DECLARATION OF PUBLICATION (C.C.P. §2015.5)

COUNTY OF STANISLAUS
STATE OF CALIFORNIA

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of Eighteen years, and not a party to or interested in the above entitled matter. I am a printer and Principal clerk of the publisher of THE MODESTO BEE, printed in the City of MODESTO, County of STANISLAUS, State of California, daily, for which said newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of STANISLAUS, State of California, Under the date of February 25, 1951, Action No. 46453; that the notice of which the annexed is a printed copy, has been published in each issue there of on the following dates, to wit:

Feb 11, 2011

I certify (or declare) under penalty of perjury that the foregoing is true and correct and that this declaration was executed at

MODESTO, California on

February 11th, 2011

(By Electronic Facsimile Signature)
TO: Mayor & City Council

THROUGH: Greg Nyhoff, City Manager

FROM: Nicholas Pinhey, Director of Utility Planning and Projects Department

SUBJECT: Public Hearing – To adopt a Methodology Consumption Calculation determining the per-capita water use targets and the associated per-capita water uses as part of the 2010 Urban Water Management Plan

CONTACT: Nick Pinhey, Director, npinhey@modestogov.com, (209) 577-5205

DESCRIPTION:
Hearing to consider approving a Methodology Consumption Calculation that determines per-capita water use targets and the associated per-capita water uses, as required by the State Water Code, in the 2010 Urban Water Management Plan (2010 UWMP). (Funding Source: Water Fund)

FISCAL IMPACT:
There is no direct fiscal impact by adopting a Methodology Consumption Calculation for determining per-capita water use targets.

BACKGROUND:
Urban Water Management Plans (UWMP) are required to be updated and submitted to the State Department of Water Resources (DWR) every five years under the Urban Water Management Planning Act (UWMPA). On September 14, 2010, the Council, by Resolution No. 2010-404, approved an Agreement with West Yost Associates (West Yost) to develop the 2010 Joint Urban Water Management Plan (2010 UWMP). An UWMP is necessary for water agencies (City/MID) to be eligible for State water management grants or loans.

One of the requirements of the 2010 UWMP is that the City/MID must implement specific Demand Management Measures (DMMs) that will help achieve per-capita water use targets that reflect a 20% reduction in water use by the year 2020, mandated by the State’s Water Conservation Act (Senate Bill X7-7).

In October 2010, the DWR released the Final Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use document describing the methods for determining these targets and three of the four methods allowed for determining the 20% reduction water use target for the year 2020, as well as the Interim 2015 target.
West Yost developed a Technical Memorandum (January 2011) which established the base water usage for Modesto’s water system and compared water use targets for three of the four methodologies as well as targets on the fourth methodology based on draft information available to date. Based on the analysis, it is recommended that Modesto adopt Methodology Target 1 which provides for the required amount of reduction in per-capita water use to meet the Final 2020 and Interim 2015 per-capita water use targets. Base per-capita water usage is calculated from a 10-year running average per DWR requirements.

Modesto’s base per-capita water use has been calculated at 285 gallons per-capita-per-day (gpcd). Method 1 results in a year 2020 water usage target of 228 gpcd (reduction of 20%) and an Interim 2015 water usage target of 256 gpcd (10% reduction). As shown in Table 1 below, Target Methodology 1 is the best choice for Modesto in order to comply with the 2009 Water Conservation Act compared to the other DWR target methodologies.

Table 1: Calculated Water Use Targets for DWR Methodologies

<table>
<thead>
<tr>
<th>Target Method Number</th>
<th>Target Method Description</th>
<th>Base Daily Per Capita Water Use</th>
<th>Interim (2015) Target</th>
<th>Final (2020) Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Uses historical gross water use and service area population to determine a base daily per capita water use. The Urban Water Use Target is 80 percent of this value.</td>
<td>285 gpcd</td>
<td>256 gpcd</td>
<td>228 gpcd</td>
</tr>
<tr>
<td>2</td>
<td>Uses performance standards for indoor and outdoor water use, landscape irrigation use, and commercial, institutional, and industrial (CII) uses.</td>
<td>285 gpcd</td>
<td>230 gpcd</td>
<td>175 gpcd</td>
</tr>
<tr>
<td>3</td>
<td>Uses 95 percent of the applicable state hydrologic region target as defined in the State’s draft 20x2020 Water Conservation Plan issued by DWR in April 2009.</td>
<td>285 gpcd</td>
<td>225 gpcd</td>
<td>165 gpcd</td>
</tr>
<tr>
<td>4*</td>
<td>Not yet Defined. To be evaluated once it is defined by DWR.</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>Minimum Requirement</td>
<td>Based on 95 percent of the 5-year running average per capita water use ending between 2007 and 2010.</td>
<td>278 gpcd</td>
<td>275 gpcd</td>
<td>265 gpcd</td>
</tr>
</tbody>
</table>

* Target Method 4 has not been finalized by DWR; however, preliminary estimates by West Yost based on available draft information suggests this method would unlikely provide more favorable per-capita water usages than Method 1.

As required under Assembly Bill 1420, there are 14 Demand Management Measures (DMMs) accepted by DWR as qualifying conservation programs to achieve the water use targets described by Methodology Target 1 above. These DMMs are to be implemented or planned to be implemented in order to be eligible for State water management grants and loans. Modesto’s current Water Conservation Program fully and partially implements eight of the 14 DMMs. Six of the DMMs are not currently implemented, and one of the six does not apply to Modesto.

Concurrent with development of the 2010 UWMP by West Yost is an effort with RMC to develop a Water Conservation Plan that describes Modesto’s water conservation efforts through each of the established 14 DMMs. The Water Conservation Plan will describe the process to meet all of the goals for the 14 DMMs over the next ten years. The overall intent of the Conservation Plan
is to promote water conservation and maximize real water conservation results in the most effective and economical means available to achieve the mandated 2015 Interim and 2020 Final per-capita water use targets.

A future public comment period and request for Council action scheduled for the end of May 2011 will recommend a resolution to consider the adoption of the full 2010 UWMP, which will also include the City’s Water Conservation Plan.

PUBLIC PARTICIPATION:
A notice of a public hearing to be held by the Council of the City of Modesto on February 22, 2011, was published in the Modesto Bee prior to the public hearing.

COMMITTEE RECOMMENDATION:
This item has not been reviewed by a Council Committee.

CEQA/NEPA REQUIREMENTS:
Urban Water Management Plans are exempt from the CEQA/NEPA requirement.

STRATEGIC PLAN ELEMENT:
The recommended action supports the Utility Planning and Projects Department initiative of having a water system with sufficient capacity and quality for all current needs and future economic growth.

RECOMMENDED COUNCIL ACTION:
Resolution approving a methodology for consumption calculation for determining urban water use target and the associated per-capita water uses, as required by the State Water Code, in the 2010 Urban Water Management Plan.

Approved by:

Jack Bond, Senior Civil Engineer, Capital Planning Section

Nicholas Pinhey, Utility Planning & Projects Director

Greg Nyhoff, City Manager

Attachments:
Resolution
MODESTO CITY COUNCIL
RESOLUTION NO. 2011-063

RESOLUTION APPROVING A METHODOLOGY FOR CONSUMPTION CALCULATION FOR DETERMINING URBAN WATER USE TARGET AND THE ASSOCIATED PER-CAPITA WATER USES, AS REQUIRED BY THE STATE WATER CODE, IN THE 2010 URBAN WATER MANAGEMENT PLAN

WHEREAS, Urban Water Management Plans (UWMP) are required to be updated and submitted to the State Department of Water Resources (DWR) every five years under the Urban Water Management Planning Act (UWMPA), and

WHEREAS, the City of Modesto, by Resolution No. 2010-404, and the Modesto Irrigation District (MID) hired West Yost Associates to develop the 2010 Joint Urban Water Management Plan (2010 UWMP), and

WHEREAS, an UWMP is necessary for water agencies (City/MID) to be eligible for State water management grants and loans, and

WHEREAS, one of the requirements of the UWMP is that the City/MID must implement specific Demand Management Measures (DMMs) that will help achieve per-capita water use targets that reflect a 20% reduction in water use by the year 2020 mandated by the state’s Water Conservation Act (Senate Bill X7-7), and

WHEREAS, in October 2010, the DWR released the Final Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use document describing the methods for determining these targets and three of the four methods allowed for determining the 20% reduction water use target for the year 2020, as well as the interim 2015 target, and
WHEREAS, West Yost developed a Technical Memorandum which established the base water usage for Modesto’s water system and compared water use targets for three of the four methodologies, and

WHEREAS, Modesto’s base per-capita water use has been calculated at 285 per-capita-per-day (gpcd) and it is recommended Modesto adopt Methodology Target 1 which provides for the required amount of reduction in per-capita water use to the meet the Final 2020 (228 gpcd) and Interim 2015 (256 gpcd) per-capita water use targets,

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Modesto that it hereby approves a methodology of consumption calculation for determining urban water use target and the associated per-capita water uses, as required the State Water Code, in the 2010 Urban Water Management Plan.

The foregoing resolution was introduced at a regular meeting of the Council of the City of Modesto held on the 22nd day of February, 2011, by Councilmember Hawn, who moved its adoption, which motion being duly seconded by Councilmember Muratore, was upon roll call carried and the resolution adopted by the following vote:

AYES: Councilmembers: Burnside, Geer, Hawn, Lopez, Marsh, Muratore Mayor Ridenour

NOES: Councilmembers: None

ABSENT: Councilmembers: None

ATTEST: STEPHANIE LOPEZ, City Clerk

(SEAL)

APPROVED AS TO FORM:

By: SUSANA ALCALA WOOD, City Attorney
TECHNICAL MEMORANDUM

DATE: January 20, 2011
PROJECT NO.: 418-02-10-28

TO: Jack Bond, City of Modesto
Jim Alves, City of Modesto

FROM: Gerry Nakano, R.C.E. #29524
Elizabeth Drayer, R.C.E. #46872

SUBJECT: Compliance with the Water Conservation Act of 2009 (Senate Bill x7-7)

BACKGROUND

In November 2009, Senate Bill x7-7 (SBx7-7), The Water Conservation Act of 2009, was signed into law by Governor Arnold Schwarzenegger as part of a comprehensive water legislation package. The Water Conservation Act addresses both urban and agricultural water conservation. The legislation sets a goal of achieving a 20 percent statewide reduction in urban per capita water use by the year 2020 (i.e., “20 by 2020”), and directs urban retail water suppliers to establish an “interim” per capita water use target to be met by 2015 and a “final” per capita water use target to be met by 2020.

The legislation also extended the deadline for the submittal of 2010 Urban Water Management Plans (UWMPs) by urban retail water suppliers from December 31, 2010 to July 1, 2011 to allow for additional time to comply with the SBx7-7 requirements and to incorporate reporting requirements into the 2010 UWMPs. Similar legislation (SB 1478 passed on September 24, 2010) was also passed to extend the 2010 UWMP submittal deadline for urban wholesale water suppliers to permit coordination between urban wholesale water suppliers and urban retail water suppliers.

The Water Conservation Act of 2009 was incorporated into Division 6 of the California Water Code, commencing with Section 10608 of Part 2.55. The methodologies, water use targets, and reporting required by the Water Conservation Act of 2009 apply to urban retail water suppliers that “directly provide potable municipal water to more than 3,000 end users or that supply more than 3,000 acre-feet of potable water annually at retail for municipal purposes.”

The City of Modesto (City) currently serves approximately 76,900 connections1 (as of January 2010) and provided approximately 70,700 acre-feet of potable water to customers in 20092. Therefore, the City is required to comply with the requirements of SBx7-7.

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1 Source: Shibumi Consulting Services, LLC “Connections” November 2010.
INTRODUCTION

This memorandum presents the City of Modesto’s (City’s) proposed compliance with SBx7-7. This memorandum includes the following information:

- City of Modesto water service area
- Assumptions for gross water use and service area population
- Calculation of base daily per capita water use
- Calculation of interim and final targets using the four target methods established by SBx7-7 and DWR
- Recommended interim and final per capita water use targets for the City
- Allowable adjustments to compliance daily per capita water use
- Provisions for future revision of base daily per capita water use and/or target method used
- Public hearing requirements
- Reporting requirements in the City’s 2010 UWMP and subsequent UWMPs
- Consequences of non-compliance with SBx7-7
- References

Calculations of Base Daily Per Capita Water Use, and Interim and Final Per Capita Water Use Targets have been made based on the requirements specified in the SBx7-7 legislation and the California Department of Water Resources (DWR) “Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use” dated October 1, 2010 (referred to as the “DWR Methodologies” in this memorandum).

WATER SERVICE AREA

The City’s water service area consists of one large “contiguous” service area and several “outlying” non-contiguous service areas. The City’s contiguous service area is primarily defined by the current City of Modesto Sphere of Influence (SOI), Salida, North Ceres and some unincorporated Stanislaus County “islands” within or adjacent to the SOI (including Empire, Bret Harte, Shackelford and West Modesto). The outlying service areas include Grayson, Hickman, Del Rio, Waterford, Ceres (Walnut Manor), and portions of Turlock. This service area is largely the result of the City’s 1995 acquisition of the Del Este Water Company. Figure 1 illustrates the location of the City’s contiguous and outlying service areas.
GROSS WATER USE

Gross water use is the annual water supplied to the distribution system adjusted for recycled, wholesale, and agricultural deliveries and is defined in the Water Code as follows:

10608.12 (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.

The City’s gross water use includes purchased treated surface water from the Modesto Regional Water Treatment Plant (MRWTP), owned and operated by the Modesto Irrigation District (MID), and groundwater pumped from 102 operational wells located throughout the City’s service area. In 1996, the City acquired the Del Este Water Company and began serving customers in the former Del Este Water Company service areas. The City’s acquisition of the Del Este Water Company included the acquisition of groundwater production wells in the Del Este Water Company service areas.

DWR Methodology 1 (Gross Water Use) suggests that water volumes should be adjusted for meter errors and that gross water use calculations should be adjusted for changes in distribution system storage, indirect recycled water use and process water use. However, the City’s gross water use has not been adjusted for meter errors as the City’s meters are considered to be appropriately calibrated and any meter errors are considered to be negligible. The City has also not adjusted its gross water use for changes in distribution system storage as the volumes of water stored in the City’s water storage reservoirs and tanks, although they vary from hour to hour based on diurnal demand patterns, are kept at consistent levels throughout the year. Also, no deductions have been taken for indirect recycled water use, water delivered for agricultural use or process water use as these deductions do not apply to the City. The City’s gross water use, presented in the format recommended by the DWR Methodologies, is presented in Table 1.
### Table 1. Urban Retail Water Supplier Gross Water Use Calculation

(DWR Methodologies Table 1)

<table>
<thead>
<tr>
<th>Item</th>
<th>Calculation</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Volume from Own Sources (raw data)</td>
<td>14,908</td>
<td>13,919</td>
<td>14,988</td>
<td>16,067</td>
<td>15,484</td>
<td>15,218</td>
<td>15,178</td>
<td>14,687</td>
<td>13,969</td>
<td>14,744</td>
</tr>
<tr>
<td></td>
<td>Meter error adjustment (+/-)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Subtotal: Corrected Volume from Own Sources</td>
<td>14,908</td>
<td>13,919</td>
<td>14,988</td>
<td>16,067</td>
<td>15,484</td>
<td>15,218</td>
<td>15,178</td>
<td>14,687</td>
<td>13,969</td>
<td>14,744</td>
</tr>
<tr>
<td>2</td>
<td>Volume from Imported Sources (raw data)</td>
<td>11,025</td>
<td>10,985</td>
<td>11,381</td>
<td>11,054</td>
<td>11,512</td>
<td>11,434</td>
<td>10,592</td>
<td>10,918</td>
<td>11,917</td>
<td>10,438</td>
</tr>
<tr>
<td></td>
<td>Meter error adjustment (+/-)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Subtotal: Corrected Volume from Imported Sources</td>
<td>11,025</td>
<td>10,985</td>
<td>11,381</td>
<td>11,054</td>
<td>11,512</td>
<td>11,434</td>
<td>10,592</td>
<td>10,918</td>
<td>11,917</td>
<td>10,438</td>
</tr>
<tr>
<td>3</td>
<td>Total Volume Into Distribution System = Item 1 + Item 2</td>
<td>25,933</td>
<td>24,904</td>
<td>26,369</td>
<td>27,121</td>
<td>26,996</td>
<td>26,652</td>
<td>25,770</td>
<td>25,605</td>
<td>25,886</td>
<td>25,182</td>
</tr>
<tr>
<td>4</td>
<td>Volume Exported to Other Utilities (raw data)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Meter error adjustment (+/-)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Subtotal: Corrected Volume Exported to Other Utilities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Change in Distribution System Storage (+/-)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Gross Water Use Before Indirect Recycled Water Use Deductions = Item 3 - Item 4 - Item 5</td>
<td>25,933</td>
<td>24,904</td>
<td>26,369</td>
<td>27,121</td>
<td>26,996</td>
<td>26,652</td>
<td>25,770</td>
<td>25,605</td>
<td>25,886</td>
<td>25,182</td>
</tr>
<tr>
<td>7</td>
<td>Indirect Recycled Water Use Deduction</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>Gross Water Use After Indirect Recycled Water Use Deductions = Item 6 - Item 7</td>
<td>25,933</td>
<td>24,904</td>
<td>26,369</td>
<td>27,121</td>
<td>26,996</td>
<td>26,652</td>
<td>25,770</td>
<td>25,605</td>
<td>25,886</td>
<td>25,182</td>
</tr>
<tr>
<td>9</td>
<td>Water Delivered for Agricultural Use (optional deduction)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>Process Water Use (optional deduction)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>Gross Water Use After Optional Deductions = Item 8 - Item 9 - Item 10</td>
<td>25,933</td>
<td>24,904</td>
<td>26,369</td>
<td>27,121</td>
<td>26,996</td>
<td>26,652</td>
<td>25,770</td>
<td>25,605</td>
<td>25,886</td>
<td>25,182</td>
</tr>
</tbody>
</table>

**Note:** 1995 production data includes only City of Modesto water production (does not include production in Del Este Water Company service area)
The City’s historical gross water use from 1996 to 2010 in acre-feet per year (af/yr) is summarized in Table 2.

<table>
<thead>
<tr>
<th>Year</th>
<th>Gross Water Use (includes water purchased from MID and groundwater produced by City and former Del Este Water Company wells), af/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>62,462</td>
</tr>
<tr>
<td>1997</td>
<td>70,733</td>
</tr>
<tr>
<td>1998</td>
<td>64,081</td>
</tr>
<tr>
<td>1999</td>
<td>79,590</td>
</tr>
<tr>
<td>2000</td>
<td>76,428</td>
</tr>
<tr>
<td>2001</td>
<td>80,923</td>
</tr>
<tr>
<td>2002</td>
<td>83,231</td>
</tr>
<tr>
<td>2003</td>
<td>82,846</td>
</tr>
<tr>
<td>2004</td>
<td>81,791</td>
</tr>
<tr>
<td>2005</td>
<td>79,086</td>
</tr>
<tr>
<td>2006</td>
<td>78,585</td>
</tr>
<tr>
<td>2007</td>
<td>79,446</td>
</tr>
<tr>
<td>2008</td>
<td>77,286</td>
</tr>
<tr>
<td>2009(a)</td>
<td>70,672</td>
</tr>
<tr>
<td>2010(a)</td>
<td>64,464</td>
</tr>
</tbody>
</table>

(a) 2009 and 2010 gross water use in the City was reduced due to a number of factors including drought conditions and economic conditions.

SERVICE AREA POPULATION

Service area population is used to determine per capita water use and is defined in the Water Code as follows:

(I) 10608.20 (f) When calculating per capita values for the purpose of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

Consistent with DWR Methodology 2 (Service Area Population), the City’s service area population has been estimated using California Department of Finance (DOF) and the United States Census Bureau to the extent that it is available. The City serves a number of areas located outside City limits which are County areas or areas previously served by the Del Este Water Company. Where DOF or Census data were not available for a specific part of the City’s service area, population estimates were based on the number of dwelling units and/or connections served by the City and the estimated number of people per household (based on Census data for the surrounding communities). The City’s historical service area population from 1996 to 2010 is summarized in Table 3. It should be noted that population estimates for the City service prior to 1996 and the acquisition of the Del Este Water Company have not been made for purposes of this SBx7-7 analysis.

3 The City of Modesto acquired the Del Este Water Company in 1996.
## Table 3. City of Modesto Historical Service Area Population

<table>
<thead>
<tr>
<th>Year</th>
<th>City of Modesto</th>
<th>Salida</th>
<th>Empire</th>
<th>Del Rio</th>
<th>Grayson</th>
<th>Hickman</th>
<th>Waterford</th>
<th>Turlock</th>
<th>North Ceres (Bystrom)</th>
<th>Ceres (Walnut Manor)</th>
<th>Total Modesto Service Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>178,467</td>
<td>9,336</td>
<td>3,903</td>
<td>1,168</td>
<td>1,077</td>
<td>457</td>
<td>6,446</td>
<td>1,137</td>
<td>4,518</td>
<td>5,161</td>
<td>223,053</td>
</tr>
<tr>
<td>1997</td>
<td>179,932</td>
<td>10,142</td>
<td>3,903</td>
<td>1,168</td>
<td>1,077</td>
<td>457</td>
<td>6,545</td>
<td>1,137</td>
<td>4,518</td>
<td>5,161</td>
<td>225,423</td>
</tr>
<tr>
<td>1998</td>
<td>181,674</td>
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<td>1,212</td>
<td>514</td>
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<td>4,518</td>
<td>5,161</td>
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</tr>
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<td>14,143</td>
<td>4,395</td>
<td>1,315</td>
<td>1,212</td>
<td>514</td>
<td>8,860</td>
<td>1,137</td>
<td>4,518</td>
<td>5,161</td>
<td>264,174</td>
</tr>
</tbody>
</table>

**Data Sources:**
- California Dept of Finance Report E-4 for City of Modesto (1990 and 2000 data: Census 2007 for City of Modesto)
- 2000 data: Census 2007 data: City-data.com
- 2000 data: Census 2007 data: City-data.com
- 2000 data: Census 2007 data: City-data.com
- 2000 data: Census 2007 data: City-data.com
- California Dept of Finance Report E-4 for City of Waterford
- 2000 data: Census 2007 data: City-data.com
- Per City of Modesto data: 53 Low Density Residential parcels in Walnut Manor (assume 2.9 people per housing unit)
- Assume 2.9 people per du
- 2000 Census data for City of Modesto--people per housing unit

**Notes:**
- Parts of City were served by Del Este prior to 1996
- Served by Del Este prior to 1996
- Served by Del Este prior to 1996
- Served by Del Este prior to 1996
- Served by Del Este prior to 1996
- Served by Del Este prior to 1996
- Served by Del Este prior to 1996
- Served by Del Este prior to 1996
- Served by Del Este prior to 1996
- Served by Del Este prior to 1996
- Served by Del Este prior to 1996
- Served by Del Este prior to 1996
- Served by Del Este prior to 1996

**Service area population for years prior to 1996 are not available as City of Modesto city limits included areas served by the Del Este Water Company. The Del Este Water Company was acquired by the City of Modesto in 1996 and the City of Modesto began providing service to former Del Este Water Company service areas.**
BASE DAILY PER CAPITA WATER USE

The Base Daily Per Capita Water Use is the historical gross water use divided by the service area population and is defined in the Water Code as follows:

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.

(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.

Unless the urban retail water supplier’s 5-year Base Daily Per Capita Water Use per Water Code Section 10608.12(b)(3) is 100 gallons per capita per day (gpcd) or less, Base Daily Per Capita Water Use must be calculated for both baseline periods. Calculation methods are described in DWR Methodology 3 (Base Daily Per Capita Water Use).

5-Year Base Daily Per Capita Water Use Per Water Code Section 10608.22

For purposes of Water Code Section 10608.22, the Base Daily Per Capita Water Use must be calculated using a continuous 5-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

Table 4 shows the calculation of the City’s Base Daily Per Capita Water Use for the 5-year period ending December 31, 2007. As shown, the City’s 5-Year Base Daily Per Capita Water Use is 278 gpcd.

10- or 15-Year Base Daily Per Capita Water Use Per Water Code Section 10608.20

Per Water Code Section 10608.20, the City’s Base Daily Per Capita Water Use is calculated 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.

The City does not currently use recycled water within its service area. As such, the City must use a continuous 10-year period to determine their Base Daily Per Capita Water Use. Table 5 shows the calculation of the City’s Base Daily Per Capita Water Use for the 10-year period ending December 31, 2008. As shown, the City’s 10-Year Base Daily Per Capita Water Use is 285 gpcd.
<table>
<thead>
<tr>
<th>Base Years</th>
<th>Service Area Population</th>
<th>Gross Water Use, gpd</th>
<th>Daily Per Capita Water Use (3) ÷ (2), gpcd</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>253,984</td>
<td>73,955,103</td>
<td>291</td>
</tr>
<tr>
<td>2004</td>
<td>257,562</td>
<td>73,013,324</td>
<td>283</td>
</tr>
<tr>
<td>2005</td>
<td>258,066</td>
<td>70,598,620</td>
<td>274</td>
</tr>
<tr>
<td>2006</td>
<td>258,595</td>
<td>70,151,387</td>
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<tr>
<td>2007</td>
<td>259,916</td>
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</tr>
<tr>
<td><strong>Total of Column (4):</strong></td>
<td><strong>1,392</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Divide Total by 5:</strong></td>
<td><strong>278</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base Years</td>
<td>Service Area Population</td>
<td>Gross Water Use, gpd</td>
<td>Daily Per Capita Water Use (3) ÷ (2), gpcd</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------</td>
<td>----------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>1999</td>
<td>231,424</td>
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<td>242,420</td>
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<td>2002</td>
<td>248,704</td>
<td>74,298,786</td>
<td>299</td>
</tr>
<tr>
<td>2003</td>
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<td>2004</td>
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<td>73,013,324</td>
<td>283</td>
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<tr>
<td>2005</td>
<td>258,066</td>
<td>70,598,620</td>
<td>274</td>
</tr>
<tr>
<td>2006</td>
<td>258,595</td>
<td>70,151,387</td>
<td>271</td>
</tr>
<tr>
<td>2007</td>
<td>259,916</td>
<td>70,919,986</td>
<td>273</td>
</tr>
<tr>
<td>2008</td>
<td>260,850</td>
<td>68,991,794</td>
<td>264</td>
</tr>
</tbody>
</table>

Total of Column (4): 2,850
Divide Total by 10: 285

Note: In 1996, the City of Modesto acquired the Del Este Water Company and began providing service to former Del Este Water Company service areas.

Overview of DWR Methods

The City must set an interim (2015) water use target and a final (2020) water use target using one of four methods defined by SBx7-7 and DWR. Three of these methods are defined in Water Code Section 10608.20(a)(1), with the fourth to be 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: 80 percent of the City’s base daily 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 commercial, industrial, and institutional uses
- Method 3: 95 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 to be developed by DWR and reported to the Legislature by December 2010

As described below, the target may need to be adjusted further to achieve a minimum reduction in water use regardless of the target method.

Target Method 1

SBx7-7 legislation, Water Code Section 10608.20 (b) (1), defines Method 1 as:

_Eighty percent of the urban retail water supplier’s baseline per capita daily water use._

Urban water use targets calculated using Method 1 rely on the historical gross water use and service area population to determine a base daily per capita water use. The definitions and methodologies used for Method 1, as defined in the legislation and in the DWR Methodologies, are detailed below.

Target Method 1 is based on a 20 percent reduction from the City’s 10-year Base Daily Per Capita Water Use. The Interim (2015) target is based on 90 percent of the Base Daily Per Capita Water Use and the Final (2020) target is based on 80 percent of the Base Daily Per Capita Water Use.

As calculated above, the City’s Base Daily Per Capita Water Use for the 10-year period ending December 31, 2008 is 285 gpcd (see Table 5). Therefore, the City’s interim (2015) target per Target Method 1 is 256 gpcd (90 percent of 285 gpcd), and the City’s final (2020) target per Target Method 1 is 228 gpcd (80 percent of 285 gpcd).

The City’s targets using Target Method 1 are summarized as follows:

- Interim (2015) Target = 256 gpcd
- Final (2020) Target = 228 gpcd
Target Method 2

SBx7-7 legislation, Water Code Section 10608.20 (b) (2), defines Method 2 as:

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, institutional water use by 2020.

Residential Indoor Water Use

Per DWR Methodology 5 (Indoor Residential Use), the residential indoor urban water use target is set at 55 gpcd. The legislation requires that DWR assess whether this is a reasonable assumption in a report due in 2016. Depending on the findings, the residential indoor urban water use target may be adjusted after 2016.

Landscape Irrigation Water Use

The landscaped area urban water use target relies on the state-adopted Model Water Efficient Landscape Ordinance for definitions and calculations. The 2020 landscaped area for the service area must be estimated and then the Maximum Applied Water Allowance (MAWA) calculated from the Model Water Efficient Landscape Ordinance. Two different MAWA equations are specified in the DWR Methodologies. For landscapes installed prior to January 1, 2010, the MAWA equation as defined in the 1992 version of the Model Water Efficient Landscape Ordinance is to be used. For landscapes installed after January 1, 2010, the MAWA equation as defined in the 2009 version of the Model Water Efficient Landscape Ordinance is to be used.

Per the DWR Methodology 6 (Landscaped Area Water Use), a rigorous application of this method requires a data-intensive analysis using GIS, coupled with site visits, to estimate to 2020 landscape areas. Such an analysis has not been performed for this evaluation. Instead, rough estimates of existing and projected future landscaped areas have been used to determine if the Method 2 targets are comparable to targets obtained using alternative methods.

The equation used to calculate the MAWA on landscaped areas constructed prior to January 1, 2010 is as follows:

\[
\text{Maximum Applied Water Allowance (MAWA)} = (ETo) \times 0.62 \times 0.8 \times LA
\]

Where,

MAWA is in gallons per year
ETo = 50.2 inches/year for the City of Turlock (closest city to Modesto with a published ETo value). Reference evapotranspiration (inches per year), which is “a standard measurement of environmental parameters which affect the water use of plants” (reference: Appendix A of the Model Water Efficient Landscape Ordinance)

0.62 = Conservation Factor (from inches/year to gallons/sf/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 (sf), which includes “all the planting areas, turf areas, and water features in a landscape design plan subject to the MAWA calculation” (for SBx7-7 compliance, only irrigated landscape area should be included)

The City has estimated the Landscaped Area (LA) installed prior to January 1, 2010 based on the following assumptions:

- Residential landscaped areas have been estimated to be 3,000 square feet per connection (actual landscaped areas have not been measured)
- “Dedicated meter” landscaped areas have been estimated based on actual irrigation water use and assuming a unit water use factor of 3.5 af/ac/yr to back-calculate the landscaped area (actual landscaped areas have not been measured)

Based on these assumptions, the pre-2010 Landscaped Area is approximately 233 million square feet (about 5,400 acres), and the calculated MAWA is 5.8 billion gallons per year. Based on the City’s projected 2020 service area population, the MAWA for the pre-2010 landscaped area equates to 50 gpcd.

A second equation is used to determine the MAWA on landscaped areas constructed after January 1, 2010. It is as follows:

\[
\text{Maximum Applied Water Allowance (MAWA)} = (\text{ETo}) (0.62) \left[ (0.7 \times \text{LA}) + (0.3 \times \text{SLA}) \right]
\]

Where definitions for factors not provided above are:

- 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
- 0.3 = Additional Water Allowance for Special Landscape Area (SLA), resulting in an effective ETAF for SLA of 1.0
- SLA = Special Landscaped Area (sf), 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”
The City has estimated the Landscaped Area (LA) and Special Landscaped Area (SLA) to be constructed after January 1, 2010 based on the following assumptions:

- Residential landscaped areas in 2020 have been estimated to be 3,000 square feet per connection (projected landscaped areas have not been measured) times the number of new single-family connections projected between 2010 and 2020.
- “Dedicated meter” landscaped areas in 2020 have been estimated based on projected incremental irrigation water use in 2020 and assuming a unit water use factor of 3.5 af/ac/yr to back-calculate the incremental landscaped area (projected landscaped areas have not been measured).

Based on these assumptions, the post-2010 Landscaped Area (LA) is 131 million square feet (about 3,000 acres) and the post-2010 Special Landscaped Area (SLA) is 0 square feet, and the calculated MAWA is 2.9 billion gallons per year. Based on the City’s projected 2020 service area population, the MAWA for the post-2010 landscaped area equates to 25 gpcd.

The total MAWA for the 2020 landscapes therefore equates to 75 gpcd (50 gpcd + 25 gpcd).

**Commercial, Industrial and Institutional Water Use**

Per DWR Methodology 7 (Baseline Commercial, Industrial and Institutional Water Use), the commercial, industrial and institutional (CII) urban water use target is based on a 10 percent reduction in water use from the baseline CII water use by 2020. The calculation of the baseline CII water use is performed in the same way that the 10-year Base Daily Per Capita Water Use is calculated and is shown on Table 6. As shown, the baseline CII water use for the 10-year period ending in 2009 is 50 gpcd. The CII water use target is then a 10 percent reduction from this baseline water use and equals 45 gpcd.

The resulting final (2020) target for Method 2 is then the sum of the residential indoor water use target (55 gpcd), the landscaped area urban water use target for pre- and post-landscaped areas (50 gpcd + 25 gpcd = 75 gpcd) and the CII urban water use target (45 gpcd), or 175 gpcd. The interim (2015) target is the midpoint between the City’s 10-Year Base Daily Per Capita Water Use (285 gpcd) and the final (2020) target as calculated by Method 2 (175 gpcd), or 230 gpcd.

The City’s targets using Target Method 2 are summarized as follows:

- Interim (2015) Target = 230 gpcd
- Final (2020) Target = 175 gpcd
### Table 6. Baseline Commercial, Industrial and Institutional (CII) Water Use

<table>
<thead>
<tr>
<th>Base Years</th>
<th>Service Area Population</th>
<th>Commercial Water Use (million gallons)</th>
<th>Industrial Water Use (million gallons)</th>
<th>Institutional Water Use (million gallons)</th>
<th>Total CII Water Use (million gallons)</th>
<th>CII Daily Per Capita Water Use (gpcd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>236,080</td>
<td>2,661</td>
<td>1,528</td>
<td>266</td>
<td>4,455</td>
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</tr>
<tr>
<td>2001</td>
<td>242,420</td>
<td>2,723</td>
<td>1,341</td>
<td>302</td>
<td>4,366</td>
<td>49</td>
</tr>
<tr>
<td>2002</td>
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</tr>
<tr>
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<td>449</td>
<td>4,649</td>
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<td>2,801</td>
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<td>4,519</td>
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<td>258,066</td>
<td>2,789</td>
<td>1,192</td>
<td>817</td>
<td>4,798</td>
<td>51</td>
</tr>
<tr>
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<td>2,668</td>
<td>1,212</td>
<td>835</td>
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<td>2,690</td>
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<tr>
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<td>50</td>
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<tr>
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<td>2,554</td>
<td>1,128</td>
<td>801</td>
<td>4,483</td>
<td>47</td>
</tr>
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</table>

**Total of Column (7):** 500  
**Divide Total by 10:** 50

Note: Billed water consumption data for years prior to 1999 not available per Shibumi Consulting Services, LLC (November 2010)
Target Method 3

SBx7-7 legislation, Water Code Section 10608.20 (b) (3), defines Method 3 as:

>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.

Method 3 is based solely on the hydrologic region targets that have been established in the draft 20x2020 Water Conservation Plan dated April 30, 2009.

DWR has defined ten hydrologic regions for water resources planning purposes (see Figure 2). The City of Modesto is located in the San Joaquin Hydrologic Region (Region No. 6).

The baseline, interim and final targets established in the 20x2020 Water Conservation Plan are summarized in Table 7.

Table 7 also shows 95 percent of the final (2020) hydrologic region targets, which are the required 2020 targets for SBx7-7 Target Method 3. For the City, the 2020 target is 165 gpcd (95 percent of the Region No. 6 target).

The Method 3 interim target is calculated based on the midpoint between the City’s 10-year Base Daily Per Capita Water Use (285 gpcd) and the Method 3 2020 Target (165 gpcd) and equals 225 gpcd.

The City’s targets using Target Method 3 are summarized as follows:

- Interim (2015) Target = 225 gpcd
- Final (2020) Target = 165 gpcd

---

A final version of the 20x2020 Water Conservation Plan was published in February 2010.
### Table 7. California Hydrologic Region Per Capita Water Use Targets

<table>
<thead>
<tr>
<th>DWR Hydrologic Region Number and Name</th>
<th>Region 1</th>
<th>Region 2</th>
<th>Region 3</th>
<th>Region 4</th>
<th>Region 5</th>
<th>Region 6</th>
<th>Region 7</th>
<th>Region 8</th>
<th>Region 9</th>
<th>Region 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Coast</td>
<td>165</td>
<td>157</td>
<td>154</td>
<td>180</td>
<td>253</td>
<td>248</td>
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<tr>
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<td>144</td>
<td>139</td>
<td>165</td>
<td>215</td>
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<td>237</td>
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<tr>
<td>Central Coast</td>
<td>137</td>
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<td>123</td>
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<tr>
<td>South Coast</td>
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<tr>
<td>Sacto River</td>
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<td>Tulare Lake</td>
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<tr>
<td>North Lahontan</td>
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<td></td>
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<tr>
<td>South Lahontan</td>
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#### 20x2020 Water Conservation Plan Targets

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<tr>
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<th>Region 1</th>
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<th>Region 3</th>
<th>Region 4</th>
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<th>Region 6</th>
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<tr>
<td>(1995-2005), gpcd</td>
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<td>(2015) Targets, gpcd</td>
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<tr>
<td>(2020) Targets, gpcd</td>
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#### SBx7-7 Targets

<table>
<thead>
<tr>
<th></th>
<th>Region 1</th>
<th>Region 2</th>
<th>Region 3</th>
<th>Region 4</th>
<th>Region 5</th>
<th>Region 6</th>
<th>Region 7</th>
<th>Region 8</th>
<th>Region 9</th>
<th>Region 10</th>
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</thead>
<tbody>
<tr>
<td>95% of Final</td>
<td>130</td>
<td>124</td>
<td>117</td>
<td>142</td>
<td>167</td>
<td>165</td>
<td>179</td>
<td>164</td>
<td>162</td>
<td>200</td>
</tr>
<tr>
<td>(2020) Targets, gpcd</td>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>

Note: The City of Modesto is located in Region 6 (San Joaquin).

The Interim (2015) SBx7-7 target is the midpoint of the agency’s 10-year Base Daily Per Capita Water Use and the SBx7-7 2020 Target shown above.
Target Method 4

SBx7-7 legislation, Water Code Section 10608.16 (j), requires Method 4 be reviewed once the methodology has been developed by DWR:

10608.16 (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.

Target Method 4 is still being developed by DWR and is currently anticipated to be released by DWR in late January or early February 2011. It is West Yost’s understanding that two alternative methodologies are being considered for Target Method 4 (one involves a further refinement of methods similar to those used in Target Method 2 and the other involves reductions in per capita water use as a result of the implementation of Best Management Practices).

Based on our current understanding of potential Target Method 4 methodologies, West Yost believes that it is very unlikely that Target Method 4 would provide a more favorable result for the City than Methods 1, 2 or 3. Therefore, to allow for the timely preparation of the City/MID 2010 UWMP and to meet the July 1, 2011 submittal deadline to DWR, West Yost recommends that the City proceed with the adoption of a SBx7-7 target and preparation of the 2010 UWMP based on the results of Methods 1, 2 and 3. If warranted, the City can re-evaluate the SBx7-7 methods when preparing the 2015 UWMP.

Minimum Water Use Reduction Requirement

Water Code Section 10608.22 specifies the minimum water use reduction requirement as follows:

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.

The calculation of the minimum water use reduction requirement includes the following three steps:

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 described above, the City’s Base Daily Per Capita Water Use for the five-year period ending December 31, 2007 was 278 gpcd (see Table 4). Therefore, per Water Code Section 10608.22, the 2020 per capita water use target cannot exceed 95 percent of 278 gpcd, or 265 gpcd. The Interim (2015) target is then set at the midpoint between the City’s 10-year Base Daily Per Capita Water Use (285 gpcd) (see Table 5) and 265 gpcd, which equals 275 gpcd.

The City’s targets using the required minimum reduction are summarized as follows:

- Interim (2015) Target = 275 gpcd
- Final (2020) Target = 265 gpcd

**Recommended Target Method and Resulting Targets for the City of Modesto**

Table 8 summarizes the methods for calculating base daily water use and the interim and final target daily water use in gallons per capita per day (gpcd).

Based on the results for the four target methods, Target Method 1 results in the highest allowable SBx7-7 gpcd, and therefore is the most favorable. These targets are graphically shown on Figure 3.
## Table 8. Summary of SBx7-7 Methodologies for Determining Urban Water Use Targets

<table>
<thead>
<tr>
<th>Target Method Number</th>
<th>Target Method Description</th>
<th>Base Daily Per Capita Water Use</th>
<th>Interim (2015) Target</th>
<th>Final (2020) Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Uses historical gross water use and service area population to determine a base daily per capita water use. The Urban Water Use Target is 80 percent of this value. Based on 10-year running average per capita water use ending between 2004 and 2010. Gross water use is that total water supplied to the system less recycled, wholesale or agricultural deliveries.</td>
<td>285 gpcd</td>
<td>256 gpcd</td>
<td>228 gpcd</td>
</tr>
<tr>
<td>2</td>
<td>Uses performance standards for indoor water use, landscape irrigation use and commercial, institutional and industrial (CII) uses. Residential water use = 55 gpcd</td>
<td>285 gpcd (a)</td>
<td>230 gpcd</td>
<td>175 gpcd</td>
</tr>
<tr>
<td>3</td>
<td>Uses 95 percent of the applicable state hydrologic region target as defined in the state’s draft 20x2020 Water Conservation Plan issued by DWR in April 2009. City of Modesto is located in state hydrologic region number 6 (San Joaquin Region)</td>
<td>285 gpcd (b)</td>
<td>225 gpcd</td>
<td>165 gpcd</td>
</tr>
<tr>
<td>4</td>
<td>Not yet defined. To be evaluated once it is defined by DWR.</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>Minimum Requirement</td>
<td>Based on 95 percent of the 5-year running average per capita water use ending between 2007 and 2010.</td>
<td>278 gpcd</td>
<td>275 gpcd</td>
<td>265 gpcd</td>
</tr>
</tbody>
</table>

(a) The baseline for this method is the same as Method 1 and is used to establish the interim target.
(b) Rigorous application of this method requires a data-intensive analysis using GIS, coupled with site visits to estimate appropriate irrigation areas. For preliminary screening purposes to evaluate use of the method, landscaped areas were estimated by West Yost based on historical irrigation water use and average water use factors (see additional discussion under Target Method 2).

Therefore, the City should adopt the following SBx7-7 per capita water use targets based on Target Method 1:

- Interim (2015) Target = 256 gpcd
- Final (2020) Target = 228 gpcd

The City’s compliance with these targets in 2015 and 2020 shall be determined in accordance with DWR Methodology 4 (Compliance Daily Per Capita Water Use) based on gross water use and service area population in the compliance years (2015 and 2020).
Figure 3. Summary of SBX7-7 Targets for the City of Modesto

- 10-year Base Daily Per Capita Water Use (Based on 10-year average ending in 2008)
- 5-year Base Daily Per Capita Water Use (Based on 5-year average ending in 2007)
- Minimum Reduction Interim (2015) Target
- Minimum Reduction Final (2020) Target
- Interim (2015) Target
- Final (2020) Target

Per Capita Water Use, gpcd

- Base Daily Per Capita Water Use
- Minimum Reduction from Base Daily Per Capita Water Use
- Method 1 Targets
- Method 2 Targets
- Method 3 Targets
- Method 4 Targets

Minimum Reduction Interim (2015) Target
Minimum Reduction Final (2020) Target
Interim (2015) Target
Final (2020) Target
Interim (2015) Target
Final (2020) Target

???
To be determined
ADJUSTMENTS TO COMPLIANCE DAILY PER CAPITA WATER USE

Water Code Section 10608.24(d) provides for adjustments when determining the compliance daily per capita water use. It states that an urban retail water supplier may consider the following factors:

- Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.
- Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.
- 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.

As described in DWR Methodology 8 (Criteria for Adjustments to Compliance Daily Per Capita Water Use), 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 above, it shall provide the basis for, and data supporting, the adjustment.

FUTURE REVISION OF METHODS AND/OR TARGETS

The City may revise its calculated Base Daily Per Capita Water Use after submitting its 2010 UWMP if better information becomes available. The revisions may be included in the City’s 2015 and subsequent plans or may be submitted in an amended 2010 UWMP, provided it follows the process required for amendments to UMWP. It should be noted that if the revisions to the Base Daily Per Capita Water Use change the water use target, the water use target must be revised as well.

In addition, the City may change the method it uses to set its water use target, and report the method change and target revision in an amended 2010 UWMP or in its 2015 UWMP. Target method changes are not permitted in the 2020 UWMP or amended 2015 UWMPs.

PUBLIC HEARING REQUIREMENTS

To comply with Water Code Section 10608.26, the City shall conduct at least one public hearing to discuss and adopt the water use target method and resulting water use targets for 2015 and 2020. The following issues must be addressed during the public hearing:

- Allow community input regarding the urban retail water supplier’s implementation plan for complying with SBx7-7;
- Consider the economic impacts of the urban retail water supplier’s implementation plan for complying with SBx7-7; and
- Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.
The Water Code has no other specific requirements for this public hearing. The City may choose to hold a specific public hearing for this purpose only, or may choose to combine this public hearing with the public hearing required for the preparation of the City’s 2010 UWMP (per Water Code Section 10642).

REPORTING REQUIREMENTS

The City must report on their SBx7-7 compliance in their upcoming UWMPs. Table 9 provides an outline of the specific reporting requirements for the City’s 2010, 2015, and 2020 UWMPs.

<table>
<thead>
<tr>
<th>Reporting Element</th>
<th>2010 UWMP</th>
<th>2015 UWMP</th>
<th>2020 UWMP</th>
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<tbody>
<tr>
<td>Baseline Gross Water Use and Service Area Population</td>
<td>✓</td>
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<tr>
<td>2020 Urban Water Use Target</td>
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<td>✓</td>
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<tr>
<td>Interim 2015 Urban Water Use Target</td>
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<tr>
<td>Compliance Year Gross Water Use</td>
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<td>✓</td>
</tr>
<tr>
<td>Service Area Population</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Adjustments to Gross Water Use in the Compliance Year</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Water Suppliers who choose Target Method 2 must provide Landscaped Area Water Use and Baseline CII Water Use data</td>
<td>✓</td>
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<tr>
<td>Water suppliers who choose Target Method 4 must provide the components of calculation as required by Target Method 4</td>
<td>✓</td>
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</table>

The City will incorporate these reporting requirements into their 2010, 2015 and 2020 UWMPs.

CONSEQUENCES OF NON-COMPLIANCE WITH SBX7-7

The City must comply with the SBx7-7 requirements by establishing 2015 interim and 2020 final 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 2010, 2015 and 2020 UWMPs.

Water Code 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.

- Water Code 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.”

- Water Code 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.”

REFERENCES


- Senate Bill 1478, approved by Governor Arnold Schwarzenegger on September 24, 2010.

- Water Conservation Act of 2009 (Senate Bill x7-7), approved by Governor Arnold Schwarzenegger on November 10, 2009.