

# Chapter 4

## Baselines and Targets

Since the adoption of the Water Conservation Act of 2009, retail urban water suppliers have been required to determine baseline and target water uses. In the 2015 Plan, water agencies must demonstrate their compliance with their established water use target for the year 2015.

Establishing and meeting these water use targets will stretch an agency's water supplies to meet the challenges of increasing constraints on water supplies and support the goal of reducing California's per capita urban water consumption by 20 percent by the year 2020.

This section of the guidebook provides an overview and clarifying information regarding baselines and targets, as well as the requirements for supporting documentation that must be included for these calculations. The specific methodologies that to are be used for these calculations are detailed in *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use*, DWR 2015.

For water agencies that have calculated their baselines and target s in their 2010 UMWPs, the baseline population must be recalculated in the 2015 UMWPs to reflect the most current census data and these agencies may change their selected Target Method.

This chapter includes the following sections:

- 4.1 Baseline Periods
- 4.2 Service Area Population
- 4.3 Gross Water Use
- 4.4 Baseline Daily per Capita Water Use (GPCD)\*
- 4.5 2015 and 2020 Targets
- 4.6 Compliance with 2015 Target Daily per Capita Water Use (GPCD)
- 4.7 Regional Alliance

POINT OF DISCUSSION – would a Flow Chart be helpful?

**\*GPCD**

“Daily per Capita Water Use” is measured in gallons, therefore, the term commonly used when referring to this is “Gallons per Capita per Day” or “GPCD”. Throughout this chapter the terms may be used interchangeably.

## 4.1 Baseline Periods

In their 2015 UWMPs agencies may change the years they selected for their baseline periods as compared to their 2010 UWMPs. Agencies may choose to make this change based on any changes made to their population calculations (see section 4.2) and ensuing changes to baseline and target GPCD values.

*CWC 10608.20*

*(e) An urban retail water supplier shall include in its urban water management plan . . . the baseline daily per capita water use...along with the bases for determining those estimates, including references to supporting data.*

Water use GPCD must be calculated and reported for two baseline periods, the 10- or 15- year baseline (Baseline) and the 5 year baseline (Target confirmation)

**4.1.1 10-or 15-Year Baseline (“Baseline”)** Water suppliers must define a 10-or 15-year baseline period for water use and calculate the average water use GPCD over that length of time. This is a 10-year or 15-year continuous period ending between December 31, 2004, and December 31, 2010.

*CWC 10608.12*

*(a) (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.*

To decide whether the 10- or 15- year baseline should be used, the water supplier must determine the percentage of recycled water to total water deliveries for the year 2008.

Is the percentage of recycled water to total water deliveries for the year 2008 10 percent or greater?

If yes, water agency may use up to a 15 year baseline period.

If not, water agency must use a 10 year baseline period.

Determine the range of years to be used for calculating the 10 – 15 year baseline GPCD.

**4.1.2 5- Year Baseline for target confirmation** Water suppliers must also calculate water use GPCD for a 5-year baseline period. This will be used to confirm that the selected 2020 target meets the minimum water use reduction requirements in step 4.5.2 - Confirm the 2020 Water Use Target. This is a continuous 5-year period that ends no earlier than December 31, 2007, and no later than December 31, 2010.

**Complete Table 4-1 Base Period Ranges**

<b>Table 4-1 Base period ranges</b>			
<b>Base</b>	<b>Parameter</b>	<b>Value</b>	<b>Units</b>
10- to 15-year base period "Baseline"	2008 total water deliveries		<i>see below</i>
	2008 total volume of delivered recycled water		<i>see below</i>
	2008 recycled water as a percent of total deliveries		percent
	Number of years in base period <sup>1</sup>		years
	Year beginning base period range		
	Year ending base period range <sup>2</sup>		
5-year base period "Target Confirmation"	Number of years in base period	5	years
	Year beginning base period range		
	Year ending base period range <sup>3</sup>		

<sup>1</sup> 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.

<sup>2</sup> The ending year must be between December 31, 2004 and December 31, 2010.

<sup>3</sup> The ending year must be between December 31, 2007 and December 31, 2010.

## 4.2 Service Area Population

*CWC 10608.20*

*(e) An urban retail water supplier shall include in its urban water management plan...the baseline 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.*

*CWC 10644 (a) (2) The plan... shall include any standardized forms, tables, or displays specified by the department.*

In order to correctly calculate annual GPCD, agencies must determine the population that they serve for each of the baseline years and for the 2015 compliance year.

Agencies are encouraged to read Methodology 2: Service Area Population from *Methodologies* for more detailed information on estimating their population.

If an agency did not use 2010 census data for their baseline population calculations in the 2010 UWMP (the full census data set was not available until 2012) these agencies must re-calculate their baseline population for the 2015 UWMPs using 2000 and 2010 census data. This may affect the baseline and target GPCD values calculated in the 2010 UWMP, which must be modified accordingly in the 2015 UWMP.

### 4.2.1 Boundary Map(s)

In order to show the bases for an agency's method of estimating population, a map with the following information must be included with the UWMP:

- Service Area Boundary(ies)
  - Potable water distribution system boundary - The boundary containing the distribution system(s) of the agency's Public Water System(s). Exclude any entity that is completely supplied by a private source or another water supplier.
  - Non-potable water distribution system boundary – The boundary containing the raw water distribution system, as applicable. Note that this does not include any recycled water system. Recycled water is addressed in Chapter 5, System Supplies. Exclude any entity that is completely supplied by a private source or another water supplier.
- Jurisdictional Boundary - This boundary includes the potable and non-potable distribution system boundary(ies) and any additional areas that fall within the water

suppliers jurisdiction . For some suppliers, the jurisdictional boundary will be the same as Service Area boundary.

- Municipal boundaries - The boundary of any City or Census Designated Place that intersects with the service area boundary. This will demonstrate the overlap of the service area with municipal boundaries, as needed for Section 4.2.3.
- Boundary Changes - Any changes that occurred in the Service Area Boundary or the Jurisdictional Boundary during the base period or between the base period and 2015. See Methodology 1, Step 2 in *Methodologies* for details on changes to service area.

An electronic, geospatial shape file (such as in the ArcGIS or KML format) version of the map must be included with the following metadata:

- Map projection
- Contact person, phone, email, and address
- Annexations
- Revision dates
- Constraints
- Attribute table explanation
- Base (e.g. quadrangle, digitizing tablet, etc.)

For agencies that do not have GIS capability, these maps may be developed and downloaded using a free service provided by the Department of Public Health at the website <http://www.ehib.org/wsystemlist.jsp>.

#### 4.2.2 Determine Service Area Population

Retail water suppliers must determine which of these two circumstances apply to them and include a statement in the UWMP describing their circumstance and specifying which data sources were used.

1. The suppliers' service area substantially overlaps (95% overlap or more) with city or Census Designated Place (CDP) boundaries during baseline and compliance years.

These agencies must use Department of Finance data for the city or CDP. (*Link to DOF data*)

2. The suppliers' service area does not substantially overlap (94% or less) with city or CDP boundaries during baseline and compliance years.

- a. **Census years** (2000 and 2010) - US census data at the BLOCK level (the smallest unit of measure) for the service area boundary. *Possible DWR POPULATION TOOL.*
- b. **Non-census years** – Use the Persons-per Connection method, found in Appendix A of the *Methodologies* document (*to be modified by the USC*).

Agencies using this method must include Table 4-2A Persons per Connection (in Appendix X) in their 2015 UWMP.

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**Table 4-2** This table may be modified to reflect changes to Appendix A in the *Methodologies* document.

<b>Table 4-2 Service Area Population</b>	
Method Used to Determine Population	
<input type="checkbox"/>	Dept of Finance
<input type="checkbox"/>	Persons per Connection See Table 4-2A
<input type="checkbox"/>	Other
Year	Population
<b>10 or 15 year Baseline</b>	
Year 1	
Year 2	
Year 3	
Year 4	
Year 5	
Year 6	
Year 7	
Year 8	
Year 9	
Year 10	
<i>Year 11</i>	
<i>Year 12</i>	
<i>Year 13</i>	
<i>Year 14</i>	
<i>Year 15</i>	
<b>5 year Baseline</b>	
Year 1	
Year 2	
Year 3	
Year 4	
Year 5	
<b>2015 Compliance Year</b>	
2015	

If the agency has determined their baseline population using a method that is neither DOF, nor Persons-per-Connection, a description of the method must be included in the UWMP.

### 4.3 Gross Water Use

Water agencies that have calculated baselines and targets in their 2010 UWMPs must recalculate their population using the most current Census data (2010). This may result in changes to the baselines, the selection of baseline years, and targets in the 2015 UWMP.

*CWC 10608.12*

*(g) "Gross Water Use" is 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*

Gross Water Use is a measure of water that enters the distribution system of the supplier, over a 12 month period (may be fiscal or calendar year) with certain allowable adjustments. Gross water use is most accurate when measured at the point that water enters the distribution system. Measuring at this point ensures that all the water, including losses and other non-revenue water (firefighting, line flushing), is accounted for.

Gross water use must be calculated for each baseline year. It will also be calculated for the Compliance Year 2015. See Section xxx below.

#### 4.3.1 Allowable Exclusions and Deductions from the Water Code:

- Recycled Water- All recycled water is to be excluded from gross water use calculations, with one exception, agencies may deduct indirect potable re-use of recycled water from their gross water calculations.
- Indirect Recycled Water Use - The amount of recycled water indirectly entering the distribution system through a surface or groundwater source may be deducted from

gross water. See Methodology 1, Step 8 of Methodologies. If using this deduction, agencies must complete Table 4-3.

- Change in Distribution System Storage - A positive number indicates water that has entered the distribution system, but has not been delivered to customers. A negative number indicates water has been drawn from distribution system storage to meet customer demands. Any changes to the distribution system storage must be accounted for in gross water calculations. See Methodology 1, Step 6 in *Methodologies*.
- Exported Water - Any water sent through the distribution system (potable and/or non-potable) to another water utility or jurisdiction must be deducted from gross water deliveries. See Methodology 1, Step 5 in *Methodologies*.
- Deliveries for Agricultural Use - The water delivered through the distribution system for agricultural water uses may be deducted from gross water calculations. See Method 1, Step 10 in *Methodologies*.

#### 4.3.2 Process Water Deduction (From the California Code of Regulations)

*Title 23 California Code of Regulations*

*§ 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.*

*(c) This regulation supplements "Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use for Consistent Implementation of the Water Conservation Act of 2009" February 2011, and the "Provisional Method 4 for Determining Water Use Targets" February 2011, hereby incorporated by reference.*

Process water is defined as water used by industrial water users for producing a product or product content, or water used for research and development. 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. See Appendix XX of this guidebook for the full text of California Code of Regulations, Title 23 Section 596.

If an agency chooses to exclude process water from its gross water calculations, the following supporting documentation must be included in the UWMP:

- A description of the agency’s eligibility to exclude process water based on the criteria in Section 596.2.
- A narrative demonstrating compliance with Section 596.3.
  - i. A statement that incidental water uses have been excluded from process water use.
  - ii. A description of the method used for measuring or determining the volume of process water that is reported.
  - iii. Statement that the volume of process water excluded by the water agency is proportionate to the supply delivered by the water supplier, as found in Section 596.3 (b).

TABLE 4-4 GROSS WATER USE							
10- 15 year baseline							
Base Year	Volume Into Distribution System	Deductions					Gross Water Use
		Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water Use Table 4-3	Water Delivered for Agricultural Use	Process Water Use	
Year 1							<i>auto calculate</i>
Year 2							<i>auto calculate</i>
Year 3							<i>auto calculate</i>
Year 4							<i>auto calculate</i>
Year 5							<i>auto calculate</i>
Year 6							<i>auto calculate</i>
Year 7							<i>auto calculate</i>
Year 8							<i>auto calculate</i>
Year 9							<i>auto calculate</i>
Year 10							<i>auto calculate</i>
Year 11							<i>auto calculate</i>
Year 12							<i>auto calculate</i>
Year 13							<i>auto calculate</i>
Year 14							<i>auto calculate</i>
Year 15							<i>auto calculate</i>
5 year baseline							
Base Year	Volume Into Distribution System	Deductions					Gross Water Use
		Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water Use Table 4-3	Water Delivered for Agricultural Use	Process Water Use	
Year 1							<i>auto calculate</i>
Year 2							<i>auto calculate</i>
Year 3							<i>auto calculate</i>
Year 4							<i>auto calculate</i>
Year 5							<i>auto calculate</i>

A table may be added that sums up and accounts for meter calibration adjustments to water sources. Peter Brostrom

#### 4.4 Baseline Daily Per Capita Water Use (GPCD)

The final step in baseline calculations is to determine the water used per person in each of the baseline years. This is the “baseline daily per capita water use”. Because this is measured in gallons, it is commonly referred to as “Gallons per Capita per Day” or “GPCD”.

**Tables 4-5 and 4-6** Enter the calendar year, service area population, and annual gross water use for each of the baseline years in Tables 4-5 and 4-6 (*may auto-fill from previous tables*). The tables will calculate the GPCD for each base year and calculate the average annual GPCD for the baseline periods.

**TABLE 4-5, 10-15 Year Baseline**

In Table 4-5, indicate the baseline years, population served, and water supplied for each of the years within the 10- to 15-year range. (*may be auto-filled*)

Table 4-5 10 - 15 Year GPCD			
Base Years	Service Area Population	Gross Water Use	Daily Per Capita Water Use
Year 1	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 2	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 3	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 4	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 5	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 6	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 7	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 8	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 9	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 10	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 11	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 12	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 13	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 14	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 15	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
<b>Average Baseline GPCD</b>			<i>Auto calculate</i>

**TABLE 4-6: 5 Year Baseline for Target Confirmation**

In Table 4-6, indicate the baseline years, population served, and water supplied for each of the years within the 5-year range.

<b>Table 4-6 5 Year GPCD</b>			
<b>Base Years</b>	<b>Service Area Population</b>	<b>Gross Water Use</b>	<b>Daily Per Capita Water Use</b>
Year 1	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 2	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 3	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 4	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
Year 5	<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>
<b>Average Baseline GPCD</b>			<i>Auto calculate</i>

#### 4.5 2015 and 2020 Targets

*CWC 10608.20(e)*

*An urban retail water supplier shall include in its urban water management plan . . . urban water use target, interim urban water use target, . . . along with the bases for determining those estimates, including references to supporting data (10608.20(e)).*

*CWC 10608.20*

*(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan...*

Agencies that adjusted the baselines from their 2010 UWMPs to their 2015 UWMPs may also need to adjust their targets accordingly.

A water supplier may select a different Target Method in its 2015 plan than it selected in its 2010 plan. Once the 2015 plan is submitted, the Target Method may not be changed in any amendments to the 2015 plan or in the 2020 plan.

#### 4.5.1 Select and Apply a Target Method

**Point of discussion - Addressing water agencies who calculate a 2020 target that is HIGHER than their baseline**

The water supplier has four different methods to choose from when determining the 2020 urban water use target. Identify which of these four methods was used to determine the urban water use target. See CWC Section 10608.20(b) in Appendix X and *Methodologies* Document for details.

Target Method 1: 80% of 10- or 15- Year Baseline GPCD CWC 10608.20 (b) (1)

Calculate 80 percent of the base daily per capita water use.

Target Method 2: Performance Standards CWC 10608.20 (b) (2)

The sum of the following three performance standards:

- + Efficient Indoor Residential Use  
*(Methodology 5: Indoor Residential Use)*
- + Landscape Water Use Equivalent to Model Ordinance  
*(Methodology 6: Landscaped Area Water Use)*
- + 10% reduction in CII Water Use from baseline CII use  
*(Methodology 7: Baseline CII Water Use)*

If using Method 2, the agency must include Tables 4-9 and 4-10 from Appendix X in their UWMPs.

Target Method 3: 95% of Hydrologic Regional Target CWC 10608.20 (b) (3)

Identify the hydrologic region where the water district is located. Online tools are available at <http://www.water.ca.gov/urbanwatermanagement/technicalassistance/> to help water suppliers identify their hydrologic region.

If the water supplier's service area is within more than one hydrologic region, then proportionally calculate a 20x2020 target using the proportion that lies within each hydrologic region.

This table denotes the values for the hydrologic regions' targets using Target Method 3.

Hydrologic Region	2020 Plan Regional Targets	Method 3 Regional Targets (95%)
North Coast	<b>137</b>	<b>130</b>
North Lahontan	<b>173</b>	<b>164</b>
Sacramento River	<b>176</b>	<b>167</b>
San Francisco Bay	<b>131</b>	<b>124</b>
San Joaquin River	<b>174</b>	<b>165</b>
Central Coast	<b>123</b>	<b>117</b>
Tulare Lake	<b>188</b>	<b>179</b>
South Lahontan	<b>170</b>	<b>162</b>
South Coast	<b>149</b>	<b>142</b>
Colorado River	<b>211</b>	<b>200</b>

Target Method 4: Savings by Water Sector *DWR Method 4*

DWR was directed in CWC 10608.20 (b) (4) to develop a fourth Target Method to calculate 2020 water use targets. This method identifies water savings obtained through identified practices and subtracts them from the agency’s baseline GPCD.

Agencies that use Target Method 4 must use the procedures described in *Provisional Method 4 for Determining Water Use Targets*, DWR 2011, and include the Method 4 Calculator ([Appendix or online?](#)) in their 2015 UWMPs.

**4.5.2 2020 Target Confirmation**

*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.*

This step verifies that achieving the 2020 water use target will reduce the agency’s water use by a minimum of 5% from the water use for the 5 year baseline.

**Is the 5-year baseline GPCD less than or equal to 100 GPCD?**

**If yes**, the 2020 target developed in step 4.5.1 is the confirmed 2020 target. The urban water supplier is exempt from the required 5 percent minimum reduction to the 2020 target. It must document in 2015 and 2020 UWMPs that it has maintained the 100 GPCD.

**If no**, compare the 2020 target calculated in step 4.2.1 to the highest allowable 2020 target (also known as the “Minimum Water Use Reduction”).

The highest allowable 2020 target is 95% of the 5-Year “Target Confirmation” baseline (from Table 4-6).

**Is the 2020 target greater than or less than the highest allowable 2020 target?**

**If greater than**, the 2020 target is adjusted down to the highest allowable 2020 target. This adjusted target is the confirmed 2020 target.

**If less than or equal to**, no adjustment to the 2020 target is needed. The 2020 target as calculated in step 4.2.1 is the confirmed 2020 target.

Include the value of the confirmed 2020 target in the 2015 UWMP.

**4.5.3 Calculate the 2015 Interim Urban Water Use Target.**

The 2015 target is the value halfway between the 10- or 15 – year baseline GPCD (from Table 4-5) and the confirmed 2020 target.

To determine the 2015 target calculate the average between the 10-or15-year baseline and the 2020 target. Include the value of the 2015 target in the 2015 UWMP.

**4.6 2015 Compliance Daily per Capita Water Use (GPCD)**

## Meeting the 2015 Target

*CWC 10608.12 (e)*

*“Compliance daily per-capita use” means the gross water use during the final year of the reporting period...*

*CWC 10608.20 (a)*

*Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.*

*CWC 10608.20(e)*

*An urban retail water supplier shall include in its urban water management plan . . . compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data (10608.20(e)).*

Water suppliers will calculate their actual 2015 water use to determine whether or not they have met their 2015 target water use and to assess their progress toward meeting their 2020 target water use.

### 4.6.1 Calculate 2015 Actual Gross Water Use

*CWC 10608.24 (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.*

In 2015 (and 2020) there are several allowable adjustments that can be made to an agency's gross water use. These are detailed in Methodology 8: Criteria for Adjustment to Compliance Daily Per capita Water Use.

See Methodology 4: Compliance Daily Per Capita Water Use for 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. Agencies must include a description of any adjustments made as a result of using Methodology 4.

Calculate the gross water use for 2015 by completing Table 4-7.

TABLE 4-7 2015 GROSS WATER USE									
Volume Into Distribution System	Deductions					Adjustments			2015 Gross Water
	Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water Use Table 4-3	Water Delivered for Agricultural Use	Process Water Use	Weather Normalization	Economic Adjustment	Institutional Water Use	

#### 4.6.2 Calculate 2015 GPCD

Calculate the 2015 actual GPCD by completing table 4-8.

Table 4-8 2015 GPCD		
Service Area Population	Gross Water Use	Daily Per Capita Water Use
<i>Auto fill</i>	<i>Auto fill</i>	<i>Auto calculate</i>

#### 4.6.3 Compare 2015 target water use to 2015 actual use.

10608.24. (a) *Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.*

(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.*

***ADD CODE REGARDING ELIGIBILITY FOR GRANTS AND LOANS***

State the results of the comparison and discuss as necessary.

## **4.7 Regional Alliance**

Agencies that are choosing to comply with SBX requirements through a Regional Alliance must report the information from this guidebook chapter in the Regional Alliance Report. See Methodology 9 of *Methodologies*.

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## Appendix for Targets and Baselines

**Table 4-2 A Persons per Connection**

Agencies whose service area does not substantially overlap a city boundary must use the persons-per-connection method and complete Table 4-2A. **May have to be done for 2000 and 2010.**

1. Obtain the number of residential connections for year 2010 (multi- and single family combined). Generally this is available in water agency records.
2. Find “Persons per Residential Connection Year 2010”. Divide the 2010 population by 2010 number of residential connections = Persons per Residential Connection Year 2010.
3. Obtain the Number of Residential Connections for 2013 and 2014. These are generally available in the water agency records.

Table 4-2 A Persons Per Connection Population Method			
Baseline Year	# Residential Connections <i>(multi and single family combined)</i>	Persons per Residential Connection Year 2010	Population for non-census years
			<i>auto calculate</i>
		<i>autofill from line 1</i>	<i>auto calculate</i>
		<i>autofill from line 1</i>	<i>auto calculate</i>
		<i>autofill from line 1</i>	<i>auto calculate</i>
		<i>autofill from line 1</i>	<i>auto calculate</i>
		<i>autofill from line 1</i>	<i>auto calculate</i>
		<i>autofill from line 1</i>	<i>auto calculate</i>
		<i>autofill from line 1</i>	<i>auto calculate</i>
		<i>autofill from line 1</i>	<i>auto calculate</i>
		<i>autofill from line 1</i>	<i>auto calculate</i>

**Table 4-3**

Table 4-3 - Indirect Potable Re-Use															
Surface Reservoir Augmentation															
	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
<b>Surface Reservoir Augmentation</b>															
Volume Discharged from Reservoir for Distribution System Delivery															
Recycled Water Blend															
Recycled Water Delivered to Treatment Plant															
Transmission/Treatment Loss															
Transmission/Treatment Losses															
<b>Volume Entering Distribution System from Surface Reservoir Augmentation</b>															
<b>Groundwater Recharge</b>															
5-Year Annual Average Recharge															
Recharge Recovery Factor															
Recycled Water Pumped from Basin															
Utility Pumping as % of Basin Total															
Recycled Water Pumped by Utility															
Transmission/Treatment Loss															
Transmission/Treatment Losses															
<b>Volume Entering Distribution System from Groundwater Recharge</b>															
<b>Total Deductible Volume of Indirect Potable Re-use Entering the Distribution System</b>															





## PROCESS WATER EXCLUSION

### 1. REQUIRED SUPPORTING DOCUMENTATION

If an agency chooses to exclude process water from its gross water calculations, the following supporting documentation must be included in the UWMP:

- A description of the agency’s eligibility to exclude process water based on the criteria in Section 596.2.
- A narrative demonstrating compliance with Section 596.3.
  - i. A statement that incidental water uses have been excluded from process water use.
  - ii. A description of the method used for measuring or determining the volume of process water that is reported.
  - iii. Statement that the volume of process water excluded by the water agency is proportionate to the supply delivered by the water supplier, as found in Section 596.3 (b).

### 2. REGULATION Title 23 California Code of Regulations

#### § 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.

(c) This regulation supplements “Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use for Consistent Implementation of the Water Conservation Act of 2009” February 2011, and the “Provisional Method 4 for Determining Water Use Targets” February 2011, hereby incorporated by reference.

#### § 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.

#### **§ 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 as a whole within the supplier's service area meets the criteria for a disadvantaged community.

**§ 596.3. Quantification and Verification of Total Industrial Process and Industrial Incidental Water.**

The volumes of water uses in Section 596.2 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 volumes 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.

**§ 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.

**§ 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.