of Base Daily Per Capita Water Use. Method 1 has one step (Step 2B1a). Calculate 80 percent of the base daily per capita water use.

Step 2B2: Method 2 — Performance Standards. Method 2 consists of a series of 4 steps and uses actual water use data and estimates from the water supplier.

- Step 2B2a. Using Methodology 5, apply indoor residential water use.
- Step 2B2b. Using Methodology 6, determine the landscaped area.
- Step 2B2c. Using Methodology 7, determine the commercial, industrial, and institutional water use.
- Step 2B2d. Sum the results of Steps 2B2a, 2B2b, and 2B2c.

Figure F-1 in Part II, Section F, shows the hydrologic regions and goals for 2020.

Step 2B3: Method 3 — 95% of Regional Target. Method 3 consists of 2 steps.

- Step 2B3a. Identify the hydrologic region within which the water district occurs. Identify the 20x2020 target for the hydrologic region, shown in Figure F-1, in Section F. Online tools are available at http://www.water.ca.gov/urbanwatermanagement/technicalassistance/ to help water suppliers identify their hydrologic basin. If the water supplier's service area is within more than one hydrologic region, then proportionally calculate an intermediate 20x2020 target using the proportion that lies within each hydrologic region.
- Step 2B3b. Calculate 95% of the target for the hydrologic region (Figure D-3).

Online tools are available at the UWMP Web page to help water suppliers identify the hydrologic basin(s) in which their district occurs.

Step 2B4: Method 4 — Savings by Water Sector. This method identifies water savings obtained through identified practices and subtracts them from the base daily per capita water use value identified for the water supplier. This method is accomplished in 5 steps.

- Step 2B4a. Determine the indoor residential use savings.
- Step 2B4b. Determine the CII savings.
- Step 2B4c. Determine the landscape and water loss savings.
- Step 2B4d. Sum the results of Steps 2B4a, 2B4b, and 2B4c.
- Step 2B4e. Subtract the total savings from the water supplier's base daily per capita water use value.

Step 2C: Urban Water Use Target

The urban water use target value determined using one of the four identified methods will be used in Step 3 to confirm the urban water use target.

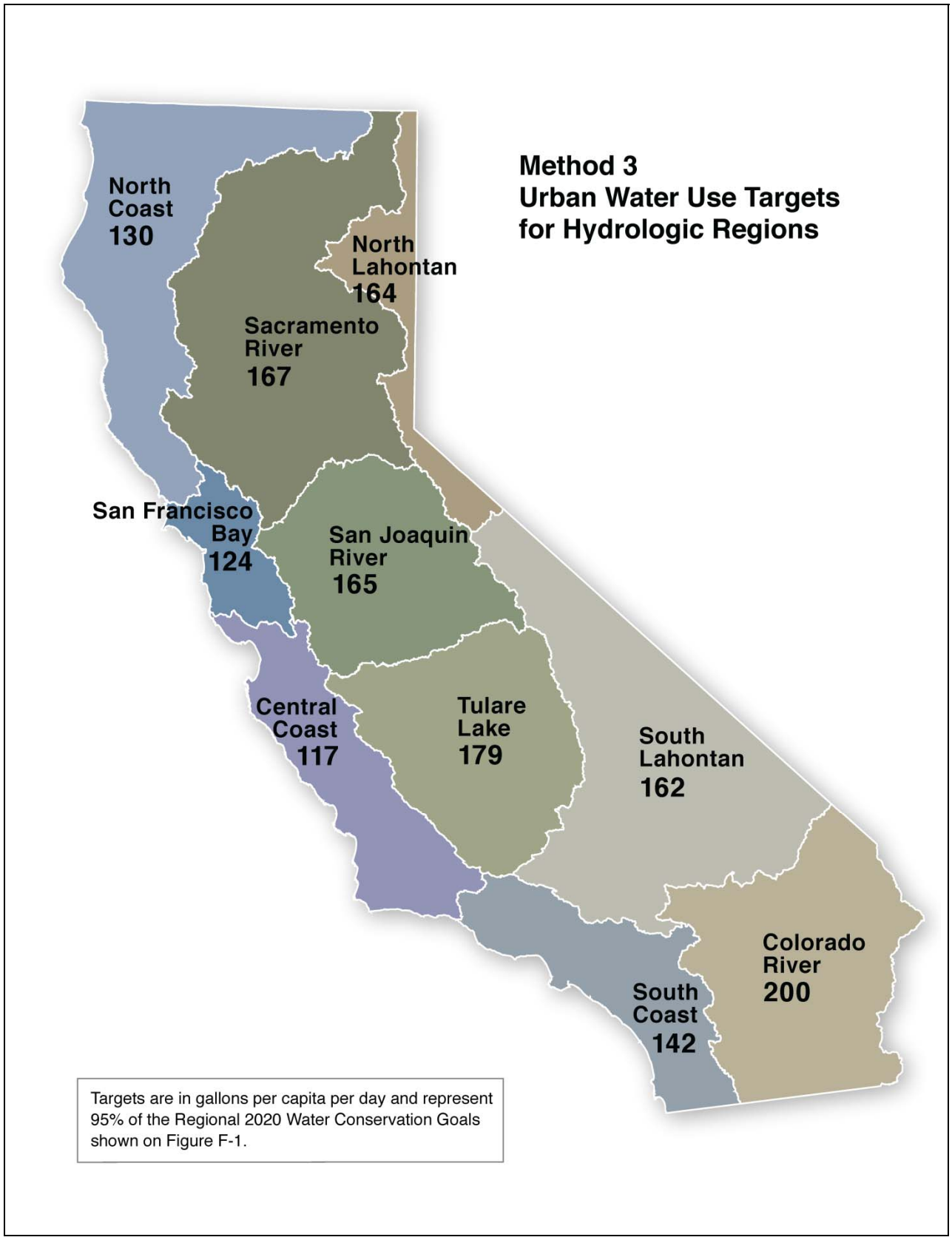


Figure D-3 Method 3 urban water use targets for hydrologic regions

Step 3: Confirm Urban Water Use Target

Step 3 confirms the water supplier's urban water use target determined in Step 2. It compares the urban water use target determined in Step 2 to a 5-year base daily per capita water use value to confirm that the urban water use target has met a minimum reduction established by statute. Adjustments are made, if necessary, so that the threshold is met.

Step 3A: Identify the 5-Year Base Period

CWC Section 10608.22 indicates that calculation of a base daily per capita water use determined by using a 5-year base period will be used to confirm that the urban water use target meets a minimum threshold. The 5-year continuous base period is to end no earlier than December 31, 2007, and no later than December 31, 2010.

Step 3B: Estimate Distribution System Area

This step is the same as Step 1D.

The service area identifies the physical extent for which both the population and gross water use will be determined, and then ultimately the base daily per capita water use. For the purposes of implementing this legislation, the service area is equivalent to a water supplier's distribution system.

Using Step 2 of Methodology 1 (Gross Water Use), delineate the distribution system boundary for each of the base period years. A map is to be included in the UWMP that shows the Distribution System Boundary and any changes that occurred in the boundary during the base period. This map may be a single page using shading or various line types to show system area changes over the identified base period.

Step 3C: Estimate Service Area Population

This step is the same as Step 1E.

Using Methodology 2 (Service Area Population), determine the service area population for each year of the baseline periods by using the estimates for the Distribution System Boundary during each of the years in the base period.

Step 3D: Calculate Gross Water Use

This step is the same as Step 1F.

Using Steps 3 through 12 of Methodology 1 (Gross Water Use), complete the process for calculating gross water use. Steps 3 through 12 are to be performed for each of the base period years.

Step 3E: Determine Annual Daily Per Capita Water Use

This step is the same as Step 1G.

Using Table 4 of Technical Methodology 3, calculate the daily per capita water use for each base period year. Units are to be in GPCD.

Step 3F: Determine 5-Year Base Daily Per Capita Water Use

This step is the same as Step 1H.

Using Technical Methodology 3, calculate the base daily per capita water use for the entire base period by averaging the annual daily per capita water use values identified in Step 1G. Units are to be in GPCD.

Step 3G: Determine 5-Year Base Daily Per Capita Water Use

The 5-year base daily per capita water use value identified in Step 5F will be used in the next series of steps to assess that the urban water use target determined in Step 2 meets minimum thresholds.

Step 3H: Decision — 5-Year Base Daily Per Capita Water Use

Is the 5-year base daily per capita water use value from Step 3G less than or equal to 100 GPCD? If so, proceed to Step 3Ka. If not, proceed to Step 3I.

Step 3I: Calculate 95% of 5-Year Base Daily Per Capita Water Use

Calculate 95% of 5-Year Base Daily Per Capita Water Use value determined in Step 3G.

Step 3J: Decision — Compare 5-Year Base Daily Per Capita Water Use and Urban Water Use Target

Determine whether the urban water use target is greater than 95 percent of the 5-year base daily per capita water use value determined in Step 3G. If yes, proceed to Step 3Kb. If no, proceed to Step 3Ka.

Steps 3Ka and Kb: Urban Water Use Target Adjustments

This step assesses the urban water use target and determines if additional adjustments are needed to the urban water use target.

Step 3Ka: No Adjustments

No adjustments to the urban water use target are needed.

Step 3Kb: Adjust Urban Water Use Target

If the urban water use target is greater than 95 percent of the 5-Year base daily per capita water use value determined in Step 3G, then the urban water use target is adjusted to be 95 percent of the 5-year base daily per capita water use value determined in Step 3G.

Step 3L: Urban Water Use Target

The value of the urban water use target confirmed in Steps 3Ka and 3Kb are established as the water supplier's urban water use target.

Step 4: Determine Interim Urban Water Use Target

Step 4A: Determine Interim Urban Water Use Target

To determine the interim urban water use target—the water use goal each water supplier is to achieve and report in the 2015 UWMP—add the base daily per capita water use to the urban water use target. Then divide by 2.

Step 4B: Interim Urban Water Use Target

The value of the interim urban water use target established in Step 4A is water supplier's interim urban water use target.

Section E: Demand Measurement Measures and Best Management Practices

DMMs are specific actions a water supplier takes to support its water conservation efforts. Specifically, the UWMP Act identifies 14 DMMs (CWC 10631(f)) that are to be evaluated in each UWMP. The 14 DMMs are:

A. Water survey programs for single-family residential and multifamily residential customers

B. Residential plumbing retrofit

C. System water audits, leak detection, and repair

D. Metering with commodity rates for all new connections and retrofit of existing connections

E. Large landscape conservation programs and incentives

F. High-efficiency washing machine rebate programs

G. Public information programs

H. School education programs

I. Conservation programs for commercial, industrial, and institutional accounts

J. Wholesale agency programs

K. Conservation pricing

L. Water conservation coordinator

M. Water waste prohibition

N. Residential ultra-low-flush toilet replacement programs

These 14 DMMs correspond to the 14 BMPs listed and described in the CUWCC MOU that signatory water suppliers commit to implement as part of their urban water conservation programs. These 14 DMMs also correspond to the DMMs identified in DMM Implementation Compliance (AB 1420). DWR has consulted with the CUWCC and appropriate funding agencies and determined that DMMs will be equated with the BMPs as described in the CUWCC MOU for loan and grant funding eligibility purposes. Therefore, for the UWMP process, DMMs, and BMPs are referred to interchangeably as DMMs/BMPs.

DMMs and BMPs

The CUWCC has restructured the organization of its BMPs to group them according to type. Although the BMP names and organization have been modified, they still correlate to the DMMs identified in the UWMP Act. Table E-1 correlates the DMM names and the CUWCC BMP names and reorganization.

Table E-1 Demand management measures and California Urban Water Conservation Council BMP names

CUWCC BMP Organization and Names (2009 MOU)				**UWMP DMMs**	
Type	Category	BMP #	BMP name	DMM #	DMM name
Foundational	Operations Practices	1.1.1	Conservation Coordinator	L	Water conservation coordinator
		1.1.2	Water Waste Prevention	M	Water waste prohibition
		1.1.3	Wholesale Agency Assistance Programs	J	Wholesale agency programs
		1.2	Water Loss Control	C	System water audits, leak detection, and repair
		1.3	Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections	D	Metering with commodity rates for all new connections and retrofit of existing connections
		1.4	Retail Conservation Pricing	K	Conservation pricing
	Education Programs	2.1	Public Information Programs	G	Public information programs
		2.2	School Education Programs	H	School education programs
Programmatic	Residential	3.1	Residential assistance program	A	Water survey programs for single-family residential and multifamily residential customers[1]
				B	Residential plumbing retrofit
		3.2	Landscape water survey	A	Water survey programs for single-family residential and multifamily residential customers[1]
		3.3	High-Efficiency Clothes Washing Machine Financial Incentive Programs	F	High-efficiency washing machine rebate programs
		3.4	WaterSense Specification (WSS) toilets	N	Residential ultra-low-flush toilet replacement programs
	Commercial, Industrial, and Institutional	4	Commercial, Industrial, and Institutional	I	Conservation programs for commercial, industrial, and institutional accounts
	Landscape	5	Landscape	E	Large landscape conservation programs and incentives

[1] Components of DMM A (Water survey programs for single-family residential and multifamily residential customers) applies to both BMP 3.1 (Residential assistance program) and BMP 3.2 (Landscape water survey)

Documenting DMM Implementation

An urban water supplier's UWMP is to document its DMM implementation by either:

- Providing the required information for each DMM
- Submitting a copy of its 2009-2010 approved CUWCC BMP report, if the supplier is a signatory to the CUWCC MOU

An AB 1420 report submitted to DWR and determined by DWR to be eligible to receive funding, may have been prepared by an urban water supplier to document eligibility for grant and loan funding. However, this process does not fulfill all of the UWMP requirements. An urban water supplier may use the AB 1420 report as a part of its DMM reporting, but it must also provide:

- Descriptions of the specific actions the urban water supplier is taking to comply with the UWMP DMM requirements
- Additional economic documentation for any DMM the urban water supplier is not implementing

The UWMP Act clearly states that "all" DMMs are to be discussed (10631(f)); therefore, it is recommended that information on each DMM be presented, regardless of its implementation or potential for implementation. The DMM information a water supplier is to include, which depends upon the state of DMM implementation, is discussed further below.

DWR DMM Evaluation

The UWMP Act empowers DWR to determine whether the urban water supplier is implementing the identified DMMs. The UWMP Act in 10631.5(b)(2)(A) states:

". . . the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following: (i) Compliance on an individual basis [or] (ii) Compliance on a regional basis . . ."

In addition, 106351(e) states:

"The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities. In addition, for urban water suppliers that are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California and submit annual reports to the California Urban Water Conservation Council in accordance with the memorandum, the department may use these reports to assist in tracking the implementation of water demand management measures."

Therefore, in the 2010 UWMPs, DWR will be assessing how a water supplier is addressing each DMM and consulting with the CUWCC, when necessary, for BMP information regarding MOU signatories.

DWR will use the DMM review sheet (Part II, Section J) to assess each water supplier's compliance with the DMM requirements. The DMM review sheet is not included in DOST.

UWMP DMM Requirements

The UWMP Act identifies different information to be provided for DMMs "implemented, or schedule for implementation" and "not currently being implemented or scheduled for implementation."

DMMs Implemented and Scheduled for Implementation

For those DMMs being implemented or scheduled to be implemented within the next five years, the following information is required by the Water Code (10631(f)):

- The year the DMM was implemented or is scheduled for implementation
- A comprehensive description of the DMM (see below)
- A description of the steps necessary to implement the measure (see below)
- An implementation schedule
- A description of the methods used to evaluate the effectiveness of the DMM
- Estimates, if available, of conservation savings and the effect of the savings on the suppliers' ability to further reduce demand

Each of these points is to be addressed for each DMM. If it is not applicable or information is not available, then provide the explanatory text.

A comprehensive description of the DMM may include:

- Components of the survey or activity
- Information or devices provided to customers
- Description of program venues
- Rebates or financial assistance provided
- Responsibilities of staff and activities performed
- Local ordinances that assist the agency with performing the DMM
- Follow-up with customers and results of follow-up

A description of steps necessary to implement the measure may include:

- Marketing strategy for customer enrollment
- Tracking of participation and results of participation
- Schedule strategy

The descriptions for the methods to evaluate DMM effectiveness may be the same for multiple implemented DMMs. This information can be provided in one paragraph with the corresponding DMMs listed. If the effectiveness is not evaluated, provide an explanation of it is not.

The descriptions for the estimate of conservation savings may be the same for multiple implemented DMMs. This information can be provided in one paragraph with the corresponding DMMs listed. If no estimates are available, provide an explanation of why they are not.

DMMs Not Implemented or Scheduled for Implementation

An evaluation of any DMM not implemented or scheduled for implementation within the next five years is to be included in the UWMP (CWC 10631(g)). The evaluation is to include:

- Economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors
- A cost-benefit analysis, identifying total benefits and total costs
- A description of funding available to implement any planned water supply project that would provide water at a higher unit cost
- A description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation

The cost/benefit evaluation information used in the UWMP should provide the appropriate documentation in its benefit/cost analysis to avoid delay of any funding eligibility.

To be eligible for a water management grant or loan, a water supplier can either:

- Document that a DMM is not locally cost effective (CWC 10631.5(a)(4)) or
- Provide a schedule, financing plan, and budget for the implementation of the DMM (CWC 10631.5(a)(3)).

If a DMM is submitted as “not locally cost effective”—the present value of the local benefits of implementing a DMM is less than the present value of the local costs of implementing that measure—DWR will determine whether the documentation submitted demonstrates this requirement. If the documentation fails to demonstrate that a DMM is not locally cost effective, DWR will notify the water supplier within 120 days.

CUWCC BMP Annual Reports

CUWCC members have the option of submitting their 2009–2010 BMP annual reports in lieu of describing the DMMs in their UWMP if the supplier is in full compliance with the CUWCC’s Memorandum of Understanding Regarding Urban

Water Conservation in California (the CUWCC MOU). The submitted reports should have documentation from the CUWCC that supplier is in full compliance with the MOU. If the new CUWCC database is not completed or ready for use at the time a supplier is to release its plan for public review, the supplier can self-certify its full compliance with the MOU. For this purpose, a supplier will self-certify full compliance by supplying all the data required for documenting BMP, Flex Track Menu, or gallons per capita per day (GPCD) consumptions implementation. The supplier will also include documentation that coverage level for each BMP or equivalent program has been met. This documentation is to be included as part of the plan when it is released for public review and as adopted by the board.

USBR-MP Annual Water Management Plans

United States Bureau of Reclamation – Mid-Pacific Region (USBR-MP) annual water management plans cannot be submitted for DMM documentation.

DMM Compliance (AB 1420)

Part II, Section F, covers related programs.

Any urban water supplier that applies for grant or loan funds is eligible to comply with AB 1420. Compliance with AB 1420 is discussed in Part II, Section F: Related Programs.

Briefly, if an urban water supplier has obtained a determination of "compliant" from DWR, it means that the urban water supplier has met one of the following four criteria:

- Has, in the past, implemented all BMPs at a coverage level determined by the CUWCC MOU; or
- Is currently implementing all BMPs at a coverage level determined by the CUWCC MOU; or
- Has submitted a schedule, budget, and finance plan to implement all BMPs at a coverage level determined by CUWCC and commencing within the first year of the agreement for which grant funds are requested; or
- Has demonstrated by providing supporting documentation that certain BMPs are "not locally cost effective."

State Water Board — Funding

Applicants for loan or grant funding from the State Water Board from the Clean Water State Revolving Fund (CWSRF) or the Water Recycling Funding Program must adopt a water conservation program. State Water Board applicants for grants and loans may submit an adopted UWMP instead of a water conservation program.

If an applicant for funding from the Water Recycling Funding Program is an urban water supplier subject to the UWMP Act, it must document that it has prepared and adopted a complete UWMP before a funding agreement can be executed.

The State Water Board determines eligibility either by referring to DWR's evaluation of DMM implementation or a water supplier's membership in the CUWCC. If a water supplier is not a CUWCC member, it is to provide in its UWMP detailed descriptions of its DMM activities or provide discussion and justification for each DMM not implemented or scheduled for implementation. Additional information regarding this eligibility requirement can be found at the State Water Board's Web site:
http://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/docs/policy0309/policy09update_appf_h2ocons.pdf

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Section F: Related Programs

The UWMP process is intended to be consistent with and support other local, regional, and statewide water management processes. These include:

- California Water Plan
- Integrated Regional Water Management Plans (IRWMP, SB 1672)
- 20x2020 Water Conservation Plan
- City and County General Plans
- Water Conservation Bill of 2009 (SBX7-7)
- Water Supply Assessments (SB 610)
- Written Verifications of Water Supply (SB 221)
- Water Meters (AB 2572)
- Model Water Efficient Landscape Ordinance (AB 1881)
- and Cal Green
- DMM Implementation Compliance (AB 1420)
- CUWCC BMP

It is recommended, but not required, that the methodologies used to develop numbers and estimates common to these other planning and reporting efforts be consistent with those included in UWMPs. This enables stronger planning at the local, regional, and statewide levels and helps identify goals and track progress toward attaining them.

Brief summaries and the relationship to UWMPs are provided below.

California Water Plan Update

The California Water Plan Update provides a framework for water managers, legislators, and the public to consider options and make decisions regarding California's water future. The water plan, which was updated in 2009 and will be updated again in 2013, presents data and information on California's water resources including water supply evaluations and assessments of agricultural, urban, and environmental water uses. The water plan also identifies and evaluates existing and proposed statewide demand management and water supply augmentation programs and projects to address the state's water needs.

When the California Water Plan is updated, extensive data review of water conditions, water use, and water supplies occurs. Water conservation, water recycling, and desalination are important resources that are considered. Through UWMPs, water suppliers report their water use and supplies. With the submittal of the 2010 UWMPs, the creation of a comprehensive database will be available to support California Water Plan Update 2013.

Integrated Regional Water Management Plans

IRWM elements that may be part of a UWMP are addressed in Part II, Section C.

Since the Legislature passed the Integrated Regional Water Management Planning Act in 2000 (CWC §10530 et seq., added by Stats. 2002, c. 767), IRWM plans have been developed throughout the state. This process is working toward a more integrated approach to water management planning by providing the framework for local agencies to cooperatively manage available local and imported water supplies and improve water supply quality, quantity, and reliability. Many of these IRWM elements (CWC §10540 et seq.) are also part of a UWMP and can be addressed cooperatively during the UWMP process, if certain criteria are met. These will be discussed later in Part II, Section C: Regional Water Planning.

20x2020 Water Conservation Plan

As part of the plan for improving the Sacramento-San Joaquin Delta, Governor Schwarzenegger in February 2008 directed State water agencies to develop a plan to reduce statewide per capita urban water use 20 percent by the year 2020. This directive is described in the 20x2020 Water Conservation Plan (DWR and others 2010). Elements of this plan were included in the Water Conservation Bill of 2009.

The Water Conservation Plan proposed the Interim 2010 Statewide Target of 173 GPCD and the Final 2020 Statewide Target of 154 GPCD. In addition, interim and final targets are established for each of the state's 10 hydrologic regions based on population, climate, and water use. The hydrologic region targets were incorporated into the Water Conservation Bill of 2009. Current water use and conservation targets vary among the regions due to many factors, such as land use patterns (lot sizes, square footage of irrigated landscape), the age and condition of the water distribution infrastructure (water losses), and industrial and socioeconomic characteristics (the cost of water and income level of residents). Interim and final targets for each hydrologic region are shown in Figure F-1.

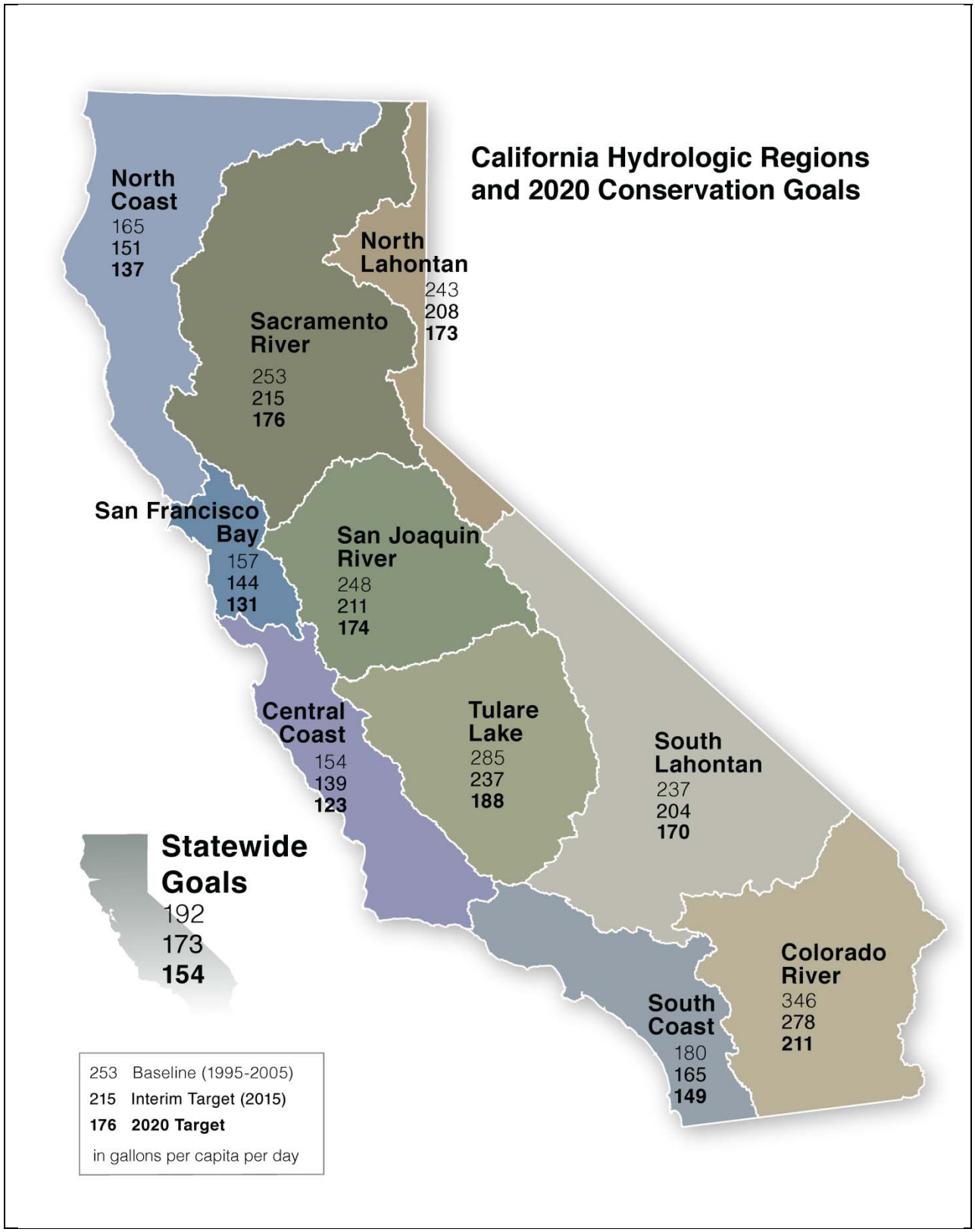

Figure F-1 California hydrologic regions and 2020 water conservation goals

City and County General Plans

General plans and UWMPs have a strong link. In support of the process to develop and update the two types of documents, there is frequently an iterative process by which water suppliers and planning agencies coordinate between planned development and water supply availability to support each process.

The UWMP planning process requires that a water supplier consider existing and planned water demands within the 20-year planning horizon. This includes water demands for projects identified in a general plan that occur within a water supplier's service area.

Water suppliers are often not the governmental agencies directly responsible for development of general plans, but a UWMP may be considered a supporting document for general plan development. In addition, under the California Environmental Quality Act (CEQA), a water supplier may be able to act as a responsible agency by reviewing land use plans or development proposals for determining whether the supplier has the ability to meet the planned water needs.

Water Conservation Bill of 2009 (SBX7-7)

The Water Conservation Bill of 2009 (SBX7-7) is one of four policy bills enacted as part of the November 2009 Comprehensive Water Package (Special Session Policy Bills and Bond Summary). The Water Conservation Bill of 2009 provides the regulatory framework to support the statewide reduction in urban per capita water use described in the 20x2020 Water Conservation Plan (DWR and others 2010). It also addresses agricultural water and commercial, industrial, and institutional (CII) water use.

Part II, Section D, describes the approach for determining baseline and target information.
Part II, Section B, describes changes in UWMP requirements since 2005.

Before California can achieve the Final 2020 Statewide Target of 154 GPCD, each water supplier must determine and report its existing baseline water consumption and establish either its own or cooperative targets. This reporting is to begin with the 2010 UWMP, which is required by the Water Conservation Bill of 2009. The specific steps each water supplier is to take for these analyses are presented in Part II, Section D: Baseline and Target Determination.

As described in Section B: Changes in Urban Water Management Plan Requirements Since 2005, SBX7-7 describes what is required of water suppliers to identify their water conservation targets and track their progress toward achieving those targets. It also requires that water suppliers document and report targets and progress in UWMPs (CWC §10608.20(e)).

Water Supply Assessments (SB 610 of 2001) and Written Verifications of Water Supply (SB 221 of 2001)

Water Supply Assessments (SB 610, CWC §10613 et seq., added by Stats. 2001, chapter 643) and Written Verifications of Water Supply (SB 221, CWC §66473.7,

added by Stats. 2001, chapter 642) require urban water suppliers and cities and counties to coordinate local water supply availability and land use decisions to improve the link between information on water supply availability and certain land use decisions made by cities and counties. Both statutes were effective January 1, 2002, and require that detailed information regarding water availability be provided to the city and county decision-makers prior to approval of specified large development projects. Both SB 221 and SB 610 are project specific and apply to:

- Residential developments of more than 500 units,
- "Projects" as defined by SB 610 Projects that would increase the number of the public water system's existing service connections by 10 percent.

These laws are intended to ensure that a water supply to serve a project or new large subdivision is established before construction begins.

SB 610 requires that detailed information be included in a WSA, which is then included in the administrative record that serves as the evidentiary basis for an approval action by the city or county. SB 221 requires that the detailed information be included in a VWS. Because the requirements of the laws are data intensive and suppliers must provide the detailed information within a 90-day time frame, water suppliers can take advantage of a provision that allows them to use their UWMP as a foundational document for the WSA and VWS.

SB 610 and SB 221 are companion measures which seek to promote more collaborative planning between local water suppliers and cities and counties. Both statutes:

- Require detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects.
- Require this detailed information be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects.
- Recognize local control and decision making regarding the availability of water for projects and the approval of projects.
- Apply to a 500 unit residential development OR a project that would increase the number of the public water system's existing service connections by 10 percent.

Under SB 610, water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code 10912 [a]) subject to CEQA. Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply. The water supply reliability information required under SB 610 and SB 221 apply to both rapidly growing areas and those with stable populations or slow growth rate and/or not much commercial development.

If coordinated and comprehensive water supply planning is under way at the time that the SB 610 water assessment is prepared, compliance with SB 221 will be greatly facilitated. SB 221 is intended as a "fail safe" mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs when it should—before construction begins.

Not every project that is subject to the requirements of SB 610 would also require the mandatory water verification of SB 221 (e.g., when there is no subdivision map approval). Conversely, not every project that is subject to the requirements of SB 221 would also require the environmental document to contain an SB 610 water supply assessment (WSA). Projects approved before January 1, 2002, were not subject to the requirements of SB 610 or SB 221; however, some projects may have been subject to the requirement to prepare a WSA as set forth in SB 901 of 1995 (Chapter 881, Statues of 1995).

A foundational document for compliance with both SB 610 and SB 221 is the UWMP. Both of these statutes repeatedly identify the UWMP as a planning document that, if properly prepared, can be used by a water supplier to meet the standards set forth in both statutes. Thorough UWMPs will allow water suppliers to use UWMPs as a foundation to fulfill the specific requirements of these two statutes. Cities, counties, water districts, property owners, and developers will all be able to utilize this document when planning for and proposing new projects.

UWMPs, SB 610, and SB 221 require water supply reliability information be provided in 5-year increments over a 20-year future planning horizon. The water supply reliability information in the UWMP can be used to help meet the SB 610 or SB 221 requirement if one of the following conditions is met:

- If the projected water demand associated with the proposed project was accounted for in the most recently adopted UWMP, the public water system may incorporate the requested information from the UWMP in preparing the elements of the assessment (CWC §10910(c)(2)); and
- The current UWMP provides at least 25 years of water supply reliability information and, therefore contains the required 20 years of information for a WSA or VWS.

Because of this second option, many suppliers have opted to develop their UWMPs with a 25- or 30-year planning horizon so the UWMP can be used to support the water supply reliability requirements of WSAs or VWSs. If a water supplier chooses to expand the period of time considered in its UWMP to support WSA and VWS compliance, then it only has to add the additional information to tables and text within its UWMP.

DWR's "Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001" is available at the DWR Water Use and Efficiency Branch website at: http://www.water.ca.gov/pubs/use/sb_610_sb_221_guidebook/guidebook.pdf.

Additional information about SB 610 and SB 221 is available at: http://www.water.ca.gov/urbanwatermanagement/SB610_SB221/.

Water Meters (AB 2572 of 2004)

CWC §529.5 requires that on or after January 1, 2010, any urban water supplier applying for State grant funds for wastewater treatment projects, water use efficiency projects, drinking water treatment projects, or for a permit for a new or expanded water supply, must demonstrate that it meets the water meter requirements in CWC §525 et seq.

Model Water Efficient Landscape Ordinance (AB 1881) and Cal Green

The Water Conservation in Landscaping Act of 2006 (Assembly Bill 1881, Laird) requires cities, counties, and charter cities and charter counties, to have adopted landscape water conservation ordinances by January 1, 2010. Pursuant to this law (CWC §490 et seq.), DWR has prepared a Model Water Efficient Landscape Ordinance (Model Ordinance) for use by local agencies. The Model Ordinance was approved by the Office of Administrative Law and became effective on September 10, 2009.

Effective January 1, 2010 local agency was to have either adopted the state Model Ordinance or crafted an ordinance to fit local conditions. Local agencies had the option of responding independently to the requirement or working collaboratively with one or more local agencies to develop and adopt a broader regional ordinance. If a local or regional ordinance was adopted, the only requirement was that it must be as effective as the Model Ordinance in conserving water.

Water efficient landscape ordinances will help agencies meet urban water management goals by limiting the water use per acre to a prescribed water budget. The Model Ordinance water budget is based on an evapotranspiration adjustment factor of 0.7, which allows a site-wide water budget of 70 percent of local evapotranspiration. The CUWCC BMP 5, Large Landscape Water Conservation, currently allows for a water budget based on an Evapotranspiration Adjustment Factor of 1.0. If new and rehabilitated landscapes adhere to the provisions of the Model Ordinance, the expected urban water needs can be lower than that expected under adherence to BMP 5.

The plant factor used in the water budget calculation assumes a plants ratio of 1/3 high water-use plants, to 1/3 moderate water-use plants, to 1/3 low-water use plants. By voluntarily increasing the percentage of low-water use plants, even more water savings can be realized. The local agencies of a region can take further action and require the selection of plants that require little supplemental irrigation as part of a water shortage contingency plan.

The Model Ordinance applies to non-residential and developer installed residential landscaping where the landscape area is at least 2500 Square feet. The Model Ordinance also applies to homeowner provided residential landscaping, where the landscape area is 5000 square feet or more.

As of August 1, 2010, approximately 311 local agencies have responded and notified DWR that they have adopted a water efficient landscape ordinance. Of those, 173 local ordinances have been adopted by local agencies and each of the local agencies have determined that the local ordinance is at least as effective as the State Model. Forty-eight agencies have adopted the State Model Ordinance and ninety have adopted the State Model in the interim as they develop a local ordinance to be adopted at a later date.

An additional landscape regulation passed since the Model Landscape Ordinance reinforces, and in some cases extends, the goal of water use efficiency in urban landscapes by addressing irrigation of smaller residential lots. The code is referred to as “Cal Green” and is an update to the California Green Building code jointly developed by the California Building Standards Commission and the Department of Housing and Community Development. Cal Green takes effect in January 2011. In single family residential landscapes of any size, it requires the use of irrigation controllers with weather-based or soil moisture sensor based technology and rain sensor technology. Non-residential landscapes use the provisions of the Model Ordinance as a baseline with voluntary tiers to achieve higher water savings to capture landscape projects that are not reviewed by the local land use authority. In addition, submeters are required for non-residential landscaped areas between 1,000 and 5,000 square feet, which exceeds current Water Code (CWC Code §535), which requires dedicated water submeters on new water service of non-residential properties with a landscape area of 5000 square feet or more.

Demand Management Measures Implementation Compliance (AB 1420 of 2007)

AB 1420 (Laird, Stats. 2007, ch. 628) amended the UWMP Act, (CWC §10610 et seq.). Effective January 1, 2009, AB 1420 requires that the terms of, and eligibility for, any water management grant or loan made to an urban water supplier and awarded or administered by DWR, State Water State Water Board, or California Bay-Delta Authority (CBDA) or its successor agency, be conditioned on the implementation of the water demand management measures (DMMs) described in CWC Section 10631(f). These DMMs correspond to the 14 BMPs listed and described in the CUWCC MOU. Based on this, DWR has consulted with the CUWCC and appropriate funding agencies, and determined that it will equate the DMMs with the BMPs described in the CUWCC MOU for loan and grant funding eligibility purposes.

AB 1420 focuses on documenting an urban water suppliers' eligibility for grants and loans, whether or not the supplier is a member of the CUWCC. It provides the mechanism by which a water supplier can record compliance with each of the 14 DMMs identified in the UWMP Act and, by extension, document eligibility. Water management grants and loans include programs and projects include those for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability and water supply augmentation. This funding includes, but is not limited to, funds made available pursuant to Public Resources Code Section 75026 (Integrated Regional Water Management Program).

AB 1420 requires:

- DWR, State Water Board, and CBDA to condition water management grants or loans made to an urban water supplier on the implementation of the DMMs (as noted above, the DMMs correspond to the BMPs described in the CUWCC MOU).
- DWR, in consultation with the State Water Board and the CBDA, to develop eligibility requirements that consider the CUWCCs BMPs.
- DWR to exercise its discretionary authority to determine whether an urban water supplier is eligible for a water management grant or loan.

Urban water suppliers may be eligible for a water management grant or loan if they demonstrate that they are implementing or scheduling the implementation of BMPs, as follows:

- The urban water supplier is currently implementing all BMPs at coverage requirement determined by the CUWCC MOU; or
- The urban water supplier has submitted a schedule, budget, and finance plan commencing within the first year of the agreement for which grant funds are requested to implement all BMPs at the coverage requirement determined by the CUWCC MOU; or
- The urban water supplier has demonstrated by providing supporting documentation that certain BMPs are "not locally cost effective." "Not locally cost effective" means that the present value of the local benefits of implementing a BMP is less than the present value of the local costs of implementing that BMP.

Past, current, and near future implementation of each BMP must together demonstrate that the urban water supplier is implementing BMPs at the coverage requirement determined by the CUWCC MOU.

AB 1420 allows for the implementation of alternative conservation approaches. For the purpose of loan and grant program this includes CUWCC Flex Track BMPs and/or other alternative conservation approaches. If an urban water supplier chooses to implement alternative conservation approaches, they must provide equal or greater water savings than the established BMPs.

Failure to implement BMPs and/or alternative conservation approaches may cause the Funding Agency, at its sole discretion, to halt disbursement of grant or loan funds, not pay any pending invoices, and pursue any other applicable legal remedy.

AB 1420 Submittals

Urban water suppliers must demonstrate that they are implementing all BMPs at the coverage requirement determined by the CUWCC MOU by completing AB 1420 Self-Certification Statement Table 1[12]. Table 1 provides an update of past and current BMP implementation, to demonstrate whether suppliers are implementing BMPs at the coverage requirement determined by the CUWCC MOU.

If urban water suppliers are not implementing all BMPs at the coverage requirement required, they may be eligible to receive grant and loan funds by providing a schedule, budget, and finance plan to implement all BMPs at the coverage requirement determined by the CUWCC MOU by filling out Table 2[13].

By signing Table 1, the authorized representative certifies under penalty of perjury that all information and claims regarding compliance, implementation of the BMPs, and financing plans are true and accurate. Falsification or inaccuracies in Tables 1 and 2 and in any supporting documents may, at the discretion of the Funding Agency, result in loss of all grant or loan funds to the applicant. Additionally, the Funding Agency may take legal action to recover any disbursed funds and refer the matter to the Attorney General's Office.

Urban water suppliers must also submit hard copies of any reports that support or substantiate claims made on Tables 1 and 2. These reports include urban water management plans, and the most recent BMP reports to the CUWCC as part of the Urban MOU. If the urban water supplier is not a CUWCC member, any reports on BMP implementation and/or alternative conservation approaches must be submitted to DWR in the CUWCC report format.

Urban water suppliers must complete updated Tables 1 and 2 for each grant or loan program. Updated information must include any changes in the implementation schedule, financing, budget, and level of coverage. If there are no updates or changes to Tables 1 and 2, then there is no need to re-submit these tables.

Regional Compliance

Compliance on a regional basis requires participation in a regional conservation program consisting of two or more urban water suppliers that achieve the level of conservation or water efficiency savings equivalent to the amount of conservation or saving achieved if each of the participating urban water suppliers implemented the

[12] www.water.ca.gov/wateruseefficiency/docs/compliance-ab1420-table1.xls

[13] www.water.ca.gov/wateruseefficiency/docs/compliance-ab1420-table2.xls

water DMMs. The urban water supplier administering the regional program shall provide participating urban water suppliers and DWR with data to demonstrate that the regional program is consistent with this clause. DWR shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements (WCC 10631.5(b)(2)(A)(ii).

DWR Determination

AB 1420 requires that DWR make a determination and respond to the Funding Agency within 60 days of the request. Urban water suppliers that do not submit a completed Table 1 may not be eligible to receive grant or loan funds.

More information on AB 1420 can be found at: http://www.water.ca.gov/wateruseefficiency/docs/compliance-ab1420.pdf.

California Urban Water Conservation Council Best Management Practices

The CUWCC BMP MOU:

- Expedites implementation of reasonable water conservation measures in urban areas and
- Establishes assumptions for use in calculating estimates of reliable future water conservation savings resulting from proven and reasonable conservation measures.

The MOU was first prepared in 1991 and has been updated numerous times, most recently in June 2010. The MOU identifies 14 water conservation BMPs that a water supplier can document as being implemented or as planned to be implemented. Water suppliers provide this documentation to the CUWCC every 2 years.

DMMs are described in Part II, Section E.

The MOU has been signed by more than 200 water agencies, which have agreed to implement the BMPs. Signatories of the MOU may provide copies of the completed and approved annual reports in UWMPs to demonstrate compliance with the DMMs. This is described further in Part II, Section E: Demand Management Measures and Best Management Practices.

More information about the BMP MOU is available at the CUWCC website: http://www.cuwcc.org/bmps.aspx.

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Section G: Guidance on Climate Change for Urban Water Management Plans

California is addressing the causes and impacts of climate change in a number of different forums. The Global Warming Solutions Act of 2006 (AB 32) clearly identified climate change as a "serious threat to the economic well-being, public health, natural resources, and the environment of California". The California Air Resources Board completed the Climate Change Scoping Plan (2008) to support implementation of AB 32 and the California Natural Resources Agency issued the Climate Change Adaptation Strategy (2009) to identify how California will adapt to expected climate changes.

Climate change and/or greenhouse gas (GHG) emissions must now be considered in:

- City and county general plans
- CEQA documents
- IRWMPs

By considering potential future water supply impacts resulting from climate changes in its UWMP, a water supplier facilitates integration of its UWMP with these documents and supports water management functions. As a water supplier evaluates potential water supply impacts resulting directly or indirectly from climate change, consideration should be given not only to local changes but also to statewide changes that could affect the supplier and its water supplies. If a water supplier is a member of an IRWM Regional Water Management Group or Stakeholder Group, it may consider referring to the climate change objectives of the IRWMP effort in its UWMP.

Background information and suggestions of factors to consider are provided here to assist urban water suppliers in their efforts to mitigate their GHG emissions and prepare for expected climate changes. Urban water suppliers are strongly encouraged to review the following information and use it to assess the GHG impacts of DMM implementation and analyze the vulnerability of water supply and demand to the impacts of climate change.

In addition, DWR and its partner agencies are in the process of preparing a comprehensive IRWM climate change handbook which will provide additional information for conducting climate change and GHG analysis at the watershed planning scale. The handbook is expected to be released in 2011.

Background

In 2008, DWR released a climate change white paper that focused on the impacts of climate change on the water resources of the state (DWR 2008). The white paper states (page 3):

While the exact conditions of future climate change remain uncertain, there is no doubt about the changes that have already happened. Analysis of paleoclimatic data (such as tree-ring reconstructions of streamflow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. The average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage (one acre-foot of water is enough for one to two families for one year). During the same period, sea level rose seven inches along California's coast. California's temperature has risen 1˚ F, mostly at night and during the winter, with higher elevations experiencing the highest increase. A disturbing pattern has also emerged in flood patterns; peak natural flows have increased on many of the state's rivers during the last 50 years. At the other extreme, many Southern California cities have experienced their lowest recorded annual precipitation twice within the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record.

These changes are very likely to intensify within the 20-year UWMP planning horizon. Because of this, as well as the climate change requirements in IRWMPs and CEQA, DWR is presenting in this Guidebook climate change issues that water supplies are encouraged to consider as they prepare their 2010 UWMPs.

Water Supplier Considerations

Climate change brings the prospect of both model-predicted and unforeseen changes to the environment that may physically affect cities and water districts. These potential changes include a more variable climate with risks of extreme climate events more severe than those in the recent hydrologic record, sea level rise, a hotter and drier climate, and the likelihood that more of the uplands precipitation will fall as rain and not as snow. Volume 1, Chapter 2 of the California Water Plan discusses the impacts of climate change in greater detail on pages 9 and 21-22.

Responding to climate change generally takes two forms: mitigation and adaptation. Mitigation is taking steps to reduce our contribution to the causes of climate change by reducing GHG emissions. Adaptation is the process of responding to the effects of climate change by modifying our systems and behaviors to function in a warmer climate.

Mitigation

In the water sector, climate change mitigation is generally achieved by reducing energy use, becoming more efficient with energy use, and/or substituting fossil fuel based energy sources for renewable energy sources. Because water requires energy to move, treat, use, and discharge, water conservation is also energy conservation. As each water supplier implements DMM/BMPs and determines its water conservation targets, it can also calculate conserved energy and GHGs not-emitted as a side benefit.

Once a water supplier has calculated the water conserved by a BMP, it is straightforward to convert that volume to conserved energy, and GHGs not-emitted. Additionally, water suppliers may want to reconsider DMMs that conserve water but do so at a significant increase in GHG emissions.

Adaptation

Climate change means more than hotter days. Continued warming of the climate system has considerable impact on the operation of most water districts. Snow in the Sierra Nevada provides 65 percent of California's water supply. Predictions indicate that by 2050 the Sierra snowpack will be significantly reduced. Much of the lost snow will fall as rain, which flows quickly down the mountains during winter and cannot be stored in our current water system for use during California's hot, dry summers. The climate is also expected to become more variable, bringing more droughts and floods. Water districts will have to adapt to new, more variable conditions.

Potential Climate Change Effects

Within the next 20 years, DWR expects that water supplies, water demand, sea level, and the occurrence and severity of natural disasters will be affected by climate change. Some of these potential changes are presented below.

Water suppliers should consider the following climate change effects, many of which are already documented in California:

- Water Demand — Hotter days and nights, as well as a longer irrigation season, will increase landscaping water needs, and power plants and industrial processes will have increased cooling water needs.
- Water Supply and Quality — Reduced snowpack, shifting spring runoff to earlier in the year (Figure G-1), increased potential for algal bloom, and increased potential for seawater intrusion—each has the potential to impact water supply and water quality.
- Sea Level Rise — It is expected that sea level will continue to rise, resulting in near shore ocean changes such as stronger storm surges, more forceful wave energy, and more extreme tides. This will also affect levee stability in low-lying areas and increase flooding.
- Disaster — Disasters are expected to become more frequent as climate change brings increased climate variability, resulting in more extreme droughts and floods. This will challenge water supplier operations in several ways as wildfires are expected to become larger and hotter, droughts will become deeper and longer, and floods can become larger and more frequent.

A thorough discussion of a water suppliers' potential actions and responses to these changes will be presented in the IRWM climate change handbook currently being prepared. If a water supplier has already begun evaluating potential climate change

impacts in its service area, it is encouraged to include a summary or reference in its UWMP or include it as an attachment.

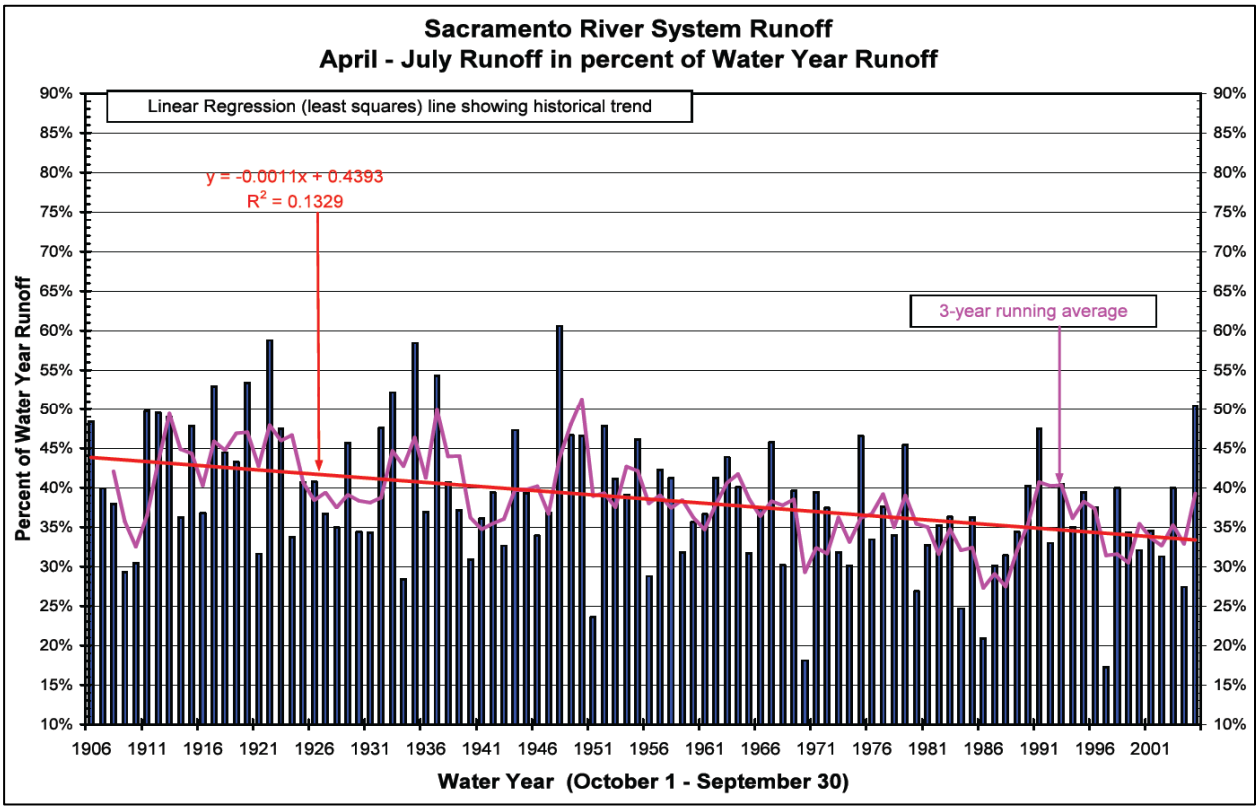

Figure G-1 Change in the timing of seasonal runoff on the Sacramento River

Source: Roos and Anderson 2006.

IRWMP Climate Change Requirements

Climate change is part of the IRWM Grant Program both legislatively and procedurally. SBX2-1, the IRWM Planning Act, was passed in September 2008 and revised CWC §10530 et seq. The planning act describes what IRWM plans must include and what DWR must include in the guidelines for the grant program. CWC §10541(e)(9) and (10) specify that the guidelines must include consideration of GHG emissions of identified programs and projects and evaluation of the adaptability to climate change of the region's water management systems.

CWC §10540(b)(2) specifically mentions UWMPs as a plan that may be coordinated with an IRWM planning effort. As such, any climate change work conducted within the context of a UWMP can help feed into the regional perspective and actions of an IRWMP, and any regional analysis done on climate change effects at the IRWM region level can feed back into the UWMP.

The Final IRWM Grant Program guideline released in August 2010 contains an IRWM plan standard for climate change, as well as climate change components in

standards for how IRWMs select projects (project review process) and describe regions. Climate change is one of 16 IRWM plan standards in the guideline. On Page 24 the IRWM Grant Program guideline state:

The IRWM Plan must address both adaptation to the effects of climate change and mitigation of GHG emissions. The IRWM Plan must include the following items:

- *A discussion of the potential effects of climate change on the IRWM region, including an evaluation of the IRWM region's vulnerabilities to the effects of climate change and potential adaptation responses to those vulnerabilities, and*
- *A process that discloses and considers GHG emissions when choosing between project alternatives.*

The IRWM Plan guidelines also mention SB 97[14] requirements, which are discussed further below.

CEQA Climate Change Requirements

As the IRWM grant funds enable construction projects to move forward, those projects may be considered projects under CEQA and subject to CEQA analysis and documentation. With the passage of SB 97, the CEQA guidelines were amended and adopted by the Natural Resources Agency and became effective March 18, 2010. The CEQA amendments require lead agencies to include an evaluation of the GHG emissions from the project in their CEQA documents. The CEQA guideline amendments do not identify a threshold of significance for GHG emissions nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion that CEQA grants lead agencies to make their own determinations based on substantial evidence.

DWRs DIRWM, when providing funding to implement IRWM projects, acts as a CEQA-responsible agency in its discretionary disbursement of funds. As such, DWR must evaluate the CEQA documentation for adequacy and reach its own CEQA findings with respect to any identified significant environmental effects, including the assessment and mitigation of GHG emissions. Although a UWMP does not require a CEQA document, UWMPs are increasingly relied on by other projects for analysis required for CEQA documentation. Providing analysis of climate change and GHG emissions reductions associated with DMMs/BMPs may support future projects and reduce requirements for future analysis.

[14] SB 97, signed by the Governor in 2007, is an act to add Section 21083.05 to, and to add and repeal Section 21097 of, the Public Resources Code, relating to the California Environmental Quality Act. SB 97 (2007) advances a policy to develop CEQA guidelines on how State and local agencies should analyze, and when necessary, mitigate greenhouse gas emissions.

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Section H: Electronic Submittal

DOST is not online as of the date of the release of this Guidebook. This section will be added once DOST is online.

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Section I: Urban Water Management Plan Checklist

This checklist is developed directly from the UWMP Act and the Water Conservation Bill of 2009. It is provided to support water suppliers during preparation of its UWMP. Two versions of the UWMP Checklist are provided: The first one (Table I-1) is organized according to the law and the second checklist (Table I-2) according to subject matter. The two checklists contain duplicate information, and the water supplier should use whichever checklist is more convenient. In the event that information or recommendations in these tables are inconsistent with, or conflict with, or omit the requirements of the UWMP Act or applicable laws, the UWMP Act or other laws prevail.

Part II, Section H, contains instructions for electronic submittal.

Each water supplier submitting a UWMP can also provide DWR with the UWMP location of the required element by completing the last column of either Table I-1 or I-2. This will support DWR in its review of these UWMPs. The completed form can be included as a hard copy with the UWMP or submitted electronically, as described in Section H: Electronic Submittal.

If an item does not pertain to a water supplier, then indicate the UWMP requirement and that it does not apply. For example, if a water supplier does not directly or indirectly have groundwater as a water supply source, the UWMP should include a statement that groundwater is not a water supply source.

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Table I-1 Urban Water Management Plan checklist, organized by legislation number

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)	System Demands		
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	System Demands	Retailer and wholesalers have slightly different requirements	
3	Report progress in meeting urban water use targets using the standardized form.	10608.40	Not applicable	Standardized form not yet available	
4	Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)	Plan Preparation		
5	An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.	10620(f)	Water Supply Reliability . . .		
6	Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.	10621(b)	Plan Preparation		
7	The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).	10621(c)	Plan Preparation		

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
8	Describe the service area of the supplier	10631(a)	System Description		
9	(Describe the service area) climate	10631(a)	System Description		
10	(Describe the service area) current and projected population . . . The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier . . .	10631(a)	System Description	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	
11	. . . (population projections) shall be in five-year increments to 20 years or as far as data is available.	10631(a)	System Description	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	
12	Describe . . . other demographic factors affecting the supplier's water management planning	10631(a)	System Description		
13	Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).	10631(b)	System Supplies	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	
14	(Is) groundwater . . . identified as an existing or planned source of water available to the supplier . . .?	10631(b)	System Supplies	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
15	(Provide a) copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management. Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)	System Supplies		
16	(Provide a) description of any groundwater basin or basins from which the urban water supplier pumps groundwater.	10631(b)(2)	System Supplies		
17	For those basins for which a court or the board has adjudicated the rights to pump groundwater, (provide) a copy of the order or decree adopted by the court or the board	10631(b)(2)	System Supplies		
18	(Provide) a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.	10631(b)(2)	System Supplies		
19	For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.	10631(b)(2)	System Supplies		
20	(Provide a) detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.	10631(b)(3)	System Supplies		
21	(Provide a) detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.	10631(b)(4)	System Supplies	Provide projections for 2015, 2020, 2025, and 2030.	

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) An average water year, (B) A single dry water year, (C) Multiple dry water years.	10631(c)(1)	Water Supply Reliability . . .		
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)	Water Supply Reliability . . .		
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)	System Supplies		
25	Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof;(I) Agricultural.	10631(e)(1)	System Demands	Consider “past” to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
26	(Describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) Water survey programs for single-family residential and multifamily residential customers; (B) Residential plumbing retrofit; (C) System water audits, leak detection, and repair; (D) Metering with commodity rates for all new connections and retrofit of existing connections; (E) Large landscape conservation programs and incentives; (F) High-efficiency washing machine rebate programs; (G) Public information programs; (H) School education programs; (I) Conservation programs for commercial, industrial, and institutional accounts; (J) Wholesale agency programs; (K) Conservation pricing; (L) Water conservation coordinator; (M) Water waste prohibition;(N) Residential ultra-low-flush toilet replacement programs.	10631(f)(1)	DMMs	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	
27	A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.	10631(f)(3)	DMMs		
28	An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.	10631(f)(4)	DMMs		

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
29	An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following: (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors; (2) Include a cost-benefit analysis, identifying total benefits and total costs; (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost; (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.	10631(g)	DMMs	See 10631(g) for additional wording.	
30	(Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.	10631(h)	System Supplies		
31	Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.	10631(i)	System Supplies		

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
32	Include the annual reports submitted to meet the Section 6.2 requirement (of the MOU), if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	DMMs	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	
33	Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).	10631(k)	System Demands	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	
34	The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)	System Demands		
35	Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.	10632(a)	Water Supply Reliability . . .		
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)	Water Supply Reliability . . .		
37	(Identify) actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)	Water Supply Reliability . . .		

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
38	(Identify) additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)	Water Supply Reliability . . .		
39	(Specify) consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)	Water Supply Reliability . . .		
40	(Indicated) penalties or charges for excessive use, where applicable.	10632(f)	Water Supply Reliability . . .		
41	An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)	Water Supply Reliability . . .		
42	(Provide) a draft water shortage contingency resolution or ordinance.	10632(h)	Water Supply Reliability . . .		
43	(Indicate) a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)	Water Supply Reliability . . .		
44	Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area	10633	System Supplies		
45	(Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)	System Supplies		
46	(Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)	System Supplies		

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
47	(Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)	System Supplies		
48	(Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)	System Supplies		
49	(Describe) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.	10633(e)	System Supplies		
50	(Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)	System Supplies		
51	(Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)	System Supplies		
52	The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.	10634	Water Supply Reliability . . .	For years 2010, 2015, 2020, 2025, and 2030	

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
53	Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)	Water Supply Reliability . . .		
54	The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.	10635(b)	Plan Preparation		
55	Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642	Plan Preparation		
56	Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area.	10642	Plan Preparation		
57	After the hearing, the plan shall be adopted as prepared or as modified after the hearing.	10642	Plan Preparation		
58	An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.	10643	Plan Preparation		

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
59	An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.	10644(a)	Plan Preparation		
60	Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.	10645	Plan Preparation		

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.

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Table I-2 Urban Water Management Plan checklist, organized by subject

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
PLAN PREPARATION				
4	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)		
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635(b)		
55	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642		
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644(a)		
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		
10	Indicate the current population of the service area	10631(a)	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		
SYSTEM DEMANDS				
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)		
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Retailers and wholesalers have slightly different requirements	

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631(e)(1)	Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)		
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631(b)	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)		
16	Describe the groundwater basin.	10631(b)(2)		
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		
19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	10631(b)(3)		
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	Provide projections for 2015, 2020, 2025, and 2030.	
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)		

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
46	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)		
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		
49	The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	10633(e)		
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)		
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)		
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b]				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)		
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)		
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)		
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)		
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)		
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	For years 2010, 2015, 2020, 2025, and 2030	

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)		
DEMAND MANAGEMENT MEASURES				
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631(f)(4)		
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	See 10631(g) for additional wording.	
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	

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Section J: DWR Staff UWMP 2010 Review Sheet

The Review Sheet on the following pages will be used by DWR to assess each legislatively required UWMP component. It is provided here for information only. It is NOT to be completed by the water supplier and included with the UWMP prior to adoption.

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2010 Urban Water Management Plan "Review for Completeness" Form

AGENCY NAME HERE

1. Coordination with Appropriate Agencies **(Water Code § 10620 (d)(1)(2))**

☐ Participated in area, regional, watershed or basinwide URBAN WATER MANAGEMENT PLAN _____ Reference & Page Number
Name of plan _____ Lead Agency _____

☐ Described the coordination of the plan preparation and anticipated benefits. _____ Reference & Page Number

Table 1
Public and agency coordination

Coordinating Agencies[1,2]	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the draft plan	Was sent a notice of intention to adopt	Not involved / No information
Other water suppliers							
Water mgmt agencies							
Relevant public agencies							
General public							
Other							

[1] Indicate the specific name of the agency with which coordination or outreach occurred.
[2] Check at least one box in each row.

DWR Reviewer Comments:

2. Describe resource maximization / import minimization plan **(Water Code §10620 (f))**

☐ Described how water management tools / options maximize resources & minimize need to import water _____ Reference & Page Number

DWR Reviewer Comments:

3. Plan Updated in Years Ending in Five and Zero **(Water Code § 10621(a))**

☐ Updated and adopted plan _____ Date adopted _____ Reference & Page Number

DWR Reviewer Comments:

4. City and County Notification and Participation **(Water Code § 10621(b))**

☐ Provided 60-day notification to any city or county within service area of UWMP review and revision _____ Reference & Page Number

DWR Reviewer Comments:

5. Service Area Information **Water Code § 10631 (a))**

☐ Included current and projected population in 5-year increments for 20 years. _____ Reference & Page Number
☐ Provided population projections were based on data from state, regional or local agency _____ Reference & Page Number

Table 2
Population - current and projected

	2010	2015	2020	2025	2030	2035 - optional	Data source[2]
Service area population[1]							

[1] Service area population is defined as the population served by the distribution system. See Technical Methodology 2: Service Area Population (2010 UWMP Guidebook, Section M).
[2] Provide the source of the population data provided.

☐ Described climate characteristics that affect water management _____ Reference & Page Number
☐ Described other demographic factors affecting water management _____ Reference & Page Number

DWR Reviewer Comments:

6. Water Sources **(Water Code § 10631 (b))**

☐ Identified existing and planned water supply sources, to the extent practicable _____ Reference & Page Number
☐ Provided current water supply quantities _____ Reference & Page Number
☐ Provided planned water supply quantities _____ Reference & Page Number

Table 16
Water supplies - current and projected

Water Supply Sources		2010	2015	2020	2025	2030	2035 - optional
Water purchased from[1]:	Wholesaler supplied volume (yes/no)						
Wholesaler 1 (enter agency name)							
Wholesaler 2 (enter agency name)							
Wholesaler 3 (enter agency name)							
Supplier-produced groundwater[2]							
Supplier-produced surface water							
Transfers in							
Exchanges In							
Recycled Water							
Desalinated Water							
Other							
Other							
Total		0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Volumes shown here should be what was purchased in 2010 and what is anticipated to be purchased in the future. If these numbers differ from what is contracted, show the contracted quantities in
[2] Volumes shown here should be consistent with Tables 17 and 18.

DWR Reviewer Comments:

2010 Urban Water Management Plan "Review for Completeness" Form

AGENCY NAME HERE

7. If Groundwater identified as existing or planned source **(Water Code §10631 (b)(1-4))**

☐ Agency uses or plans to use groundwater _____ Reference & Page Number

OR ☐ Agency does NOT use groundwater and does not have plans to use groundwater (Skip Section) _____ Reference & Page Number

Groundwater Management Plans

☐ No groundwater management plan adopted for applicable groundwater basin(s) _____ Reference & Page Number

☐ Groundwater management plan(s) have been adopted by the supplier _____ Reference & Page Number

☐ Other specific authorization(s) for groundwater management exist _____ Reference & Page Number

☐ If groundwater management plans exists, provided applicable groundwater management plans _____ Reference & Page Number

☐ Described each groundwater basin(s) (b)(2) _____ Reference & Page Number

Basin Adjudication _____ Reference & Page Number

☐ Basin is not adjudicated _____ Reference & Page Number

☐ Basin is adjudicated _____ Reference & Page Number

☐ If adjudicated, attached order or decree (b)(2) _____ Reference & Page Number

☐ If adjudicated, quantified amount of legal pumping right (b)(2) _____ Reference & Page Number

Basin Overdraft

☐ Basin not in overdraft _____ Reference & Page Number

☐ DWR Bulletin 118 Update 2003 identified, or projected to be, in overdraft (b)(2) _____ Reference & Page Number

☐ Included plan to eliminate overdraft (b)(2) _____ Reference & Page Number

☐ Provided analysis of location, amount and sufficiency, of groundwater pumped for the last five years (b)(3) _____ Reference & Page Number

☐ Provided analysis of location and amount of projected groundwater pumping for 20 years (b)(4) **IN TABLE 3** _____ Reference & Page Number

Table 18
Groundwater - volume pumped

Basin name(s)	Metered or Unmetered[1]	2006	2007	2008	2009	2010
Groundwater as a percent of total water supply						

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Indicate whether volume is based on volumeteric meter data or another method

Table 19
Groundwater - volume projected to be pumped

Basin name(s)	2015	2020	2025	2030	2035 - optional
Percent of total water supply					

Units are in acre-feet per year.
Include future planned expansion

DWR Reviewer Comments:	

8. Reliability of Supply **(Water Code §10631 (c) (1-3)**

☐ Described the reliability of the water supply and vulnerability to seasonal or climatic shortage _____ Reference & Page Number

Table 28
Supply reliability - historic conditions

		Multiple Dry Water Years			
Average / Normal Water Year	Single Dry Water	Year 1	Year 2	Year 3	Year 4
Percent of Average/Normal Year:					

☐ Provided the basis of water year data _____ Reference & Page Number

Table 27
Basis of water year data

Water Year Type	Base Year(s)
Average Water Year	
Single-Dry Water Year	
Multiple-Dry Water Years	

_____ Reference & Page Number
_____ Reference & Page Number
_____ Reference & Page Number

Table 29
Factors resulting in inconsistency of supply

Water supply sources[1]	Specific source name, if any	Limitation quantification	Legal	Environmental	Water quality	Climatic	Additional information

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] From Table 16.

☐ Described plans to supplement or replace inconsistent sources with alternative sources or DMMs _____ Reference & Page Number

☐ No inconsistent sources _____ Reference & Page Number

DWR Reviewer Comments:	

2010 Urban Water Management Plan "Review for Completeness" Form

AGENCY NAME HERE

9. Transfer or Exchange Opportunities **(Water Code §10631 (d))**

☐ Describe short term and long term exchange or transfer opportunities _____ Reference & Page Number

OR ☐ No transfer or exchange opportunities (Skip Section) _____ Reference & Page Number

☐ Has intertie(s) for emergency purposes only _____ Reference & Page Number

Table 20
Transfer and exchange opportunities

Transfer agency	Transfer or exchange	Short term or long term	Proposed Volume
Total			

Units (circle one): acre-feet per year million gallons per year cubic feet per year

DWR Reviewer Comments:	

10. Water Use Provisions **(Water Code §10631 (e)(1)(2))**

☐ Quantified past water use by sector _____ Reference & Page Number

☐ Quantified current water use by sector _____ Reference & Page Number

☐ Projected future water use by sector _____ Reference & Page Number

Table 3
Water deliveries - actual, 2005

	2005				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family					0
Multi-family					0
Commercial					0
Industrial					0
Institutional/governmental					0
Landscape					0
Agriculture					0
Other					0
Total	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 6
Water deliveries - actual, 2010

	2010				
	Metered		Not metered		Total
Water use sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	Volume
Single family					0
Multi-family					0
Commercial					0
Industrial					0
Institutional/governmental					0
Landscape					0
Agriculture					0
Other					0
Total	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 5
Water deliveries - projected, 2015

	2015				
	Metered		Not metered		Total
Water use sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	Volume
Single family					0
Multi-family					0
Commercial					0
Industrial					0
Institutional/governmental					0
Landscape					0
Agriculture					0
Other					0
Total	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 6
Water deliveries - projected, 2020

	2020				
	Metered		Not metered		Total
Water use sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	Volume
Single family					0
Multi-family					0
Commercial					0
Industrial					0
Institutional/governmental					0
Landscape					0
Agriculture					0
Other					0
Total	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

2010 Urban Water Management Plan "Review for Completeness" Form

AGENCY NAME HERE

Table 7 Water deliveries - projected 2025, 2030, and 2035						
	2025		2030		2035 - optional	
	metered		metered		metered	
Water use sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family						
Multi-family						
Commercial						
Industrial						
Institutional/governmental						
Landscape						
Agriculture						
Other						
Total	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

DWR Reviewer Comments:	

☐ Identified and quantified sales to other agencies _____ Reference & Page Number

OR ☐ No sales to other agencies _____ Reference & Page Number

Table 9 Sales to other water agencies							
Water distributed	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035 - opt**
name of agency			0	0	0	0	0
name of agency							
name of agency							
Total	0	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

☐ Identified and quantified additional water uses _____ Reference & Page Number

OR ☐ No additional water uses _____ Reference & Page Number

Table 10 Additional water uses and losses							
Water use[1]	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035 -opt**
Saline barriers							
Groundwater recharge							
Conjunctive use							
Raw water							
Recycled water							
System losses							
Other (define)							
Total	0	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Any water accounted for in Tables 3 through 7 are not included in this table.

Table 11 Total water use							
Water Use	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035 - opt**
Total water deliveries (from Tables 3 to 7)							
Sales to other water agencies (from Table 9)							
Additional water uses and losses (from Table 10)							
Total							

Units (circle one): acre-feet per year million gallons per year cubic feet per year

DWR Reviewer Comments:	

11. Per Capita Water Use and Water Use Targets **(Water Code §10608.20)**

☐ Base daily per capita water use is calculated according to provided methodologies

Table 13 Base period ranges			
Base	**Parameter**	**Value**	**Units**
10- to 15-year base period	2008 total water deliveries		*see below*
	2008 total volume of delivered recycled water		*see below*
	2008 recycled water as a percent of total deliveries		percent
	Number of years in base period[1]		years
	Year beginning base period range		
	Year ending base period range[2]		
5-year base period	Number of years in base period	5	years
	Year beginning base period range		
	Year ending base period range[3]		

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first base period is a continuous 10- to 15-year period.

[2] The ending year must be between December 31, 2004 and December 31, 2010.

[2] The ending year must be between December 31, 2007 and December 31, 2010.

2010 Urban Water Management Plan "Review for Completeness" Form

AGENCY NAME HERE

Table 14
Base daily per capita water use - 10- to 15-year range

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1				
Year 2				
Year 3				
Year 4				
Year 5				
Year 6				
Year 7				
Year 8				
Year 9				
Year 10				
Year 11				
Year 12				
Year 13				
Year 14				
Year 15				
			Base Daily Per Capita Water Use[1]	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Add the values in the column and divid by the number of rows.

Table 15
Base daily per capita water use - 5-year range

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1				
Year 2				
Year 3				
Year 4				
Year 5				
			Base Daily Per Capita Water Use[1]	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Add the values in the column and divid by the number of rows.

Target method used to determine urban water use target

☐ Target method 1
☐ Target method 2
☐ Target method 3
☐ Target method 4

☐ Urban water use target is calculated according to provided methodologies
_____ **gpcd**

☐ Interim urban water use target is calculated according to provided methodologies
_____ **gpcd**

DWR Reviewer Comments:	

12. Water Use Projections and Low Income Housing **(Water Code §10631.1(a))**

☐ Indicate how much of the water use projections provided in Tables 12 through 16 (above) is for single-family and multi-family residential low income housing. _____ Reference & Page Number

☐ Agency included deliveries to low-income housing in Tables 3-7 _____ Reference & Page Number

☐ No anticipated low income single or multifamily residential water demands

Table 8
Low income projected water demands

Low Income Water Demands[1]	2015	2020	2025	2030	2035 - opt
Single-family residential	0	0	0	0	0
Multi-family residential					
Total	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Provide demands either as directly estimated values or as a percent of demand.

DWR Reviewer Comments:	

13. 2010 Urban Water Management Plan "Review of DMMs for Completeness" Form **(Water Code §10631 (f) and (g)**

(Water Code §10631 (f) & (g), the 2005 Urban Water Management Plan "Review of DMMs for Completeness" Form is found on Sheet 2

IMPORTANT NOTE
TO BE ELIGIBLE FOR GRANTS OR LOANS, AB1420 HAS MANDATED IMPLEMENTATION, SCHEDULED IMPLEMENTATION, OR EXEMPTION FOR ALL DMMs. TO ENSURE YOUR PLAN ADDRESSES THE PROVISIONS OF WATER CODE 10631(f) AND (g), PROVIDE COMPLETE DESCRIPTIONS OR BENEFIT/COST ANALYSES FOR ALL DMMs AS IDENTIFIED ON THE DMMs WORKSHEET.

☐ Each DMM has been addressed

DWR Reviewer Comments:	

2010 Urban Water Management Plan "Review for Completeness" Form

AGENCY NAME HERE

14. Planned Water Supply Projects and Programs **(Water Code §10631 (h))**

☐ Agency has future water supply projects planned that are not related to DMMs. _____ Reference & Page Number

OR ☐ Agency does NOT have any future water supply projects planned that are not related to DMMs (Skip Section). _____ Reference & Page Number

☐ Provided detailed description of expected future supply projects and programs _____ Reference & Page Number

☐ Provided timeline for each proposed project _____ Reference & Page Number

Table 26
Future Water Supply Projects

Project name[1]	Projected start date	Projected completion date	Potential project constraints[2]	Normal-year supply[3]	Single-dry year supply[3]	Multiple-dry year first year supply[3]	Multiple-dry year second year supply[3]	Multiple-dry year third year supply[3]
				0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Water volumes presented here should be accounted for in Table 16.

2Indicate whether project is likely to happen and what constraints, if any, exist for project implementation.

[3] Provide estimated supply benefits, if available.

DWR Reviewer Comments:

15. Opportunities for development of desalinated water **(Water Code §10631 (i))**

☐ Agency uses or has future plans to use desalinated water. _____ Reference & Page Number

OR ☐ Agency does NOT have any opportunities for future use of desalinated water (Skip Section). _____ Reference & Page Number

Described opportunities for development of desalinated water, including, but not limited to,

☐ Ocean water

☐ Brackish ocean water

☐ Brackish groundwater

☐ Other

DWR Reviewer Comments:

16. District is a CUWCC signatory **(Water Code § 10631 (j))**

☐ Agency is a CUWCC member _____ Reference & Page Number

☐ Attached 2009-2010 biannual update to UWMP _____ Reference & Page Number

☐ Biannual updates is considered complete by CUWCC website _____ Reference & Page Number

DWR Reviewer Comments:

17. If Supplier receives or projects receiving water from a wholesale supplier **(Water Code §10631 (k))**

☐ Agency receives or plans to receive wholesale water _____ Reference & Page Number

OR ☐ Agency neither has nor planto receive future receipt of wholesale water _____ Reference & Page Number

☐ Agency provided written demand projections to wholesaler, 20 years _____ Reference & Page Number

Table 12
Retail agency demand projections provided to wholesale suppliers

Wholesaler	Contracted Volume[3]	2010	2015	2020	2025	2030	2035 -opt

☐ Wholesaler provided written water availability projections, by source, to agency, 20 years _____ Reference & Page Number
(if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)

Table 17
Wholesale supplies - existing and planned sources of water

Wholesale sources[1,2]	Contracted Volume[3]	2015	2020	2025	2030	2035 - opt
(source 1)						
(source 2)						
(source 3)						

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Water volumes presented here should be accounted for in Table 16.

[2] If the water supplier is a wholesaler, indicate all customers (excluding individual retail customers) to which water is sold. If the water supplier is a retailer, indicate each wholesale supplier, if more than one.

[3] Indicate the full amount of water

☐ Provided reliability of wholesale supply in writing by wholesale agency _____ Reference & Page Number
(if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)

☐ Wholesale supply reliability numbers provided in Table 31. _____ Reference & Page Number

☐ Factors resulting in inconsistency of wholesaler's supply are provided in Table 29. _____ Reference & Page Number

DWR Reviewer Comments:

2010 Urban Water Management Plan "Review for Completeness" Form

AGENCY NAME HERE

18. Water Shortage Contingency Plan Section - Stages of Action **(Water Code § 10632 (a))**

- ☐ Provided stages of action _____ Reference & Page Number
- ☐ Provided the water supply conditions for each stage _____ Reference & Page Number
- ☐ Included plan for 50 percent supply shortage _____ Reference & Page Number

Table 35
Water shortage contingency - rationing stages to address water supply shortages

Stage No.	Water Supply Conditions	% Shortage

[1] One of the stages of action must be designed to address a 50 percent reduction in water supply.

DWR Reviewer Comments:	

19. Water Shortage Contingency Plan Section - Three-Year Minimum Water Supply **(Water Code §10632 (b))**

- ☐ Identified driest 3-year period _____ Reference & Page Number
- ☐ Determined minimum water supply available by source for the next three years _____ Reference & Page Number

Table 31
Supply reliability - current water sources

Water supply sources[1]	Average / Normal Water Year Supply[2]	Single Dry Water Year Supply[2]	Multiple Dry Water Year Supply[2]			
			Year 1	Year 2	Year 3	Year 4
Percent of normal year:						

Units are in acre-feet per year.
[1] From Table 16.
[2] See Table 27 for basis of water type years.

DWR Reviewer Comments:	

20. Water Shortage Contingency Plan - Preparation for catastrophic water supply interruption **(Water Code §10632 (c))**

- ☐ Provided catastrophic supply interruption plan _____ Reference & Page Number
- ☐ Described actions to be taken during power outage _____ Reference & Page Number
- ☐ Described actions to be taken during earthquake _____ Reference & Page Number
- ☐ Described actions to be taken during other catastrophic interruptions _____ Reference & Page Number

DWR Reviewer Comments:	

21. Water Shortage Contingency Plan - Prohibitions, Consumption Reduction Methods, and Penalties **(Water Code § 10632 (d-f))**

- ☐ Listed the mandatory prohibitions against specific water use practices during water shortages _____ Reference & Page Number

Table 36
Water shortage contingency - mandatory prohibitions

Examples of Prohibitions	Stage When
Using potable water for street washing	
Other (name prohibition)	
Other (name prohibition)	
Other (name prohibition)	
Other (name prohibition)	
Other (name prohibition)	
Other (name prohibition)	

- ☐ Listed the consumption reduction methods the water supplier will use to reduce water use in the most restrictive stages with up to a 50% reduction. _____ Reference & Page Number

Table 37
Water shortage contingency - consumption reduction methods

Consumption	Stage When	Projected
name method		
name method		
name method		
name method		
name method		
name method		

- ☐ Listed penalties or charges for excessive use _____ Reference & Page Number

Table 38
Water shortage contingency - penalties and charges

Penalties or Charges	Stage When Penalty Takes Effect
Penalty for excess use	
Charge for excess use	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	

DWR Reviewer Comments:	

2010 Urban Water Management Plan "Review for Completeness" Form

AGENCY NAME HERE

22. Water Shortage Contingency Plan - Revenue and Expenditure Impacts **(Water Code § 10632 (g))**

- ☐ Described how actions and conditions impact revenues _____ Reference & Page Number
- ☐ Rate adjustments _____ Reference & Page Number
- ☐ Development of reserves _____ Reference & Page Number
- ☐ Described how actions and conditions impact expenditures _____ Reference & Page Number
- ☐ Described measures to overcome the revenue and expenditure impacts _____ Reference & Page Number

DWR Reviewer Comments:

23. Water Shortage Contingency Plan - Water Shortage Contingency Ordinance/Resolution **(Water Code § 10632 (h))**

- ☐ Attached a copy of the draft water shortage contingency resolution or ordinance. _____ Reference & Page Number

DWR Reviewer Comments:

24. Water Shortage Contingency Plan - Reduction Measuring Mechanism **(Water Code § 10632 (i))**

- ☐ Provided mechanisms for determining actual reductions _____ Reference & Page Number
- ☐ No water shortage contingency resolution or ordinance _____ Reference & Page Number

DWR Reviewer Comments:

25. Wastewater and Recycled Water - System description and disposal **(Water Code § 10633 (a))**

- ☐ Described the wastewater collection and treatment systems for the supplier's service area _____ Reference & Page Number
- ☐ Quantified the volume of wastewater collected and treated _____ Reference & Page Number
- ☐ Described methods of wastewater disposal _____ Reference & Page Number

Table 21
Recycled water - wastewater collection and treatment

Type of Wastewater	2005	2010	2015	2020	2025	2030	2035 - opt
Wastewater collected & treated in service area							
Volume that meets recycled water standard							

Units (circle one): acre-feet per year million gallons per year cubic feet per year

- ☐ Described methods of wastewater disposal _____ Reference & Page Number

Table 22
Recycled water - non-recycled wastewater disposal

Method of disposal	Treatment Level	2010	2015	2020	2025	2030	2035 - opt
Name of method							
Name of method							
Name of method							
Name of method							
	Total	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

DWR Reviewer Comments:

26. Wastewater and Recycled Water - Uses and Projected Uses **(Water Code § 10633 (b - e))**

- ☐ Agency has access to recycled water. _____ Reference & Page Number
- OR ☐ Agency does NOT have any access to recycled water (explanation provided) _____ Reference & Page Number
- ☐ The use of recycled water by the Agency is technically or economically feasible. _____ Reference & Page Number
- OR ☐ The use of recycled water by the Agency is NOT technically or economically feasible (explanation provided) _____ Reference & Page Number
- ☐ No current (2010) use of recycled water _____ Reference & Page Number
- ☐ Described and quantified potential uses of recycled water _____ Reference & Page Number

Table 23
Recycled water - potential future use

User type	Description	Feasibility[1]	2015	2020	2025	2030	2035 - opt
Agricultural irrigation							
Landscape irrigation[2]							
Commercial irrigation[3]							
Golf course irrigation							
Wildlife habitat							
Wetlands							
Industrial reuse							
Groundwater recharge							
Seawater barrier							
Getothermal/Energy							
Indirect potable reuse							
Other (user type)							
Other (user type)							
	Total	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] *Technical and economic feasibility.*

[2] *Includes parks, schools, cemeteries, churches, residential, or other public facilities)*

[3] *Includes commercial building use such as landscaping, toilets, HVAC, etc) and commercial uses (car washes, laundries, nurseries, etc)*

DWR Reviewer Comments:

2010 Urban Water Management Plan "Review for Completeness" Form

AGENCY NAME HERE

27. Wastewater and Recycled Water - Projected Uses **(Water Code § 10633 (e))**

☐ Compared 2010 projections included in the 2005 UWMP with actual 2010 volumes _____ Reference & Page Number

OR ☐ No recycled water use for 2010 projected in 2005 UWMP

Table 24
Recycled water - 2005 UWMP use projection compared to 2010 actual

Use type	2010 actual use	2005 Projection for 2010[1]
Agricultural irrigation		
Landscape irrigation[2]		
Commercial irrigation[3]		
Golf course irrigation		
Wildlife habitat		
Wetlands		
Industrial reuse		
Groundwater recharge		
Seawater barrier		
Getothermal/Energy		
Indirect potable reuse		
Other (user type)		
Other (user type)		
Total	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] From the 2005 UWMP. There has been some modification of use types. Data from the 2005 UWMP can be left in the existing catagories or modified to the new catagories, at the discretion of the water supplier.

[2] Includes parks, schools, cemeteries, churches, residential, or other public facilities)

[3] Includes commercial building use such as landscaping, toilets, HVAC, etc) and commercial uses (car washes, laundries, nurseries, etc)

DWR Reviewer Comments:

28. Wastewater and Recycled Water - optimize uses **(Water Code § 10633 (f))**

☐ Described actions that might be taken to encourage recycled water uses _____ Reference & Page Number

☐ Described projected results of these actions in terms of acre-feet of recycled water used per year _____ Reference & Page Number

Table 25
Methods to encourage recycled water use

Actions	Projectes Results					
	2010	2015	2020	2025	2030	2035 - opt
Financial incentives						
name of action						
name of action						
Total	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

DWR Reviewer Comments:

29. Wastewater and Recycled Water - Recycling Plan Agency Coordination **(Water Code § 10633(f))**

☐ Provided a recycled water use optimization plan which includes actions to facilitate the use of recycled water (dual distribution systems, promote recirculating uses) _____ Reference & Page Number

☐ Agency does not have recycled water use optimization plan _____ Reference & Page Number

☐ Described the coordination of the recycling plan preparation information to the extent available. _____ Reference & Page Number

DWR Reviewer Comments:

30. Water quality impacts on availability of supply **(Water Code §10634)**

☐ Discussed water quality impacts (by source) upon water management strategies and supply reliability _____ Reference & Page Number

OR ☐ No water quality impacts projected (explanation provided) _____ Reference & Page Number

Table 30
Water quality - current and projected water supply impacts

Water source	Description of condition	2010	2015	2020	2025	2030	2035 - opt

Units are in acre-feet per year.

DWR Reviewer Comments:

31. Supply and Demand Comparison to 20 Years **(Water Code § 10635 (a))**

☐ Compare the projected normal water supply to projected normal water demand over the next 20 years, in 5-year increments. _____ Reference & Page Number

Table 32
Supply and demand comparison - normal year

	2010	2015	2020	2025	2030	2035 - opt
Supply totals (from Table 16)						
Demand totals (From Table 11)						
Difference						
Difference as % of Supply						
Difference as % of Demand						

Units are in acre-feet per year.

DWR Reviewer Comments:

2010 Urban Water Management Plan "Review for Completeness" Form

AGENCY NAME HERE

32. Supply and Demand Comparison: Single-dry Year Scenario **(Water Code § 10635 (a))**

☐ Compare the projected single-dry year water supply to projected single-dry year water demand over the next 20 years, in 5-year increments. _____ Reference & Page Number

Table 33
Supply and demand comparison - single dry year

	2010	2015	2020	2025	2030 - opt	2030
Supply totals[1,2]						
Demand totals[2,3,4]						
Difference						
Difference as % of Supply						
Difference as % of Demand						

Units are in acre-feet per year.
[1] Consider the same sources as in Table 16. If new sources of water are planned, add a column to the table and specify the source, timing, and amount of water.
[2] Provide in the text of the UWMP text that discusses how single-dry-year water supply volumes were determined.
[3] Consider the same demands as in Table 3. If new water demands are anticipated, add a column to the table and specify the source, timing, and amount of water.
[4] The urban water target determined in this UWMP will be considered when developing the 2020 water demands included in this table.

DWR Reviewer Comments:

33. Supply and Demand Comparison: Multiple-dry Year Scenario **(Water Code § 10635 (a))**

☐ Project a multiple-dry year period (as identified in Table 27) occurring between 2011-2015 and compare projected supply and demand during those years _____ Reference & Page Number

☐ Project a multiple-dry year period (as identified in Table 27) occurring between 2016-2020 and compare projected supply and demand during those years _____ Reference & Page Number

☐ Project a multiple-dry year period (as identified in Table 27) occurring between 2021-2025 and compare projected supply and demand during those years _____ Reference & Page Number

☐ Project a multiple-dry year period (as identified in Table 27) occurring between 2026-2030 and compare projected supply and demand during those years _____ Reference & Page Number

Table 34
Supply and demand comparison - multiple dry-year events

		2010	2015	2020	2025	2030	2035 - opt
Multiple-dry year first year supply	**Supply totals[1,2]**						
	Demand totals[2,3,4]						
	Difference						
	Difference as % of Supply						
	Difference as % of Demand						
Multiple-dry year second year supply	**Supply totals[1,2]**						
	Demand totals[2,3,4]						
	Difference						
	Difference as % of Supply						
	Difference as % of Demand						
Multiple-dry year third year supply	**Supply totals[1,2]**						
	Demand totals[2,3,4]						
	Difference						
	Difference as % of Supply						
	Difference as % of Demand						

Units are in acre-feet per year.
[1] Consider the same sources as in Table 16. If new sources of water are planned, add a column to the table and specify the source, timing, and amount of water.
[2] Provide in the text of the UWMP text that discusses how single-dry-year water supply volumes were determined.
[3] Consider the same demands as in Table 3. If new water demands are anticipated, add a column to the table and specify the source, timing, and amount of water.
[4] The urban water target determined in this UWMP will be considered when developing the 2020 water demands included in this table.

DWR Reviewer Comments:

34. Provision of Water Service Reliability section to cities/counties within service area **(Water Code § 10635(b))**

☐ Provided Water Service Reliability section of UWMP to cities and counties within which it provides water supplies within 60 days of UWMP submission to DWR _____ Reference & Page Number

DWR Reviewer Comments:

35. Does the Plan Include Public Participation and Plan Adoption **(Water Code § 10642)**

☐ Attach a copy of adoption resolution _____ Reference & Page Number
☐ Encourage involvement of social, cultural & economic community groups _____ Reference & Page Number
☐ Plan available for public inspection _____ Reference & Page Number
☐ Provide proof of public hearing _____ Reference & Page Number
☐ Provided meeting notice to local governments _____ Reference & Page Number

DWR Reviewer Comments:

36. Review of implementation of 2005 UWMP **(Water Code § 10643)**

☐ Reviewed implementation plan and schedule of 2005 UWMP _____ Reference & Page Number
☐ Implemented in accordance with the schedule set forth in plan _____ Reference & Page Number
☐ 2005 UWMP not required _____ Reference & Page Number

DWR Reviewer Comments:

37. Provision of 2010 UWMP to local governments **(Water Code § 10644 (a))**

☐ Provide 2010 UWMP to DWR, and cities and counties within 30 days of adoption _____ Reference & Page Number

DWR Reviewer Comments:

38. Does the plan or correspondence accompanying it show where it is available for public review **(Water Code § 10645)**

☐ Does UWMP or correspondence accompanying it show where it is available for public review _____ Reference & Page Number

DWR Reviewer Comments:

Section K: California Water Code, Division 6, Part 2.6: Urban Water Management Planning

The following sections of California Water Code Division 6, Part 2.6, are available online at http://www.leginfo.ca.gov/calaw.html.

Chapter 1. General Declaration and Policy	§10610-10610.4
Chapter 2. Definitions	§10611-10617
Chapter 3. Urban Water Management Plans	
Article 1. General Provisions	§10620-10621
Article 2. Contents of Plans	§10630-10634
Article 2.5. Water Service Reliability	§10635
Article 3. Adoption And Implementation of Plans	§10640-10645
Chapter 4. Miscellaneous Provisions	§10650-10656

Chapter 1. General Declaration and Policy

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2.

(a) The Legislature finds and declares all of the following:

(1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.

(2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.

(4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.

(5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

Chapter 2. Definitions

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.5. “Demand management” means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. “Customer” means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10613. “Efficient use” means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. “Person” means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

Chapter 3. Urban Water Management Plans

Article 1. General Provisions

10620.

(a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

10621.

(a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

(c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

Article 2. Contents of Plans

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of

water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) (1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(A) An average water year.

(B) A single dry water year.

(C) Multiple dry water years.

(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

(A) Water survey programs for single-family residential and multifamily residential customers.

(B) Residential plumbing retrofit.

(C) System water audits, leak detection, and repair.

(D) Metering with commodity rates for all new connections and retrofit of existing connections.

(E) Large landscape conservation programs and incentives.

(F) High-efficiency washing machine rebate programs.

(G) Public information programs.

(H) School education programs.

(I) Conservation programs for commercial, industrial, and institutional accounts.

(J) Wholesale agency programs.

(K) Conservation pricing.

(L) Water conservation coordinator.

(M) Water waste prohibition.

(N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

(j) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivisions (f) and (g) by complying with all the provisions of the “Memorandum of Understanding Regarding Urban Water Conservation in California,” dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

(k) Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

10631.1.

(a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code,

as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

10631.5.

(a) (1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures described in Section 10631, as determined by the department pursuant to subdivision (b).

(2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation. This section does not apply to water management projects funded by the federal American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

(3) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if the urban water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the water demand management measures. The supplier may request grant or loan funds to implement the water demand management measures to the extent the request is consistent with the eligibility requirements applicable to the water management funds.

(4) (A) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the

department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination.

(B) For purposes of this paragraph, “not locally cost effective” means that the present value of the local benefits of implementing a water demand management measure is less than the present value of the local costs of implementing that measure.

(b) (1) The department, in consultation with the state board and the California Bay-Delta Authority or its successor agency, and after soliciting public comment regarding eligibility requirements, shall develop eligibility requirements to implement the requirement of paragraph (1) of subdivision (a). In establishing these eligibility requirements, the department shall do both of the following:

(A) Consider the conservation measures described in the Memorandum of Understanding Regarding Urban Water Conservation in California, and alternative conservation approaches that provide equal or greater water savings.

(B) Recognize the different legal, technical, fiscal, and practical roles and responsibilities of wholesale water suppliers and retail water suppliers.

(2) (A) For the purposes of this section, the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following:

(i) Compliance on an individual basis.

(ii) Compliance on a regional basis. Regional compliance shall require participation in a regional conservation program consisting of two or more urban water suppliers that achieves the level of conservation or water efficiency savings equivalent to the amount of conservation or savings achieved if each of the participating urban water suppliers implemented the water demand management measures. The urban water supplier administering the regional program shall provide participating urban water suppliers and the department with data to demonstrate that the regional program is consistent with this clause. The department shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements.

(B) The department may require additional information for any determination pursuant to this section.

(3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

(c) In establishing guidelines pursuant to the specific funding authorization for any water management grant or loan program subject to this section, the agency administering the grant or loan program shall include in the guidelines the eligibility requirements developed by the department pursuant to subdivision (b).

(d) Upon receipt of a water management grant or loan application by an agency administering a grant and loan program subject to this section, the agency shall request an eligibility determination from the department with respect to the requirements of this section. The department shall respond to the request within 60 days of the request.

(e) The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities. In addition, for urban water suppliers that are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California and submit annual reports to the California Urban Water Conservation Council in accordance with the memorandum, the department may use these reports to assist in tracking the implementation of water demand management measures.

(f) This section shall remain in effect only until July 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before July 1, 2016, deletes or extends that date.

10631.7. The department, in consultation with the California Urban Water Conservation Council, shall convene an independent technical panel to provide information and recommendations to the department and the Legislature on new demand management measures, technologies, and approaches. The panel shall consist of no more than seven members, who shall be selected by the department to reflect a balanced representation of experts. The panel shall have at least one, but no more than two, representatives from each of the following: retail water suppliers, environmental organizations, the business community, wholesale water suppliers, and academia. The panel shall be convened by January 1, 2009, and shall report to the

Legislature no later than January 1, 2010, and every five years thereafter. The department shall review the panel report and include in the final report to the Legislature the department's recommendations and comments regarding the panel process and the panel's recommendations.

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

(a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

(b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

(c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

(d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

(f) Penalties or charges for excessive use, where applicable.

(g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

(h) A draft water shortage contingency resolution or ordinance.

(i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water

supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Article 2.5. Water Service Reliability

10635.

(a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand

assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

(b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

Article 3. Adoption and Implementation of Plans

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630).

The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644.

(a) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the exemplary elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report those water demand management measures adopted and implemented by specific urban water suppliers, and identified pursuant to Section 10631, that achieve water savings significantly above the levels established by the department to meet the requirements of Section 10631.5.

(2) The department shall distribute to the panel convened pursuant to Section 10631.7 the results achieved by the implementation of those water demand management measures described in paragraph (1).

(3) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

10645. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

Chapter 4. Miscellaneous Provisions

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.

(b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the “Memorandum of Understanding Regarding Urban Water Conservation in California” is deemed to be reasonable for the purposes of this section.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or

applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

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Section L: California Water Code, Division 6, Part 2.55: Water Conservation

The following sections of California Water Code Division 6, Part 2.55, are available online at http://www.leginfo.ca.gov/calaw.html.

Chapter 1. General Declarations and Policy	§10608-10608.8
Chapter 2. Definitions	§10608.12
Chapter 3. Urban Retail Water Suppliers	§10608.16-10608.44

Legislative Counsel's Digest

Senate Bill No. 7
Chapter 4

An act to amend and repeal Section 10631.5 of, to add Part 2.55 (commencing with Section 10608) to Division 6 of, and to repeal and add Part 2.8 (commencing with Section 10800) of Division 6 of, the Water Code, relating to water.

[Approved by Governor November 10, 2009. Filed with Secretary of State November 10, 2009.]

Legislative Counsel's Digest

SB 7, Steinberg. Water conservation.

(1) Existing law requires the Department of Water Resources to convene an independent technical panel to provide information to the department and the Legislature on new demand management measures, technologies, and approaches. "Demand management measures" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

This bill would require the state to achieve a 20% reduction in urban per capita water use in California by December 31, 2020. The state would be required to make incremental progress towards this goal by reducing per capita water use by at least 10% on or before December 31, 2015. The bill would require each urban retail water supplier to develop urban water use targets and an interim urban water use target, in accordance with specified requirements. The bill would require agricultural water suppliers to implement efficient water management practices. The bill would require the department, in consultation with other state agencies, to develop a single standardized water use reporting form. The bill, with certain exceptions, would provide that urban retail water suppliers, on and after July 1, 2016, and agricultural water suppliers, on and after July 1, 2013, are not eligible for state water grants or loans unless they comply with the water conservation requirements established by the bill. The bill would repeal, on July 1, 2016, an existing requirement that conditions

eligibility for certain water management grants or loans to an urban water supplier on the implementation of certain water demand management measures.

(2) Existing law, until January 1, 1993, and thereafter only as specified, requires certain agricultural water suppliers to prepare and adopt water management plans.

This bill would revise existing law relating to agricultural water management planning to require agricultural water suppliers to prepare and adopt agricultural water management plans with specified components on or before December 31, 2012, and update those plans on or before December 31, 2015, and on or before December 31 every 5 years thereafter. An agricultural water supplier that becomes an agricultural water supplier after December 31, 2012, would be required to prepare and adopt an agricultural water management plan within one year after becoming an agricultural water supplier. The agricultural water supplier would be required to notify each city or county within which the supplier provides water supplies with regard to the preparation or review of the plan. The bill would require the agricultural water supplier to submit copies of the plan to the department and other specified entities. The bill would provide that an agricultural water supplier is not eligible for state water grants or loans unless the supplier complies with the water management planning requirements established by the bill.

(3) The bill would take effect only if SB 1 and SB 6 of the 2009–10 7th Extraordinary Session of the Legislature are enacted and become effective.

The people of the State of California do enact as follows:

SECTION 1. Part 2.55 (commencing with Section 10608) is added to Division 6 of the Water Code, to read:

Part 2.55. Sustainable Water Use and Demand Reduction

Chapter 1. General Declarations and Policy

10608. The Legislature finds and declares all of the following:

(a) Water is a public resource that the California Constitution protects against waste and unreasonable use.

(b) Growing population, climate change, and the need to protect and grow California's economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.

(c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.

(d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve streamflows, and reduce greenhouse gas emissions.

(e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.

(f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.

(g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.

(h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.

(i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

10608.4. It is the intent of the Legislature, by the enactment of this part, to do all of the following:

(a) Require all water suppliers to increase the efficiency of use of this essential resource.

(b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.

(c) Measure increased efficiency of urban water use on a per capita basis.

(d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.

(e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.

(f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.

(g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.

(h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.

(i) Require implementation of specified efficient water management practices for agricultural water suppliers.

(j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.

(k) Advance regional water resources management.

10608.8.

(a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.

(2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an administrative proceeding. This paragraph shall become inoperative on January 1, 2021.

(3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.

(b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.

(c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population growth may have greater effects on water

use. This part does not limit the economic productivity of California's agricultural, commercial, or industrial sectors.

(d) The requirements of this part do not apply to an agricultural water supplier that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect. After the expiration of the Quantification Settlement Agreement, to the extent conservation water projects implemented as part of the Quantification Settlement Agreement remain in effect, the conserved water created as part of those projects shall be credited against the obligations of the agricultural water supplier pursuant to this part.

Chapter 2. Definitions

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) “Agricultural water supplier” means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. “Agricultural water supplier” includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. “Agricultural water supplier” does not include the department.

(b) “Base daily per capita water use” means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) “Baseline commercial, industrial, and institutional water use” means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) “Commercial water user” means a water user that provides or distributes a product or service.

(e) “Compliance daily per capita water use” means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(f) “Disadvantaged community” means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(g) “Gross water use” means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(h) “Industrial water user” means 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.

(i) “Institutional water user” means 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.

(j) “Interim urban water use target” means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(k) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(l) "Process water" means water used for producing a product or product content or water used for research and development, including, but not limited to, continuous manufacturing processes, water used for testing and maintaining equipment used in producing a product or product content, and water used in combined heat and power facilities used in producing a product or product content. Process water does not mean incidental water uses not related to the production of a product or product content, including, but not limited to, water used for restrooms, landscaping, air conditioning, heating, kitchens, and laundry.

(m) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050, that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse, that meets the following requirements, where applicable:

(1) For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following:

(A) Metered.

(B) Developed through planned investment by the urban water supplier or a wastewater treatment agency.

(C) Treated to a minimum tertiary level.

(D) Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.

(2) For reservoir augmentation, water supplies that meet the criteria of paragraph (1) and are conveyed through a distribution system constructed specifically for recycled water.

(n) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(o) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(p) "Urban retail water supplier" means 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.

(q) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

(r) "Urban wholesale water supplier," means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

Chapter 3. Urban Retail Water Suppliers

10608.16.

(a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.

(b) The state shall make incremental progress towards the state target specified in subdivision (a) by reducing urban per capita water use by at least 10 percent on or before December 31, 2015.

10608.20.

(a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in subdivision (a) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

(e) An urban retail water supplier shall include in its urban water management plan required pursuant to Part 2.6 (commencing with Section 10610) due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its Internet Web site, and make written copies

available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with subdivision (l) of Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) An urban retail water supplier shall be granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

10608.22. Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

10608.24.

(a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

(b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

(c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.

(d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.

(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

(e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area, may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.

(f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.

(2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26.

(a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

(b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.

(c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's implementation plan for complying with this part shall consider the United States Department of Defense military installation's requirements under federal Executive Order 13423.

(d) (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

(2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28.

(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

10608.32. All costs incurred pursuant to this part by a water utility regulated by the Public Utilities Commission may be recoverable in rates subject to review and approval by the Public Utilities Commission, and may be recorded in a memorandum account and reviewed for reasonableness by the Public Utilities Commission.

10608.36. Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

10608.40. Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

10608.42. The department shall review the 2015 urban water management plans and report to the Legislature by December 31, 2016, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets in order to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for

commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

(a) Appropriate metrics for evaluating commercial, industrial, and institutional water use.

(b) Evaluation of water demands for manufacturing processes, goods, and cooling.

(c) Evaluation of public infrastructure necessary for delivery of recycled water to the commercial, industrial, and institutional sectors.

(d) Evaluation of institutional and economic barriers to increased recycled water use within the commercial, industrial, and institutional sectors.

(e) Identification of technical feasibility and cost of the best management practices to achieve more efficient water use statewide in the commercial, industrial, and institutional sectors that is consistent with the public interest and reflects past investments in water use efficiency.

10608.44. Each state agency shall reduce water use on facilities it operates to support urban retail water suppliers in meeting the target identified in Section 10608.16.

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Section M: Water Conservation Bill of 2009 Technical Methodologies

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Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use

(For the Consistent Implementation of the Water Conservation Act of 2009)

February 2011

California Department of Water Resources
Division of Statewide Integrated Water Management
Water Use and Efficiency Branch

Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use

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California Department of Water Resources
Division of Statewide Integrated Water Management
Water Use and Efficiency Branch

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Introduction

In February 2008, Governor Arnold Schwarzenegger introduced a seven-part comprehensive plan for improving the Sacramento-San Joaquin Delta. A key component of his plan was a goal to achieve a 20 percent reduction in per capita water use statewide by the year 2020. The governor's inclusion of water conservation in the Delta plan emphasizes the importance of water conservation in reducing demand on the Delta and in reducing demand on the overall California water supply. In response to Schwarzenegger's call for statewide per capita savings, the Department of Water Resources (DWR) and the State Water Resources Control Board convened the 20x2020 Agency Team on Water Conservation. DWR released a draft 20x2020 Water Conservation Plan in April 2009 and the final 20x2020 Water Conservation Plan in February 2010. The water conservation plan developed estimates of statewide and regional baseline per capita water use and outlined recommendations to the governor on how a statewide per capita water use reduction plan could be implemented.

In November 2009, SBX7-7, The Water Conservation Act of 2009, was signed into law as part of a comprehensive water legislation package. The Water Conservation Act addresses both urban and agricultural water conservation. The urban provisions reflect the approach taken in the 20x2020 Water Conservation Plan. The legislation sets a goal of achieving a 20 percent statewide reduction in urban per capita water use and directs urban retail water suppliers to set 2020 urban water use targets. The Water Conservation Act of 2009 directs DWR to develop technical methodologies and criteria to ensure the consistent implementation of the Act and to provide guidance to urban retail water suppliers in developing baseline and compliance water use. These technical methodologies were developed through a public process with stakeholder input. DWR has held two public listening sessions, five public stakeholder meetings, and two public workshops to receive comment on the technical methodologies. One of the methodologies, the Criteria for Compliance -Year Adjustment will be released in 2011. This methodology is not needed by urban water suppliers to develop 2010 urban water management plans, and additional time is needed to develop the weather normalization model, which will be a major component of the methodology.

Background documents, stakeholder meeting summaries and public comments related to the development of these methodologies are available at the Water Conservation Act of 2009 website: http://www.water.ca.gov/wateruseefficiency/sb7/

Or contact:

SBX7-7 Urban Water Conservation Program Manager
Water Use and Efficiency Branch
Department of Water Resources, 1416 Ninth Street, Sacramento CA 95814

Overview of Methodologies, Water Use Targets, and Reporting

The Water Conservation Act of 2009 was incorporated into Division 6 of the California Water Code, commencing with Section 10608 of Part 2.55. All quotations of the Water Code in this report are from sections added by this legislation, unless otherwise noted.

The methodologies, water use targets, and reporting apply to urban retail water suppliers that meet a threshold of number of end users or annual volume of potable water supplied. Section 10698.12 (p) defines the water suppliers affected:

> *"Urban retail water supplier" means 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.*

This overview summarizes the process that urban retail water suppliers must follow and the options they have for complying with the legislation.

Methodologies

The legislation specifically calls for developing seven methodologies and a set of criteria for adjusting daily per capita water use at the time compliance is required (the 2015 and 2020 compliance years) under Section 10608.20(h):

> *(1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:*
>
> *(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.*
>
> *(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.*

Sections 10608.20 and 10608.28 of the Water Code allow water suppliers the choice of complying individually or regionally by mutual agreement with other water suppliers or regional agencies. DWR has also developed a methodology for regional compliance.

The following methodologies are included in this report:

- Methodology 1: Gross Water Use
- Methodology 2: Service Area Population
- Methodology 3: Base Daily Per Capita Water Use
- Methodology 4: Compliance Daily Per Capita Water Use

- Methodology 5: Indoor Residential Use
- Methodology 6: Landscaped Area Water Use
- Methodology 7: Baseline Commercial, Industrial, and Institutional (CII) Water Use
- Methodology 8: Criteria for Adjustments to Compliance Daily Per Capita Water Use
- Methodology 9: Regional Compliance

The methodologies provide specific guidance to water suppliers on how to calculate baseline, target, and compliance-year water use. Each methodology defines how its calculations are to be used, with direct reference to the applicable section of the Water Code.

Each methodology describes the calculations, data needed, and, where applicable, optional steps and alternative approaches that water suppliers may use depending on their specific circumstances.

The methodologies for indoor residential water use; landscaped area water use; and baseline CII water use (Methodologies 5, 6, and 7) apply only to urban retail water suppliers who use Method 2 (see Water Use Targets below) to set water use targets.

Baseline Water Use

Water suppliers must define a 10- or 15-year base (or baseline) period for water use that will be used to develop their target levels of per capita water use. Water suppliers must also calculate water use for a 5-year baseline period, and use that value to determine a minimum required reduction in water use by 2020. The longer baseline period applies to a water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water. Methodology 3: Base Daily Per Capita Water Use describes the calculations.

Water Use Targets

An urban retail water supplier, as defined above, must set a 2020 water use target and a 2015 interim target using one of four methods. Three of these are defined in Section 10608.20(a)(1), with the fourth developed by DWR by the end of 2010. The 2020 water use target will be calculated using one of the following four methods:

- Method 1: Eighty percent of the water supplier's baseline per capita water use
- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscaped area water use; and CII uses
- Method 3: Ninety-five percent of the applicable state hydrologic region target as stated in the State's April 30, 2009, draft 20x2020 Water Conservation Plan
- Method 4: An approach developed by DWR and reported to the Legislature by December 2010 (a description of this target method will be included as Appendix C)

The target may need to be adjusted further to achieve a minimum reduction in water use regardless of the target method (this is explained in Methodology 3). The Water Code directs that water suppliers must compare their actual water use in 2020 with their calculated targets to assess compliance. In addition, water suppliers will report interim compliance in 2015 as compared to an interim target (generally halfway between the

baseline water use and the 2020 target level). The years 2015 and 2020 are referred to in the methodologies as compliance years. All baseline, target, and compliance-year water use estimates must be calculated and reported in gallons per capita per day (GPCD).

Water suppliers have some flexibility in setting and revising water use targets:

- A water supplier may set its water use target and comply individually, or as part of a regional alliance (see Methodology 9: Regional Compliance).
- A water supplier may revise its water use target in its 2015 or 2020 urban water management plan or in an amended plan.
- A water supplier may change the method it uses to set its water use target and report it in a 2010 amended plan or in its 2015 urban water management plan. Urban water suppliers are not permitted to change target methods after they have submitted their 2015 UWMP.

Data Reporting

DWR will collect data pertaining to urban water use targets through three documents: (1) through the individual supplier urban water management plans; (2) through the regional urban water management plans; and (3) through regional alliance reports.

Water suppliers that comply individually must report the following data in their urban water management plans (applicable urban water management plan dates are included in parentheses).

- Baseline Gross Water Use and Service Area Population (2010, 2015, 2020)
- Individual 2020 Urban Water Use Target (2010, 2015, 2020) and Interim 2015 Urban Water Use Target (2010)
- Compliance Year Gross Water Use (2015 and 2020) and Service Area Population (2010, 2015, 2020)
- Adjustments to Gross Water Use in the compliance year (2015, 2020)
- Water suppliers who choose Target Method 2 also must provide Landscaped Area Water Use and Baseline CII Water Use data (2010, 2015, and 2020).
- Water Suppliers who choose Target Method 4 must provide the components of calculation as required by Target Method 4. Appendix C describes Target Method 4 and the regional compliance reporting that applies to that method (2010, 2015, and 2020).

Water suppliers that comply regionally must fulfill additional reporting requirements. These are described in greater detail in Methodology 9: Regional Compliance.

Consequences if Water Supplier Does Not Meet Water Use Targets

Each urban retail water supplier, as defined above, must comply by establishing 2015 and 2020 water use targets, demonstrating that its water use is in compliance with its targets,

and reporting water use baselines, targets, compliance year water use, and supporting data in its urban water management plan. Section 10608.56 (a) states that a water supplier not in compliance will not be eligible for water grants or loans that may be administered by DWR or other state agencies:

> *On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.*

Two exceptions to this are allowed. Section 10608.56 (c) states that a water supplier shall be eligible for a water loan or grant if it "has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions."

Section 10608.56 (e) states that a water supplier can also be eligible for a water loan or grant if it "has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community."

Methodology 1: Gross Water Use

Definition of Gross Water Use

Section 10608.12(g) of the Water Code defines "Gross Water Use" as:

> *the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:*
>
> *(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier*
>
> *(2) The net volume of water that the urban retail water supplier places into long term storage*
>
> *(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier*
>
> *(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24*

Calculation of Gross Water Use

Gross Water Use is a measure of water supplied to the distribution system over 12 months and adjusted for changes in distribution system storage and deliveries to other water suppliers that pass through the distribution system. Recycled water deliveries are to be excluded from the calculation of Gross Water Use. Water delivered through the distribution system for agricultural use may be deducted from the calculation of Gross Water Use. Under certain conditions, industrial process water use also may be deducted from Gross Water Use.

The methodology for calculating Gross Water Use broadly follows American Water Works Association (AWWA) Manual M36 guidance for calculating Distribution System Input Volume.[1] Calculating Gross Water Use entails 12 basic steps, two of which are optional.[2]

Step 1: Define the 12-month Calculation Period

Gross Water Use shall be calculated over a continuous 12-month period. This period can be based on the calendar year or the utility's fiscal year.[3] The same 12-month period must be used in calculations of Gross Water Use for determining Base Daily Per Capita Water Use and Compliance Daily Per Capita Water Use.

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[1]American Water Works Association, Manual of Water Supply Practices – M36: Water Audits and Loss Control Programs, 3rd Edition, 2009. M36 defines Distribution System Input Volume as the volume of water entering the distribution system to provide service to customers. It is equal to the water volume derived from the water utility's own source waters, plus water imported or purchased, plus or minus the net change in water storage (if applicable and significant).

[2]AWWA Manual M36 contains several forms and worksheets that retail urban water suppliers can use to compile and organize data required to calculate Gross Water Use.

[3]As stipulated in paragraph (1) of subdivision (a) of Section 10608.20 of SBX7-7.

Step 2: Delineate Distribution System Boundary

Water supply systems can be broadly subdivided between the transmission systems that convey large amounts of water to local storage reservoirs or treatment plants, and the distribution systems that supply water to residential, commercial, industrial, and public uses such as fire safety. Water distribution systems generally comprise large networks of pipes with complex branched and loop topologies with multiple flow paths to many delivery points.[4] In some systems, some retail customers receive water for municipal and industrial (M&I) uses directly from transmission canals and pipes, in which case the retail water supplier may treat the sections of the transmission canals and pipes delivering water to the retail M&I customers as part of its distribution system. However, transmission canals and pipelines not used for delivering water directly to retail customers should not be included as part of the distribution system.

Wherever possible, distribution system boundary limits should be defined by points of metering or measurement[5] of the water supply. Typical measurement locations for distribution include exit points for treatment plants, treated water reservoirs, wells feeding directly into the distribution system, and imported water entering directly into the distribution system. A schematic of a typical urban retail water supply system is shown in Figure 1; actual distribution systems may vary greatly in configuration. Therefore, each urban retail water supplier must define and delineate its distribution system for purposes of calculating Gross Water Use. The rules for defining and delineating the distribution system boundary must be applied consistently in the base period and compliance years.[6]

Step 3: Compile Water Volume from Own Sources

The water supplier's own sources of supply entering the distribution system shall be identified and tallied. For systems that provide only treated water, this may consist mostly or entirely of water entering the distribution system from treatment plants (as in Figure 1). It may also include water from wells or other sources controlled by the water supplier that directly supply the distribution system (as in Figure 1).

Recycled water, as defined in subdivision (m) of Section 10608.12, directly entering the distribution system shall be excluded from the tally of own sources. Step 8 addresses how to account for recycled water indirectly entering the distribution system through potable reuse.

Measurement records for each source shall be compiled into annual volumes. AWWA's M36 manual or other appropriate references should be consulted in situations where water sources are unmetered or the water meters have not been routinely calibrated. Volumes for each source shall be reviewed and corrected for known errors that may exist in the raw

[4] http://censam.mit.edu/news/posters/whittle/1.pdf

[5] Measurements of unmetered agricultural and raw water deliveries must, at a minimum, meet an accuracy standard of +/- 6% by volume, as defined in the U.S. Bureau of Reclamation, Mid-Pacific Region's "2008 Conservation and Efficiency Criteria". Metered deliveries of M&I water must meet the measurement accuracy and calibration standards described in American Water Works Association Manual M6.

[6] For guidance on situations in which the distribution system boundary changed during the base period, see Methodology 3: Base Daily Per Capita Water Use. For situations in which the distribution system boundary changed during the compliance period, see Methodology 4: Compliance Daily Per Capita Water Use.

measurement data. Uncorrected metered volumes shall be adjusted based on the registration accuracy of the meter, as follows:[7]

$$\text{metered volume correction} = \frac{\text{uncorrected metered volume}}{\text{registration accuracy expressed as a decimal}} - \text{uncorrected meter volume}$$

Step 4: Compile Imported Water Volume

Outside sources of finished water imported directly into the distribution system shall be identified and tabulated, excluding the following:

- Recycled water, as defined in subdivision (m) of Section 10608.12, imported from another water supplier
- Imported raw water passing through the urban retail water supplier's treatment plants, if that water has already been counted under Step 3 (as in Figure 1)

The raw measurement data shall be corrected for known errors in the same manner as for own source water.[8]

Step 5: Compile Exported Water Volume

Any water volumes sent through the distribution system to another water utility or jurisdiction shall be identified and tabulated. Recycled water, as defined in subdivision (m) of Section 10608.12, exiting the distribution system shall be excluded from the tabulation.[9]

Bulk water exports that do not pass through the distribution system also shall not be counted. The raw metering data shall be corrected for known errors in the same manner as for own source and imported water.

Step 6: Calculate Net Change in Distribution System Storage

If distribution system storage is greater at the end of the year than at the beginning, it indicates that water has entered the distribution system but has not been delivered to customers. This water would have been counted in Steps 3 and 4, but because it has not been delivered to customers, it must be deducted from the calculation of Gross Water Use.

Conversely, a decrease in end-of-year distribution system storage indicates that water has been drawn from storage to meet customer demands. This water would not have been counted in Steps 1 and 2, and therefore must be added to the calculation of Gross Water Use. Note that these calculations apply only to storage in the distribution system. Do not include changes in storage outside the distribution system. If the change in distribution system storage is expected to be insignificant, or if data needed to calculate the change in distribution system storage are not available, the water supplier may forgo this step.

[7]AWWA Manual M36 should be consulted if additional guidance on correcting raw meter data for meter registration inaccuracy is needed. Meters with errors exceeding AWWA standards should be recalibrated, repaired, or replaced.

[8]Generally, bulk water sale meters are routinely monitored for accuracy because they provide the basis for payment between the wholesaler and retailer.

[9]It is necessary to subtract recycled water exiting the system only if it was included in the tabulations of water entering the distribution system performed in Steps 3 and 4. However, the easiest way to handle recycled water directly entering the distribution system in the calculation of Gross Water Use is to exclude it entirely from each calculation step.

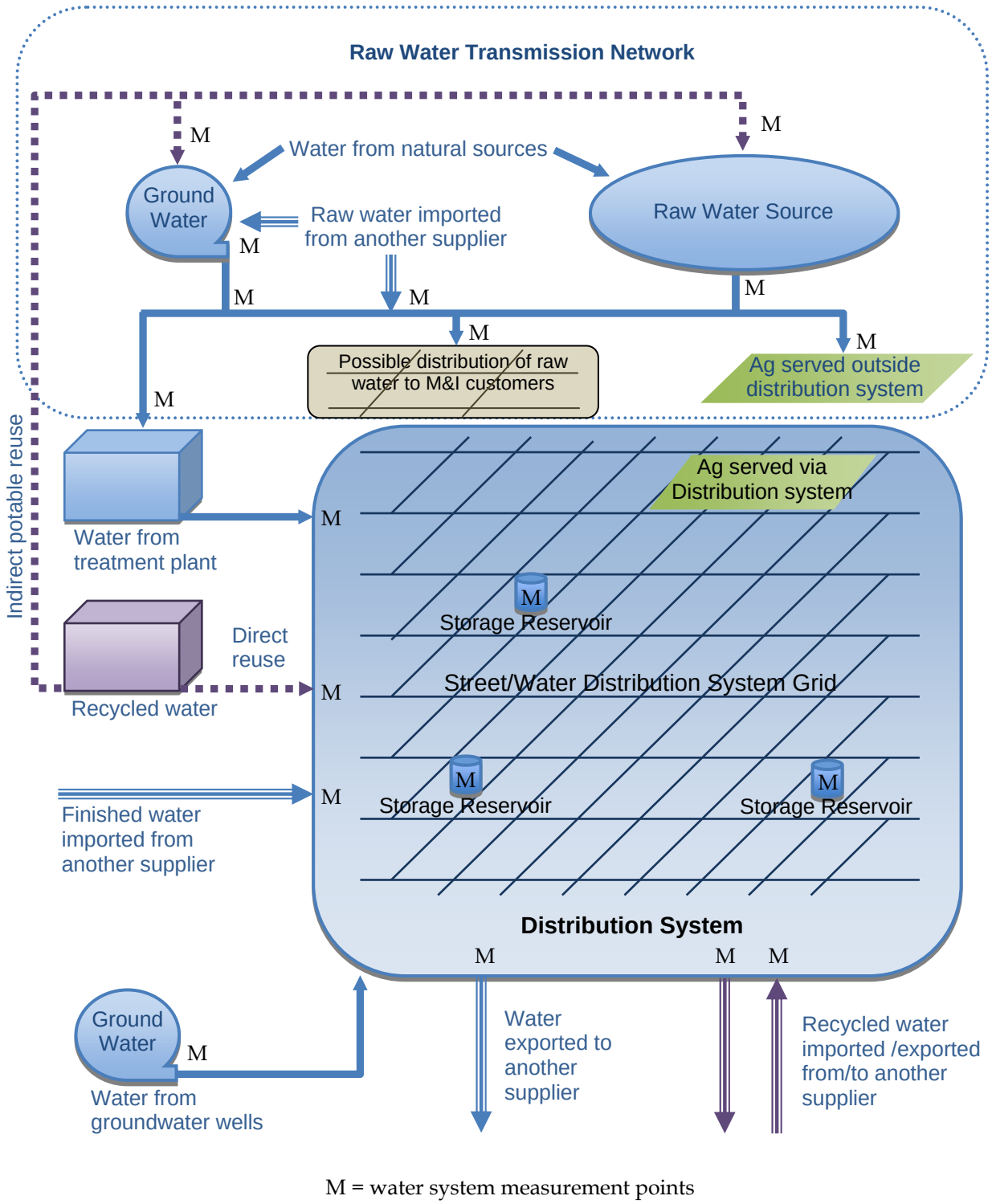

FIGURE 1
URBAN RETAIL WATER SUPPLIER SYSTEM SCHEMATIC[10]

[10]Figure 1 provides a general depiction of all of the elements that may affect the calculation of Gross Water Use. Not all of these elements may be present in a particular water system, nor is it expected that Figure 1 will accurately characterize a particular system configuration.

Step 7: Calculate Gross Water Use before Indirect Recycled Water Use Deductions

Gross Water Use before Indirect Recycled Water Use Deductions equals the volume of water from own sources entering the distribution system determined in Step 3, plus the volume of water from imported water sources entering the distribution system determined in Step 4, less the volume of water delivered via the distribution system to other utilities determined in Step 5, less the net change in distribution system storage determined in Step 6.[11] Table 1 provides an example calculation.

Step 8: Deduct Recycled Water Used for Indirect Potable Reuse from Gross Water Use

This step is necessary only if the urban retail water supplier uses recycled water (as defined in Subdivision (m) of Section 10608.12) to supplement raw surface or groundwater for indirect potable reuse. The Step 8 deduction requires the urban retail water supplier to estimate the amount of recycled water indirectly entering the distribution system through a surface or groundwater source (as in Figure 1).[12] This calculation requires three steps: (1) estimate the amount of recycled water used to supplement a surface reservoir source of supply, (2) estimate the amount of recycled water in extracted groundwater sources of supply, and (3) adjust these volumes for losses during transmission and treatment before the water enters the distribution system.

1. **Estimate recycled water used for surface reservoir augmentation.** The allowable deduction depends on the recycled water blend percentage in the surface reservoir water entering the potable water treatment plant. For example, if the raw surface water source is 95 percent fresh water and 5 percent recycled water, no more than 5 percent of the volume from this water source can be deducted from Gross Water Use calculated in Step 7. If the blend percentage of a surface water source is unknown, it shall be estimated based on the measured or estimated volumes of recycled water, local runoff, and imported water that entered the reservoir for the three years before the year for which Gross Water Use is being calculated. For example, if Gross Water Use is being calculated for 2005, the blend percentage is estimated by dividing the volume of recycled water that entered the reservoir by the total volume of water that entered the reservoir from 2002 through 2004.

2. **Estimate recycled water used for groundwater recharge.** Three approaches are allowed to estimate the amount of recycled water extracted from groundwater and introduced into a distribution system. Because year-to-year variations can occur in the amount of recycled water applied in a groundwater recharge operation, long-term running averages are required.

[11] If the net change is negative, Gross Water Use will increase. If it is positive, Gross Water Use will decrease.

[12] Recycled water used for indirect potable use should only be subtracted at the time it enters the potable distribution system. It cannot be subtracted when placed into storage and again when extracted for potable use.

a. **Monitoring data at extraction wells.** If monitoring data are available to enable determination of the percent of extracted water at each extraction well that originated as recycled water (for example, using geochemical analysis), then such data can be used to estimate the amount of recycled water entering a distribution system. To account for year-to-year variations, the credit or recycled water is a five year running monthly average percentage for each well for the preceding 60 months. For recharge projects in operation less than 60 months, a period of 60 months can be created using a combination of actual monitoring data since initiation of recharge operations and projected data. The projected data can be based on an acceptable groundwater model as described in paragraph b below or a projected average of extraction using the procedure described in paragraph c below.

b. **Groundwater model for extraction wells.** If a groundwater model is available that has the capability of tracking the movement of recycled water from recharge operations to extraction wells and estimating the percent of extracted groundwater that originated as recycled water at each well operated by the water supplier based on actual historic data of recycled water applied at groundwater recharge operations, then such data can be used to determine the amount of recycled water entering a distribution system. The groundwater model must be calibrated and approved as part of an adjudication or other regulatory process, such as the groundwater permitting process by the California Department of Public Health or a California Regional Water Quality Control Board. To account for year-to-year variations, the credit for recycled water is a five-year running monthly average percentage at each well for the preceding 60 months. For recharge projects in operation less than 60 months, the monthly running average may be derived from the model using all months of actual recycled water applied in a recharge operation and projected recycled water amounts planned to be applied for a future period to reach a combined total of 60 months of operation.

c. **Recharge data less in-basin losses.** Where actual extraction well monitoring data or estimated data obtained from an accepted groundwater model, as described in paragraph b above, are unavailable, an estimate can be made of extracted recycled water based on amounts of recycled water applied in recharge operations adjusted for an in-basin loss factor. The allowable deduction depends on the product of three factors:

   i. The average annual volume of recycled water recharged into the groundwater basin for the purpose of indirect potable reuse over the 5 years before the year for which Gross Water Use is being calculated. For recharge projects in operation less than 60 months, data from all months of actual recharge operations may be combined with projected volumes of recycled water recharge to reach a combined total of 60 months of operation to calculate the average annual volume of recycled water recharged.

   ii. A loss factor to account for water losses during recharge and extraction. If a loss factor has been developed as part of a groundwater management plan,

a basin adjudication process, or some similar regulatory process, the water supplier shall use that loss factor and provide reference to the appropriate documentation. If a loss factor has not been developed as part of a local regulatory process, the water supplier shall use a default loss factor of 10 percent.[13] The default loss factor of 10percent is not applicable to groundwater recharge operations intended as seawater intrusion barriers. For seawater intrusion barriers, the loss factor will be determined on a case-by-case basis.

iii. The volume of water pumped from the basin by the urban retail water supplier expressed as a percentage of the total volume of water pumped by all water users extracting water from the basin in the year for which Gross Water Use is being calculated.

For example, if the average annual recharge of recycled water for the five years before the year for which Gross Water Use is being calculated is 500 acre-feet (AF), the recharge loss factor is 10 percent, and the urban retail water supplier accounted for 25 percent of the volume of water pumped from the basin in the year for which Gross Water Use is being calculated, then no more than 113AF =(500 x (1.0-0.10) x 0.25) from this supply source can be deducted from Gross Water Use calculated in Step 7.

3. **Adjust for losses.** Only deduct the volume of recycled water used for indirect potable reuse that enters the distribution system from Gross Water Use calculated in Step 7.

Loss factors for transmission and treatment based on recent system audit data (or other reliable sources for estimating transmission and treatment losses) shall be applied to the estimated volumes of recycled water. For example, if the volume of recycled water before transmission and treatment is estimated to be 1,000 AF, and combined losses from transmission and treatment are estimated to be 3 percent, only 970 AF shall be deducted from Gross Water Use calculated in Step 7.

Table 2 shows an example calculation of the volume of recycled water used for indirect potable reuse based on approach 2.c above.

[13]The default value of 10 percent is based on the loss factors applied to groundwater storage in the Arvin-Edison and Semitropic Water Storage Districts. It also is consistent with the range of 0 to 15 percent loss factors applied to California water storage projects identified in the Groundwater Banking Programs Survey-Results and Summary Report prepared for the Sacramento Groundwater Authority by Kennedy/Jenks Consultants (2008). The projects they surveyed primarily used modeling and observation to determine the specific loss factor for each project.

Step 9: Calculate Gross Water Use after Deducting Indirect Recycled Water Use

This equals the volume of water determined in Step 7 less the volume of water determined in Step 8. Table 1 shows an example calculation of Gross Water Use after indirect recycled water use deductions.

Step 10 (Optional): Deduct from Gross Water Use the Volume of Water Delivered for Agricultural Use

This step is necessary only if the urban retail water supplier has chosen to exclude from the calculation of Gross Water Use water delivered for agriculture per Section 10608.12 (g) (4).

Consideration of agricultural water use must be the same for calculations of Gross Water Use for determining Base Daily Per Capita Water Use and Compliance Daily Per Capita Water Use.

Identify and tabulate the volume of water delivered through the distribution system for agricultural water uses. Do not include deliveries that bypass the distribution system (see Figure 1 for examples of agricultural deliveries inside and outside the distribution system).

Delivery volumes shall be based on account records and meter data for connections in the distribution system used to supply water for the commercial production of agricultural crops or livestock.[14]

Step 11 (Optional): Deduct Volume of Water Delivered for Process Water Use

This step is necessary only if the urban retail water supplier has elected to exclude process water from the calculation of Gross Water Use and the supplier is eligible to do so. An urban retail water supplier is eligible to exclude process water from the calculation of Gross Water Use only if its industrial water use comprises a substantial percentage of total water use.

[NOTE: See Appendix D for guidance on whether to include or exclude process water.]

Step 12: Calculate Gross Water Use after Optional Deductions

This equals the volume of water determined in Step 9 less the volume of water determined in Steps 10 and 11. Table 1 provides an example calculation of Gross Water Use after optional deductions.

[14]The standard used to identify distribution system connections supplying agricultural water uses is based on subdivision (b) of Section 535 of the California Water Code. Commercial agricultural production is defined by the U.S. Department of Agriculture and the Census Bureau as any place from which $1,000 or more of agricultural products (crops and livestock) were sold or normally would have been sold during the year. For the purposes of calculating Gross Water Use, retail nursery water use is not considered to be an agricultural water use.

TABLE 1

EXAMPLE URBAN RETAIL WATER SUPPLIER GROSS WATER USE CALCULATION

Utility Name:		**12-month period:**		**1-Jan to 31-Dec**			**Volume Units:**		**Million Gallons**		
	Calculation	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
	Volume from Own Sources (raw data)	3,480.8									
	Meter error adjustment (+/-)	136.9									
1	*Subtotal: Corrected Volume from Own Sources*	3,617.7									
	Volume from Imported Sources (raw data)	1,005.0									
	Meter error adjustment (+/-)	39.5									
2	*Subtotal: Corrected Volume from Imported Sources*	1,044.5									
3	***Total Volume Into Dist. System = Line 1 + Line 2***	***4,662.2***									
	Volume Exported to Other Utilities (raw data)	432.0									
	Meter error adjustment (+/-)	17.3									
4	*Subtotal: Corrected Volume Exported to Other Utilities*	449.3									
5	Change in Dist. System Storage (+/-)	-8.6									
6	***Gross Water Use Before Indirect Recycled Water Use Deductions = Line 3 - Line 4 - Line 5***	***4,221.5***									
7	Indirect Recycled Water Use Deduction	304.3									
8	***Gross Water Use After Indirect Recycled Water Use Deductions = Line 6 - Line 7***	***3,917.2***									
9	*Water Delivered for Ag. Use (optional deduction)*	0.0									
10	*Process Water Use (optional deduction)*	278.8									
11	**Gross Water Use After Optional Deductions = Line 8 - Line 9 - Line 10**	**3,638.4**									

TABLE 2

EXAMPLE CALCULATION OF ANNUAL DEDUCTABLE VOLUME OF INDIRECT RECYCLED WATER ENTERING DISTRIBUTION SYSTEM

Surface Reservoir Augmentation			**Volume Discharged from Reservoir for Distribution System Delivery (MG)**	**Recycled Water Blend**	**Recycled Water Delivered to Treatment Plant (MG)**	**Transmission/Treatment Loss**	**Transmission/Treatment Losses (MG)**	**Volume Entering Distribution System (MG)**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
					(4) x (5)		(6) x (7)	(6) – (8)
Source 1			1,000	5%	50	3%	1.5	48.5
Source 2			500	10%	50	3%	1.5	48.5
						Subtotal Reservoir Augmentation:		*97*
Groundwater Recharge	**5-Year Annual Average Recharge (MG)**	**Recharge Recovery Factor**	**Recycled Water Pumped from Basin (MG)**	**Utility Pumping as % of Basin Total**	**Recycled Water Pumped by Utility (MG)**	**Transmission/Treatment Loss**	**Transmission/ Treatment Losses (MG)**	**Volume Entering Distribution System (MG)**
			(4)	(5)	(6)	(7)	(8)	(9)
(1)	(2)	(3)	(2) x (3)		(4) x (5)		(6) x (7)	(6) – (8)
Basin 1	500	90%	450	25%	113	3%	3.4	109.1
Basin 2	750	90%	675	15%	101	3%	3	
						Subtotal Groundwater Recharge:		*207.3*
					Deductable Volume of Indirect Recycled Water Entering Distribution System:			**304.3**

MG = million gallons

Methodology 2: Service Area Population

Definition of the Service Area Population

Section 10608.20(f) states:

> *When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.*

The legislation directs DWR to develop consistent methodologies and criteria for determining Service Area Population.

To obtain an accurate estimate of GPCD, water suppliers must estimate population of the areas that they actually serve, which may or may not coincide with either their jurisdictional boundaries or with the boundaries of cities. Customers may be in the distribution area with a wholly private supply during the baseline and compliance years, and new areas may be annexed into a water supplier's distribution system over time. The area used for calculating Service Area Population shall be the same as the distribution system area used in Methodology 1, Gross Water Use.

Figure 2 illustrates the many different situations that may arise, with the background grid indicating the census blocks that overlap with the water supplier's service area boundary.

Examples include the following:

- The actual distribution area may cover only a portion of the jurisdictional boundary.
- Large water users that depend wholly or partially on a private groundwater supply (e.g., college campus, a military installation, a correctional facility) may exist in the distribution area. If such a user is wholly dependent on private supply, its residents should be excluded. If the user is partially dependent (for example, it uses a municipal source for indoor use and private groundwater wells for irrigation only), its residents served by the municipal source should be included. Estimation of compliance GPCD for customers that switch their irrigation to a municipal source between the baseline and compliance years is addressed in Methodology 4: Compliance Daily Per Capita Water Use.
- New customers outside the present distribution area may connect to the water supplier's distribution system in the future for various reasons.
- The water supplier's distribution system can geographically expand over time as a result of economic and population growth.

Although a water supplier may consult any or all federal, State, and local data sources to estimate population, these estimates must account for the above-mentioned complexities.

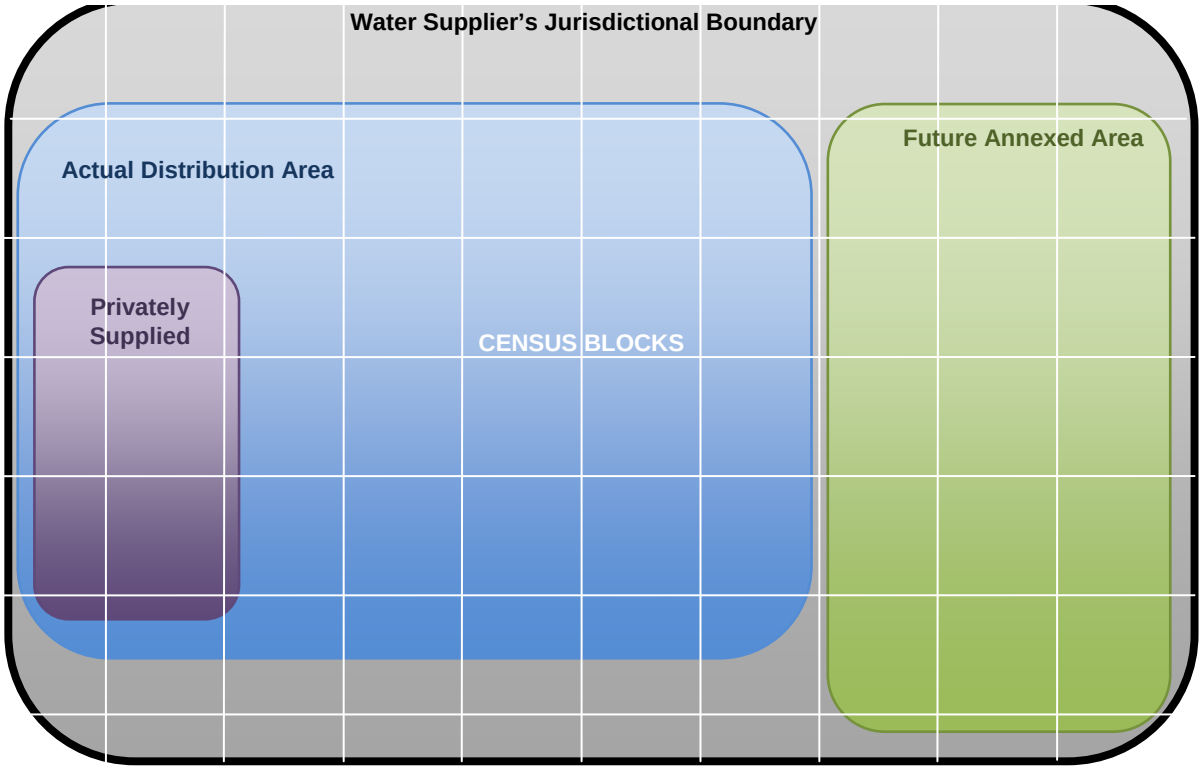

FIGURE 2
DEFINING AREA FOR POPULATION CALCULATION

Estimating the Service Area Population

Data published by the California Department of Finance (DOF) or the U.S. Census Bureau must serve as the foundational building block for population estimates. In some instances, data published by these two sources may be directly applicable. In other instances, additional refinements may be necessary. For example, to account for distribution areas that do not match city boundaries, customers with private sources of supply, or other unique local circumstances, water suppliers may have to supplement the above sources of data with additional local data sources such as county assessor data, building permits data, and traffic analysis zone data. These refinements are acceptable as long as they are consistently applied over time, and as long as they build upon population data resources of the DOF or the U.S.

Census Bureau. Suppliers in any category listed below may use the persons per-connection or person per housing unit population calculation method described in Appendix A.

Retail water suppliers will generally fall into one of the following three categories:

- Category 1: Water suppliers whose actual distribution area overlaps substantially (≥95%) with city boundaries (may be a single city or a group of cities) during baseline and compliance years
- Category 2: Water suppliers not falling in Category 1 but having an electronic geographic information system (GIS) map of their distribution area

- Category 3: Water suppliers not falling in Category 1 and lacking an electronic GIS map of their distribution area.

Category 1 Water Suppliers

These water suppliers are encouraged to use population data published by the DOF's demography unit. However, population data may also be available through a water wholesaler, a local government agency, or an association of local governments. A list of associations of local governments is available through the California Association of Councils of Government (CALCOG: www.calcog.org). Many of these associations serve as census data repositories and also have GIS capabilities.

Category 1 water suppliers may use population estimates from any of these federal, state, or local agencies, as long as they clearly cite their data source, use the same source for both the baseline and compliance years, and correct these estimates for privately supplied large customers that may exist in their actual distribution area (for development of these corrections, see Appendix A).

Category 2 Water Suppliers

These water suppliers have two options:

- Water suppliers that are members of an association of local governments (or a water wholesaler) that develop population estimates for its members using GIS maps of actual distribution areas and population data from the DOF or Census Bureau should use these data for the baseline and compliance years. These suppliers are not required to use the per-connection or per-housing unit methodology described in Appendix A. The water suppliers should coordinate with the local government association or wholesaler to complete the task of identifying and removing large institutions with wholly private systems in their distribution area.
- Water suppliers without such membership must develop population estimates using either a per-connection or per-housing unit methodology described in Appendix A or another equivalent method that uses data either from the DOF or the U.S. Census Bureau as its basis.

Category 3 Water Suppliers

These water suppliers have the same two options as Category 2 water suppliers. The only difference is that to access the U.S. Census Bureau's population data resources, they first must identify which census blocks fall in their distribution area. This exercise can be performed manually (see Appendix A), or the distribution area map boundary can be digitized. Category 3 water suppliers may be able to access these digitization capabilities and census-based population estimation capabilities through their local association of governments. Alternatively, they can develop population estimates using either the per-connection or per-housing unit methodology described in Appendix A or another equivalent method that uses data from either the DOF or the U.S. Census Bureau as its basis.

Determining Adequacy of Current Population Estimate Methodology

Figure 3 provides a flow chart to help water suppliers determine whether their existing population estimation methodology is adequate or must be refined. If refinement is needed,

it should be coordinated with the water wholesaler or the local association of governments that currently provides population estimates. Water suppliers that currently lack access to reliable population estimates that reflect characteristics of their actual distribution areas can use the per-connection methodology described in Appendix A.

Adjusting Population Estimates

Population increases in existing developed areas or high-density infill redevelopments are estimated annually by DOF for incorporated cities and unincorporated portions of counties. These and other sources of local data may be used to estimate population for the non-census years. For water suppliers using the methodology described in Appendix A, population changes largely will be captured through the persons-per-connection ratios applied to changes in counts of active connections over time.

Water suppliers may revise population estimates for baseline years between 2000 and 2010 when 2010 census information becomes available. DWR will examine discrepancy between the actual 2010 population estimate and the DOF's projections for 2010. If significant discrepancies are discovered, DWR may require some or all suppliers to update their baseline population estimates.

Service area boundaries may also contract or expand during the baseline period. The latter could occur because of annexation of previously developed areas that may have been dependent upon private groundwater wells in the past but have subsequently become part of an urban retail water supplier's system. The following list provides guidance under various annexation scenarios. Additional adjustments may be required to population estimates for events that occur between the baseline and compliance years. These issues are discussed in Methodology 4: Compliance Daily Per Capita Use.

- If a portion of the distribution area is removed during one of the baseline years, water suppliers must compute their baseline after eliminating this removed portion from all their baseline years.
- If an area was annexed before the first baseline year, or the annexation involves merger with another urban retail water supplier, no data issues arise. In the latter case, population and connections data would be available for each water supplier separately. If not, appropriate estimates should be developed and documented.
- If the area was annexed before 2000, population estimates should be developed for the annexed area using the census block and person-per-connection method outlined in Appendix A, or an equivalent method.
- If the area was annexed after 2000, the water supplier will know the connection count only in the year of the annexation, not in 2000 and corresponding to the population estimate. Water suppliers may apply person-per-connection ratios developed for their pre-annexation distribution area to estimate population in the annexed area, or use other defensible techniques. For example, they could obtain county assessor data to back-cast what connection counts would have been in the annexed area in 2000 to permit scaling of census population estimates for the annexed areas to the post-annexation years. These can be further improved after 2012 once data from the 2010 census become available.

Water suppliers in other unique situations, such as those experiencing a significant change in their seasonal workforce or seasonal resident population between the baseline and compliance years, may adjust their population estimates using other techniques. The water supplier must provide documentation that the technique is based on or consistent with DOF or U.S. Census Bureau population data.

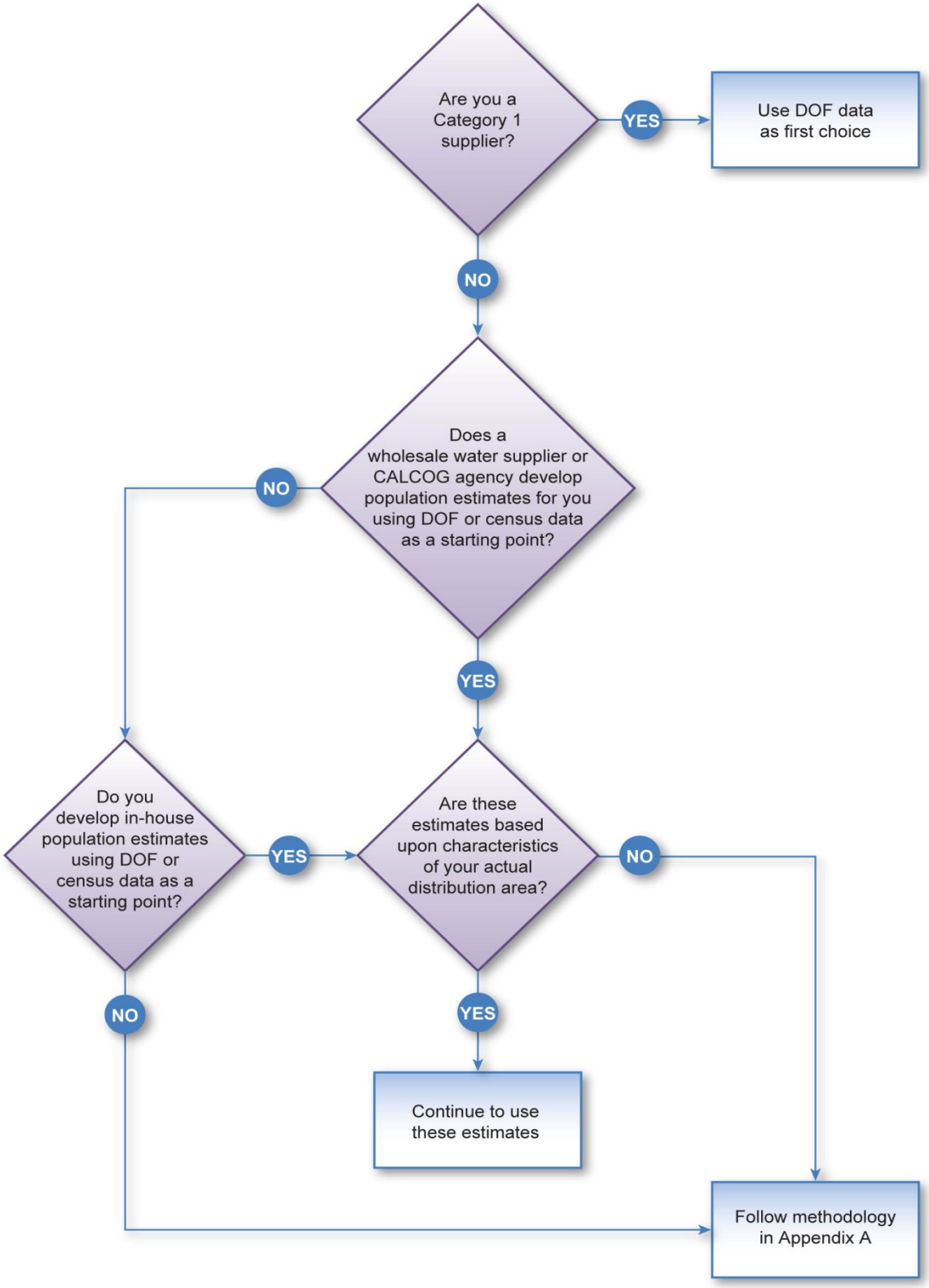

FIGURE 3
SUGGESTED PROCESS FOR DETERMINING ADEQUACY OF SERVICE AREA POPULATION ESTIMATE METHODOLOGY

Methodology 3: Base Daily Per Capita Water Use

Definition of Base Daily Per Capita Water Use

Base Daily Per Capita Water Use is defined as average gross water use, expressed in GPCD, for a continuous, multiyear base period. The Water Code specifies two different base periods for calculating Base Daily Per Capita Water Use under Section 10608.20 and Section 10608.22:

- The first base period is a 10- to 15-year continuous period, and is used to calculate baseline per capita water use per Section 10608.20.
- The second base period is a continuous five-year period, and is used to determine whether the 2020 per capita water use target meets the legislation's minimum water use reduction requirement per Section 10608.22.

Unless the urban retail water supplier's five year Base Daily Per Capita Water Use per Section 10608.12 (b) (3) is 100 GPCD or less, Base Daily Per Capita Water Use must be calculated for both baseline periods.

Calculation of Base Daily Per Capita Water Use

Calculating Base Daily Per Capita Water Use entails four steps:

1. Estimate Service Area Population for each year in the base period using Methodology 2.
2. Calculate Gross Water Use for each year in the base period using Methodology 1. Express Gross Water Use in gallons per day (gpd).[15]
3. Calculate daily per capita water use for each year in the base period. Divide Gross Water Use (determined in Step 2) by Service Area Population (determined in Step 1).
4. Calculate Base Daily Per Capita Water Use. Calculate average per capita water use by summing the values calculated in Step 3 and dividing by the number of years in the base period. The result is Base Daily Per Capita Water Use for the selected base period.

[15]If Gross Water Use is expressed in million gallons per year, multiply by 1,000,000 and then divide the result by 365. If Gross Water Use is expressed in acre-feet, multiply by 325,851 and then divide the result by 365.

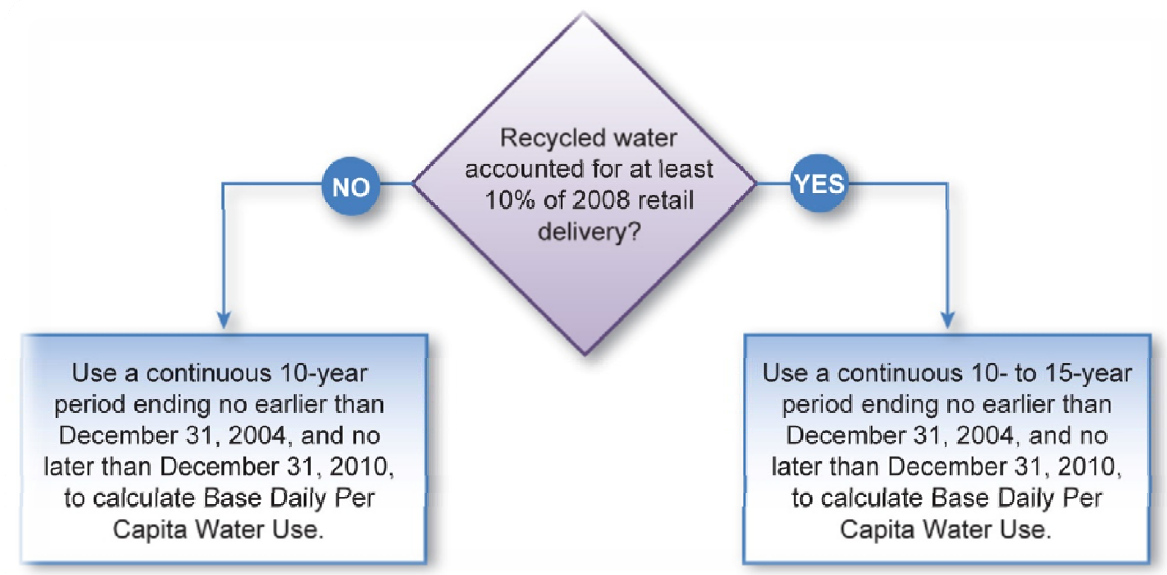

FIGURE 4
10 TO 15 YEAR BASE DAILY PER CAPITA WATER USE CALCULATIONS

Calculating Base Daily Per Capita Water Use per Section 10608.20

Calculate Base Daily Per Capita Water Use using one of the following base periods:

• If recycled water made up less than 10 percent of 2008 retail water delivery, use a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

• If recycled water made up 10 percent or more of 2008 retail water delivery, use a continuous 10- to 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

Figure 4 illustrates the procedure. If Gross Water Use and/or population are not available for the full base period, the water supplier shall calculate base daily per capita water use for the maximum number of years for which data are available. When selecting between base periods, the water supplier shall select the base period for which the most data are available.

For example, if gross water use and/or population data are not available before 1997, the water supplier shall select a base period starting in 1997.

Distribution Area Expansion Caused by Mergers

If two or more water suppliers merged wholly, or one water supplier acquired a portion of another's service area, during a year that falls in the baseline period of the merged entity, they should derive their baseline GPCD as if they were a single entity for the entire baseline period to stay consistent with the targets and compliance GPCDs that would represent the merged entity.

Distribution Area Contraction

If during the baseline period a previously served portion of the distribution system is removed from a water supplier's service area, the baseline GPCD shall be corrected to reflect only that portion of the service area that remained consistently supplied during the baseline and compliance years.

Distribution Area Expansion by Annexation of Already Developed Areas[16]

For areas annexed during the baseline years, water suppliers can select one of two choices:

- Include these areas for baseline GPCD estimation and test compliance for the combined entity.
- Track baseline and compliance GPCDs for the annexed areas separately.

Determining the Minimum Water Use Reduction Requirement per Section 10608.22

The following calculation is required only if the five-year baseline per capita water use per Section 10608.12 (b) (3) is greater than 100 gpcd. The calculation is used to determine whether the water supplier's 2015 and 2020 per capita water use targets meet the legislation's minimum water use reduction requirement per Section 10608.22. The calculation entails three steps:

1. Calculate Base Daily Per Capita Water Use using a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.17
2. Multiply the result from Step 1 by 0.95. The 2020 per capita water use target cannot exceed this value (unless the water supplier's five year baseline per capita water use is 100 gpcd or less). If the 2020 target is greater than this value, reduce the target to this value.
3. Set the 2015 target to the mid-point between the 10- or 15-year baseline per capita water use and the 2020 target determined in Step 2.

As an example, suppose a water supplier has a 10-year baseline per capita water use (per Section 10608.20) of 170 GPCD, and a 5-year baseline per capita water use (per Section 10608.22) of 168 GPCD.

- The maximum allowable GPCD target in 2020 (per Section 10608.22) is 0.95 x 168 GPCD = 160 GPCD.
- The 2020 target under Method 1 is 0.8 x 170 GPCD = 136 GPCD.

[16]Annexation here refers to already developed and inhabited areas that may have relied upon groundwater until this point in time, or on other sources of water for which data are not available, and that were not previously connected to a municipal source. This is not to be confused with annexation of previously undeveloped land. No adjustment is required for the latter type of annexation, whose impact on GPCD is naturally accounted for by the estimation of base period Gross Water Use and Service Area Population.

[17]If 5 years of continuous data are not available, use the maximum number of years for which data are available.

Because the Method 1 target is less than 160 GPCD, no further adjustment to the 2020 target is required if Method 1 is used.

Suppose the water supplier's 2020 target under Method 3 is 167 GPCD. Because this is greater than 160 GPCD, the target would need to be reduced to 160 GPCD if Method 3 is used.

Similarly, if a target calculated using Method 2 or 4 exceeded 160 GPCD, it would need to be reduced to 160 GPCD in order to satisfy the legislation's minimum water use reduction requirement. Figure 5 shows how the two baseline per capita water use amounts are used to determine whether the 2020 target meets the legislation's minimum water use reduction requirement.

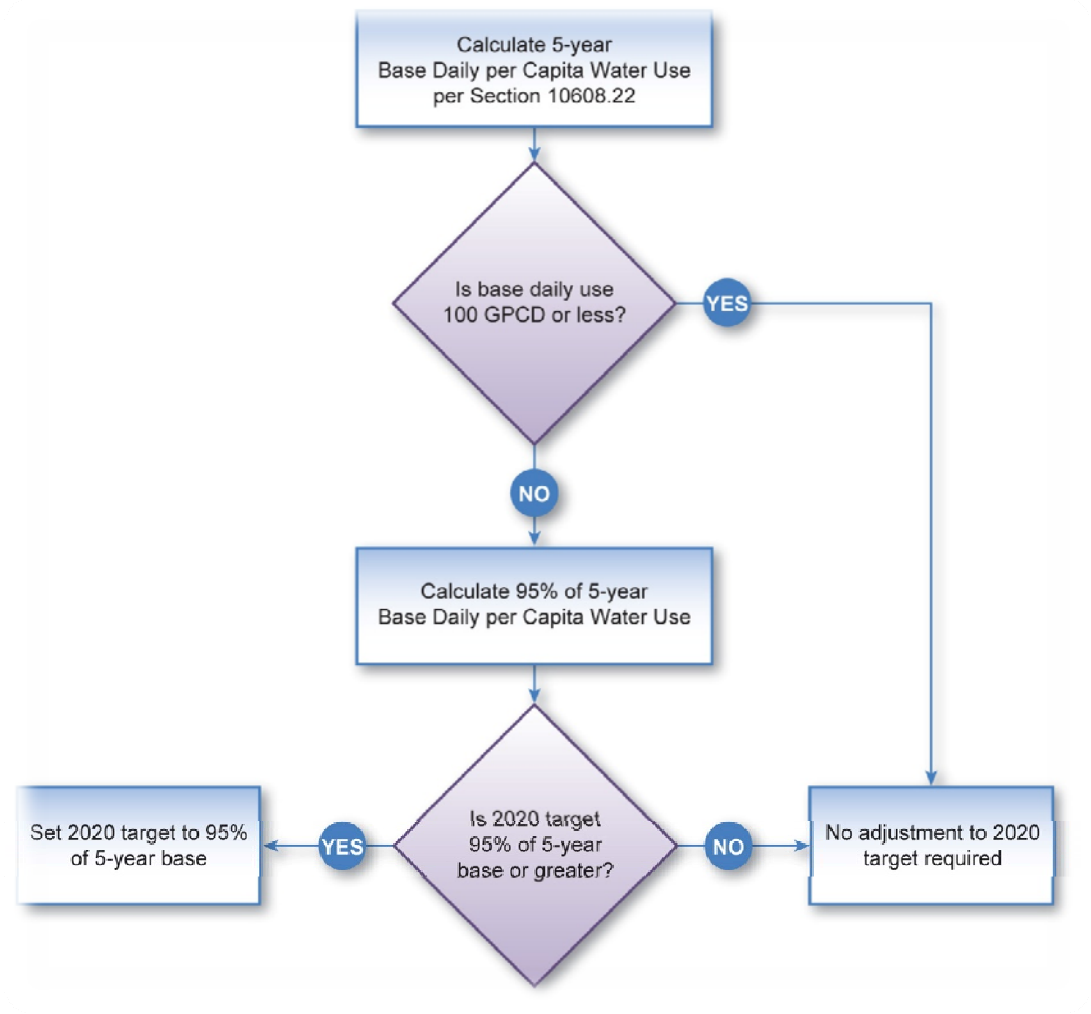

FIGURE 5
DETERMINATION OF MAXIMUM ALLOWABLE 2020 GPCD TARGET

Tables 3 and 4 may be used to organize the information needed to calculate Base Daily Per Capita Water Use under Sections 10608.20 and 10608.22.

TABLE 3

BASE DAILY PER CAPITA WATER USE CALCULATION FOR SECTION 10608.22

Utility Name: _____

12-month Period: _____ to _____

(1)	(2)	(3)	(4)
Base Years*	**Service Area Population**	**Gross Water Use (gal. per day)**	**Daily Per Capita Water Use (3) ÷ (2)**
Year 1			
Year 2			
Year 3			
Year 4			
Year 5			
		Total of Column (4):	
		Divide Total by 5:	

*Most recent year in base period must end no earlier than December 31, 2007, and no later than December 31, 2010.

TABLE 4

BASE DAILY PER CAPITA WATER USE CALCULATION FOR SECTION 10608.20

Utility Name: _____

12-month Period: _____ to _____

(1)	(2)	(3)	(4)
Base Years*	**Service Area Population**	**Gross Water Use (gal. per day)**	**Daily Per Capita Water Use (3) ÷ (2)**
Year 1			
Year 2			
Year 3			
Year 4			
Year 5			
Year 6			
Year 7			
Year 8			
Year 9			
Year 10			
Year 11			
Year 12			
Year 13			
Year 14			
Year 15			
		Total of Column (4):	
		Divide Total by Number of Base Years:	

* Enter the actual year of the data in this column. The most recent year in base period must end no earlier than December 31, 2004, and no later than December 31, 2010. *The base period cannot exceed 10 years unless at least 10 percent of 2008 retail deliveries were met with recycled water.*

Revisions to Base Daily Per Capita Water Use or Targets

A water supplier may revise its calculated Base Daily Per Capita Water Use after submitting its 2010 urban water management plan if better information becomes available. The revisions may be included in the water supplier's 2015 and subsequent plans or may be submitted as an amended plan, provided it follows the process required for amendments to such plans. If the revisions to the Base Daily Per Capita Water Use changes the water use target, the water use target must be revised as well.

In addition, a water supplier may change the method it uses to set its water use target, and report the method change and target revision in a 2010 amended plan or in its 2015 urban water management plan. Target method changes are not permitted in the 2020 plan or amended 2015 plans.

Methodology 4: Compliance Daily Per Capita Water Use

The following methodology addresses estimation of compliance daily per capita water use (in GPCD) in the years 2015 and 2020.

Definition of Compliance Daily Per Capita Use

Section 10608.12(e) states:

> *"Compliance daily per-capita use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.*

Estimation of Compliance-Year GPCD

Methodology 1: Gross Water Use and Methodology 2: Service Area Population shall be used to develop the two basic components for estimating compliance-year GPCD. This section discusses adjustments to compliance-year GPCD because of changes in distribution area caused by mergers, annexation, and other scenarios that occur between the baseline and compliance years.

Adjustments are allowed in calculating compliance-year GPCD for factors described in Section 10608.24. These adjustments are discussed in Methodology 8: Criteria for Compliance-Year Adjustment.

Distribution Area Expansion Caused by Mergers

If water suppliers merge, or one water supplier acquires a portion of another's service area, between the baseline period and the compliance year, they have two choices:

- Test compliance separately for each service area.
- Calculate a (compliance year) population weighted average of each system's target and determine compliance as a single entity using this weighted average.

Distribution Area Contraction

If a previously supplied portion included in the baseline is removed from the distribution area before the compliance years, water suppliers shall re-compute their baseline GPCD after eliminating the removed portion for all baseline years.

Distribution Area Expansion by Annexation of Already Developed Areas[18]

For areas annexed between the baseline and compliance years, a water supplier must determine Base Daily Per Capita Water Use, target water use, and compliance water use.

- Base Daily Per Capita Water Use for the annexed area shall be determined using the same baseline period as the water supplier's original service area (before the annexation). If such data are not available, the water supplier shall use a baseline period starting with the earliest year available for the annexed area and including ten years, if available. If no data exist for years before annexation, the water supplier shall use data from the year of annexation.
- Annexed areas shall be assigned a prorated target based upon the number of years between annexation and the end of 2020. For example, if a water supplier's target is based on a 20 percent reduction by 2020, and it annexes an area in 2017, this annexed area should show a 6 percent reduction in GPCD by 2020 relative to its 2017 GPCD.
- Compliance may be determined for the separate service areas (annexed and original), or for the combined service area using a (compliance year) population weighted average.

If compliance is determined separately for separate service areas, both areas must be in compliance for supplier to be in compliance.

Distribution Area Expansion by Annexation of Undeveloped Areas

No special adjustment calculation is needed for areas that were undeveloped during the baseline period but which were annexed and developed between the baseline period and compliance year. The impact on GPCD is accounted for by the estimation of compliance year Gross Water Use and compliance-year population.

Existing Large Partial Customers Become Whole Customers

Large customers that pump groundwater or take surface water for landscape irrigation or other uses (depending on their municipal source solely for indoor use) may switch and use only the municipal source. This change will disrupt the baseline and compliance year comparison. Two adjustments are provided below:

- If the switch occurs during the baseline years, the landscape irrigation or other use should be included in the compliance-year gross water calculation.
- If the switch occurs between the baseline and compliance years, the water associated with irrigation use switches, properly documented and subjected to the requirements of the Model Water Efficient Landscape Ordinance adopted by DWR in 2009, may be excluded from the calculation of compliance-year Gross Water Use. Otherwise, the irrigation or other use must be included in both the baseline and compliance year gross water use calculations.

[18]Annexation here refers to already developed and inhabited areas that may have relied upon groundwater until this point in time and were not previously connected to a municipal source.

Water Supplier Subject to Urban Water Management Plan Reporting Requirements between 2010 and 2020

Water suppliers that become subject to urban water management plan reporting requirements after 2010 also become subject to the new requirements of Section 10608 of the Water Code from the same year onward. These water suppliers are required to estimate their baseline GPCD and establish their 2020 GPCD targets using the same methodological guidelines that apply to other water suppliers. However, for testing compliance, such water suppliers may prorate these targets depending on the year the water supplier became subject to the new requirements.

For example, if a water supplier chooses a 2020 target that is 20 percent below its baseline GPCD, but it became subject to the new requirements only in 2017, it shall test compliance against a target that is 6 percent below its baseline GPCD.

Methodology 5: Indoor Residential Use

Definition of Indoor Residential Use

Section 10608.20(b)(2)(A) states:

> *For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.*

Section 10608.42 states:

> *The department shall review the 2015 urban water management plans and report to the Legislature by December 31, 2016, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets in order to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.*

Section 10608.20(b)(2)(A) sets a provisional standard for efficient indoor use (55 GPCD) that urban retail water suppliers using target Method 2 must use to set their 2020 target.

However, they are not required to demonstrate that this indoor residential target has actually been met—only that the overall target, which includes additional components for landscaped area water use and CII water use, has been met.

Section 10608.42 requires DWR to submit a report to the Legislature in 2016 that will include recommendations on changes to water use efficiency standards to reflect updated efficiency information and technological changes. DWR will conduct a study to assess whether the provisional indoor residential standard of 55 GPCD should be adjusted.

Based on the report DWR submits in 2016, the Legislature may change the indoor residential standard. The indoor residential standard is used only to set the target under Method 2; calculation of indoor usage by water supplier is not required for determining compliance with Method 2.

Methodology 6: Landscaped Area Water Use

The calculation of Landscaped Area Water Use requires a measurement (or estimate) of landscaped area and of the landscape water use per unit area (based on reference evapotranspiration [ET]). As with other urban water use measures under Section 10608, Landscaped Area Water Use is defined as a daily per capita rate of water use; consequently, Methodology 2: Service Area Population is used in calculating Landscaped Area Water Use.

Definition of Landscaped Area Water Use

For the Landscaped Area Water Use component of target Method 2, Section 10608.20 (b) (2) (B) states:

> *For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.*

All landscape irrigated by dedicated or residential meters must be included, including multifamily residential parcels. Definitions and calculations contained in the Model Water Efficient Landscape Ordinance (MWELO) are provided in Appendix B. These calculations give the Landscaped Area Water Use as a function of landscaped area and reference ET. The MWELO defines landscaped area as planting areas, turf areas, and water features. Landscaped area excludes footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (such as open spaces and existing native vegetation). Section 10608.20 (b)(2)(B) restricts the landscaped area to include only landscape irrigated through dedicated or residential meters or connections.

Landscaped area for the purposes of calculating the Method 2 target shall mean the water supplier's estimate or measurement of 2020 landscaped areas. Water suppliers shall develop a preliminary estimate (forecast) of 2020 landscaped areas for purposes of setting urban water use targets and interim urban water use targets under Subdivision 10608.20 (a) (1).

For final compliance-year calculations, water suppliers shall update the estimate of 2020 landscaped areas using one of the techniques described in the following sections.

Approach to Calculating Landscaped Area Water Use

Water suppliers shall follow five steps to calculate Landscaped Area Water Use:

1. Identify applicable MWELO (1992 or 2010) for each parcel.
2. Estimate irrigated landscaped area for each parcel.

3. Determine reference evapotranspiration for each parcel.
4. Use the Maximum Applied Water Allowance (MAWA) equation from the applicable MWELO to calculate annual volume of landscaped area water use.
5. Convert annual volume to GPCD.

Identify Applicable MWELO for Each Parcel

Before computing landscaped area, water suppliers must determine how MWELO ordinances apply to specific parcels in their service areas. Two versions of MWELO apply according to the date when landscaping was installed in a given parcel:

- For landscaped areas installed on or after January 1, 2010, the MAWA equation and all applicable criteria from the 2009 version of the ordinance or its equivalent shall be used.
- For landscaped areas installed before January 1, 2010, the MAWA equation and all applicable criteria from the 1992 version of the ordinance or its equivalent shall be used.

For the purposes of this methodology, two important differences between the two ordinances are the ET adjustment factor and the inclusion of a special landscaped area for calculating a water allowance in the 2010 ordinance. The applicable definitions and calculations in these ordinances are provided in Appendix B.

Landscaped Area Water Use shall be calculated for each parcel (or groups of parcels with the same reference ET and applicable MWELO) using Maximum Applied Water Allowance (MAWA) computations from the applicable MWELO.

Water suppliers should use the best available information to determine which MWELO applies to each parcel. This may include date of submittal for MWELO design review, date of service establishment, and remote sensing information.

The calculations provided in Appendix B will yield water use estimates in gallons per year.

The total Landscaped Area Water Use for the water supplier will equal the total Landscaped Area Water Use of all parcels in the water supplier's service area. Because Landscaped Area Water Use is defined in units of GPCD, the result of the calculation above must be divided by Service Area Population and then converted from annual to daily use.

Measure Landscaped Area

The water supplier shall select a technique for measuring landscaped area that satisfies the following criteria:

- The landscaped area must be measured or estimated for all parcels served by a residential or dedicated landscape water meter or connection in the water supplier's service area.
- Only irrigated landscaped area served by residential or dedicated landscape water meter or connection shall be included in the calculation of Landscaped Area Water Use. Landscape served by CII connections and non-irrigated landscape shall be excluded. (All references to landscaped area below shall mean irrigated landscaped area served by a residential or dedicated landscape meter or connection.)

Measurement Techniques

The following sections describe techniques that may be used to measure landscaped area. Water suppliers may use one or a combination of these techniques.

Field-Based Measurement. Field-based measurement of parcels' landscaped area may be accomplished by physical measurement using devices such as a total station, measuring wheel and compass, global positioning system (GPS), or other measuring devices having accuracy similar to these devices. Field-based measurement also may be obtained from landscape designs submitted to the water supplier for compliance with the MWELO or for other planning and billing purposes.

Measuring with Remote Sensing. The landscaped area may be measured by using remote sensing (aerial or satellite imaging) to identify the landscaped areas in conjunction with a GIS representation of the parcels in the water supplier's service area. A variety of remote sensing techniques are available, and additional techniques may become available between now and 2020. DWR will allow the water supplier to select the remote-sensing technique that it prefers. However, the following conditions shall be met:

- The remote-sensing information must be overlaid onto a GIS representation of each parcel boundaries to estimate the irrigated landscaped area in each parcel.
- The remote-sensing imagery must have a resolution of 1 meter or less per pixel.
- The remote-sensing technique must be verified for accuracy by comparing its results to the results of field-based measurement for a subset of parcels selected using random sampling. The water supplier shall report the resulting percent error between the estimates of landscaped area produced by the remote-sensing technique and those produced by field-based measurements for the sampled parcels.
- DWR has not set its own standards for remote-sensing verification and sampling design. The water supplier shall provide a description of its remote-sensing technique (including imagery, data processing, and verification) when it reports its landscaped area for purposes of complying with provisions of the Water Code. Congalton and Green (1999)[19] and Stein et al. (2002)[20] are two references that describe professional standards for remote sensing.

Using Sampling to Estimate Landscaped Area on Small Parcels. The landscaped area for smaller-sized parcels may be calculated by measuring the percentage of total parcel area that is landscaped in a sample of similar parcels and applying that percentage to the remaining parcels. This technique may be used only for parcels with a total land area of 24,000 square feet or less. The parcels for which this technique is used shall be divided into groups, or strata, based on parcel size increments of 4,000 square feet or less. (For example, parcels up to 4,000 square feet would form one group, parcels between 4,001 and 8,000 square feet would form another group, and so forth.) Field-based measurement or remote sensing must be used to calculate the landscaped area for a subset of parcels sampled at random in each parcel size group. The percentage of landscaped area to total

[19]Congalton, R. G., and K. Green, 1999. Assessing the Accuracy of Remotely Sensed Data: Principles and Practices. CRC Press, Boca Raton, FL.

[20]Stein, A., F. van der Meer, and B. Gorte, eds. 2002. Spatial Statistics for Remote Sensing. Kluwer Academic Publishers, Netherlands.

land area for the sampled parcels in each group can then be used to calculate the landscaped area for all other parcels in the group. Parcels greater than 24,000 square feet shall be measured directly.

Statistical sampling is a means to provide adequate information at reasonable cost. If implemented carefully, sampling allows the water supplier to develop accurate estimates of landscaped area for all relevant parcels from a subset of parcels. However, sampling shall not be used to estimate landscaped area for parcels larger than 24,000 square feet. Stratified sampling (random sampling in identified subgroups of parcels) should be used to estimate the landscaped area in different parcel size groups, as described earlier. Other characteristics of parcels may be used as a basis for selecting the strata in addition to parcel size.

DWR has not developed specific standards for sampling design. Urban water suppliers should follow standards of professional practice sufficient to demonstrate unbiased estimates of landscaped area. For example, Cochrane (1977)[21] and Lohr (2010)[22] provide guidance for sound sampling design.

Other Measurement Techniques. The water supplier may use another technique to measure landscaped area for each parcel other than the ones described previously if one becomes available in the future. However, the technique must meet similar conditions to those described above for remote sensing:

- The landscaped area information must be gathered or reported on a parcel basis, or it must be overlaid onto a GIS representation of each parcel's boundaries to calculate the landscaped area in each parcel.
- The technique must be tested for accuracy by comparing its results to the results of field-based measurement for a subset of parcels. Field-based measurement should be performed for a subset of parcels selected at random from those for which the technique has been used. The water supplier should report the percent error between the calculations of landscaped area produced by the selected technique and those produced by field-based measurements for the sampled parcels.

Estimate Reference Evapotranspiration

Calculations under the MWELO require determination of reference ET. Each parcels served by a residential or dedicated landscape water meter or connection in the water supplier's service area shall be assigned a reference ET based on one of the following methods:

- Appendix A of the 2009 ordinance contains tables of reference ET. In some cases, the water supplier may choose a single reference ET value most appropriate for all parcels in its service area. For parcels in geographic areas not covered in the Appendix A table, the ordinance provides the following direction for selecting the appropriate reference value: "For geographic areas not covered in Appendix A, use data from other cities located nearby in the same reference evapotranspiration zone, as found in the CIMIS Reference Evapotranspiration Zones Map, Department of Water Resources, 1999."

[21]Cochrane, William G. 1977. Sampling Techniques. 3rd edition. Wiley; NY, NY.
[22]Lohr, Sharon. 2010. Sampling: Design and Analysis. Brooks/Cole Cengage, Boston, MA. 2nd edition.

- DWR has developed a spatial program (Spatial CIMIS) that provides interpolated ET data between weather stations.[23] The program can provide estimates of reference ET for any part of California with a resolution of 2 kilometer (km) by 2 km. Water suppliers may use this tool to assign reference ET to parcels. Any other CIMIS enhancements or additional stations formally adopted by DWR between 2010 and 2020 also may be used.
- Water suppliers may use local reference ET estimates that are not formally part of CIMIS or that make adjustments to CIMIS station estimates, provided that such estimates or adjustments are scientifically derived and of comparable reliability to CIMIS estimates.

The water supplier shall explain why neither the CIMIS nor other approved DWR reference ET information is adequate, and shall provide the data and calculations used to develop the local reference ET estimate.

Apply MAWA Equation to Calculate Annual Volume

Appendix B provides the MAWA equations that apply to parcels. These equations, or their equivalents, will yield water use estimates in gallons per year. The total Landscaped Area Water Use for the water supplier will equal the total Landscaped Area Water Use of all parcels in the supplier's service area.

Convert Annual Volume to GPCD

After the MAWA for all parcels has been summed to determine the total Landscaped Area Water Use portion of the Method 2 target, the total must be divided by Service Area Population and then by 365 to calculate the Landscaped Area Water Use in GPCD. Refer to Methodology 2: Service Area Population to complete this step. Because Landscaped Area Water Use is defined in units of GPCD, the result must be converted from annual to daily use.

Summary of Steps to Calculate Landscaped Area Water Use

Calculating Landscaped Area Water Use requires the following process:

1. Assign applicable MWELO (1992 or 2009) to each parcel.
2. Estimate landscaped area for each parcel.
    a. Select measurement technique(s) for landscaped area (for example, field based, remote sensing, or sampling).
    b. Apply technique(s) to calculate total landscaped area for each parcel. (This applies only to parcels for which landscaped area has not yet been measured.)
    c. Measure special landscape area (SLA) where applicable.
3. Determine the reference ET for each parcel.
4. Use the MAWA from the applicable MWELO to calculate Landscaped Area Water Use for all parcels.

[23]California Irrigation Management Information System. The spatial model is available at http://www.cimis.water.ca.gov/cimis/cimiSatSpatialCimis.jsp.

   a. Use the equations, or their equivalents, to calculate the MAWA for each parcel or group of parcels (grouped according to applicable MWELO, reference ET, and presence of SLA).
   b. Sum the MAWA over all parcels to calculate the total annual Landscaped Area Water Use portion of the Method 2 target.

5. Divide the total from Step 4 by Service Area Population and then by 365 to calculate the Landscaped Area Water Use in GPCD.

Methodology 7: Baseline Commercial, Industrial, and Institutional Water Use

Baseline Commercial Industrial and Institutional (CII) Water Use is needed for urban water use target Method 2 (along with the indoor residential and landscape uses). It also affects the adjustment factors that agencies may consider at the time of testing compliance in 2015 and 2020 by allowing them to make adjustments based on "substantial changes" in CII relative to Baseline CII Water Use per Section 10608.24 (d)(1)(B). The definition of "substantial change" and adjustments are discussed in Methodology 8: Criteria for Adjustments to Compliance Daily Per Capita Water Use.

Definition of Baseline CII Water Use

Section 10608.12 defines Baseline CII Water Use and related concepts as follows:

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "Commercial water user" means a water user that provides or distributes a product or service.

(h) "Industrial water user" means 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.

(i) "Institutional water user" means 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.

Use of Baseline CII Water Use

Urban retail water suppliers are given several methods for calculating water use targets. Method 2 allows them to calculate a target by using three components: Indoor Residential Use, Landscaped Area Water Use, and Baseline CII Water Use. Section 10608.20 (b)(2)(C) specifies that the CII portion of the target is to be calculated as follows:

For CII uses, a 10 percent reduction in water use from the baseline CII water use by 2020.

Calculation of Baseline CII Water Use

Baseline periods that a retail water supplier may use to determine Baseline CII Water Use shall follow the same direction required for Base Daily Per Capita Water Use under Section 10608.12.(b):

"Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

A retail water supplier must have CII data for the entire baseline period used in the water supplier's calculation of Base Daily Per Capita Water Use. If the CII data do not exist, the retail water supplier should use another water use target method.

For each year in the baseline period, the volume of Baseline CII Water Use shall be divided by the Service Area Population (see Methodology 2), and the average of those calculations, converted to a daily rate, is the Baseline CII Water Use for the purpose of calculating the Method 2 target as defined in Section 10608.20(b)(2). The procedure for averaging the annual per capita CII use is the same as for calculating Base Daily Per Capita Water Use (refer to Methodology 3: Base Daily Per Capita Water Use).

The CII component of the 2020 target for Method 2 shall be the Baseline CII Water Use (in GPCD) multiplied by 0.9.

Process Water Exclusion

A retail water supplier may elect to exclude process water from its calculation, consistent with Section 10608.24(e):

> *When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area, may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.*

If a water supplier elects to exclude process water, it must do so for baseline and compliance year per capita water use and for baseline CII water use. DWR regulations that define when and how process water can be excluded from Gross Water Use and Baseline CII Water Use calculations are provided in Appendix D.

Adjustments for Multifamily Residential Connections

A retail water supplier whose baseline CII data includes some multifamily residential uses must demonstrate that it can accurately adjust the data to remove those uses.

In cases where the retail water supplier can estimate the population in multifamily residences included in the CII data, the supplier must do both of the following:

1. Use the adjustment procedure described below in Adjustments for Residential Uses in CII Connections to remove indoor residential uses from the CII data.
2. Assure that landscaped area in the CII data is excluded from the calculations of Landscaped Area Water Use.

In situations where the supplier cannot estimate the population in multifamily residences included in the CII data, Method 2 cannot be used to set the water supplier's water use target.

Adjustments for Residential Uses in CII Connections

Some CII connections also may serve group quarters or other residential uses. Examples could include campus dormitories, military base housing, and apartments that are served by a CII connection. Water use target Method 2 already provides an indoor use allowance of 55 GPCD for such residents. To ensure that this indoor use is not double-counted, the following steps must be used to adjust the CII component of the target water use under Method 2:

1. Estimate the average population served by CII connections during the baseline period and whose residents use is included in the water supplier's unadjusted Baseline CII Water Use.
2. Calculate the average daily volume of target Indoor Residential Use associated with this population by multiplying the result of Step 1 by the 55-GPCD target indoor use specified for Method 2.
3. Convert the unadjusted CII GPCD target (the Baseline CII Water Use times 0.9) to an average daily volume by multiplying by Service Area Population.
4. Subtract the average daily volume calculated in Step 2 from the unadjusted CII daily volume calculated in Step 3.
5. Divide the result from Step 4 by Service Area Population to give the adjusted Baseline CII Water Use in GPCD for use in calculating the water use target for Method 2.

Methodology 8: Criteria for Adjustments to Compliance Daily Per Capita Water Use

Definition of Adjustments to Compliance Daily Per Capita Water Use

Section 10608.24(d) states:

> *(1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:*
>
> > *(a) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.*
> >
> > *(b) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.*
> >
> > *(c) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.*
>
> *(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.*

Calculation of Adjustments to Compliance GPCD

To be developed.

[Application of these adjustments will not occur until a compliance year. This methodology requires further development including completion of weather normalization modeling. Expected completion date is early 2011.]

Methodology 9: Regional Compliance

According to Sections 10608.20(a)(1) and 10608.28, urban retail water suppliers may plan, comply, and report on a regional basis, an individual basis or both. Each group of water suppliers agreeing among themselves to plan, comply, and report as a region is referred to in this methodology as a "regional alliance."

Legislative Guidance for Regional Compliance

Section 10608.20(a)(1) states:

> *Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.*

Section 10608.28 states:

> *(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:*
>
> > *(1) Through an urban wholesale water supplier.*
> >
> > *(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).*
> >
> > *(3) Through a regional water management group as defined in Section 10537.*
> >
> > *(4) By an integrated regional water management funding area.*
> >
> > *(5) By hydrologic region.*
> >
> > *(6) Through other appropriate geographic scales for which computation methods have been developed by the department.*
>
> *(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.*

Criteria for Water Suppliers that May Report and Comply as a Region

To form a regional alliance, water suppliers must meet at least one of the following criteria:

- Water suppliers are recipients of water from a common wholesale water supplier. For this purpose, the State Water Project and the Central Valley Project are not considered wholesale water suppliers. Wholesale water suppliers are not required to establish and meet targets for daily per capita water use. Wholesale water suppliers serving in the role of a regional alliance are representing the urban retail water suppliers that are members of the alliance and compliance with a regional target is on behalf of the member suppliers and not the wholesaler supplier itself.
- Water suppliers are partners with a common regional agency authorized to plan and implement water conservation.
- Water suppliers are part of a regional water management group as defined in Water Code section 10537.
- Water suppliers are part of an integrated regional water management funding area, which for this purpose is interpreted to mean an Integrated Regional Water Management (IRWM) planning area.
- Water suppliers are located in the same hydrologic region, which for this purpose refers to the 10 hydrologic regions as shown in the California Water Plan. For situations where water suppliers may serve areas in more than one hydrologic region, the majority of each water supplier's Service Area Population must be in the hydrologic region being identified as a regional alliance.
- Water suppliers join through appropriate geographic scales for which these methodologies can be applied. For this provision, water suppliers' service area boundaries must be contiguous.

Tiered Regional Alliances

In general, urban retail water suppliers can belong to only one regional alliance for the purpose of establishing and complying with urban water use targets. An exception is when regional alliances are tiered so that the members of the smallest alliance are all members of the larger alliance or alliances.

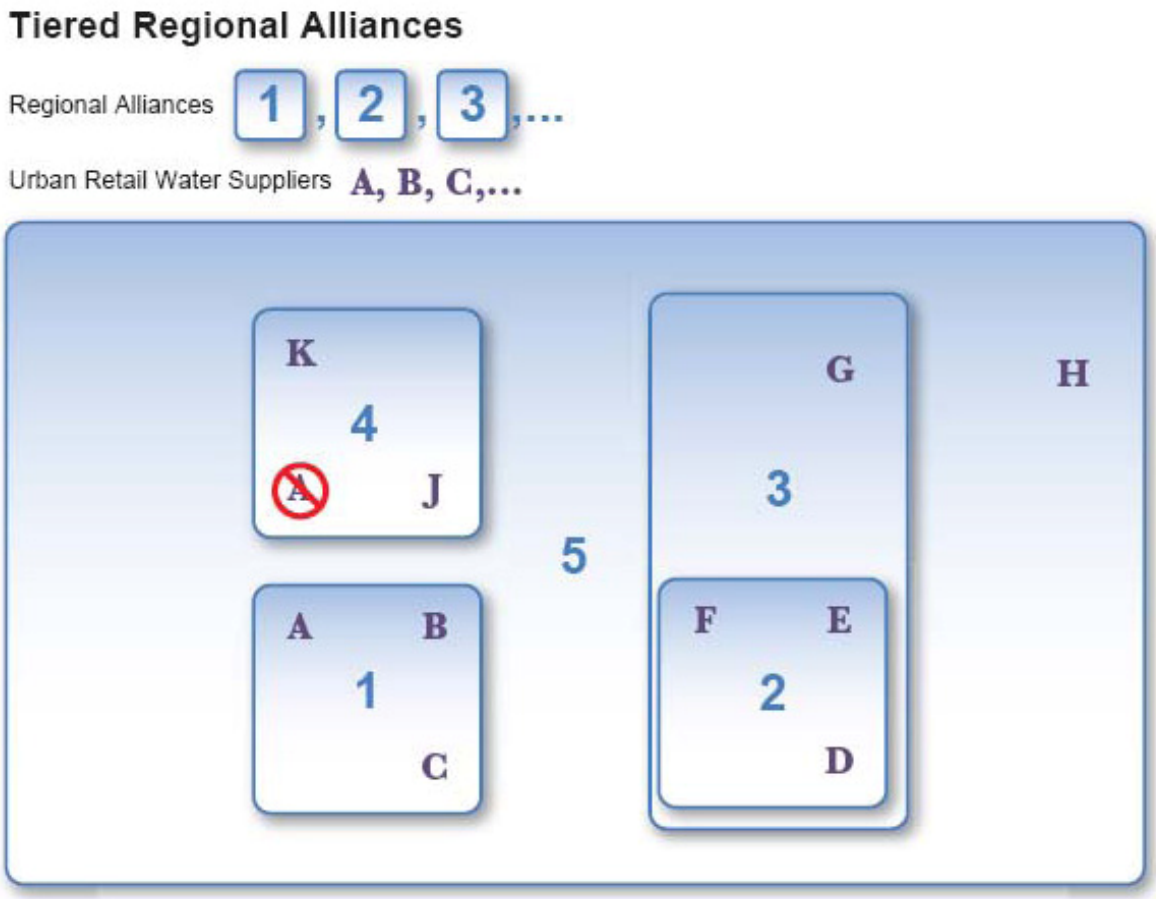

FIGURE 6:
EXAMPLE OF TIERED ALLIANCES

Figure 6 illustrates tiered alliances. For example, supplier A forms an alliance with suppliers B and C (Alliance 1). Supplier A cannot also form an alliance with suppliers J and K unless the A,J,K alliance were to include B and C as well. Water suppliers D, E, and F could comply as regional Alliance 2, or include supplier G and comply as regional Alliance 3. Alternatively, all suppliers in Figure 6 could comply as Alliance 5. The tiered alliance requirements are only for compliance with urban water use targets and do not apply to other regional water management activities or partnerships.

Calculation of Targets and Compliance GPCD

Calculation of Regional Targets

Water suppliers wishing to test compliance regionally are permitted to do so. Water suppliers in a regional alliance have three options for calculating their regional targets.

Under the first option, which preserves maximum flexibility at the supplier level, each supplier in a regional alliance would first calculate its individual target as if it were complying individually. These individual targets should then be weighted by each supplier's population and averaged over all members in the alliance to obtain the regional target.[24] For the 2011 urban water management plans, suppliers may use their current population data for generating the regional targets. However, for testing compliance in 2015 and 2020, the population weighting of the individual targets must be based upon the compliance-year population data. A retail water supplier may update its target in 2015 (see Water Code section 10608.20(g) and any such modifications made to individual targets after 2011 must be incorporated into updated regional targets and reported in the compliance year 2015. For those urban retailers or alliances that choose method 2 for developing a target (see Water Code section 10608.20(b)(2)), the target must be revised and reported in 2020. A modification in any individual target or a change in membership in a regional alliance will require a recalculation of the regional target.

A second approach for an alliance to calculate a regional target is to sum up the individual supplier's gross water use and service area populations to develop regional gross water use and population. The alliance would then calculate regional base daily per capita use and choose one target method to calculate a regional target. Alliances must have all their members use the same baseline period.

A third approach is to calculate regional gross water use or population directly for the entire regional alliance area. Regional base daily per capita use and a regional water use target would then be derived. Like the second approach, members of alliances using this approach must use the same baseline period and the same target method. A regional alliance must meet the requirements of Section 10608.22. The regional target may not exceed 95 percent of the region's 5-year Base Daily Per Capita Water Use. Methodology 3: Base Daily Per Capita Water Use describes in detail the interpretation and calculations required under Section 10608.22.

Calculation of Regional Compliance Daily Per Capita Water Use

Gross Water Use and Service Area Population must be reported for each supplier during the compliance year. If applicable, adjustments for evapotranspiration and rainfall, fire suppression, and changes in distribution area should be made for each individual water supplier. Adjustments to Gross Water Use for extraordinary economic growth can be

[24] Assume there are (N) suppliers in an alliance, with individual targets (T_1, T_2, … , T_N) and population (P_1, P_2, … , P_N), where the subscript on the individual targets and population denote the identity of each supplier. Then, total population in a regional alliance (RP) becomes:

$RP = P_1 + P_2 + \ldots + P_N$

The regional target (RT) can be derived as a weighted average of the individual supplier targets as follows:

$RT = (P_1 * T_1 + P_2 * T_2 + \ldots + P_N * T_N)/RP$

applied either to the individual supplier's data or to the aggregate regional alliance data (but not both), depending upon availability of suitable data and methods. Regional compliance daily per capita water use shall be calculated as the aggregate regional Gross Water Use divided by the aggregate Service Area Population.

Data Reporting for a Regional Alliance

A regional alliance must send DWR a letter stating that an alliance has been formed and provide a list of the water supplier members. This letter should be sent by July 1, 2011, for alliances formed before submitting 2010 urban water management plans, or in ninety days after an alliance has been formed after July 1, 2011. In the case of tiered alliances, a retail water supplier cannot be cited as a member of a regional alliance unless it acknowledges its membership in that alliance in its urban water management plan.

DWR will collect data pertaining to regional alliances through three documents: (1) through the individual supplier urban water management plans; (2) through the regional urban water management plans; and (3) through the regional alliance reports.

Individual Supplier Urban Water Management Plans

All members of a regional alliance must include the following data in their individual urban water management plans unless they are participating in a regional urban water management plan (applicable urban water management plan dates are shown in parentheses):

- A list of all of its regional alliances. If a supplier is a member of tiered alliances, it must name all the alliances it is a member of
- Baseline Gross Water Use and Service Area Population (2010, 2015, 2020)
- Individual 2020 Urban Water Use Target (2010, 2015, 2020) and Interim 2015 Urban Water Use Target (2010)
- Compliance Year Gross Water Use (2015 and 2020) and Service Area Population (2010, 2015, 2020)
- Adjustments to Gross Water Use in the compliance year (2015, 2020)
- Water suppliers who choose Target Method 2 also must provide Landscaped Area Water Use and Baseline CII Water Use data (2010, 2015, 2020)
- Water Suppliers who choose Target Method 4 must provide the components of calculation as required by Target Method 4. Appendix C describes Target Method 4 and the regional compliance reporting that applies to that method (2010, 2015, 2020)

Regional Urban Water Management Plans

Members of regional alliance can forgo submitting individual urban water management plans and instead submit a regional urban water management plan. These regional urban water management plans are different from the regional alliance reports in that they must meet all the urban water management plan reporting requirements. The water use target data can be reported in the regional plan in either of two ways:

- The regional plan can report all the data elements that are now required to be included in the individual urban water management plans pertaining to this program (see section above titled Individual Supplier Urban Water Management Plans), for each supplier in the alliance. It would also report the same data elements aggregated over all members in the alliance.
- The regional plan may report some data elements only in aggregate for the alliance as a whole (not for each individual member). For example, the plan may report Service Area Population only for the regional alliance if the regional population data are more accurate or available. If the Service Area Population is only reported on a regional basis, then Base Daily per Capita Use, Compliance Daily per Capita Use, and Urban Water Use Targets would be calculated and reported only on a regional basis. Water suppliers that are part of a regional alliance that only reports a regional population can only develop a regional Urban Water Use Target and comply with this target regionally. Developing individual targets and testing compliance at the individual level is not possible unless an individual Service Area Population is calculated.

Regional Alliance Report

For regional alliances that do not submit a regional urban water management plan, DWR will require a regional alliance report. This report shall include all the water use target data elements that are now required to be included in the individual urban water management plans (see section above titled Individual Supplier Urban Water Management Plans) for each supplier in the alliance, and also shall include the alliance-level aggregates.

Memoranda of Understanding or Agreements for Regional Alliances

DWR will not review or approve the terms of memoranda of understanding (MOUs) or legal agreements that water suppliers use to create and manage regional alliances. However, terms of the agreements shall be consistent with all applicable sections of the Water Code. DWR will presume that water suppliers understand the consequences if partner suppliers withdraw from a regional alliance.

Compliance Assessment for Water Suppliers Belonging to a Regional Alliance

Compliance will be assessed based upon how an individual retail water supplier performs relative to its individual target or how the retail water supplier's regional alliance performs as a whole relative to its regional target. Wholesale suppliers are not themselves subject to compliance assessment. The following guidelines will be used to assess compliance:

- If a regional alliance meets its regional target, all suppliers in the alliance will be deemed compliant. For tiered alliances, if a smaller alliance does not meet its water use target, the member agencies can still be in compliance if a larger alliance is in compliance. Conversely, members of a smaller alliance can be in compliance if the smaller alliance complies while the larger alliance fails. If a regional alliance fails to meet its regional

target, water suppliers in the alliance that meet their individual targets will be deemed compliant.

- Water suppliers in alliances that meet neither their individual targets nor their regional targets will be deemed noncompliant. These suppliers can still apply for grant funds if their application is accompanied by a plan that demonstrates how the funds being sought will bring them into compliance with their targets (Section 10608.56).

Withdrawal from a Regional Alliance before 2020

If a water supplier withdraws from a regional alliance, the withdrawing water supplier must then comply individually. The water suppliers remaining in the regional alliance must revise regional baseline and target data and alliance membership in the subsequent UWMP plan. The memorandum of understanding or other legal agreements governing the alliance may define additional consequences or remedies.

Dissolution of a Regional Alliance before 2020

If a regional alliance dissolves before 2020, each affected water supplier must then comply individually or form or join another alliance. An affected water supplier that had not previously submitted an individual urban water management plan (for example, if it had participated in a regional urban water management plan for a regional alliance that has dissolved) has to submit an urban water management plan or a regional water management plan. The memorandum of understanding or other legal agreements governing the alliance may define additional consequences or remedies.

APPENDIX A

Alternative Methodology for Service Area Population

Water suppliers without access to detailed population data should develop population estimates by anchoring their year 2000 residential connections to the year 2000 census population estimate, and then scaling this estimate backward and forward using data for active residential connections. The procedure for calculating population from connections first requires a water supplier to identify the census blocks that lie in its (year 2000) distribution area. The availability of a GIS distribution area map for the year 2000 makes this first step relatively easy.

If no GIS boundary map of the distribution area is available, a water supplier will have to perform this exercise manually. The U. S. Census Bureau's county/tract/block maps should serve as the primary tool for this matching exercise.[1] First select the appropriate county. Next, the first file labeled "CBC06xxx_000.pdf" provides the detailed map numbering scheme for the entire county. The relevant maps from this list can then be used online or printed to locate the appropriate census blocks.

It is also relatively easy to scan a paper map of the distribution area (in 2000), digitize and geo-reference the boundary (and internal areas that need to be excluded), and overlay it electronically on a census map to identify which census blocks lie in the 2000 distribution area. Category 3 water suppliers may be able to access these capabilities through their local association of governments.

Step 1: Finalize Census Blocks in the 2000 Distribution Area

Some census blocks may straddle the water supplier's year 2000 distribution area boundary line. In such cases, if half or more of the block's area appears to lie within the boundary, the water supplier should include it; otherwise, it should exclude the block.

Census blocks are grouped into block groups. Blocks that identify places such as college campuses, military installations, or correctional institutions are organized into a

What Is a Census Block?

A census block is the smallest geographical unit used by the Census Bureau. Census blocks are areas bounded on all sides by visible features, such as streets, roads, streams, and railroad tracks, and by invisible boundaries, such as city, town, township, and county limits, property lines, and short, imaginary extensions of streets and roads. Generally, census blocks are small in area; for example, a block may be bounded by city streets. However, census blocks in sparsely settled areas may contain many square miles of territory.

[1] These maps can be accessed at http://www2.census.gov/geo/maps/blk2000/st06_California/County/.

single block group that, taken together, corresponds exactly with the boundary of such a place. Census blocks associated with such institutions in the distribution area, but with wholly private sources of supply, can thus be cleanly removed from the population estimate.

Census block groups aggregate up to the next level of geography that is called a census tract. Blocks have a unique identification number only in a tract, not across tracts. When identifying blocks that lie in the distribution area, both block and tract identification numbers are needed to correctly link the selected blocks with their corresponding population data.

What Is a Census Block Group?

A block group (BG) is a cluster of census blocks having the same first digit of their four-digit identifying numbers in a census tract. For example, block group 3 (BG 3) in a census tract includes all blocks numbered from 3000 to 3999. BGs generally contain between 600 and 3,000 people, with an average size of 1,500 people. BGs on American Indian reservations, off reservation trust lands, and special places must contain a minimum of 300 people. (Special places include correctional institutions, military installations, college campuses, worker's dormitories, hospitals, nursing homes, and group homes.)

Step 2: Scale Population Information from Census Blocks to Distribution Area

Once the census blocks lying in the year 2000 distribution area are identified, each block's total and group-quarter population in 2000 can be obtained from the Census Bureau's website. This requires the following steps:[2]

1. Go to www.census.gov
2. Click on "American FactFinder" tab in left navigation column.
3. Select the legacy American FactFinder link (factfinder.census.gov). If and when this legacy website is terminated, the following download instructions may require modification.
4. Click on "Download Center" in the left navigation column.
5. In the table that appears, click on the "Census 2000 Summary File 1 (SF-1) 100-Percent Data" link.
6. Under geographic summary level, select "All Blocks in a County (101)."
7. Follow the prompts to select state and county.
8. Under Select a Download Method, choose "Selected Detailed Tables."
9. Click on "Go."

Place of Residence

Each person included in the census is counted at his or her usual place of residence, which is the place where he or she lives and sleeps most of the time. If a person has no usual residence, the person is counted where he or she was staying on Census Day (April 1). People temporarily away from their usual residence, such as on a vacation or business trip, are counted at their usual place of residence. People who moved around Census Day are counted at the place they consider to be their usual residence. A person's usual place of residence is not necessarily the same as legal residence or voting residence. A detailed set of enumeration rules guides how the Census Bureau counts individuals. An attempt is made to count all individuals, whether they reside in housing units or in group quarters.

[2] Note that these steps apply as of February 2011. Link names and other elements of the Census Bureau's website may change in future. The same caution applies to other website directions in this appendix.

10. When prompted with table choices, select at a minimum "P1. Total Population" and P37. Group Quarters Population by Group Quarter Type." You can select multiple tables at once by holding down the Ctrl key as you select them.
11. Click "Add" to add them to the Current Table Selections box.
12. Select "Next"
13. Select "Start Download"

A zipped file containing three files will be created for the user. One of these will include the data in a delimited text format (the character " | " will be the delimiter which the user will need to specify while importing the text file into Excel for further manipulation) containing total population and any additional information the user selects by block. From this list, select the blocks identified as falling in the water supplier's year 2000 actual distribution area in Step 1 and obtain the aggregate population for the water supplier's service area.

P1. Total Population

The "Total Population" selection includes population residing in housing units as well as in group quarters. Housing units include structures such as single-family homes, multifamily homes, mobile homes, boats, RVs, and vans. Group quarters include institutions such as correctional facilities, nursing homes, hospital wards and hospices, psychiatric hospitals, juvenile institutions, college dormitories, military quarters, agriculture worker's dormitories, logging camps, and other institutions. The full list of what is included in group quarters is long and is intended to capture a variety of residency scenarios to make the population count as complete as possible. This list can be obtained from the Census Bureau's website.

In most cases, additional editing or manipulation of total year 2000 population should not be required. Census blocks associated with privately supplied customers would already have been removed from the distribution area definition. However, if some census blocks include both utility supplied residents and privately supplied group-quarter residents, the latter may be removed by subtracting the group-quarter population from the total population, wherever applicable, before aggregating population up to the distribution area level.

P37. Group Quarters Population by Group Quarter Type

This selection provides a breakdown of the group quarter population into the following categories: correctional institutions; nursing homes; other institutionalized populations; college dormitories including college quarters off campus; military quarters; other non-institutional group quarters.

Step 3: Obtain Population by Structure Type

To estimate population per connection, agencies are advised to develop at least two separate ratios: one for population per single-family connection, and one for population per multifamily connection, which includes apartment complexes and other types of group quarters. This information can also be obtained from the Census Bureau website. For this purpose, the Census 2000 Summary File 3 (SF-3) should be used as the source since these data are not available from Summary File 1. Data in Summary File 3, however, are presented at the block group level. The first letter in a block's identifier indicates the block group it belongs to.

H33. Total Population in Occupied Housing Units by Tenure by Units in Structure

This selection provides a breakdown of population by the following types of structures:
Owner occupied, 1 detached unit in structure
Owner occupied, 1 attached unit in structure
Owner occupied, 2 units in structure
Owner occupied, 3-4 units in structure
Owner occupied, 5-9 units in structure
Owner occupied, 10-19 units in structure
Owner occupied, 20-49 units in structure
Owner occupied, 50 or more units in structure
Owner occupied, mobile home
Owner occupied, boat, RV, van, etc.
(Repeated for renters)

1. Go to www.census.gov
2. Click on "American FactFinder" tab in left navigation column.
3. Select the legacy American FactFinder link (factfinder.census.gov). If and when this legacy website is terminated, the following download instructions may require modification.
4. Click on "Download Center" in the left navigation column.
5. Select the "Census 2000 Summary File 3 (SF-3) Sample Data" link.
6. Under geographic summary level, select "All Block Groups in a County (150)."
7. Follow the prompts to select state and county
8. Under Select Download Method, select "Select Detailed Tables."
9. Click on "Go."
10. When prompted with table choices, select at a minimum "P1. Total Population" and "H33. Total Population in Occupied Housing Units by Tenure by Units in Structure."
11. Click on "Next."
12. Click on "Start Download."

A zipped file containing three files will be created for the user. One of these will include the data in a delimited text format (the character " | " will be the delimiter which the user will need to specify while importing the text file into Excel for further manipulation) containing total population split across many categories.

It is necessary to download both total population and population in occupied housing units by tenure and units in structure.

Why is it necessary to download total population at the block group level? First, total population in a block group obtained from Summary File 3 may not exactly match block group population were it to be estimated from Summary File 1 for the purpose of comparison. This is because the former is created from a sample, the latter from the full data. Sample weights ensure that the two estimates of total population converge for higher levels of aggregation, such as a county, but they may not exactly match at the block-group level.

Second, the definition of housing units excludes group quarters. Therefore, if total population were estimated by aggregating population residing in the various categories of data series H33, group-quarter population would not be captured.

Step 4: Obtain Active Connections Data

Water suppliers differ in their metering of certain structure types. For example, some water suppliers may typically use individual metering of single-family attached structures, while other water suppliers may use master-metering. Water suppliers must first decide, based

upon local knowledge and level of detail available in the billing system, how different structure types will be allocated to either the single-family or multifamily category.

For each baseline year (and the census year 2000 if it is not included in the baseline period), tabulate total single-family and total multifamily connections. Remove from the tabulation any connections that were inactive during the entire year.

For each block group, aggregate population for the single-family structure category, including both renters and owners. Subtract this estimate from total block group population obtained from Summary File 3. The difference is an estimate of population residing in multifamily structures, including group quarters.

Develop a ratio for each block group indicating how its total population is split between the single-family and multifamily structures. Then, for each block in the distribution area, apply its corresponding block-group ratio to split the block-level total population (from Summary File 1) into the single-family and multifamily categories. Aggregate these block-specific splits to obtain total population residing in single-family and multifamily structures in the entire distribution area.

Step 5: Develop Population Estimates for Non-Census Years

For the census year 2000, obtain persons per single-family connection and per multifamily connection. Apply these ratios to active connections data for the non-census years to estimate non-census-year population. Figure A-1 provides a pictorial description of the approach outlined above.

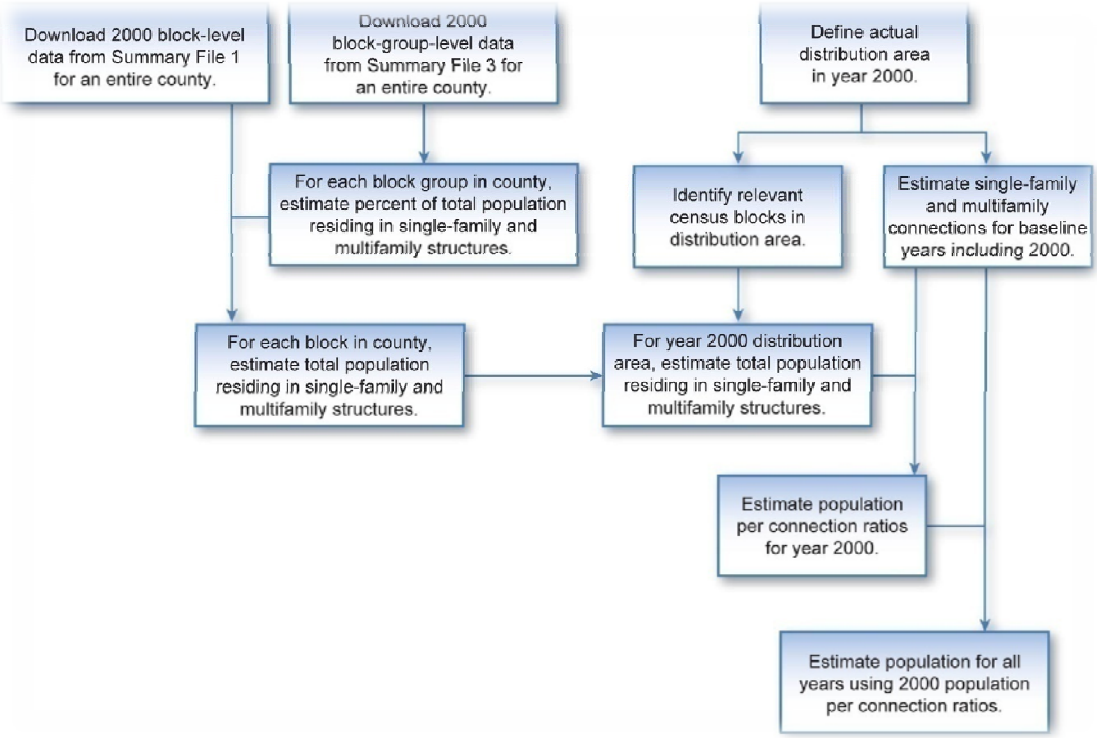

FIGURE A-1
POPULATION PER RESIDENTIAL CONNECTION METHOD

Two exceptions to this procedure are possible:

- Water suppliers are permitted to split their multifamily accounts into additional categories. For example, water suppliers may divide the multifamily sector into categories based upon units in the structure, assuming such information is reliably recorded in their billing system. The water supplier can calculate persons-per-connection for each of these categories, as long as they use the same methodology for all base period and compliance years. Water suppliers may substitute a person-per-unit ratio in place of a person-per-connection ratio to scale multifamily population if their billing systems include reliable data about total units in each multifamily structure. In such a case, population in group quarters would need to be scaled separately using a persons-per-connection ratio specific to group quarters.
- Water suppliers that cannot identify multifamily connections at present should use a single ratio (total population per single-family connection) to obtain population for the non-census years. DWR recommends that these water suppliers begin improving their data systems so that population estimates for the 2015 and 2020 compliance years are more accurate. DWR also encourages water suppliers to identify multifamily accounts separately from CII accounts.

Step 6: Further Improvements to Estimates

Water suppliers that calculate population using the per-connection method described here are encouraged to improve these estimates by including auxiliary information from other sources such as the California Department of Finance, Current Population Survey, the American Housing Survey, building permits data, and similar sources. If they use such information they should maintain consistency between the baseline and compliance years, document the methodology, and provide details about the magnitude of the adjustments made to the population estimated using Steps 1 through 5.

APPENDIX B

Model Water Efficient Landscape Ordinance Definitions and Calculations

The Model Water Efficient Landscape Ordinance (MWELO) was originally added to the California Code of Regulations (Title 23, Division 2, Chapter 2.7) in 1992 and was revised in 2009. Paragraph 492.4 defines the calculation of Maximum Applied Water Allowance (MAWA).

For landscaped areas that are installed on or after January 1, 2010, the MAWA equation and all applicable definitions of terms from the revised ordinance are as follows:

Maximum Applied Water Allowance (MAWA) = (ETo) (0.62) [(0.7 x LA) + (0.3 x SLA)]

Maximum Applied Water Allowance (MAWA) is in gallons per year

ETo = Reference Evapotranspiration (inches per year). Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowance so that regional differences in climate can be accommodated." Reference Evapotranspiration values for each location can be found in Appendix A of the 2010 Model Water Efficient Landscape Ordinance.

0.62 = Conversion Factor (from inches/year to gallons/sq ft/year)

0.7 = ET Adjustment Factor (ETAF). When applied to reference evapotranspiration, the ETAF "adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape."

LA = Landscaped Area including SLA (square feet), which includes "all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation)."

0.3 = Additional Water Allowance for Special Landscape Area (SLA), resulting in an effective ETAF for SLA of 1.0.

SLA = Special Landscaped Area (square feet), which is defined as "an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface."

For landscaped areas that are installed before January 1, 2010, the MAWA equation and all applicable definition of terms from the original 1992 version of the ordinance are as follows:

Maximum Applied Water Allowance (MAWA) = (ETo) (0.62) (0.8 x LA)

Maximum Applied Water Allowance (MAWA) is in gallons per year

ETo = Reference Evapotranspiration (inches per year). Reference Evapotranspiration values for each location can be found on page 38.10 of the Model Water Efficient Landscape Ordinance.

0.62 = Conversion Factor (from inches/year to gallons/sq ft/year)

0.8 = ET Adjustment Factor (ETAF). When applied to reference evapotranspiration, the ETAF "adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape."

LA = Landscaped area includes the entire parcel less the building footprint, driveways, non-irrigated portions of parking lots, landscapes such as decks and patio, and other non-porous areas. Water features are included in the calculation of the landscaped area. Areas dedicated to edible plants, such as orchards or vegetable gardens are not included.

APPENDIX C

PROVISIONAL METHOD 4 FOR DETERMINING WATER USE TARGETS

DWR developed Provisional Target Method 4 in accordance with Water Code Section 10608.20(b)(4). Urban retail water suppliers that adopt Target Method 4 to determine their 2020 urban water use target must use the provisional procedures described in this document. This target method has been developed with the assistance of the California Urban Water Conservation Council, the California State Water Resources Control Board, and the Urban Stakeholder Committee, composed of technical experts and representatives of water suppliers and environmental and other organizations.

Water Code Section 10608.20(d) provides that DWR will update Target Method 4 by December 31, 2014. It is anticipated that improvements will be made to the target method based on new data and analytical techniques in the update. Provisional Target Method 4 described here will be in effect until the update by 2014.

A Target Method 4 Calculator (Calculator) using an Excel spreadsheet has been developed for use with Provisional Target Method 4. The Calculator will be required to accomplish some of the procedures for this method. Other procedures may be accomplished without use of the Calculator but have been incorporated into the Calculator to automate the calculation of the 2020 target.

Overview

The overall framework for Provisional Target Method 4 is described in this section. Details are presented in the Detailed Procedures section. For this target method, savings are assumed between the baseline period and 2020 due to metering of unmetered water connections and achieving water conservation measures in three water use sectors.

The 2020 water use target for individual urban water suppliers is determined by Equation 1 in units of gallons per capita per day (GPCD).

Equation 1

Urban Water Use Target	=	Base Daily per Capita Water Use	-	Total Savings

The base daily per capita water use is separated into three sectors for the purpose of Target Method 4:

1. Residential indoor
2. Commercial, Industrial, and Institutional (CII)
3. Landscape water use, water loss, and other unaccounted-for water

Because accurate methods are not generally available to estimate the water use in these three sectors, a standard of 70 GPCD is assumed for residential indoor water use. For the purpose of Target Method 4, CII water use does not include landscape irrigation use served by dedicated landscape irrigation meters. Dedicated landscape meters often serve large commercial or institutional irrigation sites such as golf courses, parks, or school grounds. CII water use includes irrigation water use served by mixed use water meters. Landscape irrigation water use in item 3 above is composed of residential irrigation and irrigation served by dedicated landscape irrigation meters or connections. Unaccounted for water is water that is lost in water distribution systems. Other unaccounted for water may include unmetered uses such as construction water or discrepancies in water meter accuracy. For simplification, water loss and other unaccounted for water are referred to as "water loss" in this document.

For the purpose of Target Method 4 it is necessary to calculate landscape water use and loss using Equation 2. The units for Equation 2 are GPCD.

Equation 2

Landscape and Water Loss per Capita Use	=	Base Daily per Capita Water Use	-	Standard Indoor Residential 70 gpcd	-	CII Water Use

Potential water savings are estimated for each of these water use sectors and for reduced water use due to installation of meters on unmetered connections, as shown in Equation 3. The units for Equation 3 are GPCD.

Equation 3

Total Savings	=	Metering Savings	+	Indoor Residential Savings	+	CII Savings	+	Landscape and Water Loss Savings

Detailed Procedures

Step 1: Baseline Water Use and Midpoint Year

The Base Daily Per Capita Water Use is an average calculated for the base period selected by the urban retail water supplier, as described in Methodology 3 in *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (Methodologies Report).

The data required for some of the following steps of Target Method 4 must be provided for the midpoint year for the base period. For a base period with an even number of years, the midpoint year will be the 12 months preceding the midpoint date.

The Calculator has been designed for calendar years. For water suppliers that choose to use a fiscal year reporting basis, the Calculator can be adapted by entering the fiscal year period representing the year designated in the Calculator.

Step 2: Metering Savings

For service areas with water service connections without water meters, a water supplier must estimate the total amount of water delivered to unmetered connections during the midpoint year of the baseline period. The metering savings is calculated using Equation 4.

Equation 4

$$\text{Metering Savings, GPCD} = \frac{\text{Water Deliveries to Unmetered Connections in Midpoint Baseline Year, gallons} \times 0.20}{\text{Service Area Population in Midpoint Baseline Year} \times 365 \text{ days}}$$

Step 3: Indoor Residential Savings

Indoor residential water savings are estimated based upon anticipated increases in the installation of more efficient toilets, residential clothes washers, and showerheads. The savings estimates are based on a comparison of saturation levels of fixtures, at certain water use efficiencies, during the midpoint year of the baseline period and with saturation goals in 2020. Separating toilets in single-family and multi-family dwellings, the 2020 saturation goals for the four plumbing fixtures categories are listed in Table 1.

Table 1. Saturation Goals for Indoor Residential Fixtures

Fixture Type	2020 Saturation Goals
Single-family Toilets	85% 1.28 gal/flush toilets 15% average flush volume at midpoint baseline year
Multi-family Toilets	85% 1.28 gal toilets 15% average flush volume at midpoint baseline year
Residential Washers	85% Water Factor (WF) of 6 15% average WF at midpoint baseline year
Residential Showerheads	95% low flow showerheads 5% non-low flow showerheads

There are two alternatives for calculating indoor residential water savings, one using the Target Method 4 Calculator based on historic data for a water supplier and the other using a default savings of 15 GPCD.

Alternative 1:

To calculate indoor residential savings using the historic data of an individual water supplier the following types of data may be required to enter into the Calculator:

- Persons per household
- Toilets per household
- Showers per household
- Numbers of single- and multi-family dwelling units for years 1991 through the midpoint of baseline period
- Population residing in group quarters in the midpoint year of baseline period
- Either (1) numbers of efficient toilets, showerheads, and clothes washers either distributed, installed, or credited through incentives, such as rebates for years 1991 through the midpoint of baseline period or (2) saturation levels of fixtures at various efficiencies at the midpoint year of the baseline period

After entry of the required data, the Calculator will determine the indoor residential savings in terms of GPCD.

Alternative 2:

If a water supplier does not have historic data for the midpoint baseline and prior years, the supplier can use a default indoor residential water savings of 15 GPCD. While the Calculator allows Alternative 2 for the convenience of calculating the target, if this alternative is chosen, the Calculator is unnecessary.

Determining whether to use the default value, the following information may be helpful. In developing the Provisional Target Method 4, a random sample of 52 water suppliers were selected to test the Calculator. The sample represented a variety of climatic and demographic characteristics. An analysis of this random sample developed a statewide average savings from the four indoor residential elements was 14.1 GPCD, with a range of

7.9 to 16.8 GPCD. Sixty percent of the suppliers fell within the range of 13.1 to 15.1 GPCD and 15 percent exceeded 15.1 GPCD.

Step 4: CII Savings

CII water savings is assumed to be 10 percent of baseline CII water use, which is an average for the baseline period calculated following procedures in Methodology 7 in the Methodologies Report. For the purpose of Target Method 4, CII water use does not include landscape irrigation served by dedicated landscape irrigation meters. CII savings is calculated using Equation 5.

Equation 5

CII Savings, GPCD	=	Average baseline CII Water Use, GPCD	X	0.10

Step 5: Landscape Irrigation and Water Loss Savings

Landscape water use and water loss savings are based on a 21.6 percent reduction in that sector for all suppliers. The 21.6 percent reduction was derived from an analysis of 52 sample water suppliers and was calculated so that the average water use target for the 52 sample suppliers would meet the overall goal of a cumulative 20% percent savings. Landscape water use and water loss use is calculated using Equation 2 and represents irrigation water use, water loss and other unaccounted-for water uses. The savings is calculated using
Equation 6.

Equation 6

Landscape water use and Water Loss Savings, GPCD	=	Landscape Irrigation and Water Loss Sector Use per Eq. 2, GPCD	X	0.216

Step 6: Total Savings

The total savings required using Target Method 4 is calculated using Equation 3, entering results from Steps 2 through 5.

Step 7: 2020 Urban Water Use Target

The 2020 urban water use target in GPCD is calculated using Equation 1.

Example

To illustrate the procedures for the Provisional Target Method 4, calculations for the fictional Whispering Glen Water District are shown below.

Step 1. Baseline Water Use and Midpoint Year

Whispering Glen Water District selected a 10-year baseline period of 1996-2005. The average base daily per capita water use for this period was calculated to be 228 GPCD. The savings are calculated based on water deliveries in the midpoint year of the baseline period, which is 2000.

Step 2. Metering Savings (Equation 4)

$$\text{Metering Savings, GPCD} = \frac{\text{Water Deliveries to Unmetered Connections in Midpoint Baseline Year, gallons} \times 0.20}{\text{Service Area Population in Midpoint Baseline Year} \times 365 \text{ days}} = 8.3 \text{ GPCD}$$

Water Deliveries to Unmetered Connections in Midpoint Baseline Year, gallons	2,541,637,800
Service Area Population in Midpoint Baseline Year	168,118

Step 3. Indoor Residential Savings

Alternative 1, Target Method 4 Calculator:

Total Indoor Residential Savings, GPCD	=	Single-family Toilets Savings, GPCD	+	Multi-family Toilets Savings, GPCD	+	Residential Washers Savings, GPCD	+	Residential Showers Savings, GPCD	=	16.5 GPCD
		7.6		1.6		6.0		1.3		

Alternative 2, Default:

Total Indoor Residential Savings, GPCD	=	15.0 GPCD

Step 4. CII Savings (Equation 5)

CII Savings, GPCD	=	Average baseline CII Water Use, GPCD	X	0.10	=	6.9 GPCD
		69.0				

Step 5. Landscape Irrigation and Water Loss Savings (Equations 2 and 6)

Landscape Irrigation and Water Loss Sector Use, GPCD	=	2000 Base Daily per Capita Water Use	–	Standard Indoor Residential Use, GPCD	–	CII Water Deliveries in Midpoint Baseline Year, GPCD	=	89.0 GPCD
		227.7		70.0		68.7		

Landscape Irrigation and Water Loss Savings, GPCD	=	Landscape Irrigation and Water Loss Sector Use, GPCD	X	0.216	=	19.2 GPCD
		89.0				

Step 6. Total Savings

Because there are two alternative methods to calculate indoor residential savings, there are two alternatives for total savings, calculated using Equation 3.

Alternative 1 (based on Target Method 4 Calculator for Indoor Residential Savings):

Total Savings, GPCD	=	Metering Savings, GPCD	+	Indoor Residential Savings, GPCD	+	CII Savings, GPCD	+	Landscape Irrigation and Water Loss Savings, GPCD	=	50.9 GPCD
		8.3		16.5		6.9		19.2		

Alternative 2 (based on default for Indoor Residential Savings):

Total Savings, GPCD	=	Metering Savings, GPCD	+	Indoor Residential Savings, GPCD	+	CII Savings, GPCD	+	Landscape Irrigation and Water Loss Savings, GPCD	=	49.4 GPCD
		8.3		15.0		6.9		19.2		

Step 7. 2020 Urban Water Use Target (Equation 1)

Alternative 1 (based on Target Method 4 Calculator for Indoor Residential Savings):

Urban Water Use Target, GPCD	=	Base Daily per Capita Water Use, GPCD	–	Total Savings, GPCD	=	176.8 GPCD
		227.7		50.9		

Alternative 2 (based on default for Indoor Residential Savings):

Urban Water Use Target, GPCD	=	Base Daily per Capita Water Use, GPCD	–	Total Savings, GPCD	=	178.3 GPCD
		227.7		49.4		

APPENDIX D

Regulations for Implementing Process Water Provision

California Code of Regulations
Title 23. Waters
Division 2. Department of Water Resources
Chapter 5.1. Water Conservation Act of 2009
Article 1. Industrial Process Water Exclusion in the Calculation of Gross Water Use

§596. Process Water

(a) An urban retail water supplier that has a substantial percentage of industrial water use in its service area is eligible to exclude the process water use of existing industrial water customers from the calculation of its gross water use to avoid a disproportionate burden on another customer sector.

(b) The Department of Water Resources will review and assess the implementation of this article and may amend its provisions upon considering the recommendations of the Commercial, Industrial and Institutional task force convened pursuant to section 10608.43 of the Water Code.

Note: Authority cited: Section 10608.20, Water Code. Reference: Sections 10608.20(e), 10608.24(e), and 10608.43 Water Code.

§596.1. Applicability and Definitions

(a) Sections 596.2 through 596.5 describe criteria and methods whereby an urban retail water supplier may deduct process water use when calculating their gross water use in developing their urban water use targets.

(b) The terms used in this article are defined in this subdivision.

(1) “commercial water user” means a water user that provides or distributes a product or service. Examples include commercial businesses and retail stores, office buildings, restaurants, hotels and motels, laundries, food stores, and car washes.

(2) “disadvantaged community” means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(3) “distribution system” means a water conveyance system that delivers water to a residential, commercial, or industrial customer and for public uses such as fire safety where the source of water is either raw or potable water.

(4) “drought emergency” means a water shortage emergency condition that exists when there would be insufficient water for human consumption, sanitation and fire protection, as set forth in California Water Code Section 350-359 and Government Code Section 8550-8551.

(5) "gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(A) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier

(B) The net volume of water that the urban retail water supplier places into long-term storage

(C) The volume of water the urban retail water supplier conveys for use by another urban water supplier

(D) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24 of the Water Code.

(6) "incidental water use" means water that is used by industry for purposes not related to producing a product or product content or research and development. This includes incidental cooling, air conditioning, heating, landscape irrigation, sanitation, bathrooms, cleaning, food preparation, kitchens, or other water uses not related to the manufacturing of a product or research and development.

(7) "industrial water user" means a manufacturer or processor of materials as defined by the North American Industry Classification System (NAICS) code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development. An industrial water user is primarily involved in product manufacturing and processing activities and research and development of products, such as those related to chemicals, food, beverage bottling, paper and allied products, steel, electronics and computers, metal finishing, petroleum refining, and transportation equipment. Data centers dedicated to research and development are considered an industrial water user.

(8) "institutional water user" means 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.

(9) "local agency" means any municipality, such as a city or county government or public water agency.

(10) "non-industrial water use" means gross water use minus industrial water use.

(11) "process water" means water used by industrial water users for producing a product or product content, or water used for research and development. Process water includes, but is not limited to; the continuous manufacturing processes, water used for testing, cleaning and maintaining equipment. Water used to cool machinery or buildings used in the manufacturing process **or necessary to maintain product quality or chemical characteristics for product manufacturing or control rooms, data centers, laboratories, clean rooms and other industrial facility units that are integral to the manufacturing** or research and development process shall be considered process water. Water used in the manufacturing process that is necessary for complying with local, State and federal health and safety laws, and is not incidental water, shall be considered process water. Process water does not include incidental, commercial or institutional water uses.

(12) "recycled water" means water that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse that meets the following requirements, where applicable:

(A) For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following:

(i) Metered.

(ii) Developed through planned investment by the urban water supplier or a wastewater treatment agency.

(iii) Treated to a minimum tertiary level.

(iv) Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.

(B) For reservoir augmentation, water supplies that meet the criteria of subdivision (A) and are conveyed through a distribution system constructed specifically for recycled water.

(13) "urban retail water supplier" means 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.

(14) "Urban Water Management Plan" means a plan prepared pursuant to California Water Code Division 6 Part 2.6. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

Note: Authority cited: Section 10608.20, Water Code. Reference: Sections 10608.12, 10608.20, and 10631Water Code.

§596.2 Criteria for Excluding Industrial Process Water Use from Gross Water Use Calculation

When calculating its gross water use, an urban retail water supplier may elect to exclude up to 100 percent of process water use from its gross water use if any one of the following criteria is met in its service area:

(a) Total industrial water use is equal to or greater than 12 percent of gross water use, or

(b) Total industrial water use is equal to or greater than 15 gallons per capita per day, or

(c) Non-industrial water use is equal to or less than 120 gallons per capita per day if the water supplier has self-certified the sufficiency of its water conservation program with the Department of Water Resources under the provisions of section 10631.5 of the Water Code, or

(d) The population within the supplier's service area meets the criteria for a disadvantaged community.

Note: Authority cited: Section 10608.20, Water Code. Reference: Sections 10608.20 and 10608.24 Water Code.

§596.3. Quantification and Verification of Total Industrial Process and Industrial Incidental Water.

The volumes of water uses in Section 596.3 shall be for the same period as urban water suppliers calculate their baseline daily per capita water use and reported in their Urban Water Management Plans.

(a) The volume of process water use shall be verified and separated from incidental water use.

(1) To establish a baseline for determining process water use, urban retail water suppliers shall calculate the process water use over a continuous ten year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) Verification of process water can be accomplished by metering, sub-metering or other means determined suitable and verifiable by the urban retail water supplier and reported in their Urban Water Management Plans and reviewed by the Department of Water Resources.

(b) In cases where the urban retail water supplier provides only a portion of an industrial water user's water supply, the urban retail water supplier shall prorate the volume of process water use excluded from gross water use by considering the average share of the industrial water use that it supplied over a continuous ten year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

The verification of the proportion of industrial water use supplied shall be accomplished through metering, sub-metering, or other means determined suitable and verifiable by the urban water supplier such as audits, historic manufacturing output or suppliers' billing records and as reported in their Urban Water Management Plans.

Example. If an urban water supplier delivered only 60 percent of the average annual water used by an industrial water user, the urban supplier can only use that 60 percent of industrial water in determining if it is eligible to exclude process water from its gross water use; and if it is eligible, it can exclude only 60 percent of the volume of process water used by such industrial water user.

Note: Authority cited: Section 10608.20, Water Code. Reference: Sections 10608.20 and 10608.24 Water Code.

§596.4. Existing Industrial Customers

When implementing this article, urban retail water suppliers shall meet the following provisions:

(a) Any ordinance or resolution adopted by an urban retail water supplier after November 10, 2009 shall not require industrial water customers existing as of November 10, 2009 to undertake changes in product formulation, operations, or equipment that would reduce process water use.

(b) An urban retail water supplier may encourage existing industrial customers to utilize water efficiency technologies, methodologies, or practices through the use of financial and technical assistance.

(c) This section shall not limit an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

Note: Authority cited: Section 10608.20, Water Code. Reference: Section 10608.26 Water Code.

§596.5 New and Retrofitted Industries

Local agencies and water suppliers shall encourage newly-established and retrofitted industries to adopt industry-specific water conservation practices and technologies where such technologies exist.

Note: Authority cited: Section 10608.20, Water Code. Reference: Section 10608.20 Water Code.

Section N: Recommended UWMP Data Tables

DWR has developed a series of tables to support inclusion of required data in a UWMP. Use of these tables help confirm that the necessary data are included in the UWMP, provide a mechanism for clear data reporting, and facilitate DWR review of submitted UWMPs. Word files containing blank tables are posted on the UWMP website for water suppliers preparing UWMPs. Blank versions of these tables are also included in this section for reference. Additional discussion of how the tables can be included in a UWMP is included in Part I. Although use of these tables is encouraged, it is not required nor are the tables necessarily sufficient to meet requirements of the UWMP Act. A water supplier can access these tables using DOST or in Word and Excel format at the UWMP website (http://www.owue.water.ca.gov/urbanplan/assist/assist.cfm).

Part II, Section H, contains instructions for electronic submittal.

With the 2010 UWMPs, data may be supplied to DWR in tables within a UWMP, and data may also be electronically transmitted by using the DWR online submittal tool (DOST). DOST is discussed further in Section H: Electronic Submittal.

These tables provide a clear and concise way for an urban water supplier to present UWMP data. If a water supplier prefers an alternate approach to data presentation, the alternate may be used as long as the required information is presented in a clear manner.

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Table 1
Coordination with appropriate agencies

Coordinating Agencies[1,2]	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the draft plan	Was sent a notice of intention to adopt	Not involved / No information
Other water suppliers							
Water mgmt agencies							
Relevant public agencies							
General public							
Other							

[1] *Indicate the specific name of the agency with which coordination or outreach occurred.*
[2] *Check at least one box in each row.*

Table 2
Population — current and projected

	2010	2015	2020	2025	2030	2035 - optional	Data source[2]
Service area population[1]							

[1] *Service area population is defined as the population served by the distribution system. See Technical Methodology 2: Service Area Population (2010 UWMP Guidebook, Section M).*
[2] *Provide the source of the population data provided.*

Table 3
Water deliveries — actual, 2005

	2005				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family					
Multi-family					
Commercial					
Industrial					
Institutional/governmental					
Landscape					
Agriculture					
Other					
Total	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 4
Water deliveries — actual, 2010

	2010				
	Metered		Not metered		Total
Water use sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	Volume
Single family					
Multi-family					
Commercial					
Industrial					
Institutional/governmental					
Landscape					
Agriculture					
Other					
Total	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 5
Water deliveries — projected, 2015

	2015				
	Metered		Not metered		Total
Water use sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	Volume
Single family					
Multi-family					
Commercial					
Industrial					
Institutional/governmental					
Landscape					
Agriculture					
Other					
Total	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 6
Water deliveries — projected, 2020

	2020				
	Metered		Not metered		Total
Water use sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	Volume
Single family					
Multi-family					
Commercial					
Industrial					
Institutional/governmental					
Landscape					
Agriculture					
Other					
Total	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 7
Water deliveries — projected 2025, 2030, and 2035

	2025 metered		2030 metered		2035 - optional metered	
Water use sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family						
Multi-family						
Commercial						
Industrial						
Institutional/governmental						
Landscape						
Agriculture						
Other						
Total	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 8
Low-income projected water demands

Low Income Water Demands[1]		2015	2020	2025	2030	2035 - opt
Single-family residential						
Multi-family residential						
Total		0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Provide demands either as directly estimated values or as a percent of demand.

Table 9
Sales to other water agencies

Water distributed		2005	2010	2015	2020	2025	2030	2035 - opt
Name of agency								
Name of agency								
Name of agency								
Total		0	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 10
Additional water uses and losses

Water use[1]	2005	2010	2015	2020	2025	2030	2035 -opt
Saline barriers							
Groundwater recharge							
Conjunctive use							
Raw water							
Recycled water							
System losses							
Other (define)							
Total	0	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Any water accounted for in Tables 3 through 7 are not included in this table.

Table 11
Total water use

Water Use	2005	2010	2015	2020	2025	2030	2035 - opt
Total water deliveries (from Tables 3 to 7)							
Sales to other water agencies (from Table 9)							
Additional water uses and losses (from Table 10)							
Total	0	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 12
Retail agency demand projections provided to wholesale suppliers

Wholesaler	Contracted Volume[3]	2010	2015	2020	2025	2030	2035 -opt

Table 13
Base period ranges

Base	Parameter	Value	Units
10- to 15-year base period	2008 total water deliveries		*see below*
	2008 total volume of delivered recycled water		*see below*
	2008 recycled water as a percent of total deliveries		percent
	Number of years in base period[1]		years
	Year beginning base period range		
	Year ending base period range[2]		
5-year base period	Number of years in base period	5	years
	Year beginning base period range		
	Year ending base period range[3]		

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first base period is a continuous 10- to 15-year period.

[2] The ending year must be between December 31, 2004 and December 31, 2010.

[2] The ending year must be between December 31, 2007 and December 31, 2010.

Table 14
Base daily per capita water use — 10- to 15-year range

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1				
Year 2				
Year 3				
Year 4				
Year 5				
Year 6				
Year 7				
Year 8				
Year 9				
Year 10				
Year 11				
Year 12				
Year 13				
Year 14				
Year 15				
			Base Daily Per Capita Water Use[1]	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Add the values in the column and divid by the number of rows.

Table 15
Base daily per capita water use — 5-year range

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1				
Year 2				
Year 3				
Year 4				
Year 5				
			Base Daily Per Capita Water Use[1]	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Add the values in the column and divid by the number of rows.

Table 16
Water supplies — current and projected

Water Supply Sources		2010	2015	2020	2025	2030	2035 - opt
Water purchased from[1]:	Wholesaler supplied volume (yes/no)						
Wholesaler 1 (enter agency name)							
Wholesaler 2 (enter agency name)							
Wholesaler 3 (enter agency name)							
Supplier-produced groundwater[2]							
Supplier-produced surface water							
Transfers in							
Exchanges In							
Recycled Water							
Desalinated Water							
Other							
Other							
Total		0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Volumes shown here should be what was purchased in 2010 and what is anticipated to be purchased in the future. If these numbers differ from what is contracted, show the contracted quantities in Table 17.
[2] Volumes shown here should be consistent with Tables 17 and 18.

Table 17
Wholesale supplies — existing and planned sources of water

Wholesale sources[1,2]	Contracted Volume[3]	2015	2020	2025	2030	2035 - opt
(Source 1)						
(Source 2)						
(Source 3)						

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Water volumes presented here should be accounted for in Table 16.
[2] If the water supplier is a wholesaler, indicate all customers (excluding individual retail customers) to which water is sold. If the water supplier is a retailer, indicate each wholesale sup
[3] Indicate the full amount of water

Table 18
Groundwater — volume pumped

Basin name(s)	Metered or Unmetered[1]	2006	2007	2008	2009	2010
Groundwater as a percent of total water supply						

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Indicate whether volume is based on volumeteric meter data or another method

Table 19
Groundwater — volume projected to be pumped

Basin name(s)	2015	2020	2025	2030	2035 - optional
Percent of total water supply					

Units are in acre-feet per year.
Include future planned expansion

Table 20
Transfer and exchange opportunities

Transfer agency	Transfer or exchange	Short term or long term	Proposed Volume
Total			

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 21
Recycled water — wastewater collection and treatment

Type of Wastewater	2005	2010	2015	2020	2025	2030	2035 - opt
Wastewater collected & treated in service area							
Volume that meets recycled water standard							

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 22
Recycled water — non-recycled wastewater disposal

Method of disposal	Treatment Level	2010	2015	2020	2025	2030	2035 - opt
Name of method							
Name of method							
Name of method							
Name of method							
	Total	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 23
Recycled water — potential future use

User type	Description	Feasibility[1]	2015	2020	2025	2030	2035 - opt
Agricultural irrigation							
Landscape irrigation[2]							
Commercial irrigation[3]							
Golf course irrigation							
Wildlife habitat							
Wetlands							
Industrial reuse							
Groundwater recharge							
Seawater barrier							
Getothermal/Energy							
Indirect potable reuse							
Other (user type)							
Other (user type)							
	Total	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Technical and economic feasibility.

[2] Includes parks, schools, cemeteries, churches, residential, or other public facilities)

[3] Includes commercial building use such as landscaping, toilets, HVAC, etc) and commercial uses (car washes, laundries, nurseries, etc)

Table 24
Recycled water — 2005 UWMP use projection compared to 2010 actual

Use type	2010 actual use	2005 Projection for 2010[1]
Agricultural irrigation		
Landscape irrigation[2]		
Commercial irrigation[3]		
Golf course irrigation		
Wildlife habitat		
Wetlands		
Industrial reuse		
Groundwater recharge		
Seawater barrier		
Getothermal/Energy		
Indirect potable reuse		
Other (user type)		
Other (user type)		
Total	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] From the 2005 UWMP. There has been some modification of use types. Data from the 2005 UWMP can be left in the existing catagories or modified to the new catagories, at the discretion of the water supplier.

[2] Includes parks, schools, cemeteries, churches, residential, or other public facilities)

[3] Includes commercial building use such as landscaping, toilets, HVAC, etc) and commercial uses (car washes, laundries, nurseries, etc)

Table 25
Methods to encourage recycled water use

Actions	Projectes Results					
	2010	2015	2020	2025	2030	2035 - opt
Financial incentives						
Name of action						
Name of action						
Total	0	0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 26
Future water supply projects

Project name[1]	Projected start date	Projected completion date	Potential project constraints[2]	Normal-year supply[3]	Single-dry year supply[3]	Multiple-dry year first year supply[3]	Multiple-dry year second year supply[3]	Multiple-dry year third year supply[3]
				0	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Water volumes presented here should be accounted for in Table 16.
[2] Indicate whether project is likely to happen and what constraints, if any, exist for project implementation.
[3] Provide estimated supply benefits, if available.

Table 27
Basis of water year data

Water Year Type	Base Year(s)
Average Water Year	
Single-Dry Water Year	
Multiple-Dry Water Years	

Table 28
Supply reliability — historic conditions

		Multiple Dry Water Years			
Average / Normal Water Year	**Single Dry Water**	**Year 1**	**Year 2**	**Year 3**	**Year 4**
Percent of Average/Normal Year:					

Table 29
Factors resulting in inconsistency of supply

Water supply sources[1]	Specific source name, if any	Limitation quantification	Legal	Environmental	Water quality	Climatic	Additional information

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] From Table 16.

Table 30
Water quality — current and projected water supply impacts

Water source	Description of condition	2010	2015	2020	2025	2030	2035 - opt

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 31
Supply reliability — current water sources

Water supply sources[1]	Average / Normal Water Year Supply[2]	Multiple Dry Water Year Supply[2]		
		Year 2011	Year 2012	Year 2013
Percent of normal year:				

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] From Table 16.
[2] See Table 27 for basis of water type years.

Table 32
Supply and demand comparison — normal year

	2015	2020	2025	2030	2035 - opt
Supply totals (from Table 16)					
Demand totals (From Table 11)					
Difference					
Difference as % of Supply					
Difference as % of Demand					

Units are in acre-feet per year.

Table 33
Supply and demand comparison — single dry year

	2015	2020	2025	2030 - opt	2030
Supply totals[1,2]					
Demand totals[2,3,4]					
Difference					
Difference as % of Supply					
Difference as % of Demand					

Units are in acre-feet per year.
[1] Consider the same sources as in Table 16. If new sources of water are planned, add a column to the table and specify the source, timing, and amount of
[2] Provide in the text of the UWMP text that discusses how single-dry-year water supply volumes were determined.
[3] Consider the same demands as in Table 3. If new water demands are anticipated, add a column to the table and specify the source, timing, and amount of
[4] The urban water target determined in this UWMP will be considered when developing the 2020 water demands included in this table.

Table 34 Supply and demand comparison — multiple dry-year events						
		2015	2020	2025	2030	2035 - opt
Multiple-dry year first year supply	Supply totals[1,2]					
	Demand totals[2,3,4]					
	Difference					
	Difference as % of Supply					
	Difference as % of Demand					
Multiple-dry year second year supply	Supply totals[1,2]					
	Demand totals[2,3,4]					
	Difference					
	Difference as % of Supply					
	Difference as % of Demand					
Multiple-dry year third year supply	Supply totals[1,2]					
	Demand totals[2,3,4]					
	Difference					
	Difference as % of Supply					
	Difference as % of Demand					

Units are in acre-feet per year.

[1] Consider the same sources as in Table 16. If new sources of water are planned, add a column to the table and specify the source, timing, and amount of water.

[2] Provide in the text of the UWMP text that discusses how single-dry-year water supply volumes were determined.

[3] Consider the same demands as in Table 3. If new water demands are anticipated, add a column to the table and specify the source, timing, and amount of water.

[4] The urban water target determined in this UWMP will be considered when developing the 2020 water demands included in this table.

Table 35 Water shortage contingency — rationing stages to address water supply shortages		
Stage No.	Water Supply Conditions	% Shortage

[1] One of the stages of action must be designed to address a 50 percent reduction in water supply.

Table 36 Water shortage contingency — mandatory prohibitions	
Examples of Prohibitions	Stage When
Using potable water for street washing	
Other (name prohibition)	
Other (name prohibition)	
Other (name prohibition)	
Other (name prohibition)	
Other (name prohibition)	
Other (name prohibition)	

Table 37 Water shortage contingency — consumption reduction methods		
Consumption	Stage When	Projected
Name method		
Name method		
Name method		
Name method		
Name method		
Name method		

Table 38 Water shortage contingency — penalties and charges	
Penalties or Charges	Stage When Penalty Takes Effect
Penalty for excess use	
Charge for excess use	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	

Section O: References

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Section P: Glossary

This glossary is included to support the new terms that have been introduced by the Legislature for the 2010 UWMPs. Although most of these definitions are included in either the Urban Water Management Planning (CWC §10611 through 10617) or Water Conservation (CWC §10608.12) Acts, the collection of these definitions into a single location, and the inclusion of additional definitions, is provided to support water suppliers as UWMPs are prepared. Sources for each definition are included in parentheses at the end of the definition.

Agency

City or county governments and public and private water suppliers that provide water for municipal purposes to 3,000 or more customers or provide more than 3,000 acre feet of water per year. (UWMP 2005 Guidebook)

Base daily per capita water use (baseline)

Any of the following:

- The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.
- For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.
- For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010 (CWC §10608.12(b)).

Base period

Any of the following:

- A 10- to 15- year continuous period used to calculate baseline daily per capita water use per Section 10608.20.
- A continuous 5-year period used to determine whether the 2020 urban water use target meets the legislation's minimum water use reduction requirement per Section 10608.22 (modified from DWR 2010a).

Baseline commercial, industrial, and institutional water use

An urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users. (CWC §10608.12(c))

Best management practice (BMP)

A best management practice (BMP) means a policy, program, practice, rule, regulation or ordinance or the use of devices, equipment or facilities which meets either of the following criteria:

An established and generally accepted practice among water suppliers that results in more efficient use or conservation of water;

A practice for which sufficient data are available from existing water conservation projects to indicate that significant conservation or conservation related benefits can be achieved; that the practice is technically and economically reasonable and not environmentally or socially unacceptable; and that the practice is not otherwise unreasonable for most water suppliers to carry out. (CUWCC website - http://www.cuwcc.org/mou/terms-section-1-definitions.aspx)

Climate change

Any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from: natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun; natural processes within the climate system (e.g. changes in ocean circulation); human activities that change the atmosphere's composition (e.g. through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification) (EPA website - http://www.epa.gov/climatechange/basicinfo.html)

Commercial water user

A water user that provides or distributes a product or service. (CWC §10608.12(d))

Compliance daily per capita water use

The gross water use during the final year of the reporting period, reported in gallons per capita per day. (CWC §10608.12(e))

Customer

A purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses. (CWC §10612)

Demand management

Those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies. (CWC §10611.5)

Demand management measures (DMM)

Those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies. (CWC §10611.5)

Demand management measures include, but are not limited to (CWC §10631 (f)(1)):

(A) Water survey programs for single-family residential and multifamily residential customers.
(B) Residential plumbing retrofit.
(C) System water audits, leak detection, and repair.
(D) Metering with commodity rates for all new connections and retrofit of existing connections.
(E) Large landscape conservation programs and incentives.
(F) High-efficiency washing machine rebate programs.
(G) Public information programs.
(H) School education programs.
(I) Conservation programs for commercial, industrial, and institutional accounts.
(J) Wholesale agency programs.
(K) Conservation pricing.
(L) Water conservation coordinator.
(M) Water waste prohibition.
(N) Residential ultra-low-flush toilet replacement programs.

Disadvantaged community

A community with an annual median household income that is less than 80 percent of the statewide annual median household income. (CWC §10608.12(f))

Distribution System

Any combination of pipes, tanks, pumps, etc., which deliver drinking water from a source or treatment facility to the consumer and includes:

a) Disinfection facilities for which no Giardia or virus reduction is required pursuant to §64654(a).
b) The composite of all distribution systems of a public water system. (CWC §63750.50)

Distribution System Boundary

The edge of the network of pipes that conveys water to residential, commercial, industrial, and public user defined by points of metering or measurement of the water supply. Typical measurement locations for distribution include exit points for treatment plants, treated water reservoirs, wells feeding directly into the distribution system, and imported water entering directly into the distribution system. (modified from DWR 2010a)

Efficient use

Those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use. (CWC §10613)

Gross water

The total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.
2) The net volume of water that the urban retail water supplier places into long-term storage.
3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.
4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24. (CWC §10608.12(g))

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. (CWC §10608.12(h))

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. (CWC §10608.12(i))

Interim urban water use target

The midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020. (CWC §10608.12(j))

Integrated Regional Water Management (IRWM)

A collaborative effort to manage all aspects of water resources in a region. IRWM crosses jurisdictional, watershed, and political boundaries; involves multiple agencies, stakeholders, Individuals, and groups; and attempts to address the issues and differing perspectives of all the entities involved through mutually beneficial solutions. .(www.water.ca.gov/irwm/index.cfm)

Locally cost effective

The present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure. (CWC §10608.12(k))

Lower Income

(a) “Lower income households” means persons and families whose income does not exceed the qualifying limits for lower income families as established and amended from time to time pursuant to Section 8 of the United States Housing Act of 1937. The limits shall be published by the department in the California Code of Regulations as soon as possible after adoption by the Secretary of Housing and Urban Development. In the event the federal standards are discontinued, the department shall, by regulation, establish income limits for lower income households for all geographic areas of the state at 80 percent of area median income, adjusted for family size and revised annually.

(b) “Lower income households” includes very low income households, as defined in Section 50105, and extremely low income households, as defined in Section 50106. The addition of this subdivision does not constitute a change in, but is declaratory of, existing law.

(c) As used in this section, “area median income” means the median family income of a geographic area of the state. (Health and Safety Code §50079.5)

Multiple-dry year period

A year in the historical sequence generally considered to be the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903. For example, 1928-1934 and 1987-1992 were the two multi-year periods of lowest average runoff during the 20th century in the Central Valley basin. Suppliers should determine this for each watershed from which they receive supplies. (2010 Guidebook)

Normal Year

A year in the historical sequence that most closely represents median runoff levels and patterns. It is defined as the median runoff over the previous 30 years or more. This median is recalculated every ten years. (2010 Guidebook)

Not locally cost effective

The present value of the local benefits of implementing a BMP is less than the present value of the local costs of implementing that BMP. (CWC §10631.5(a)(4)(B))

Person

Any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity. (CWC §10614)

Plan

An urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses,

reclamation, and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan. (CWC §10615)

Process water

Water used for producing a product or product content or water used for research and development, including, but not limited to, continuous manufacturing processes, water used for testing and maintaining equipment used in producing a product or product content, and water used in combined heat and power facilities used in producing a product or product content. Process water does not mean incidental water uses not related to the production of a product or product content, including, but not limited to, water used for restrooms, landscaping, air conditioning, heating, kitchens, and laundry. (CWC §10608.12(l))

Public agency

Any board, commission, county, city and county, city, regional agency, district, or other public entity. (CWC §10616)

Recycled water

The reclamation and reuse of wastewater for beneficial use that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse, that meets the following requirements, where applicable:

For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following:

1. Metered.
2. Developed through planned investment by the urban water supplier or a wastewater treatment agency.
3. Treated to a minimum tertiary level.
4. Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.

For reservoir augmentation, water supplies that meet the criteria of paragraph (1) and are conveyed through a distribution system constructed specifically for recycled water. (CWC §10608.12(m))

Regional Alliance

Each group of water suppliers agreeing among themselves to plan, comply, and report as a region. (DWR 2010a, pg 50)

Regional water resources management

Sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

- The capture and reuse of stormwater or rainwater.
- The use of recycled water.
- The desalination of brackish groundwater.
- The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin. (CWC §10608.12(n))

Reporting period

The years for which an urban retail water supplier reports compliance with the urban water use targets. (CWC §10608.12(o))

Single-dry year

A year in the historical sequence generally considered to be the lowest annual runoff for a watershed since the water-year beginning in 1903. Suppliers should determine this for each watershed from which they receive supplies. (2010 Guidebook)

Target Method

One of the four series of calculations an urban retail water supplier are to use to determine its urban water use target pursuant to CWC §10608.20(a). The four target methods are:

- Method 1 — 80 percent
- Method 2 — Performance standards
- Method 3 — 95 percent of hydrologic region target
- Method 4 — Water savings

Technical Methodology

The nine approaches developed by DWR to provide guidance to water suppliers on how to calculate baseline, target, and compliance year water use. They provide specific direction on how to calculate the required values and guidance on how different information is to be obtained. The technical methodologies are described in Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (For the Consistent Implementation of the Water Conservation Bill of 2009) (DWR 2010a). (2010 Guidebook)

Urban (retail) water supplier

A supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code. (CWC §10617)

Urban water use target

The urban retail water supplier's targeted future daily per capita water use. (CWC §10608.12(q))

Urban wholesale water supplier

A water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes. (CWC §10608.12(r))