



CITY OF
FOLSOM
DISTINCTIVE BY NATURE

CITY OF FOLSOM

2010 Urban Water Management Plan



Adopted June 14, 2011

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LIST OF ATTACHMENTS

Attachment A	Copy of Coordination Letter sent to local agencies
Attachment B	City of Folsom Resolution No. 8857
Attachment C	City of Folsom Public Hearing Notice for 2010 UWMP
Attachment D	City of Folsom 2009 Consumer Confidence Report
Attachment E	City of Folsom Ordinance 1118
Attachment F	Folsom Municipal Code Section 13.26

Section 1. Plan Preparation

1.1 Urban Water Management Planning Act

The City of Folsom (City) is submitting its 2010 Urban Water Management Plan (UWMP) to the California Department of Water Resources (DWR) as an update to the 2005 UWMP, adopted on March 28, 2006 pursuant to Resolution No. 7753. This update documents the City's water management plans through the year 2035.¹

California Water Code (CWC) Section 10620(a) requires an urban water supplier to prepare and adopt a UWMP consistent with section 10640. All urban water suppliers, either publicly or privately owned, serving municipal water to 3,000 customers or supplying more than 3,000 acre-feet annually are required to prepare an UWMP. The UWMP is required for an urban water supplier to be eligible for DWR state grants and loans as well as drought assistance.

Consistent with the requirements of CWC § 10610, the City's UWMP contains an assessment of current and projected supplies, an evaluation of the reliability of these supplies given a range of hydrologic conditions, an assessment of demands by customer type, and an explanation of water management strategies designed to integrate supply and demand conditions.

The purpose of this UWMP is to document the City's water supply planning strategies for the existing water service jurisdiction. This UWMP includes water planning elements related to the City's South of US 50 Specific Plan Project (Folsom SPA) and the Easton Project (Easton Place and Glenborough at Easton). Each of these proposed developments qualifies as a "project" under CWC § 10912 because each is proposed to serve more than 500 units. Pursuant to Senate Bill 610, a Water Supply Assessment (WSA) was developed for each proposed development.

In addition to the California Water Code, the City addresses the Water Conservation Bill of 2009 (SBX7-7) within the 2010 UWMP. In an effort to increase water efficiency, SBX7-7 requires urban water suppliers to reduce the statewide average per capita water consumption by 20 percent by December 31, 2020. As the City completes the development of a comprehensive water management strategy the City will review and adopt changes to this plan, pursuant to sections 10640 through 10645.

1.2 Public Participation

The City has notified potentially interested water suppliers, local governments, and other planning agencies in the Sacramento, El Dorado, and Placer County area that it is

¹ The Urban Water Management Planning Act requires a 20-year planning horizon but this document has extended that horizon by 5 years (25-year horizon) for long-term planning purposes.

preparing an UWMP. Agencies listed in **Table 1-1** were identified for notification because information contained in the UWMP may need to be coordinated with the notified agency, or it is important that the agency know the City is undertaking the water management planning activities specified in the UWMP. The City mailed notification letters to the agencies listed in **Table 1-1** on March 30, 2011. See **Attachment A** for a copy of the letter sent to the agencies listed in **Table 1-1**.

Consistent with section 10642, the City made a draft of the 2010 UWMP available to the public for review and comment beginning on May 25, 2011. The City conducted a Public Hearing on June 14, 2011 and written comments were received through June 14, 2011. See **Attachment C** for the City’s published notice of Public Hearing for the City Council adoption of the 2010 Urban Water Management Plan. This Plan has been modified where appropriate, to incorporate comments received from the public, interested organizations and other agencies.

Table 1-1. Coordination with Appropriate Agencies

Agency	Received Draft	Commented on Draft	Participated in Developing Plan
County of Sacramento	Y		
Sacramento County Water Agency	Y		
Sacramento Suburban Water District	Y		
Placer County Water Agency	Y		
El Dorado County Water Agency	Y		
El Dorado Irrigation District	Y	Y	Y
Southern California Water Company	Y		
San Juan Water District	Y		Y
Fair Oaks Water District	Y		
Citrus Heights Water District	Y		
Orange Vale Water Company	Y		
City of Roseville	Y		
Regional Water Authority	Y		
General Public	Y		
Other			

1.3 City Adoption

Consistent with the provisions of the California Urban Water Management Planning Act, the City adopted its 2010 UWMP Update on June 14, 2011 pursuant to Resolution No. 8857, a copy of which is included in **Attachment B**. Following adoption, the City will complete the following:

- ◆ In accordance with Water Code Section 10644, the City will submit to the department, the California State Library, and any city or county within which the

supplier provides water supplies, a copy of its plan no later than 30 days after adoption

- ◆ In accordance with Water Code Section 10645, not later than 30 days after filing a copy of its plan with the department, the City will make the plan available for public review during normal business hours

1.4 Document Organization

The City's 2010 UWMP is organized according to the following chapters:

- ◆ Section 1: Plan Preparation - This Section provides an overview of the UWMP requirements, the City's adoption process, and the document's organization.
- ◆ Section 2: System Description - This Section provides general information about the City's water service area, including water supplies, current population, population projections, and climatic conditions.
- ◆ Section 3: System Demands - This Section provides a detailed description of historic, current, and projected water demands by land use classification. This Section also includes the City's baseline water use and interim and urban water use targets described in the Water Conservation Bill of 2009 and the City's Water Use Reduction Plan.
- ◆ Section 4: System Supplies - This Section provides detailed information regarding the City's water supplies, source limitations, and water exchange/transfer opportunities. This Section also includes a discussion of groundwater opportunities, desalinated water opportunities, recycled water opportunities, and future water projects.
- ◆ Section 5: Water Supply Reliability and Water Shortage Contingency Planning - This Section integrates the City's supply and demand projections for purposes of urban water management planning and identifies potential shortfalls. This Section also includes water shortage contingency planning, source water quality, and drought planning.
- ◆ Section 6: Demand Management Measures – This Section outlines the City's demand management strategies.
- ◆ Section 7: Climate Change – This section discusses the potential affects due to climate change.
- ◆ Section 8: Completed UWMP Checklist – This Section includes the completed UWMP checklist.

Section 2. System Description

The purpose of this Chapter is to provide general information about the City's water service area and service area population. The chapter includes descriptions of the service area, surface supply diversion points, and conveyance systems, current population, population projections based upon land-use based build-out projections, and general climatic conditions to account for the water demands of irrigated landscapes.

2.1 Description of Service Area

To assist with demand analysis and projections made in this document, four² distinct water service areas are defined, taking advantage of service area designations and previously defined boundaries. **Figure 2-1** shows the City's boundary (outlined in red) in relation to the various water service areas described below. The four distinct water service areas currently served by the City are depicted in **Figure 2-3**:

- ◆ Folsom Service Area - West
- ◆ Folsom Service Area - East
- ◆ Ashland Area
- ◆ Nimbus Area (consists of Aerojet properties and proposed developments of Easton Place, Glenborough at Easton, and Westborough)

As shown in **Figure 2-2**, the City's boundaries (outlined in red) are not coterminous with the City's water service areas (outlined with green dashed line). One of San Juan Water District's (SJWD) water service areas – the American River Canyon Area – is within the City's boundaries. San Juan Water District provides retail water service to this area. **Table 2-10** shows the relationship between the City's water service areas and the City's boundaries.

SJWD also provides the wholesale water supply to the City for the Ashland Area, which is also within the City's boundaries. The City provides retail water service to the Ashland Area. Water customers in this area are fully reliant on wholesale water purchased by the City from SJWD. The water infrastructure for American River Canyon and Ashland are separate from the infrastructure that serves the other water service areas.³ **Figure 2-4** shows the City's current water infrastructure to each of the water service areas.

² The City of Folsom does not include the City's Sphere of Influence, which consists of the Folsom South of US 50 Specific Plan Area, in its water service area. This area has not been annexed into the City and does not currently reside within the City's water service area. It is proposed this area will be within the City's water service area upon annexation into the City.

³ The City does have an emergency intertie with SJWD to serve water to the Ashland Service Area during emergency outages.

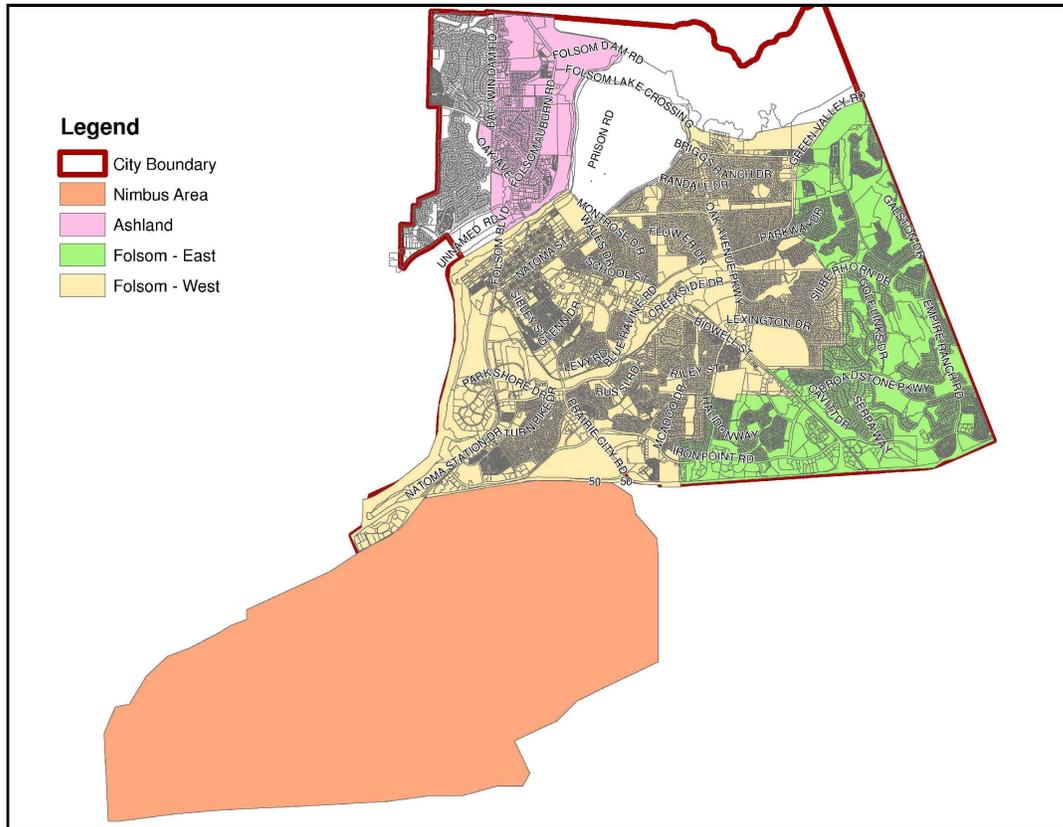


Figure 2-1. City of Folsom boundary.

The Folsom SPA is within the City’s Sphere of Influence, but not currently within the City’s boundaries. At the time this document was prepared the Folsom SPA was not yet annexed into the City. Upon completion of the environmental review process and annexation into the City, the Folsom SPA will be part of the City’s water service area. The Folsom SPA will be located in the Southern portion of the City of Folsom and is bounded on the north by Highway 50, White Rock Road to the south, Prairie City Road to the west, and the Sacramento/El Dorado County line to the east.

The Nimbus Area was ratified pursuant to PUC Order No. 71889 (Jan. 24, 1967) and related agreement with Aerojet (Aug. 30, 1967). The Easton Area and Westborough Area are located in an unincorporated area of Sacramento County outside the City limits but within the City’s water service area (Nimbus Area) and are situated south of Highway 50 and Folsom Boulevard east of Hazel Avenue. The Easton Area consists of two developments, Easton Place and Glenborough at Easton. The City of Folsom may relinquish water service to Westborough to Golden State Water Company pursuant to the agreement with them. At the time the UWMP was written, however, the conditions for implementation of the agreement were not met and the City does not have any proposed developments for Westborough.

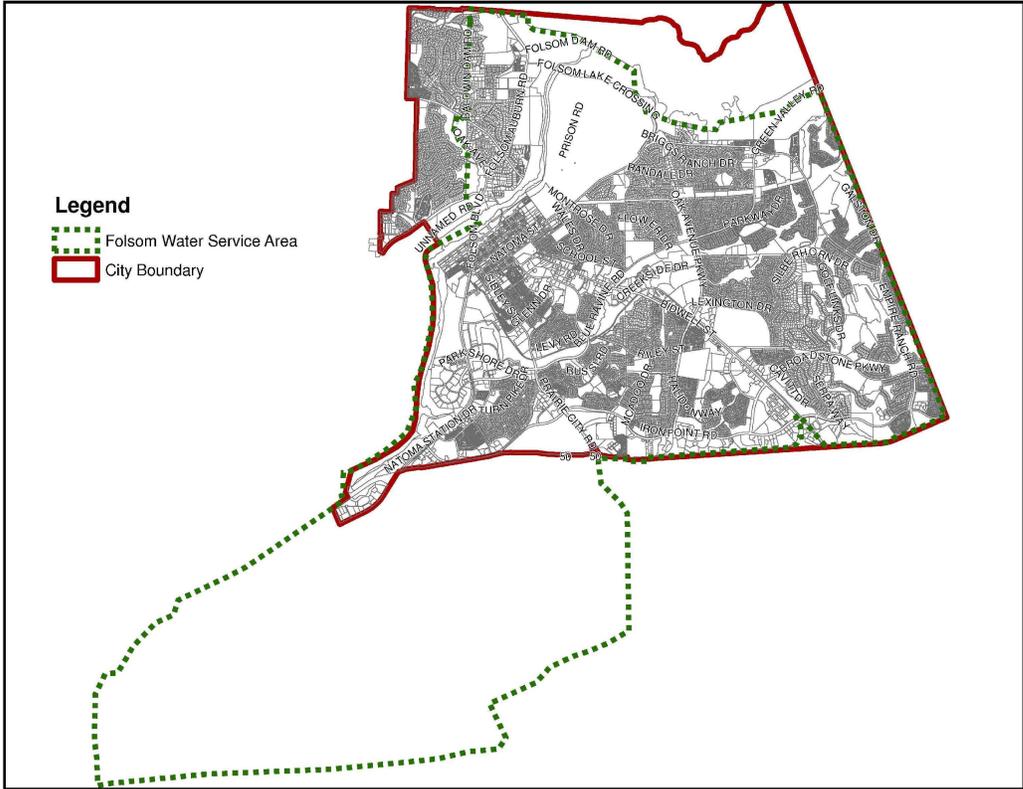


Figure 2-2. City of Folsom boundary and water service area limits.

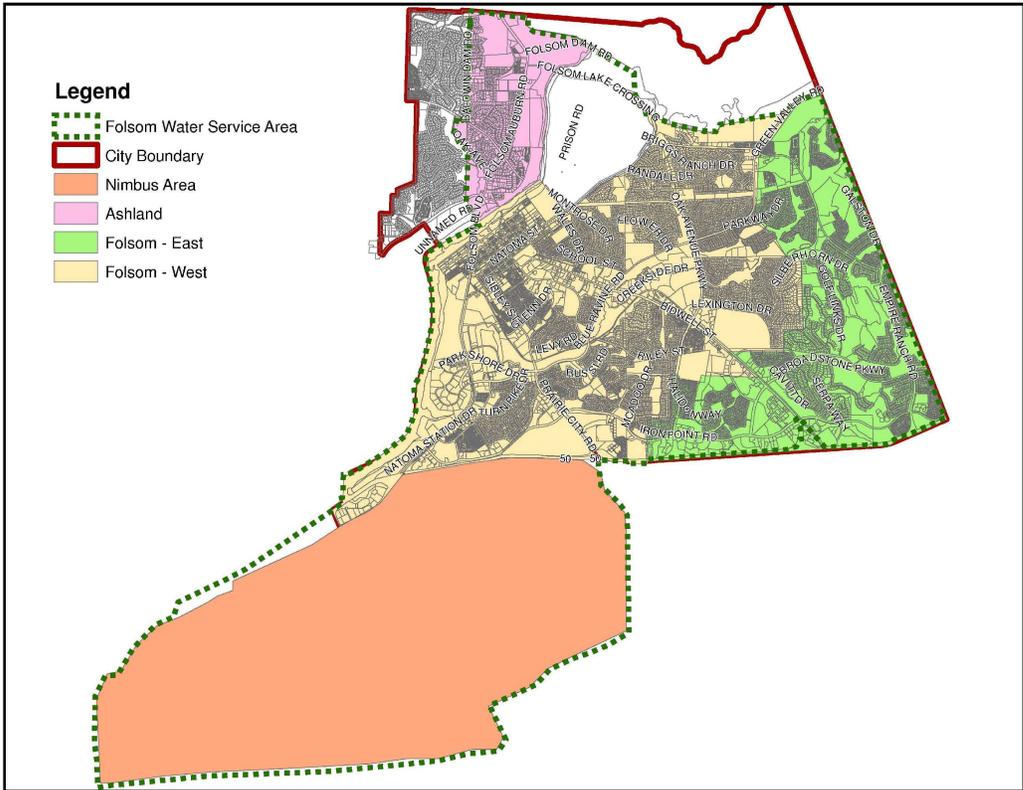


Figure 2-3. Four areas currently served by the City of Folsom.



Figure 2-4. Folsom U.S. South of 50 Specific Plan Area.

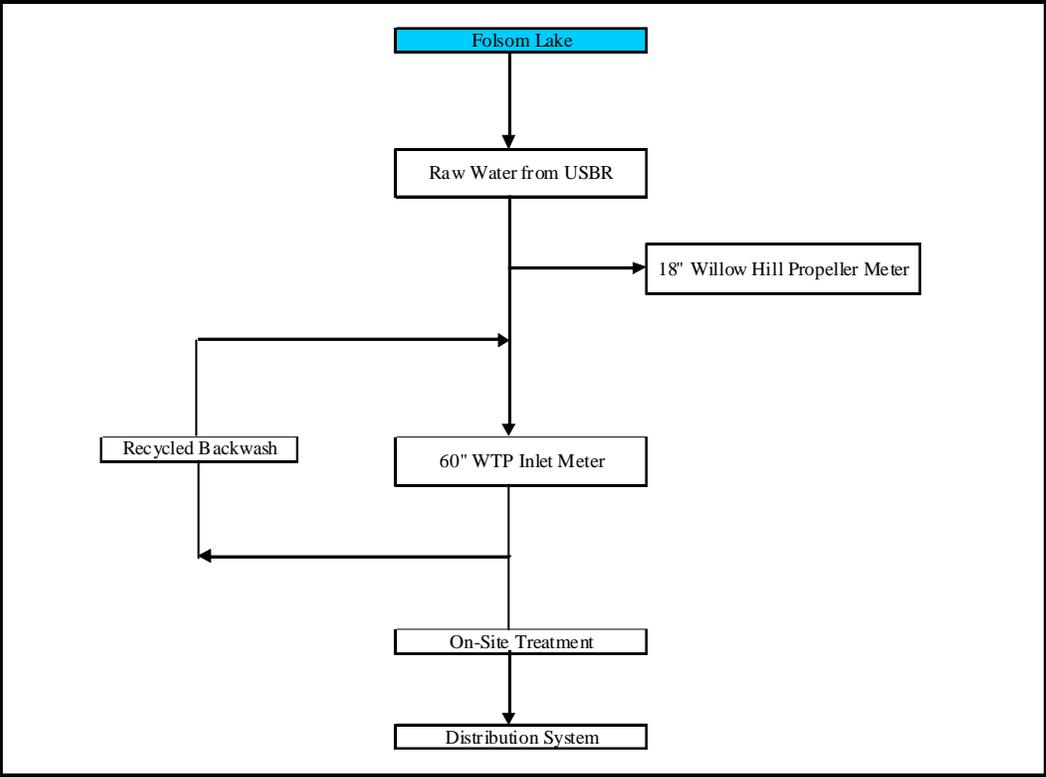


Figure 2-5. City of Folsom surface water delivery diagram.

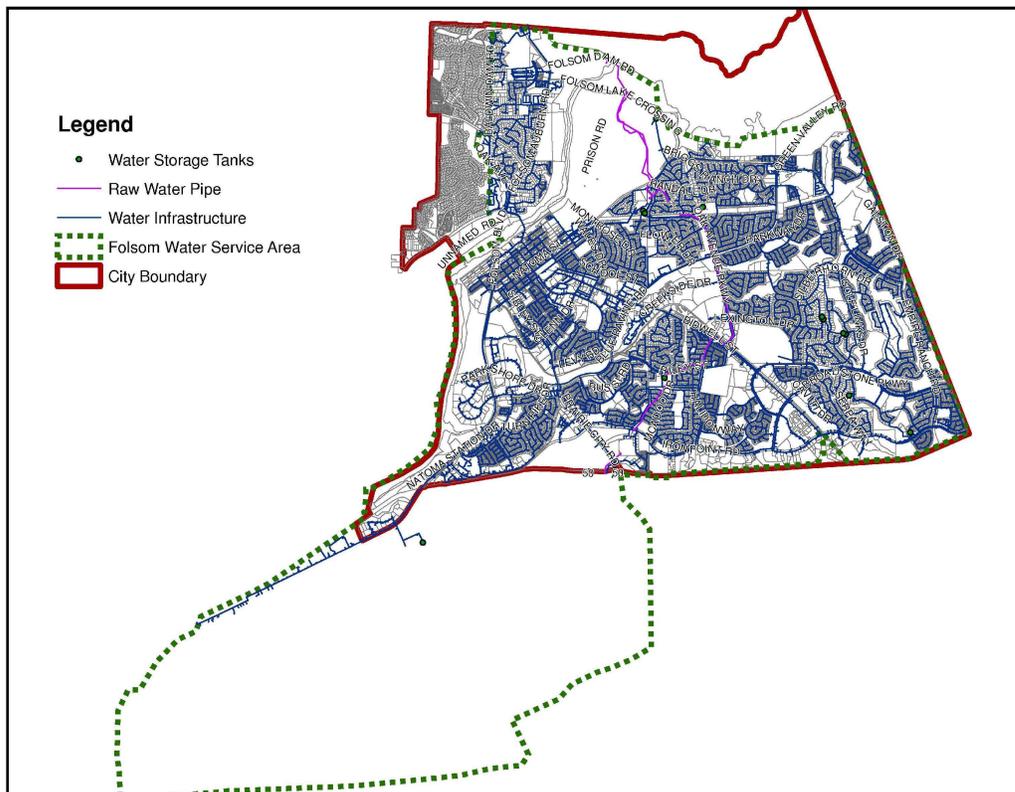


Figure 2-6. City of Folsom water infrastructure.

2.2 Diversion Points and Conveyance Systems

The City of Folsom may divert water at a number of locations, including Folsom Reservoir and the Folsom South Canal. Currently, the City uses surface water diverted from Folsom Reservoir.

- ◆ For the Folsom Service Area – West and Folsom Service Area - East, the City takes deliveries from the Natoma Pipeline, a 42-inch steel pressure pipe that originates at Folsom Dam. The Natoma Pipeline splits into two separate lines: one line to the Folsom Prison water treatment plant, and one line to the Folsom Water Treatment Plant (Folsom WTP). Raw water is delivered to Willow Hill Reservoir through a 30-inch reinforced concrete pipeline that begins upstream of the Folsom WTP inlet water meter. Currently, Aerojet uses this raw water for non-potable demands. See **Figure 2-5** for the City’s surface water delivery schematic.

After treatment at the City’s plant, water is stored and pumped through a system of reservoirs and pumping stations to seven pressure zones within the City, and a small pressure zone in Southwest Folsom (the Nimbus Zone) that extends slightly beyond the City limits. Aerojet uses the Nimbus Zone to meet its potable water demands. The Nimbus Zone is located within the Nimbus Water Service Area. Aerojet also receives raw water supplies for industrial purposes within the Nimbus Area.

- ◆ For the Ashland Area, water is diverted from the Folsom Reservoir and piped to the Sydney N. Peterson Water Treatment Plant, which is owned and operated by San Juan Water District (SJWD). After treatment, water is stored in Hinkle Reservoir until SJWD releases it and pumps or delivers it by gravity flow to the Ashland Area (**See Figure 2-3**). While SJWD provides water supplies to the Ashland Area, the City physically serves the SJWD water to customers in the Ashland service area.
- ◆ For Folsom SPA (**See Figure 2-5**), the City of Folsom proposes to divert water from the Freeport Regional Water Authority’s Freeport (FRWA) diversion facility on the Sacramento River in southern Sacramento County. Water will be conveyed from the Freeport diversion facility to the Folsom SPA via both FRWA facilities, which are already under construction, as well as facilities that will be constructed by the City of Folsom. The water may be either treated by Sacramento County Water Agency or the City of Folsom pending further review of various conveyance and treatment alternatives.⁴ A portion of this area is also located within El Dorado Irrigation District’s service area.
- ◆ For Easton Place and Glenborough at Easton development, the City of Folsom proposes to use the same diversion point from Folsom Dam described above and treat the water at the Folsom WTP. After treatment, water will be stored and pumped through a portion of the City’s existing distribution facilities and through new distribution facilities required to serve this area.
- ◆ Under the *Agreement for Reallocation of Water under Co-Tenancy Agreement* with the Southern California Water Company, dated March 8, 1994, the City is authorized to divert water from Folsom Lake or from the Folsom-South Canal. Currently, the City shares this diversion point with Golden State Water Company. Golden State Water Company has developed their portion of the intake facility, while the City has not yet developed its portion of the intake facility along the Folsom-South Canal.

2.3 *Climate*

The City service area has cool and humid winters, as well as hot and dry summers. The City lies approximately 20 miles east of the City of Sacramento. The City’s average daily temperature ranges from 38 to 95 degrees Fahrenheit (**See Table 2-1**), but the extreme low and high temperatures have been 16 and 115 degrees Fahrenheit respectively (Western Regional Climate Center). As shown in **Table 2-1**, the historical annual average precipitation is approximately 24 inches. The rainy season begins in November and ends in March. Average monthly precipitation during the winter months is about 3.5 to 4.5

⁴Conveyance alternatives are analyzed in Chapter B2.3 of the EIR/EIS for Folsom South of US 50 Specific Plan Project.

inches, but records show that the monthly precipitation has been as high as 13.5 inches and as low as 0 inches. Relative humidity in the region ranges from 29 percent to 90 percent. Low humidity usually occurs in the summer months, from May through September. The combination of hot and dry weather during the summer results in high water demands during the summer. Historical climate data is summarized below for Western Regional Climate Center’s Folsom Dam station (043113).

Also shown in **Table 2-1** is the average ETo, or reference evapotranspiration, which is an indicator, among other things, of the water demands for irrigated landscapes.

Table 2-1. Average climate data for the City of Folsom

Average climate data for the City of Folsom ⁵													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg. Precip. (in.)	4.46	4.34	4.30	1.84	0.52	0.31	0.11	0.10	0.45	1.32	3.47	3.39	24.61
Avg. Temp. (F)	46.9	51.5	55.0	59.4	66.0	72.7	77.7	76.8	73.4	65.9	54.4	47.1	62.2
Avg. Max. Temp. (F)	54.5	60.8	65.1	71.5	80.2	88.5	94.8	93.6	88.6	78.6	63.7	55.2	74.6
Avg. Min. Temp. (F)	39.2	42.2	44.8	47.3	51.8	56.8	60.6	59.9	58.1	53.1	45.0	38.9	49.8
ETo ⁶	1.09	1.70	3.54	4.62	6.66	7.80	8.40	7.46	5.47	3.55	1.68	1.04	53.0

2.4 Service Area Population

The Urban Water Management Plan Act requires an urban water supplier to estimate the current population in its service area, and to also provide a population projection for 2015, 2020, 2025, and 2030, based on data from state, regional, or local service area population projections. The City has used its land use data to assess potential future growth in the number of residential and non-residential acreage, as well as historic U.S. Census Bureau data to calculate a demand projection. This section reviews the population estimate methodology the City used.

In order to calculate the service area population, the City must first calculate the population within the City boundaries. Since the American River Canyon lies within the City’s boundaries but not within the City’s service area, the population associated with this area needs to be quantified prior to determining the service area population. By using

⁵ Data obtained from the Western Regional Climate Center, Folsom Dam (043113) Year 1971 to Year 2000

⁶ Monthly ETo information obtained from CIMIS web site for the Fair Oaks Station 131, which has data collected since April 1997

2000 Census data (Census tracts and blocks), the City can calculate current and historical population figures for this area. **Table 2-2** shows the 2000 Census Tracts and the area within the City’s boundary that each tract is located.

Table 2-2. City of Folsom 2000 Census Tracts.

Area within the City	2000 Census Tracts
American River Canyon	82.09, 82.10
Ashland Water Service Area	82.09, 82.10
Folsom Water Service Area - West	84.02, 84.03, 84.04, 85.01, 85.02, 85.03, 85.04
Folsom Water Service Area - East	85.01, 85.02, 85.03

Current population estimates and historical population was generated using the 2000 U.S. Census data. Both historical data (2000 Census) and future projections are analyzed. **Section 2.4.5** describes how the City calculated service area population. The 2000 Census and the City’s land-use based build-out projections were used as the primary source for projecting the City’s population for the areas north of Highway 50 (Ashland, American River Canyon, Folsom West, and Folsom East). These areas are within the City’s boundaries and need to be calculated prior to calculating the service area population. Since the American River Canyon Area is within the City’s boundaries, but not within the City’s water service area, this population must be subtracted from the total population within the City’s boundaries in order to calculate the service area population

Geographical Information System (GIS) data was used to identify “developed” and “build-out” conditions. Although the American River Canyon population is included in **Table 2-3**, current and projected population for this area is subtracted from the City’s total population since the population of this area is not within the City’s water service area. For the Folsom SPA and the Easton Place/Glenborough Project, each project’s EIR was used as the primary source for projecting the City’s population in these areas.

For the Ashland Area, American River Canyon Area, Folsom Service Area West, and the Folsom Service Area East, where residential build-out is anticipated in 2020, the number of dwelling units built each year is based on estimates provided by the City’s Community Development Department. The number of dwelling units built each year are multiplied by the capita per dwelling unit factors discussed in **sub-section 2.4.4** and **Table 2-8**. The resulting projections are shown in **Table 2-3**.

Table 2-3. Projected population data for the City of Folsom within the City’s Boundaries.

City of Folsom Population Projections ⁷						
Date	American River Canyon	Ashland	Folsom - West	Folsom - East	Folsom SPA ⁸	Total Population within City Boundary ⁹
2010	5,392	4,124	40,923	13,948	0	64,388
2011	5,396	4,129	40,948	13,998	0	64,472
2012	5,409	4,139	40,989	14,073	0	64,611
2013	5,431	4,156	41,087	14,320	0	64,995
2014	5,461	4,179	41,249	14,741	0	65,631
2015	5,502	4,209	41,489	15,300	1,218	67,719
2020	5,841	4,342	42,393	20,779	6,086	79,441
2025	5,841	4,342	42,393	20,779	12,174	85,529
2030	5,841	4,342	42,393	20,779	18,255	91,610
2035	5,841	4,342	42,393	20,779	24,335	97,690

2.4.1 U.S. Census Bureau Historical Population Estimates

The U.S. Census Bureau conducts census surveys every ten years for the entire country, asking questions on household size, ethnicity, housing units, and other demographic statistics. The Census Bureau data provide detailed information for regions as small as Census blocks¹⁰. Historical data from 2000 census was used as a basis for the City population estimates. Based on the information provided by the Census Bureau for the census tracts and blocks within the City’s boundary, the City can calculate single-family and multi-family capita per housing unit ratios. **Figure 2-5** shows how the City was divided into Census blocks for the 2000 Census.

A GIS-based map of the Census Blocks was used in conjunction with the map delineating the four areas north of Highway 50 to estimate population within each region. While most Census blocks for the City fell completely within one of the respective service areas, a few were split between two. For these instances, a rough estimate was made of the percentage of Census block area within each service area, and the total Census block population was split according to this percentage. This method is an approximation, and assumes uniform population density across Census blocks. Because of the small number of Census blocks requiring bisection, any error associated with the approximation should be relatively small.

⁷ Population does not include “Group Quarters” from Folsom State Prison.

⁸ The population estimates for the Folsom SPA are included as this area is within the City’s Sphere of Influence and is proposed to be annexed into the City.

⁹ The total population within the City’s boundaries does not include the Glenborough at Easton and Easton Place projects, since these areas are not within the City of Folsom’s boundaries. These projects are located in the unincorporated area of Sacramento County, but are each located within the City’s water service area.

¹⁰ A Census block is the smallest geographic unit for which the Census Bureau tabulates statistical data. Census blocks often correspond to individual city blocks, bounded by streets, but some Census blocks – especially those in rural areas – may encompass many square miles and contain boundaries that are not streets.

Based on the 2000 Census summary files, the City obtained estimates for the population residing in owner occupied and renter occupied housing units within each of the four areas listed in **Table 2-2**. For the census blocks within each area, there are corresponding totals of owner and renter occupied housing units, along with the estimated population within each housing unit type. In order to calculate the housing unit ratio, the City divided the populations within owner- and renter-occupied housing units by the associated number of owner- and renter-occupied units within each area. The housing unit ratios in **Table 2-4** are used in conjunction with the land-use population projections to calculate service area population projections.

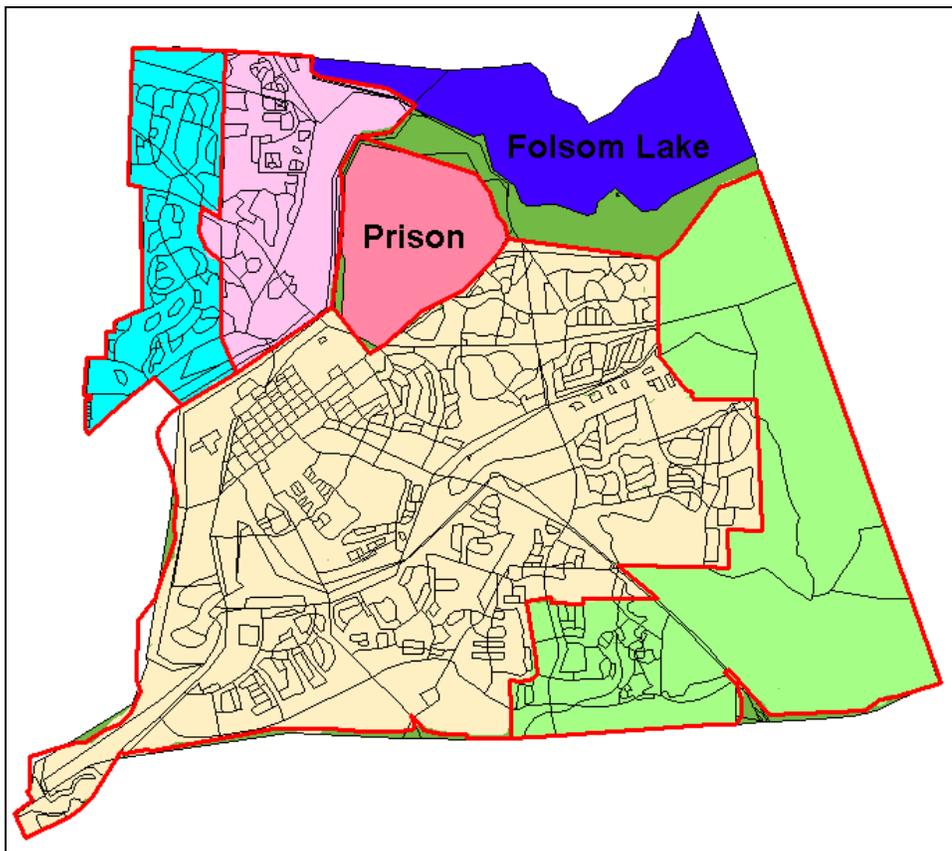


Figure 2-7. 2000 Census block boundaries for the City of Folsom

Table 2-4. 2000 Census data for the City of Folsom north of Highway 50.

2000 Census Data for the City of Folsom				
Service Area	Vacant Units	Occupied Units	Population in Occupied Units	Housing Unit Ratio
FSA – West	507	12,047	32,551	
Owner Occupied		9,131	25,927	2.84
Renter Occupied		2,916	6,624	2.27
FSA – East	126	1,239	3,438	
Owner Occupied		1,030	2,916	2.83
Renter Occupied		209	522	2.50
Ashland	69	2,002	4,030	
Owner Occupied		1,518	3,168	2.09
Renter Occupied		484	862	1.78
American River	68	1,872	4,844	
Owner Occupied		1,444	4,051	2.81
Renter Occupied		428	793	1.85

2.4.2 Land-Use Based Population Estimates

The City used current land-use information for the four service areas shown in **Table 2-6** for two time periods: “developed” and “build-out.” For the purposes of this plan, developed conditions were assumed to be representative of the conditions at the end of 2009 across all service areas, while residential build-out conditions were projected to be reached by 2020 for the Ashland Area, Folsom West, and Folsom East. Due to the economic slow-down since 2008, the build-out dates from the 2005 UWMP have been adjusted with more current projections from the City’s Community Development Department.

The land-use data includes estimates for the number of multi-family and single-family housing units in each of the service areas. For projected build-out conditions, there were also a limited number of acres for which no projected housing unit numbers have yet been compiled. For the land-use based population projections, these acres were converted to housing units using unit-per-acre data for each designated land-use category.

Information was obtained from the City’s GIS shape files and from the 2009 Housing Element. The City of Folsom’s 2009 Housing Element includes a housing inventory of vacant sites available for residential development. The 2009 Housing Element also includes built and proposed projects with affordable housing, which are included in the land-use calculations. A summary of the land-use data provided is included as **Table 2-5**.

Table 2-5. Summary of residential land-use data for the City of Folsom

Summary of Land-Use Data				
Unit Type	FSA - West	FSA - East	American River Canyon	Ashland
Developed Conditions (2010)				
Single-Family Units	11,508	4,481	1,780	912
Multi-Family Units	3,632	505	215	1,247
Build-Out Conditions (2020)				
Single-Family Units	11,656	5,800	1,875	978
Multi-Family Units	4,094	1,744	309	1,291

With a total number of single- and multi-family housing units for each service area available for both the developed and build-out conditions, 2000 Census data was used to convert the housing units to population figures. Based on the 2000 Census block level population data, the capita per dwelling unit can be calculated for single-family and multi-family residences for each of the four areas listed in **Table 2-6**. The capita per dwelling unit is multiplied by the number of vacant or undeveloped housing units to obtain the population projection for build-out conditions. **Table 2-7** summarizes the population projections based on developed and build-out conditions.

For the Easton Place and Glenborough at Easton project, the proposed land uses and zoning are defined and described in the Environmental Impact Report for the project. The number of dwelling units is multiplied by a factor of 2.64 persons per dwelling unit to obtain the population projection of 12,891 people. This figure is included in the City’s projected service area population, but not in the City’s total population, as this service area is not within the City’s boundaries. This service area is within the unincorporated area of Sacramento County.

For the Folsom SPA, the proposed land uses and zoning are defined and described in the Environmental Impact Report for the project. For this project, the single-family and multi-family dwelling units are 2.92 capita/DU and 1.94 capita/DU, respectively. The single-family population projection is 13,490 people and the multi-family population projection is 10,845 people, for a total of 24,335 people. This figure is included in the City’s total population as well as in the service area population.

Table 2-6. Summary of residential land-use population projections.

Summary - Land Use Population Projections¹¹				
	FSA - West	FSA - East	American River Canyon	Ashland
Land-Use Derived Population at Developed Conditions (2010)				
Occupied Single-Family Units	11,508	4,481	1,780	911
Occupied Multi-Family Units	3,632	505	215	1,247
Single-Family Population	32,675	12,686	4,994	1,903
Multi-Family Population	8,249	1,262	398	2,222
Derived Total Population	40,924	13,948	5,392	4,125
Land-Use Derived Population at Build-Out Conditions (2020)				
Occupied Single-Family Units	11,656	5,800	1,875	978
Occupied Multi-Family Units	4,094	1,744	309	1,291
Single-Family Population	33,103	16,414	5,269	2,044
Multi-Family Population	9,293	4,360	572	2,298
Derived Total Population	42,393	20,779	5,841	4,342

2.4.3 Selecting Population Projections

The U.S. Census data is widely used to establish historical population estimates. Census data was, as a result, chosen as the basis for projected population estimate for each of the four areas in **Table 2-6**. The 2000 Census data was used to calculate a capita per dwelling unit factor for each of the four service areas. To calculate population projections for build-out conditions, the City multiplied this factor by the projected dwelling units in each of the four areas. Population projections for the Glenborough at Easton, Easton Place, and the Folsom SPA are provided in each project’s EIR.

Based on the Environmental Impact Report for the Glenborough at Easton and Easton Place Project, Glenborough at Easton would be developed in five phases over a 20-year period as described in **Section 3.3**. Easton Place would also be developed in five phases, with each phase being implemented based on market demand. Phasing of Easton Place may follow development of residential uses in Glenborough; however, Easton Place is considered an independent development and is not necessarily tied to

¹¹ **Table 2-6** does not include population projections for Glenborough at Easton, Easton Place, or The Folsom SPA. Land use projections for these proposed projects are described in their respective EIR’s. The City of Folsom’s service area population is detailed in **Table 2-8**.

each phase of development in Glenborough (i.e., phase B of Easton Place would not be contingent on development of phases 1 and 2 of Glenborough, and vice versa).

Table 2-7. Proposed phasing for Glenborough at Easton and Easton Place.

Year	Phases ¹²	Projected Population
2010	1 (Glenborough)	2,194
2015	4 (Glenborough), A (Easton place)	2,864
2020	2 (Glenborough)	2,072
2025	3 (Glenborough), B (Easton Place)	3,733
2030	5 (Glenborough) ,C,D & E (Easton Place)	2,028
	Total Population	12,891

For the Folsom SPA, population estimates will match the estimates listed in the Environmental Impact Report, which will occur over a 20-year period from 2013 to 2033. Depending on the final phasing plan selected by the land developers and the housing market conditions, the actual population estimates may change after the development of the 2010 UWMP. The population phasing estimate for the City of Folsom’s service area is shown in **Table 2-8**.

Table 2-8. Population projections for the City of Folsom’s water service areas.

City of Folsom Service Area Population Projections						
Year	Ashland	Folsom - West	Folsom - East	Easton Place - Glenborough	Folsom SPA ¹³	Total Water Service Area Population
2010	4,124	40,923	13,948	2,194	0	61,190
2015	4,209	41,489	15,300	5,058	1,218	67,275
2020	4,342	42,393	20,779	7,131	6,086	80,730
2025	4,342	42,393	20,779	10,864	12,174	90,552
2030	4,342	42,393	20,779	12,891	18,255	98,660
2035	4,342	42,393	20,779	12,891	24,335	104,740

¹² See **Section 3 – System Demands**, for a detailed breakdown of land use designations and dwelling units for each of the phases.

¹³ Although the Folsom SPA is not currently within the City’s limits or water service area, the project lies within the City’s Sphere of Influence, and is proposed to be annexed into the City’s limits.

Table 2-9. City of Folsom population and service area relationship.

Area	Within City Boundary	Within City Service Area	Included in Service Area Population	Included in City's Total Population
American River Canyon	Yes	No	No	Yes
Ashland	Yes	Yes	Yes	Yes
Folsom - West	Yes	Yes	Yes	Yes
Folsom - East	Yes	Yes	Yes	Yes
Glenborough at Easton	No	Yes	Yes	No
Easton Place	No	Yes	Yes	No
Westborough	No	Yes	No ¹⁴	No
Folsom SPA	Yes	Yes	Yes	Yes ¹⁵

¹⁴ At the time the UWMP was developed, the City does not have any planned developments for the Westborough Area.

¹⁵ The Folsom SPA is included in the City's total population based on proposed annexation into the City's boundaries.

Section 3. System Demands

Section 3 provides a detailed description of historic, current, and projected water demands by land use classification. This Section also includes the City’s baseline water use and interim and urban water use targets described in the Water Code Section 10608 and the City’s Water Use Reduction Plan.

Sub-section 3.1 outlines water treatment plant service zone distribution figures to establish a historic demand factor for the Folsom Service Area – West, the Folsom Service Area - East, water deliveries to Ashland Service Area and current system demands (2010). Sub-section 3.1 also highlights raw water demands sent to Willow Hill Reservoir and ultimately delivered to Aerojet.

Sub-section 3.2 provides baseline projections of future demand using land-use based projections of the number of residential dwelling units or acres of other land classifications, multiplied by unit demand factors. These baselines are adjusted by a “non-revenue water” factor that assumes a degree of distribution losses, fire hydrant flushing, and construction water and therefore more accurately reflects use throughout the system.

Sub-sections 3.3 and 3.4 provide water use projections for the Glenborough at Easton – Easton Place and Folsom SPA, respectively. These projections are identified in the Water Supply Assessment and Environmental Impact Report for each project. Projections of future demand are based on dwelling unit and/or land-use designations multiplied by unit demand factors.

3.1 Historic and Current Demands

3.1.1 City of Folsom Water Treatment Plant

For the portion of the City south of the American River (defined as Folsom Service Areas – West and East), treated water is supplied through the Folsom Water Treatment Plant (Folsom WTP)¹⁶. The plant has a nominal capacity of 50 million gallons per day (MGD), and has been retrofitted to accommodate recycling of plant operations water.

Historical water use quantities from the treatment plant were obtained from City staff at the Water Treatment Plant. The WTP Inlet meter measures all raw water that enters the City’s water treatment plant for treatment and distribution to the City’s urban water users. These water use quantities include recycled backwash water that is returned upstream of the WTP Inlet meter. Thus, the recycled backwash amount is subtracted from the values obtained from the WTP Inlet meter in order to not double

¹⁶ This does not include water delivered to the Ashland Area or water raw water delivered to Aerojet.

count this amount. **Table 3-1** includes annual delivery data from the Folsom WTP to Folsom Service Areas East and West.

Table 3-1. Folsom Water Treatment Plant Annual Production.

WTP Delivery Data to Folsom Service Area East and West¹⁷	
Year	Deliveries (acre-feet)
1996	10,985
1997	13,801
1998	13,617
1999	16,355
2000	16,254
2001	21,516
2002	20,861
2003	20,879
2004	22,818
2005	21,674
2006	23,926
2007	23,379
2008	24,678
2009	22,041
2010	23,113

3.1.2 City of Folsom Raw Water Delivery

In addition to treated water supplies, raw water is also delivered by the City, but only to Aerojet’s Industrial property located south of Highway 50. This water is conveyed by a pipeline that eventually empties into Willow Hill Reservoir. Aerojet diverts raw water from the reservoir to meet part of its needs. Historical records from the raw water meters at Aerojet indicate an average annual use of about 2,731 acre-feet. A significant change to projections in the 2005 UWMP is that Aerojet’s future raw water demands are now projected to be the same as its previous average annual use. Assuming the conditions in the settlement agreement entered into between the City and Aerojet are completed, as explained in more detail in **sub-section 4.1.5**, the source of water supplied by the City to meet Aerojet’s raw water demands will also change.

3.1.3 Sydney N. Peterson Water Treatment Plant

For the area north of the American River, water is diverted through the Sydney N. Peterson Water Treatment Plant (SNPWTP), where it is then pumped or conveyed by

¹⁷ These deliveries do not include raw water deliveries to Aerojet or water delivered to the Ashland water service area.

gravity to the Ashland and American River Canyon areas. Data for historical deliveries were obtained from the San Juan Water District (SJWD), which supplies water to both areas. For the Ashland Service Area, monthly deliveries are provided from 1996-2010. Annual deliveries calculated using the monthly deliveries are shown in **Table 3-2**.

Table 3-2. San Juan Water District water delivery to the Ashland Service Area.

SJWD Deliveries to the Ashland Service Area¹⁸	
Year	Production (acre-feet)
1996	1,076
1997	1,102
1998	1,059
1999	1,141
2000	1,324
2001	1,138
2002	1,149
2003	1,107
2004	1,415
2005	1,561
2006	1,695
2007	1,820
2008	1,608
2009	1,647
2010	1,331

3.2 Projected Demands for Folsom Service Area West, Folsom Service Area East, and the Ashland Service Area

This section presents the City’s estimation of projected water demands. The analysis is based on first assessing baseline future demand – using projected land-use information multiplied by unit water demand factors representing existing use characteristics – and then adding additional demands for specific known uses not considered in the land-use analysis. After projecting baseline demands, the City can assess the potential benefit of its conservation efforts including the benefit of best management practices required as a signatory to the Water Forum Agreement (WFA) and the California Urban Water Conservation Council (CUWCC).

¹⁸ Water delivery to the Ashland Service Area is within the City’s water service area. The City provides retail water service to the Ashland Area. Water customers in this area are fully reliant on wholesale water purchased by the City from San Juan Water District.

3.2.1 Estimating Baseline Treated and Raw Water Demand

Baseline projections of future demand for the existing service areas¹⁹ were estimated using land-use based projections of the number of residential dwelling units or acres of other land classifications, multiplied by unit demand factors that vary with each classification. The City anticipates full build-out within its Ashland, Folsom Service Area – West and Folsom Service Area – East by 2020. The vast majority of additional construction in the existing development areas will occur in the Folsom West and East service areas. Only minor infill projects are anticipated in the Ashland Service Area. Future projections for Glenborough at Easton and Easton Place are discussed in **sub-section 3.3**. Future projections for the Folsom SPA are discussed in **sub-section 3.4**.

Projected Land Use: The primary source for the land-use based water demand projections was data obtained from the City, including land-use classification data for the entire City for “developed” and “build-out” conditions. The data consisted of tables of acreage levels and housing unit numbers for individual developments within the City, indexed by service area. **Table 3-3** shows an aggregated summary of the “Developed” and “Build-out” conditions, organized by water service areas north of Highway 50.

Unit Water Demand Factors: Baseline unit water demand factors, which are used to establish an acre-foot-per-unit (or per acre) per year demand for a particular type of land-use, were applied to the values in **Table 3-3** to estimate future water demands. **Table 3-4** shows the unit demand factors used for the respective land-use designations.

The unit demand factors for residential land-use categories are separated by indoor and outdoor use. This was done to accommodate evaluation of conservation opportunities. In a similar fashion, the non-residential uses were also separated into indoor and landscape unit demands, rather than a traditional value that attempts to blend indoor and outdoor uses together.

For the non-residential acreage, provided on a “total acres” basis in **Table 3-3**, there is an additional need to identify the percentage of the total acreage for an individual land-use class by indoor or outdoor. For instance, a large retail shopping center only has a small percentage of the property landscaped and a moderate percentage with domestic and process water uses. Therefore, if a retail site is 10 acres only 0.5 acres may be landscaped and only 3 acres may have indoor uses. The remaining 6.5 acres

¹⁹ The American River Canyon Area is not served by the City. The Ashland service area is served with water obtained from San Juan Water District under a contract with specific reliability provisions.

are “hardscapes” such as driveways, parking lots, and delivery alleys. The assumed percentages for the indicated acreage are shown in **Table 3-4** alongside the non-residential unit demand factors.

Table 3-3. Developed and build-out figures for water service areas north of Highway 50.

Land Use Designation (in dwelling units or acres)	Developed (2010)			Build-Out (2020)		
	Ashland	FSA West	FSA East	Ashland	FSA West	FSA East
Single Family Dwelling - Large Lot (DU)	262	112	0	283	128	0
Single Family Dwelling - Small Lot (DU)	155	10,851	4,393	177	10,952	5,662
Single Family Dwelling - Medium Lot (DU)	494	545	88	517	576	138
Two Family Residence (DU)	0	398	0	0	416	0
Neighborhood Apartment District (DU)	0	183	0	0	186	0
General Apartment District (DU)	0	636	246	43	991	849
Multi Family Residential (DU)	630	2,415	259	630	2,501	895
Mobile Home / Trailer Park (DU)	617	0	0	617	0	0
Business and Professional District (AC)	0	142	0	0	197	0
Neighborhood Business District (AC)	14	63	11	15	63	34
Central Business District (AC)	15	314	119	20	314	147
General Commercial District (AC)	22	384	238	22	407	250
Light Industrial District (AC)	0	452	0	0	498	0
General Industrial District (AC)	0	33	0	0	33	0
Limited Manufacturing District (AC)	0	40	135	0	42	183
Parks (AC)	2	282	105	2	294	144
Schools (AC)	9	218	71	9	293	71
Lighting and Landscape (AC)	1.7	150	100	1.7	150	110

Table 3-4. Baseline water unit demand factors for water service areas north of Highway 50.

Baseline Unit Demand Factors for Water Service Areas North of Highway 50			
Land-use Category	Use Class	Demand Factor	% of acreage
Residential (acre-feet/du/year)			
SFR – Large Lot SFR – Medium Lot	indoor	0.20	
	outdoor	0.45	
	Total	0.65	
SFR – Small Lot	indoor	0.20	
	outdoor	0.36	
	Total	0.56	
Two Family Residence Neighborhood Apartment District	indoor	0.20	
	outdoor	0.20	
	Total	0.40	
General Apartment District Multi Family Residential Mobile Home/Trailer Park	indoor	0.20	
	outdoor	0.10	
	Total	0.30	
Non-Residential (acre-feet/acre/year)			
Business and Professional District	Indoor	2	40%
	Landscape	4	10%
Neighborhood Business District	Indoor	1	40%
	Landscape	4	5%
Central Business District	Indoor	1.5	60%
	Landscape	4	10%
General Commercial District	Indoor	2	50%
	Landscape	4	10%
Light Industrial District	Indoor	2	60%
	Landscape	4	5%
General Industrial District	Indoor	2	60%
	Landscape	4	5%
Limited Manufacturing District	Indoor	2	60%
	Landscape	4	5%
Park	Indoor	0.5	5%
	Landscape	4	75%
Schools	Indoor	3	10%
	Landscape	4	50%
Lighting and Landscape	Landscape	4	n/a

Non-Revenue Water: The unit demand factors do not account for losses that occur in the distribution to these customers, or non-revenue water supplies, such as fire hydrant flushing, and construction water. Non-revenue water includes unbilled authorized uses, apparent losses, and real losses. To account for these factors in the overall demand requirements, the estimated demands are multiplied by a “non-revenue water” percentage, which is then added to the projected end-user demand to generate an overall estimate for demand for treated water supplies. The following

percentages have been estimated by the City to represent conditions within the various service areas. These values are consistent with the experience of other local purveyors with systems running high pressures.²⁰ Unaccounted for water percentages vary for residential versus non-residential as a result of smaller pipe sizes and material type as well as multitude of fittings at high pressures. Estimated percentages are shown in **Table 3-5**. Percentages between the Folsom West and East service areas also have been found to vary as a result of older developments in the Folsom West Service Area.

Table 3-5. Non-revenue water percentages.

Non-Revenue Water Percentage (as a % of total demand, including non-revenue water)	
	Folsom Service Area - West
Existing	25%
2035	15%
	Folsom Service Area - East
Existing	25%
2035	15%
	Ashland Service Area
Existing	25%
2035	15%

With anticipated buildout, which will reduce construction water demand, plans for metered billing, and other BMP activities planned by the City, the percentages are expected to decrease over the next 20 years. In addition to these activities, the City of Folsom has contracted with Water System Optimization, Inc. for a Two-Year Water Management Control Program. This water management control program is the foundation of the City’s System Optimization Review (SOR), as it helps identify areas of conserved water and improves system efficiencies.

Final demand projections for the City’s water service areas north of Highway 50 are presented in **Table 3-6**. Values shown are the summation of the total demand projections presented for Folsom Service Area – West, Folsom Service Area – East and Ashland Service Area. Water demands include the land-use values in **Table 3-3** multiplied by the associated unit demand factors and indoor/landscape percentages in **Table 3-4**, and the unaccounted for water for the treated distribution system. Project baseline demands for Glenborough at Easton and Easton Place are discussed in **sub-section 3.3** and the baseline unit demand factors are discussed in **sub-section 3.4**.

²⁰ The City has average operating pressures of up to 100 psi in some service areas as a result of the topography of the region.

Table 3-6. Projected baseline demands for water service areas north of Highway 50.

Projected Baseline Demand by Service Area and Land Use Designation (AF/YR)						
Land Use Designation	Developed (2010)			Build-Out (2020)		
	Ashland	FSA West	FSA East	Ashland	FSA West	FSA East
Single Family Dwelling - Large Lot	217	112	0	256	126	0
Single Family Dwelling - Small Lot	111	9,335	2,247	138	9,256	3,084
Single Family Dwelling - Medium Lot	410	544	52	469	565	87
Two Family Residence	0	245	0	0	251	0
Neighborhood Apartment District	0	112	0	0	112	0
General Apartment District	0	293	67	18	449	248
Multi Family Residential	241	1,113	71	263	1,132	261
Mobile Home / Trailer Park	236	0	0	258	0	0
Business and Professional District	0	262	0	0	357	0
Neighborhood Business District	11	58	6	13	57	20
Central Business District	26	627	141	36	616	186
General Commercial District	39	826	304	43	860	340
Light Industrial District	0	972	0	0	1,052	0
General Industrial District	0	71	0	0	70	0
Limited Manufacturing District	0	86	173	0	89	249
Parks	6	1,313	290	7	1,343	425
Schools	27	770	149	30	1,017	159
Lighting and Landscape	9	922	365	9	906	428
Total	1,332	17,660	3,865	1,540	18,257	5,487

As part of the UWMP, the City is required to provide San Juan Water District with water use projections in five-year increments to 20 years out or as far as data is

available. Since SJWD provides wholesale water to the City for the Ashland Water Service Area, the City provided the following projected water use figures to SJWD. **Table 3-7** shows the projected demands provided by the City to SJWD. **Table 3-8** shows the existing and planned sources of water provided by SJWD to the City. **Table 3-9** shows the wholesale supply reliability provided by SJWD to the City. As described in California Water Code Section 10631, the City may rely upon water supply information provided by the wholesale water agency in fulfilling the plan informational requirements of subdivisions (b) and (c).²¹

Table 3-7. Projected water use for the Ashland Water Service Area.

Water Source	2010 (AF)	2015 (AF)	2020 (AF)	2025 (AF)	2030 (AF)
San Juan Water District	1,322	1,540	1,540	1,540	1,540

Table 3-8. Existing and planned sources of water for San Juan Water District.

Wholesale sources	Contracted Volume	2015 (AF)	2020 (AF)	2025 (AF)	2030 (AF)
USBR Central Valley Project	24,200	24,200	24,200	24,200	24,200
Pre-1914 water rights	33,000	33,000	33,000	33,000	33,000
PCWA contract	25,000	25,000	25,000	25,000	25,000

Table 3-9. San Juan Water District water supply for various water year types.

San Juan Water District Supply Reliability (Acre-Feet)				
Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years		
		Year 1	Year 2	Year 3
82,200 AF	54,000 – 82,200 AF	54,000 – 82,200 AF	54,000 – 82,200 AF	54,000 – 82,200 AF
Percent of Average/Normal Year:	66-100%	66-100%	66-100%	66-100%

3.3 Projected Demands for Glenborough at Easton and Easton Place Water Service Area

The Glenborough at Easton and Easton Place developments are located in an unincorporated area of Sacramento County outside of the City limits but within the City’s water service area.²² The Glenborough at Easton community would encompass 1,208.3 acres and provide 3,239 residential dwelling units with a mix of commercial, office, open space, park, and quasi-public uses. The Easton Place community would encompass 183 acres and would be a transit-oriented village with approximately 5 million square feet of developed space inclusive of 1,644 dwelling units. Together, the Glenborough at Easton and Easton Place communities include 4,883 dwelling units, on approximately 1,380 acres.

²¹ San Juan Water District provided the information in **Table 3-8** and **Table 3-9** to the City of Folsom.

²² See California Public Utilities Commission Decision No. 71889, Dated January 24, 1967. This decision authorized the City to provide water within this service area.

Proposed land uses are described in **Table 3-10 and Table 3-11**, with residential densities expressed as dwelling units per acre (DU/AC), and commercial densities expressed as acreages and square feet. The land use categories for the unincorporated area of Sacramento County vary slightly from the land use categories within the City of Folsom boundaries, thus the land use categories are named differently.

Table 3-10. Glenborough at Easton and Easton Place Residential Land Uses.

Residential Land Uses				
Land Use Category	Quantity	Unit	DU/AC	DU
Low Density Residential	378.5	AC	4.4	1659
Medium Density Residential	77.9	AC	8.0	627
High Density Residential	29.5	AC	15.8	466
Commercial Mixed Use				487
Transit District (Easton Place)				1194
Central District (Easton Place)				450
Residential Land Use Totals	485.9	Acres		4883

Projected water demands for Glenborough at Easton and Easton Place were derived using the same methodology described in **sub-section 3.2**. Water demand factors assumed for Glenborough at Easton and Easton Place are shown in **Table 3-12** and are similar to the water demand factors in **sub-section 3.2** based on actual water use observed within the City. Water demand projections for Glenborough at Easton and Easton Place are shown in **Table 3-13** were calculated by applying these water demand factors to proposed land uses in **Table 3-10** and **Table 3-11**, respectively.

The unit demand factors used in the 2005 UWMP represent historic conditions with a range of housing ages, plumbing fixtures, and irrigation systems, and therefore do not reflect demand conditions for completely new construction. Since the 2005 UWMP was adopted, the City of Folsom has completed a five-year single-family residential meter reading project that has validated the unit demand factors used in the 2005 UWMP for the City’s existing service areas, including the factors listed in **Table 3-12**.

Based on the Water Supply Assessment for the Easton Project, the average annual unit demand was 0.67 af/du/yr. This figure, therefore, supports the use of a historic figure between 0.60 and 0.70 af/du/yr as a basis for further refinement of the unit demand factors for Easton Place and Glenborough at Easton.

Table 3-11. Glenborough at Easton and Easton Place Non-Residential Land Uses.

Non-Residential Land Uses			
Land Use Category	Quantity	Unit	Sq. Ft.
Commercial Mixed Use	69.1	Acres	223,200
Commercial	2.4	Acres	20,900
Office	37.1	Acres	455,400
Transit District (Easton Place)	30.3	Acres	283,000
Central District (Easton Place)	54.9	Acres	2,309,100
Market District (Easton Place)	54.7	Acres	935,800
Schools	40.2	Acres	
Parkways	43.5	Acres	
Parkways (Easton Place)	14.9	Acres	
Community Resource Area	25.6	Acres	
Parks	50.5	Acres	
Parks (Easton Place)	7.5	Acres	
Open Space	122.9	Acres	
Open Space - Alder Creek	270.2	Acres	
Major Roadways	60.9	Acres	
Major Roadways (Easton Place)	20.7	Acres	
Non-Residential Land Use Totals	905.4	Acres	4,227,400

The Non-Residential sector water demand for Easton Place and Glenborough at Easton is evaluated on a land-area coverage basis. Each non-residential land-use is assigned an average coverage percentage for each non-residential land-use type – indoor, hardscape, and outdoor irrigation. Land-use coverage percentages were estimated based upon historic City of Folsom data as well as proposed Floor Area Ratios in the Commercial categories.

For purposes of this Urban Water Management Plan, non-revenue water for Glenborough at Easton and Easton Place is assumed to be 10% for both residential and non-residential water uses. This figure lower than the non-revenue water used in water demand projections for the City’s existing service areas north of Highway 50, but is consistent with developments with newly constructed infrastructure and less variation in terrain (thus, lower and more consistent average system operating pressures).

Based on the Environmental Impact Report for the Glenborough at Easton and Easton Place Project, Glenborough at Easton would be developed in five phases over a 20-year period based on market demand. Easton Place would also be developed in five phases, with each phase being implemented based on market demand. Phasing of Easton Place may follow development of residential uses in Glenborough; however, Easton Place is considered an independent development and is not necessarily tied to each phase of

development in Glenborough (i.e., phase B of Easton Place would not be contingent on development of phases 1 and 2 of Glenborough, and vice versa).²³

Table 3-12. Glenborough at Easton and Easton Place Unit Water Demand Factors.

Glenborough at Easton and Easton Place Unit Water Demand Factors²⁴			
Land-use Category	Use Class	Demand Factor	% of acreage
Residential (acre-feet/du/year)			
Low Density Residential	indoor	0.20	
	outdoor	0.45	
	Total	0.65	
Medium Density Residential	indoor	0.20	
	outdoor	0.36	
	Total	0.56	
High Density Residential (Commercial Mixed Use / Transit District / Central District)	indoor	0.20	
	outdoor	0.10	
	Total	0.30	
Non-Residential (acre-feet/acre/year)			
Commercial Office / Mixed Use	Indoor	1.5	7%
	Landscape	4	10%
Commercial	Indoor	1.5	20%
	Landscape	4	10%
Office	Indoor	2	28%
	Landscape	4	10%
Transit District (Easton Place)	Indoor	1.5	21%
	Landscape	4	10%
Central District (Easton Place)	Indoor	1.5	97%
	Landscape	4	10%
Market District (Easton Place)	Indoor	1.5	39%
	Landscape	4	20%
Schools	Indoor	3	10%
	Landscape	4	50%
Parkways	Landscape	4	100%
Community Resource Area	Indoor	3	10%
	Landscape	4	70%
Parks	Indoor	0.5	5%
	Landscape	4	75%
Open Space	Indoor	n/a	n/a
	Landscape	4	100%

Each phase of construction is tied to the availability of utilities and infrastructure to serve the development. The portions of Glenborough at Easton that would be constructed at each phase are outlined below:

²³ See section 2.3.8 – *Phasing and Construction Schedule* of the Glenborough at Easton / Easton Place EIR.

²⁴ These factors are consistent with the SB 610 WSA and the approved EIR for the Easton Project.

- ◆ Phase 1: Villages A, O (O1, O2, O3), P, and R (R1, R2); five parks; improvements to Birkmont Drive; Glenborough Drive adjacent to Villages A and O; and a portion of Easton Valley Parkway (between Birkmont and Glenborough Drive). Approximately 244.0 acres, including a 2.4-acre commercial area, and 831 units would be developed in this phase.
- ◆ Phase 2: Villages B, C, D, L, M, and N; Community Resource Area; elementary school; six parks; improvements to Prairie City Road; a portion of Glenborough Drive adjacent to Village C; and remainder of Easton Valley Parkway to Prairie City Road. Approximately 314.1 acres and 785 units would be developed in this phase.
- ◆ Phase 3: Villages E (E1, E2, E3, E4), F, G (G1, G2), and Q; elementary school; five parks; and a portion of Kimball Place. Approximately 179.3 acres and 964 units would be developed in this phase.
- ◆ Phase 4: Villages H, I, J, K, and S; one park; remainder of Kimball Place and Glenborough Drive, including creek crossings. Approximately 133.2 acres and 659 units would be developed in this phase.
- ◆ Phase 5: Middle school and one park. Approximately 34.5 acres would be developed in this phase.

The portions of Easton Place that would be constructed at each phase are outlined below:

- ◆ Phase A: A portion of Transit District. Approximately 27.6 acres, including a 6.5-acre office area, and 426 units would be developed in this phase.
- ◆ Phase B: A portion of Central District and a portion of Easton Valley Parkway. Approximately 48.8 acres, including 10.3 acres of ground floor retail with office and residences above, and 450 units would be developed in this phase.
- ◆ Phase C: A portion of Central District, including one park; improvements to Hazel Avenue; and a portion of Easton Valley Parkway. Approximately 38.6 acres, including 17.5 acres of office, 2.7 acres of public, and 3.9 acres of entertainment uses, would be developed in this phase.
- ◆ Phase D: Market District, including one park. Approximately 65.4 acres, including 60 acres of office, commercial, and retail uses, would be developed in this phase.
- ◆ Phase E: A portion of Transit District. Approximately 13.4 acres and 768 units would be developed in this phase.

Table 3-13. Glenborough at Easton and Easton Place water demand projections.

Glenborough at Easton and Easton Place Water Demand Projections (acre-feet per year)					
Land Use Designation	2010	2015	2020	2025	2030²⁵
Glenborough at Easton					
Low Density Residential	350.4	350.4	787.8	1078.4	1078.4
Medium Density Residential	91.8	91.8	154.6	351.1	351.1
High Density Residential	38.4	90.0	90.0	139.8	139.8
Commercial Mixed Use DU	0	146.1	146.1	146.1	146.1
Commercial Mixed Use Acres	0	34.9	34.9	34.9	34.9
Commercial	1.7	1.7	1.7	1.7	1.7
Office	0	35.6	35.6	35.6	35.6
School	0	0.0	23.7	46.7	89.9
Community Resource Area	0	0.0	79.4	79.4	79.4
Parkways (43.5 acres)	34.8	69.6	104.4	139.2	174.0
Parks	27.2	27.2	79.6	110.1	149.1
Easton Place					
Transit District (HDR)	0	127.8	127.8	127.8	358.2
Central District (HDR)	0	0.0	0.0	135.0	135.0
Market District (HDR)	0	0.0	0.0	0.0	0.0
Transit District Commercial	0	13.8	13.8	13.8	21.7
Central District Commercial	0	0.0	0.0	57.1	101.8
Market District Commercial	0	0.0	0.0	0.0	75.8
Parkways (14.9 acres)	0	11.9	11.9	23.8	59.6
Parks	0	0.0	0.0	0.0	22.7
Sub - Total	544	1,000.8	1,691.2	2,520.5	3,054.7
Total demand without non-revenue water =					3,055
Non-Revenue Water (10%) =					305
Total treated demand (AF/YR) =					3,360

²⁵ Projected demands after year 2030 will remain the same, since build-out is scheduled to occur for the Easton Place and Glenborough at Easton developments in 2030.

3.4 Projected Demands for Folsom South of U.S. 50 SPA

The Folsom South of US 50 Specific Plan Area (Folsom SPA) is a 3,510-acre comprehensively planned community that creates new community development patterns based on the principles of Smart Growth and Transit Oriented Development. Consistent with these principles, the project includes a mix of residential, commercial, employment and public uses. The Project allows for the entitlement of 10,210 residential units across a broad range of residential unit types including single family detached homes, duplexes and patio homes as well as a range of multi-family residential housing types including townhomes, apartments, and condominiums and live/work studios. The Plan also provides a variety of retail and wholesale commercial, light industrial and office based land uses.

For the purpose of understanding the extent of the water that the Folsom SPA could demand from EID²⁶, **Table 3-14** provides the land use assumptions for the portion of the Folsom SPA located in the EID service area. EID's service area portion of the Folsom SPA encompasses approximately 172 acres and is projected to realize construction of 530 dwelling units. For comparison, **Table 3-15** provides the land uses and associated dwelling units planned for the City of Folsom's water service area.

The unit demand factors used in the 2005 UWMP represent historic conditions with a range of housing ages, plumbing fixtures, and irrigation systems, and therefore do not reflect demand conditions for completely new construction. Since the 2005 UWMP was adopted, the City of Folsom has completed a five-year single-family residential meter reading project that has validated the unit demand factors used in the 2005 UWMP for the City's existing service areas.

Based on the Water Supply Assessment for the Folsom SPA, the average annual unit demand was 0.65 af/du/yr. This figure therefore support use of a historic figure between 0.60 and 0.70 af/du/yr as a basis for further refinement of the unit demand factors for the Folsom SPA. If total annual unit demand is 0.65 af/unit/yr, the indoor demand component of total demand is approximately 0.22 af/unit/year after subtracting the outdoor demand component, based on the City's average ETo of 53 inches, the average plant factor throughout a residential landscape of 0.7 and an irrigation efficiency of about 70%.²⁷

²⁶ A portion of the Folsom SPA is within El Dorado Irrigation District's (EID) water service area.

²⁷ ETO is measured at California Irrigation Management Information System (CIMIS) station located in Fair Oaks, California. The plant factor of 0.7 reflects the fact that the predominant landscape planting in the residential sector is cool-season grass, which has a plant factor of 0.8. A slight reduction is made to 0.7 to account for trees, shrubs, native landscapes, and non-living landscape cover. An irrigation efficiency of 70% was selected because, according to UC Cooperative Extension and the Department of Water Resources, "A representative range of efficiencies for landscape systems is proposed ... to be from 65% to 90%," and "A system which is well designed and operated can have an efficiency range of 80% to 90%." Because historic residential unit demand was estimated for homes built no later than 2003, it is unlikely the

Table 3-14. Folsom SPA Land Use Categories – Folsom Water Service Area.

Land Use Categories			
Land Use Category	Area (Acres)	DU Density (DU/AC)	DU
Residential			
Single Family (SF)	524.0	3.0	1,581
Single Family, High Density (SFHD)	501.5	5.5	2,762
Multi-Family, Low Density (MFLD)	238.8	9.1	2,181
Multi-Family, Medium Density (MFMD)	67.0	18.3	1,224
Multi-Family, High Density (MFHD)	49.9	25.1	1,251
Mixed-Use Residential (MU-R)	35.5	19.2	681
Non-Residential			
Mixed – Use, Non-Residential (MU-NR)	23.6		
Office Park (OP)	89.2		
Community Commercial (CC)	38.8		
General Commercial (GC)	183.4		
Regional Commercial (RC)	110.8		
Park	118.2		
Local Park (LP)	3.5		
Schools (SCH)	179.3		
Open Space (OS)	1,010.0		
Major Circulation (MAJ CIRC)	164.8		
Total Residential	1,416.7		9,680
Total Non-Residential	1,921.6		0
Folsom Water Service Area Total	3,338.3		9,680

Table 3-15. Folsom SPA Land Use Categories – EID Water Service Area.

Land Use Categories			
Land Use Category	Area (Acres)	DU Density (DU/AC)	DU
Residential			
Single Family (SF)	33.8	3.1	106
Single Family, High Density (SFHD)	31.0	5.5	171
Multi-Family, Low Density (MFLD)	27.9	9.1	253
Non-Residential			
General Commercial (GC)	29.5		
Open Space (OS)	43.1		
Major Circulation (MAJ CIRC)	6.8		
Total Residential	92.7		530
Total Non-Residential	79.4		0
EID Water Service Area Total	172.1		530

systems would be considered “well designed and operated” seven years later. Therefore, an irrigation efficiency rate on the lower end of the range was selected. *A Guide to Estimating Irrigation Water Needs from Landscape Plants in California*, University of California Cooperative Extension and California Department of Water Resources, August, 2000.

While the division between indoor and outdoor unit demands in the City of Folsom is not certain because dedicated irrigation meters do not exist on individual residences, it is possible to derive both indoor and outdoor unit demands using meter data. The outdoor component calculation uses reference evapotranspiration (ET_o), plant factor, and irrigation efficiency numbers that are appropriate for Folsom's geography and climate.

Unit demand factors used to estimate demand for the Folsom SPA are developed by first estimating per capita use to generate an indoor unit demand factor and then considering landscaping demands to develop an outdoor unit demand factor. The indoor and outdoor components are ultimately combined into a total unit demand factor for the residential land-use categories. For the Folsom SPA, the indoor unit demand numbers for the single and multiple-family residential classifications are provided in **Table 3-16**.

The Non-Residential sector water demand for the Folsom SPA is evaluated on a land-area coverage basis. Each non-residential land-use is assigned an average coverage percentage for each non-residential land-use type – indoor, hardscape, and outdoor irrigation. Land-use coverage percentages were estimated based upon historic City of Folsom data as well as proposed Floor Area Ratios in the Commercial categories.

3.4.1 Folsom SPA Indoor Demand Factors

The historic single-family indoor unit demand factor in the City's existing service area is approximately 0.22 af/du/yr. At 2.83 persons per household, the per capita demand is about 70 gallons per person per day (GPD).²⁸ If the City of Folsom adopts indoor water-efficient infrastructure policies (based on the Cal Green Code) and implements metering and volumetric billing, the historic indoor per capita unit demand factor will be reduced by at least ten percent (10%). Therefore, the single-family unit demand factor of 63 GPD is used to calculate the indoor water demand for the Folsom SPA.

The same per capita indoor unit demand factor is used for the multi-family units as is used for the single-family units because each person has similar individual indoor demands regardless of the size of the unit – e.g., bathing, dishwashing, clothes washing, toilet flushing.²⁹ Therefore 63 GPD is used as the indoor per capita unit demand for the multi-family and multi-use categories.

For the Folsom SPA, the indoor unit demand numbers for the single and multiple-family residential classifications are provided in **Table 3-16**. Using the dwelling unit

²⁸ The Folsom 2005 UWMP assumed 2.83 persons per household, which is the per capita value that is used as the historical dwelling unit population density.

²⁹ The Folsom 2005 UWMP also assumed the multi-family indoor unit demand factor is the same as the single-family indoor unit demand factor.

population number for the Single-Family categories of 2.9 persons/unit and 1.9 persons/unit for the Multi-Family categories in combination with the per capita per day estimate of 63 gallons, the annual indoor unit demand factor is calculated as well.³⁰

3.4.2 Folsom SPA Residential Outdoor Demand Factors

Based upon single-family meter data, outdoor usage in the residential sector is approximately 4.3 acre-feet/acre/ per year (af/ac/yr). An evapotranspiration-based turf demand was calculated in the Folsom Recycled Water Demand Technical Memorandum (TM) as 4.5 af/ac/yr.³¹ The Folsom Recycled Water Demand TM also reviewed historic outdoor metered account usage and reported the average usage from 2000-2004 was 3.9 af/ac/yr. Thus, historic usage ranges between 3.9 – 4.5 af/ac/yr.

The primary driver that could significantly change both residential and non-residential outdoor water demands is the MWELo. The MWELo provides that a landscape design plan should include plantings that use no more than seventy percent (70%) of reference evapotranspiration.³² By requiring preparation of landscape plans for the Folsom SPA that use 70% of reference evapotranspiration, the long-term unit demand is likely to be somewhat greater than 70% ETo because of variations in plant and irrigation system maintenance. Therefore, this Folsom SPA demand estimate uses a “mid-point” between 100% ETo and that required in the MWELo - 85% of evapotranspiration, which is equivalent to 3.73 af/ac/yr.

The outdoor unit demand factor of 3.73 af/ac/yr was developed based upon single-family lot size and associated landscape area for each lot in the Folsom SPA land-use plan. In the multi-family sector landscaped area is reflected as a percentage of total area for each multi-family category. The estimate of single-family lot area was made based upon the acreage and unit figures for the single-family land use categories as well as an estimate of the area necessary for roads and right-of-ways. For the Single-Family category, the planned unit density is three units per acre (1687 units/557.8 acres). If 25% of the area in the Single Family category is for roads and rights of ways, then the lot size is approximately 11,000 square feet (sf).

To estimate the landscaped area on each lot, the City of Folsom Zoning Code was used as a reference. Assuming the lots are 11,000 sf, they would fit within the City of Folsom’s *Single Family Dwelling, Medium Lot District* category, which requires

³⁰ The dwelling unit population figure was calculated by dividing the estimated persons per unit by the total number of units for each land-use category.

³¹ City of Folsom Recycled Water Demands Technical Memorandum. Brown and Caldwell, November 9, 2005.

³² CCR Title 23, Div. 2, Chapter 2.7, Sec. 492.4.

minimum 10,000 sf lots and maximum building coverage of 35%.³³ If 25% of the lot is used for hardscapes, then the remainder of the lot, as landscape area, would be approximately 40%. For the Single-Family High Density Category, the planned unit density is approximately 5.5 units/acre (2933 units/532.5 acres). Again, using approximately 25% road and right-of-way dedication, then the average lot size would be about 6,000 sf. And, if some of the hardscapes in the Single-Family High Density category will occupy an area similar to that in the Single-Family category (e.g., a standard two-car driveway), then the Folsom SPA is assigned a landscaped area that is a smaller percentage of total lot area in the Single-Family High Density category – 30%.

For the Multi-Family categories in the Folsom SPA land-use plan, total area is first reduced by 10% to account for roads and right of ways. Then landscaped area is derived by assessing that the building coverage is approximately 40-50% for the Multi-Family Low and Medium Density categories to 55% for the Multi-Family High Density category.³⁴ Since hardscapes are about 15-25% of lot area, then landscaped areas cover between 25-30% of the lot. For the Multi-Unit Residential category, the landscaped area is only 10% of lot area because the combined commercial uses (in the Multi-Unit Nonresidential category) reduce landscaped areas.

Table 3-16. Folsom SPA Residential Unit Demand Factors.

Residential Unit Demand Factors³⁵			
Land Use Category	Indoor (AF/DU)	Outdoor (AF/DU)	Total (AF/DU)
Single Family (SF)	0.21	0.38	0.59
Single Family, High Density (SFHD)	0.21	0.16	0.37
Multi-Family, Low Density (MFLD)	0.14	0.09	0.23
Multi-Family, Medium Density (MFMD)	0.14	0.05	0.19
Multi-Family, High Density (MFHD)	0.14	0.04	0.18
Mixed-Use Residential (MU-R)	0.14	0.02	0.16

³³ City of Folsom Zoning Code, § 17.12.060.

³⁴ Land coverage percentages were estimated based upon comparison to existing City of Folsom Zoning Code definitions. The existing R-2, Two-Family Residence definition provides for up to 40% lot coverage and the existing R-3, Neighborhood Apartment District definition provides for coverage up to 50%. It is assumed that the Folsom SPA - PPA Multi-Family Low and Medium Density categories are similar to the existing R-2 and R-3 definitions, thus the use of the 40-50% coverage range. For the Folsom SPA - PPA Multi-Family High Density category, it is assumed that this category is more like the City of Folsom’s existing R-M, Residential Multi-Family Dwelling District definition which provides for the building to cover 60% of the lot. (See City of Folsom Zoning Code §§ 17.14, 17.16 and 17.17.)

³⁵ This figure includes potential water use savings to reach water use targets identified in SB x7-7, CUWCC volumetric billing assumed water savings, and savings from the California Model Water Efficient Landscape Ordinance.

3.4.3 Folsom SPA Non-Residential Outdoor Demand Factors

For this analysis, all commercial construction in the Community, General and Regional Commercial categories is one story and the building footprint utilizes the maximum targeted floor area. For the Office Park category, some of the units have multiple stories and the indoor coverage percentage is reduced accordingly.³⁶ For the Folsom SPA, the unit demand numbers for the non-residential classifications are provided in **Table 3-17**.

The non-residential unit demand factors include a 5% conservation-based non-residential indoor unit demand to incorporate water efficient fixtures of the CAL Green Code. The landscape unit demand factors for each non-residential land use category also includes an conservation-based outdoor unit demand factor to meet the 85% of reference evapotranspiration conclusions related to the California Model Water Efficiency Landscape Ordinance.

For the Folsom SPA, water use projections will match the estimates listed in the Environmental Impact Report, which will occur over a 20-year period from 2013 to 2033. Depending on the final phasing plan selected by the land developers and the housing market conditions, the actual population estimates may change after the development of the 2010 UWMP. And, depending on the final phasing plan selected by the land developers and the housing market conditions, these estimates may change prior to the 2015 Urban Water Management Plan as well.

³⁶ While the City of Folsom Zoning Code (§ 17.22.050) would seem to provide for buildings in categories similar to the Commercial and Office Park categories for the Folsom SPA to have more than one story, it is not certain what type of businesses will ultimately be sited in the Office Park and Commercial categories. Therefore, the building area coverage estimate is driven primarily by Tully & Young's professional opinion relative to new commercial and office park developments in the City of Folsom.

Table 3-17. Folsom SPA Non-Residential Unit Demand Factors.

Folsom SPA Non-Residential Unit Demand Factors				
Land-use Category	Acres	Use Class	Coverage (%)	Use Class Unit Demand (AF/AC/YR)
Mixed Use, Non-Residential	23.6	Indoor	20%	1.66
		Hardscape	45%	0.00
		Landscape	35%	3.73
Office Park	89.2	Indoor	25%	1.90
		Hardscape	35%	0.00
		Landscape	40%	3.73
General Commercial	212.9	Indoor	25%	1.66
		Hardscape	45%	0.00
		Landscape	30%	3.73
Community Commercial	38.8	Indoor	25%	1.66
		Hardscape	45%	0.00
		Landscape	30%	3.73
Regional Commercial	110.8	Indoor	28%	1.90
		Hardscape	47%	0.00
		Landscape	25%	3.73
Park	118.2	Indoor	2%	0.48
		Hardscape	3%	0.00
		Landscape	95%	3.73
Local Park	3.5	Indoor	2%	0.48
		Hardscape	3%	0.00
		Landscape	95%	3.73
Schools	179.3	Indoor	25%	2.85
		Hardscape	25%	0.00
		Landscape	50%	3.73
Open Space	1053.1	Indoor	0%	0.00
		Hardscape	0%	0.00
		Landscape	100%	0.00
Major Circulation	171.6	Indoor	0%	0.48
		Hardscape	90%	0.00
		Landscape	10%	3.73

For purposes of this Urban Water Management Plan, non-revenue water for Folsom SPA is assumed to be 10% for both residential and non-residential water uses. This is lower than the non-revenue water percentage used in water demand projections for the City’s existing service areas north of Highway 50, but is consistent with developments with newly constructed infrastructure and less variation in terrain (thus lower and more consistent average system operating pressures). Water demand projections for Folsom SPA shown in **Table 3-18** were calculated by applying the residential and non-residential water demand factors to proposed land uses in **Table 3-16** and **Table 3-17**, respectively.

Table 3-18. Folsom SPA water demand projections.

Folsom SPA Water Demand Projections (acre-feet per year)					
Land Use Designation	2015	2020	2025	2030	2035
City of Folsom Water Service Area					
Single Family	46.6	233.1	466.7	699.7	932.8
Single Family, High Density	51.1	255.7	511.0	766.6	1,021.9
Multi-Family, Low Density	25.1	125.4	250.9	376.3	501.6
Multi-Family, Medium Density	11.6	58.1	116.3	174.4	232.6
Multi-Family, High Density	11.3	56.3	112.7	168.8	225.2
Mixed-Use Residential	5.4	27.2	54.6	81.8	109.0
Mixed – Use, Non-Residential	1.9	9.7	19.3	29.0	38.6
Office Park	8.8	43.9	87.7	131.6	175.5
Community Commercial	3.0	14.9	29.8	44.6	59.5
General Commercial	14.1	70.3	140.7	211.0	281.3
Regional Commercial	8.1	40.6	81.1	121.7	162.3
Park	21.0	105.0	210.0	315.0	420.0
Local Park	0.6	3.1	6.2	9.3	12.4
Schools	23.1	115.5	231.1	346.6	462.1
Open Space	0.0	0.0	0.0	0.0	0.0
Major Circulation	3.1	15.4	30.8	46.1	61.5
City of Folsom Subtotal	235	1,174	2,349	3,523	4,696
EID Water Service Area					
Single Family	3.0	15.9	31.3	47.2	62.5
Single Family, High Density	3.3	15.9	31.8	47.4	63.3
Multi-Family, Low Density	3.0	14.5	29.2	43.7	58.2
General Commercial	2.3	11.3	22.6	33.9	45.3
Open Space	0.0	0.0	0.0	0.0	0.0
Major Circulation	0.1	0.6	1.3	1.9	2.5
EID subtotal	11.7	58	116	174	232
Total demand without non-revenue water =					4,928
Non-Revenue Water (10%) =					493
Total treated demand (AF/YR) =					5,421

3.5 Historic, Current, and Projected Demands for the City’s Water Service Areas

Summarized in the following tables are the City’s 2005 historic water delivery, the current 2010 water delivery, and projected water deliveries in five-year increments from 2015 to 2035. These figures are for the City’s Water Service Area. Each table identifies uses among water use sectors, including: (A) Single family residential, (B) Multi-family residential, (C) Commercial, (D) Industrial, (E) Municipal (Institutional & Governmental), (F) Landscape, (G) Schools, and (H) Aerojet raw water deliveries. For **Tables 3-19** and **Table 3-20**, there are non-metered accounts for single family residences. As described in the City’s 2007 Water Meter Implementation Plan, the City will begin billing all customers based on volumetric water use in January 2013. The listed non-metered accounts will become metered accounts by 2015, in time for the next Urban Water Management Plan.

Table 3-19. Water Service Area 2005 metered and non-metered water use by sector.

Water use sectors	2005				
	Metered		Non-Metered		Total
	# of accounts	Volume (AF)	# of accounts	Volume (AF)	Volume (AF)
Single family	48	40.3	15,860	14,479	14,519
Multi-family	265	989.7	0	0	990
Commercial	523	2418.3	0	0	2,418
Industrial	6	1014.9	0	0	1,015
Municipal (Institutional & Governmental)	9	168.7	0	0	169
Landscape	377	2636.4	0	0	2,636
Schools	29	333.8	0	0	334
Aerojet Non-Potable Water	1	2,893	0	0	2,893
Total	1,258	10,495	15,860	14,479	24,974

Table 3-20. Water Service Area 2010 metered and non-metered water use by sector.

Water use sectors	2010				
	Metered		Non-Metered		Total
	# of accounts	Volume (AF)	# of accounts	Volume (AF)	Volume (AF)
Single family	898	662.5	16,587	7831.6	8,494
Multi-family	359	1344.3	0		1,344
Commercial	683	6005.9	0		6,006
Industrial	5	349.5	0		349
Municipal (Institutional & Governmental)	35	375.4	0		375
Landscape	437	4151.5	0		4,152
Schools	35	2135.2	0		2,135
Aerojet Non-Potable Water	1	3567.0	0		3,567
Total	2,453	18,591	16,587	7,832	26,423

Table 3-21. Water Service Area 2015 metered and non-metered water use by sector.

Water use sectors	2015				
	Metered		Non-Metered		Total
	# of accounts	Volume (AF)	# of accounts	Volume (AF)	Volume (AF)
Single family	18,666	8,675	0	0	8,675
Multi-family	1,176	1,483	0	0	1,483
Commercial	704	5,800	0	0	5,800
Industrial	15	393	0	0	393
Municipal (Institutional & Governmental)	42	393	0	0	393
Landscape	465	3,971	0	0	3,971
Schools	0	2,029	0	0	2,029
Aerojet Non-Potable Water	1	2,731	0	0	2,731
Non-revenue water	0	0	0	2,659	2,659
Total	21,069	25,476	0	0	28,135

Table 3-22. Water Service Area 2020 metered and non-metered water use by sector.

Water use sectors	2020				
	Metered		Non-Metered		Total
	# of accounts	Volume (AF)	# of accounts	Volume (AF)	Volume (AF)
Single family	21,376	10,227	0	0	10,227
Multi-family	2,735	2,017	0	0	2,017
Commercial	752	6,075	0	0	6,075
Industrial	31	461	0	0	461
Municipal (Institutional & Governmental)	58	579	0	0	579
Landscape	518	4,078	0	0	4,078
Schools	37	2,134	0	0	2,134
Aerojet Non-Potable Water	1	2,731	0	0	2,731
Non-revenue water	0	0	0	3,007	3,007
Total	25,508	28,303	0	0	31,310

Table 3-23. Water Service Area fully metered water use by sector for 2025, 2030, and 2035.

Water use sectors	2025		2030		2035	
	# of accounts	Volume (AF)	# of accounts	Volume (AF)	# of accounts	Volume (AF)
Single family	22,949	11,536	23,724	12,013	24,499	12,230
Multi-family	4,262	2,610	5,856	3,028	7,559	3,414
Commercial	818	6,600	946	6,917	988	6,977
Industrial	31	509	31	514	31	509
Municipal (Institutional & Governmental)	73	708	86	812	97	914
Landscape	588	4,337	650	4,455	707	4,464
Schools	39	2,334	39	2,437	42	2,531
Aerojet Non-Potable Water	1	2,731	1	2,731	1	2,731
Non-revenue water	0	3,182	0	3,353	0	3,449
Total	28,761	34,548	31,333	36,259	33,924	37,218

3.6 Projected Demands for Lower Income Households

Water use projections for single family and multi-family housing needed for lower income housing is included in the projected demands described in **sub-sections 3.2, 3.3, and 3.4**. The City of Folsom’s 2009 Housing Element developed an inventory of “built” and “planned” projects with an affordable housing component. The 2009 Housing Element only included affordable housing for the Ashland Service Area, Folsom Service Area – West, and Folsom Service Area – East.

Of the 4,883 total units in the Glenborough at Easton and Easton Place project, 15 percent (732 units) would be designated as affordable consistent with Sacramento County’s Affordable Housing Ordinance. Seventy-two of the 318 units in Easton Place would be provided to help meet the Glenborough at Easton affordable housing unit requirement.³⁷

The Folsom SPA provides approximately 16.4% of the total maximum plan area that meets the state minimum default density of 20 units per acre for “suburban jurisdictions” that shall be deemed appropriate to accommodate housing for lower income households.³⁸ The allocated residential unit count for the multi-family high-density residential and mixed use is 1,679 housing units. See **Table 3-24** and **Table 3-25** for dwelling units and projected demand for affordable housing, respectively.

³⁷ Identified in the Easton Project EIR, Section 2.3.2.

³⁸ Identified in the Folsom Plan Area Specific Plan, Section 5.6. This is Attachment N of the Folsom South of U.S. 50 Specific Plan Project.

Table 3-24. Affordable housing dwelling units by water service area.

Affordable Housing Dwelling Units by Water Service Area				
Water Service Area	Very Low Income	Low Income	Moderate Income	Affordable Housing Total
Ashland (SFR)	1	0	0	1
Ashland (MFR)	0	0	0	0
Folsom - West (SFR)	0	4	0	4
Folsom - West (MFR)	210	58	97	365
Folsom - East (SFR)	0	0	53	53
Folsom - East (MFR)	0	113	790	903
Folsom SPA (SFR)	0	0	0	0
Folsom SPA (MFR)	N/A	N/A	N/A	1,679
Glenborough - Easton (SFR)	0	0	0	0
Glenborough - Easton (MFR)	293	293	146	732

Table 3-25. Affordable housing projected water use by water service area.

Affordable Housing Water Demand by Water Service Area (AF/YR)					
Water Service Area	2015	2020	2025	2030	2035
Ashland (SFR)	0.65	0.65	0.65	0.65	0.65
Ashland (MFR)	0	0	0	0	0
Folsom - West (SFR)	2.60	2.60	2.60	2.60	2.60
Folsom - West (MFR)	54.75	109.50	109.50	109.50	109.50
Folsom - East (SFR)	17.23	34.45	34.45	34.45	34.45
Folsom - East (MFR)	135.45	270.90	270.90	270.9	270.9
Folsom SPA (SFR)	0	0	0	0	0
Folsom SPA (MFR)	88.75	177.49	266.24	354.99	443.74
Glenborough - Easton (SFR)	0	0	0	0	0
Glenborough - Easton (MFR)	38.4	38.4	157.8	207.6	219.6
Total (AF/YR)	338	634	842	981	1081

3.7 SBx7-7 Urban Per Capita Water Use

In November 2009, SBx7-7, The Water Conservation Act of 2009, was signed into law as part of a comprehensive water legislation package. The Water Conservation Act addresses both urban and agricultural water conservation. The urban provisions reflect the approach taken in the 20x2020 Water Conservation Plan. The legislation sets a goal of achieving a 20 percent statewide reduction in urban per capita water use and directs urban retail water suppliers to set 2020 urban water use targets. This sub-section describes the 2010 base daily per capita water use, interim water use target, and urban water use target.

Urban water suppliers must define a 10-year or 15-year base period for water use that will be used to develop the target levels of per capita water use. Water suppliers must also calculate water use for a 5-year baseline period, and use that value to determine a minimum required reduction in water use by 2020. The longer baseline period applies to

a water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water.

An urban retail water supplier, as defined above, must set a 2020 water use target and a 2015 interim target using one of four methods. Three of these are defined in Water Code Section 10608.20(a)(1), with the fourth developed by the Department of Water Resources (DWR). The 2020 water use target will be calculated using one of the following four methods:

- ◆ Method 1: Eighty percent of the water supplier's baseline per capita water use
- ◆ Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscaped area water use; and commercial, industrial, and institutional uses
- ◆ Method 3: Ninety-five percent of the applicable state hydrologic region target as stated in the State's April 30, 2009, draft 20x2020 Water Conservation Plan
- ◆ Method 4: Savings are assumed between the baseline period and 2020 due to metering of unmetered water connections and achieving water conservation measures for residential indoor water use, commercial, industrial and institutional water use (CII), landscape water use, water loss, and unaccounted for water

The California Department of Water Resources (DWR) developed various methodologies that provide specific guidance to water suppliers on how to calculate baseline, target, and compliance-year water use. Each methodology defines how its calculations are to be used, with direct references to the applicable section of the Water Code. Each methodology describes the calculations and data needed by each urban supplier.

3.7.1 Gross Water Use

Gross Water Use is a measure of water supplied to the distribution system over 12 months and adjusted for changes in distribution system storage and deliveries to other water suppliers that pass through the distribution system. Recycled water deliveries are to be excluded from the calculation of Gross Water Use. Water delivered through the distribution system for agricultural use may be deducted from the calculation of Gross Water Use. Under certain conditions, industrial process water use also may be deducted from Gross Water Use. The methodology for calculating Gross Water Use broadly follows American Water Works Association (AWWA) Manual M36

guidance for calculating Distribution System Input Volume. Calculating Gross Water Use entails 12 basic steps, two of which are optional.³⁹

Since the City did not deliver any recycled water in the 2008 Calendar year, the first base period is over a continuous 10-year period. For this 10-year continuous period, the ending year must be between December 31, 2004 and December 31, 2010. See **Table 3-26** for the City’s 10-year base period. Since the Ashland Area is within the City’s water service area, these figures are included.⁴⁰ Also included are raw water deliveries to Aerojet for non-potable industrial purposes. The gross water use is derived by adding the water treatment plant inlet, Willow Hill Reservoir, and San Juan Water District, and then subtracting the recycled backwash water.

Table 3-26. City of Folsom 10-year base period water use.

Year ⁴¹	Water Treatment Plant Inlet	Willow Hill Reservoir ⁴²	Recycled Backwash	San Juan Water District	Gross Water (acre-feet)
1996	10,985	2,700	0	1,076	14,761
1997	13,801	2,700	0	1,102	17,603
1998	13,617	2,700	0	1,059	17,376
1999	16,355	2,700	0	1,141	20,196
2000	16,254	2,700	0	1,324	20,278
2001	21,516	2,700	0	1,138	25,354
2002	20,861	2,700	1,295	1,149	23,414
2003	20,879	2,700	773	1,107	23,913
2004	22,818	2,700	1,386	1,415	25,547
2005	21,674	2,893	1,154	1,561	24,974

3.7.2 Service Area Population

To obtain an accurate estimate of gallons per capita per day (GPCD), water suppliers must estimate population of the areas that they actually serve, which may or may not coincide with either their jurisdictional boundaries or with the boundaries of cities. Customers may be in the distribution area with a wholly private supply during the baseline and compliance years, and new areas may be annexed into a water supplier’s distribution system over time. The area used for calculating service area population shall be the same as the distribution system area used in Methodology 1, Gross Water Use.

³⁹ The 12 steps are defined by DWR in the *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* document.

⁴⁰ Water delivery data for the Ashland water service area is obtained from San Juan Water District on a monthly basis and then added together to calculate a yearly demand.

⁴¹ Data presented in this table is for the Calendar Year listed, from January 1 through December 31.

⁴² Raw water delivered for non-potable industrial uses at Aerojet.

The City’s service area population was detailed in **sub-section 2.4**, which describes how the American River Canyon population is calculated using the 2000 Census data. For historical purposes, the service area population is calculated using a combination of 2000 Census data and population estimates from the California Department of Finance. Historical population figures are shown in **Table 3-27**.

Census data is, however, only acquired at ten-year intervals. California Department of Finance estimates help resolve this timing issue by providing annual population figures for the entire City and for the individual group quarters facilities. For the non-census years between 2000 and 2010, the CDOF population estimates were used in calculating the base daily per capita water use. Since the CDOF does not identify population estimates based on service area within the City, a combination of Census data factors with land-use categories and CDOF estimates are used to calculate service area population for Folsom Service Area – East, Folsom Service Area – West, and Ashland Service Area.

In order to calculate the City’s service area population for the current year and projected years, there are two additional steps required. First, the current and projected population from the American River Canyon Area is subtracted. Second, the population projections for the Glenborough at Easton, Easton Place, and Folsom SPA are added, since these areas are within the City’s water service area.

Table 3-27. City of Folsom service area population.

Year	City of Folsom Total⁴³	American River Canyon⁴⁴	Service Area
1996	36,141	4,626	31,515
1997	38,441	4,677	33,764
1998	40,019	4,729	35,290
1999	44,940	4,780	40,160
2000	49,852	4,831	45,021
2001	52,492	4,952	47,540
2002	55,855	5,095	50,760
2003	57,804	5,238	52,566
2004	59,300	5,254	54,046
2005	60,816	5,269	55,547
2006	62,073	5,294	56,779
2007	63,752	5,318	58,434
2008	64,427	5,343	59,084

⁴³ This figure does not include the “Group Quarters” of the Folsom State Prison.

⁴⁴ The population figures in the American River Canyon are within the City’s boundaries, but this area is not within the City’s water service area. Therefore, this population figure is subtracted from the City’s total population obtained from CDOF.

3.7.3 Base Daily Per Capita Water Use

Base Daily Per Capita Water Use is defined as average gross water use, expressed in GPCD, for a continuous, multiyear base period. The City did not develop baselines and targets using regional methods. The Water Code specifies two different base periods for calculating Base Daily Per Capita Water Use under Section 10608.20 and Section 10608.22:

- ◆ The first base period is a 10- to 15-year continuous period, and is used to calculate baseline per capita water use per Section 10608.20.
- ◆ The second base period is a continuous five-year period, and is used to determine whether the 2020 per capita water use target meets the legislation's minimum water use reduction requirement per Section 10608.22.

Unless the urban retail water supplier's five year Base Daily Per Capita Water Use per Section 10608.12 (b) (3) is 100 GPCD or less, Base Daily Per Capita Water Use must be calculated for both baseline periods.

Calculating Base Daily Per Capita Water Use entails four steps:

1. Estimate Service Area Population for each year in the base period using Methodology 2.
2. Calculate Gross Water Use for each year in the base period using Methodology 1.
3. Calculate daily per capita water use for each year in the base period. Divide Gross Water Use (determined in Step 2) by Service Area Population (determined in Step 1).
4. Calculate Base Daily Per Capita Water Use. Calculate average per capita water use by summing the values calculated in Step 3 and dividing by the number of years in the base period. The result is Base Daily Per Capita Water Use for the selected base period.

Based on the requirements of Water Code Sections 10608.20 and 10608.22, the City calculated a 5-year and 10-year base daily per capita water use. For this 5-year continuous period, the ending year must be between December 31, 2007 and December 31, 2010. See **Table 3-28** for the City's 5-year based period. Since the Ashland Area is within the City's water service area, these figures are included.⁴⁵ Also included are raw water deliveries to Aerojet for non-potable industrial purposes. The gross water use is derived by adding the water treatment plant inlet, Willow Hill Reservoir, and San Juan Water District, and then subtracting the recycled backwash.

⁴⁵ Water delivery data for the Ashland water service area is obtained from San Juan Water District on a monthly basis.

In order to calculate the 5-year and 10-year base daily per capita water use, the gross water identified in **Table 3-26** and **Table 3-28** is converted from acre-feet per year to gallons per day. The service area population is identified in **Table 3-27**. After converting the gross water use from acre-feet per year to gallons per day, the annual daily per capita water use is calculated as shown in **Equation 1**. The base daily per capita water use for the 5-year and 10-year base period is shown in **Table 3-29**.

Table 3-28. City of Folsom 5-year base period water use.

Year ⁴⁶	Water Treatment Plant Inlet	Willow Hill Reservoir ⁴⁷	Recycled Backwash	San Juan Water District	Gross Water (acre-feet)
2004	22,818	2,700	1,386	1,415	25,547
2005	21,674	2,893	1,154	1,561	24,974
2006	23,469	2,900	1,545	1,695	26,519
2007	23,962	3,020	1,498	1,820	27,304
2008	23,744	3,020	1,729	1,608	26,644

Equation 1. Base daily per capita water use calculation.

$$\text{Gallons per Capita per Day (GPCD)} = \frac{\text{Gross Water Use (Gallons)}}{\text{Service Area Population}}$$

Table 3-29. City of Folsom 5-year and 10-year base daily per capita water use.

Year	Service Area Population	Gross Water (acre-feet)	5-Year GPCD	10-Year GPCD
1996	31,515	14,761	n/a	418
1997	33,764	17,603	n/a	465
1998	35,290	17,376	n/a	440
1999	40,160	20,196	n/a	449
2000	45,021	20,278	n/a	402
2001	47,540	25,354	n/a	476
2002	50,760	23,414	n/a	412
2003	52,566	23,913	n/a	406
2004	54,046	25,547	422	422
2005	55,547	24,974	401	401
2006	56,779	26,519	417	n/a
2007	58,434	27,304	417	n/a
2008	59,084	26,644	403	n/a
Base daily per capita water use⁴⁸			412	429

⁴⁶ Data presented in this table is for the Calendar Year listed, from January 1 through December 31.

⁴⁷ Raw water delivered for non-potable industrial uses at Aerojet.

⁴⁸ Base daily per capita water use is calculated by adding the values in the column and dividing by the number of rows.

3.7.4 Compliance Daily Per Capita Water Use

California Water Code Section 10608.12(e) states: “Compliance daily per-capita use” means the gross water use during the final year of the reporting period, reported in gallons per capita per day. No special adjustment calculation is needed for areas that were undeveloped during the baseline period but which were annexed and developed between the baseline period and compliance year. The impact on GPCD is accounted for by the estimation of compliance year Gross Water Use and compliance-year population.

The City of Folsom developed its 2020 water use target using DWR’s Method 1 approach, which is calculated as 80% the City’s baseline per capita water use. The 10-year baseline per capita water use is multiplied by 0.80 to obtain 343 (429 x 0.80) GPCD. Since the 5-year base daily water per capita water use is not less than 100 GPCD, the City also calculated 95% of the 5-year base daily per capita water use, which is 391 (412 x 0.95) GPCD. Since the 2020 target of 343 GPCD is less than the 95% of the 5-year base daily per capita water use (391 GPCD), there is no adjustment required to the 2020 target of 343 GPCD.

The 2015 target daily per capita water use is set at the midpoint between 10-year baseline and 2020 target. This calculates to be 386 GPCD for the year 2015. See **Table 3-30** for the baseline, interim, and target GPCD. These figures do not account for the potential savings described **sub-section 3.8** below. See **Table 3-31** for potential savings described in **sub-section 3.8**. As shown in **Table 3-30**, the City will meet the 2015 Interim Target of 386 GPCD, but will be above the 2020 Target of 343 GPCD. **Sub-section 3.8** describes the measures that will allow the City to reduce urban water use per capita by 2020 to meet the requirements of Senate Bill x7-7.

Table 3-30. Baseline, Projected, Interim, and Target GPCD.

10-Year Baseline	2015		2020	
	Interim Target	Projected	SBx7-7 Target	Projected
429	386	373	343	346

3.8 Water Use Reduction Plan

Pursuant to California Water Code Section 10608.26, retail water suppliers are required to develop an implementation plan for compliance with the Water Conservation Bill of 2009. The City of Folsom’s water conservation efforts related to efficient infrastructure requirements and landscape features support at least a 10% reduction in historic per capita unit demand factors. Several other areas of conservation are included in the **sub-sections 3.8.1** through **3.8.5**.

3.8.1 California Model Water Efficient Landscape Ordinance

In 2006, the California Legislature enacted, and the Governor signed, the Water Conservation in Landscaping Act (Gov. Code §§ 65591-65599), which requires the Department of Water Resources to update the Model Water Efficient Landscape Ordinance (MWELo). On September 10, 2009, the Office of Administrative Law (OAL) approved the updated MWELo, which requires that a local agency implement the provisions of the MWELo by January 1, 2010. Because the City of Folsom is a “local agency” under the MWELo, it must require “project applicants” to prepare plans consistent with the requirements of MWELo for review and approval by the City of Folsom.

The MWELo provisions likely to have a significant effect on the landscape design and resulting outdoor water demand include preparation of a Landscape Design Plan with a water budget that is 70% of reference evapotranspiration.⁴⁹ The provisions of the MWELo are applicable to new construction with a landscape area greater than 2,500 square feet.⁵⁰ The MWELo “highly recommends” use of a dedicated landscape meter on landscape areas smaller than 5,000 square feet, and requires weather-based irrigation controllers or soil-moisture based controllers or other self-adjusting irrigation controllers for irrigation scheduling in all irrigation systems.⁵¹ The MWELo provides a methodology to calculate total water use based upon a given plant factor and irrigation efficiency.⁵² Finally, MWELo requires the landscape design plan to delineate hydrozones (based upon plant factor) and then assign a unique valve for each hydrozone (low, medium, high water use).⁵³

3.8.2 Metering and Volumetric Pricing

In 2003, the California Legislature enacted, and the Governor signed, legislation that set in motion the requirement for the City of Folsom to install meters on all service connections to residential and nonagricultural commercial buildings constructed prior to January 1, 1992. As a result, Water Code § 526 now requires the City to charge for water based upon the actual volume of water delivered by March 1, 2013. Based on the City’s 2007 Water Meter Implementation Plan, the City will begin billing all customers based on volumetric use beginning January 2013.

⁴⁹ California Code of Regulations (CCR), Tit. 23, Div. 2, Ch. 27, Sec. 492.4. The MWELo provides the local agency discretion as to whether to calculate the water budget assuming effective precipitation (Eppt) 25% of annual. Use of Eppt would reduce the water budget further.

⁵⁰ CCR Tit. 23, Div. 2, Ch. 27, Sec. 490.1.

⁵¹ CCR Tit. 23, Div. 2, Ch. 27, Sec. 492.7(a)(1)(A)-(B).

⁵² In calculating Estimated Total Water Use, the MWELo requires use of at least a 71% irrigation efficiency factor. Assuming 71% irrigation efficiency, the average plant factor must be 0.50. It would be possible to stay within the water budget if the average plant factor were higher than 0.50 by designing a system with an irrigation efficiency higher than 71%.

⁵³ CCR Tit. 23, Div. 2, Ch. 27, Secs. 492.3(a)(2)(A) and 492.7(a)(2).

The California Urban Water Conservation Council recommends assuming a 20% water savings for accounts with meter retrofits and volumetric rates.⁵⁴ The conservation rate for an account with a meter that is subject to volumetric billing will likely be greater for a retrofitted account than a new account given the more modern infrastructure and more efficient landscape design. The City conservatively assumes that per unit water demands for new units built in the Folsom SPA and Glenborough at Easton and Easton Place that are metered initially will be 10% rather than 20% lower than per unit demands in the existing City service area. The City anticipates up to a 20% savings for the existing service connections.

3.8.3 California Urban Water Conservation Council

The City of Folsom is a signatory to the California Urban Water Conservation Council (CUWCC) Best Management Practices (BMP) Memorandum of Understanding (MOU). The CUWCC MOU commits the City of Folsom to implementing best management practices designed to achieve water conservation across existing demand sectors. While many of the CUWCC BMPs are focused on retrofitting existing infrastructure, some of the BMPs could be valuable for the City of Folsom as they relate to water conservation efforts in new developments such as the Folsom SPA and the Glenborough at Easton Place and Easton Place.

Some of the CUWCC BMPs that support using per unit demands in the proposed developments south of Highway 50 that are lower than such demands in the City's existing service area include Landscape Surveys (BMP 3), which could be designed for the Folsom SPA in such a way as to try to ensure the MWELo Landscape Design requirements remain in place in the field.⁵⁵ BMP 3 also requires interior surveys for Single and Multi-Family Residential customers, which could help determine whether customers are continuing to use water-efficient indoor appliances and would also provide an opportunity for the City of Folsom to tailor its incentive programs to encourage continued use of water-efficient appliances.⁵⁶

The CUWCC recommends identifying opportunities for installation of dedicated irrigation meters, monitoring progress through billing, and then providing site-specific assistance for accounts 20% over budget (CUWCC BMP 5). To the extent

⁵⁴ BMP 1.3, Memorandum of Understanding Regarding Urban Water Conservation in California, California Urban Water Conservation Council, December 10, 2008.

⁵⁵ CUWCC BMP 3 provides that MOU signatories should perform site-specific landscape water surveys that shall include checking the irrigation system and timers for maintenance and repairs; estimating landscaped area; and developing a customer irrigation schedule based on precipitation, climate and landscape conditions.

⁵⁶ CUWCC BMP 3 specifically provides that an MOU signatory should offer site-specific leak detection assistance, including a water conservation survey, water efficiency suggestions and/or an inspection, as well as providing WaterSense rated showerheads and faucet aerators.

that the City of Folsom requires installation of dedicated irrigation meters in the new development, a monitoring and survey program will provide an opportunity to ensure that landscape water demands are achieving desired water conservation targets.

Also, as a signatory to the CUWCC MOU, the City of Folsom should conduct public information campaigns and school education programs.⁵⁷ These educational campaigns will help reinforce water conservation oriented behavior throughout the City's water service areas, which can help minimize year-round water use indoors and moderate outdoor use during the peak irrigation season.

Two additional BMPs that will help moderate water demands within the City's water service area are: (1) the use of a water conservation coordinator, and (2) enactment and enforcement of a water waste prohibition.⁵⁸ The City of Folsom currently has both a water conservation coordinator and an adopted water waste ordinance.⁵⁹ Both will have an impact on the future development projects, because upon development, the coordinator will be assigned to manage water conservation programs and city staff will be authorized to enforce the ordinance.

The CUWCC BMPs should have a long-term impact on the City of Folsom's ability to manage water use throughout the City's water service areas. Through targeted outreach the City of Folsom can encourage continued customer use of highly efficient appliances and irrigation systems, emphasize the need to retain efficient landscape plantings, and also minimize otherwise wasteful uses. The City of Folsom's commitment to implementing these agreements should help maintain water use efficiency.

3.8.4 Two-Year Water Management Control Program

The City of Folsom is looking to continue efforts to become more efficient in delivering the water to customers and improve the water distribution system efficiency. Due to the limitations of the City's dry year water supply, the City is

⁵⁷ CUWCC BMP 2.1 provides that a signatory should "Implement a public information program to promote water conservation, including providing speakers to employers and at public events, providing information on customers' bills showing use for the last billing period compared to the same period the year before. This BMP also requires a messaging campaign. BMP 2.2 requires implementation of a school education program to promote water conservation, including working with schools to provide instructional assistance, educational material and classroom presentations. Both of these BMPs provide for a regional agency to undertake the educational campaigns. The City of Folsom takes advantage of this provision by supporting the Regional Water Authority's efforts on behalf of purveyors in the Sacramento County region.

⁵⁸ CUWCC BMP 1.1(A) provides that a signatory shall designate a person as the agency's responsible conservation coordinator for program management. BMP 1.1(A) also requires a signatory to enact, enforce or support ... ordinances ... that (1) prohibit water waste ... and (2) address irrigation, landscape, and industrial, commercial, and other design inefficiencies.

⁵⁹ The City of Folsom's water waste ordinance is codified in Chapter 13.26 of the Folsom Municipal Code.

currently analyzing ways to increase efficiencies in our water delivery system. In October 2010, the Folsom City Council approved a two-year water management control program that helps identify areas of conserved water and improves system efficiencies. The goal of these efforts is to ensure the long-range reliability of water supply for the region, as well as preserving our natural resources and the American River.

The two-year water management control program will include the following tasks.

- ◆ Perform an initial comprehensive leak detection campaign using portable acoustic leak detection equipment of the entire water distribution system; (276 miles)
- ◆ Convert the water pressure zones 1-7 into District Metering Areas (DMAs) which allows for specific monitoring locations within the distribution system;
- ◆ Compare the water usage for each of the DMAs and potential system improvements;
- ◆ Develop system pressure management strategies;
- ◆ Quantify potential water savings through the reduction of non-revenue water;
- ◆ Design and implement a data analysis and water management system for the City;
- ◆ Establish water management, data handling, and data management systems to track long-term measurable results

This program provides a broad look at system-wide efficiency focused on improving effectiveness and operations of a water delivery system, water district, or water basin. The system optimization review will result in a plan of action that focuses on improving efficiency, operations, and conservation on a regional and basin perspective. This program will allow the City to implement the system improvements identified through the 2-year program. The proposed water management control program will potentially achieve a savings of approximately 2,500 acre-feet of water per year. The results of this water management control program will also place the City in a position for future grant opportunities through the United States Bureau of Reclamation's Water Marketing and Efficiency Grant program.

3.8.5 California Green Building Standards Code

In January 2010, the California Building Standards Commission adopted the statewide mandatory Green Building Standards Code (CAL Green Code) that requires the installation of water-efficient indoor infrastructure for all new projects beginning

on January 1, 2011. CAL Green was incorporated into Title 24 of the California Code of Regulations.

The CAL Green Code will apply to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure. For all new building permits applied for after January 1, 2011 any new “buildings or structures” that fall under the CAL Green Code will need to satisfy the indoor water use infrastructure standards necessary to meet the CAL Green Code.

The CAL Green Code requires residential and non-residential water efficiency and conservation measures for new buildings and structures that will reduce the overall potable water use in the building by 20%. The 20% water savings can be achieved in one of the following ways: (1) installation of plumbing fixtures and fittings that meet the 20% reduced flow rate specified in the CAL Green Code, or (2) by demonstrating a 20% reduction in water use from the building “water use baseline.”⁶⁰ To be conservative, the City assumes that the water savings attributable to the installation of the required infrastructure will provide a water savings of at least 10% compared to existing infrastructure standards, but not the full 20% described above.

3.8.6 Water Use Reduction Savings

Based on the potential savings described in the water use reduction plan, the City calculated potential savings for the various water use reduction strategies described in **sub-sections 3.8.1 thru 3.8.5**. As shown below, the potential savings for each strategy will further align the City to meet the requirements of Senate Bill x7-7, which requires a 20% reduction in urban per capita water use by 2020.

- ◆ Water Management Control Program – 1,000 to 2,500 acre-feet (15-36 GPCD)
- ◆ Metering and Volumetric Pricing – 1,000 to 4,000 acre-feet (15-58 GPCD)
- ◆ Model Water Efficient Landscape Ordinance – 200 to 400 acre-feet (3-6 GPCD)
- ◆ California Green Building Codes Standard – 400 to 800 acre-feet (6-12 GPCD)
- ◆ CUWCC BMPs – 500 to 1,000 acre-feet (7-15 GPCD)

Based on the SB x7-7 calculations, the 2015 Interim Target GPCD is 386 and the 2020 Target GPCD is 343. As discussed in **sub-section 3.7.4**, the City will meet the

⁶⁰ See the CAL Green Code for determining residential and non-residential water conservation standards and reduced flow rate infrastructure standards. There are several worksheets provided that will allow the user to calculate the baseline water use.

2015 Interim Target of 386 GPCD, but will not meet the 2020 Target of 343 GPCD based on current water use conditions. In order to meet the 2020 Target, the City will implement the measures described above, **sub-sections 3.8.1 thru 3.8.5**. See **Table 3-31** for the potential water use savings in GPCD based on the City’s 2010 population data.

Table 3-31. City of Folsom water use savings based on 2010 population.

Water Use Reduction Type	Low AF/YR Savings	High AF/YR Savings	2010 Service Area Population	Low GPCD	High GPCD
Water Management Control Program	1,000	2,500	61,190	15	36
Metering and Volumetric Pricing	1,000	4,000	61,190	15	58
Model Water Efficient Landscape Ordinance	200	400	61,190	3	6
California Green Building Code Standards	400	800	61,190	6	12
CUWCC BMPs	500	1,000	61,190	7	15
TOTAL	3,100	8,700	61,190	45	127

In the 2015 UWMP, the City will be able to provide additional information based on water use reductions from the CUWCC BMP’s and the City’s transition to the GPCD reporting requirements described in the **Section 6, Demand Management Measures**. The GPCD approach evaluates compliance by evaluating the overall reduction in per capita water demand over time, which indicates the increase in efficiency in water demand over time, by dividing demand by population, which gives an average water consumption value per person served.

Section 4. System Supplies

Section 4 describes the City's water supplies through an analysis of its various water rights. Notably, most of the City's water is from surface supplies. The City currently has groundwater that is used on a golf course and has established rights to water derived from GET water. As discussed in **Section 4-5**, the City does not currently utilize recycled water, but is evaluating potential re-use opportunities. Section 4 also provides a detailed description of the potential reduction scenarios for the City's water rights, including associated risks as a signatory to the Water Forum Agreement MOU, and to its Central Valley Project contract supplies. Also included is a discussion on water exchange opportunities and future water supply projects for the Folsom SPA.

The City's water supplies are subject to reduction under certain conditions. These reductions are associated with the City's participation in the Water Forum Agreement MOU ("Water Forum Agreement") and dry-year reductions associated with its Central Valley Project contract supplies. As discussed in more detail later, reductions that would be provided for under the Water Forum Agreement assume that the City would offset these reductions by acquiring replacement water supplies from other purveyors and through reduced demand throughout the City's water service area.

4.1 Existing Sources of Surface Water Supply

The City's surface water supply used to serve the Folsom Service Area – West, Folsom Service Area – East, and Nimbus Service Area is derived from many different water rights. One water right is groundwater from the Groundwater Extraction and Treatment (GET A/B) supplies under the pending Agreement with Aerojet (described previously). The surface water supplies were developed through different circumstances and, as such, are subject to unique conditions and limitations. These attributes and issues affect the volume of water available under certain conditions. Surface water supply for the Ashland Service Area is obtained through a contract with the San Juan Water District, and therefore is not a directly owned City supply. The surface water supplies for Folsom Service Area are listed below. The four supplies are summarized in **Table 4-1**.

- ◆ A pre-1914 appropriative water right for 22,000 acre-feet per year
- ◆ A pre-1914 appropriative water right for 5,000 acre-feet per year
- ◆ A Central Valley Project (CVP) contract entitlement for 7,000 acre-feet per year
- ◆ Contract rights with San Juan Water District

Existing surface water supply sources can be used within existing or planned areas within the City's water service area, including any non-potable demands. The GET A/B supplies are discussed in more detail in **sub-section 4.1.5**.

Table 4-1. City of Folsom Surface Water Supplies

City of Folsom Surface Water Supplies			
Water Right	Supply Volume	Point of Delivery	Area Served
Pre-1914	22,000 AF	Folsom Reservoir and Folsom South Canal	City of Folsom and Surrounding Regions
Pre-1914	5,000 AF	Folsom Reservoir and Folsom South Canal	City of Folsom and Surrounding Regions
CVP Project Supply	7,000 AF	Folsom Reservoir	Folsom East Area
Pre-1914 and CVP Supply	1,540 AF	Folsom Reservoir	Ashland Area

4.1.1 Pre-1914 Rights for 22,000 Acre-Feet per Year

The City’s 22,000 acre-foot entitlement is based on a pre-1914 appropriative right from the South Fork of the American River established by the Natoma Water Company (Natoma) in 1851. Natoma’s original pre-1914 water right established a maximum diversion rate “to fill a Canal Eight feet wide and Four feet deep with a current running Ten miles per hour.” This correlates to a diversion rate of 60 cfs and a maximum allocation of 32,000 acre-feet per year. This right is held with Golden State Water Company pursuant to a co-tenancy agreement.

The place of use under the pre-1914 right included a wide area that encompasses the City and additional surrounding areas (including Easton Place/Glenborough). The 1851 filing is the earliest in priority of perfected appropriative rights on the South Fork of the American River. This water right was formally recognized in the settlement agreement between the U.S. Bureau of Reclamation ("Reclamation") and the City of Folsom. Under this agreement, Reclamation delivers this entire water supply without reduction on a permanent basis.

4.1.2 Pre-1914 Rights for 5,000 Acre-Feet per Year

The City’s 5,000 acre-foot entitlement is also based on Natoma’s pre-1914 appropriative right from the South Fork of the American River. In November 1994, the City executed a contract with Southern California Water Company-Folsom Division (SCWC) under which the City acquired the right to lease 5,000 acre-feet of water per year (of SCWC’s remaining 10,000 acre-feet per year under the original Natoma purchase) for an indefinite period. This right is held with Golden State Water Company pursuant to a co-tenancy agreement. This water right was also formally recognized in the settlement agreement between Reclamation and the City of Folsom.

Under this agreement, Reclamation delivers this entire water supply without reduction on a permanent basis.

4.1.3 CVP Project Contract Right up to 7,000 Acre-Feet per Year

On April 8, 1999, Reclamation entered into Contract No. 6-07-20-W1372 with the Sacramento County Water Agency (SCWA) under Section 206 of Public Law 101-514. The contract dedicated 22,000 acre-feet of water to SCWA, commonly called “Fazio Water.” The City was specifically named in the SCWA-Reclamation contract as a subcontractor to gain benefit of a portion of the Fazio Water supply. On April 25, 2000, SCWA entered into a separate contract with the City to provide 7,000 acre-feet of the 22,000 acre-feet of Fazio Water.

The Fazio Water supply is a standard “project supply” water entitlement – derived entirely from Central Valley Project (“CVP”) water supplies. These supplies are junior to water rights that existed prior to the development of the CVP and are more likely than some other forms of water rights to be burdened with reduction. As explained in more detail in **sub-section 5.1.1**, the analyses in this assessment will limit reliance upon the City’s CVP entitlement to 75% of the contract amount, or 5,250 acre-feet per year, as a result of potential reductions pursuant to Reclamation’s municipal and industrial shortage policy, which could potentially be triggered even in what appear to be normal hydrologic years.

4.1.4 Contract Rights with San Juan Water District

The City has a contract with the San Juan Water District (SJWD) for use in the Ashland Service Area. In the Ashland Service Area, the City controls the water conveyance facilities but the water provided to those facilities is delivered by SJWD. Water will be made available by San Juan to the City under the *San Juan Water District and City of Folsom Wholesale Water Supply Agreement* from water supplies that are available to San Juan from time to time.

During each year throughout the term of this agreement, consistent with San Juan’s Water Rights and Entitlements and subject to the terms of this agreement, San Juan will make available to the City supplies of treated water at the Point of Delivery that are scheduled by the City. The City will make reasonable and beneficial use of the water supplies provided to the City by San Juan, in a manner that is consistent with the terms of San Juan’s Water Rights and Entitlements.

4.1.5 Groundwater

Groundwater within the City of Folsom is discussed in **sub-section 4.1.5.1** and **4.1.5.2**. This includes a discussion on the Groundwater Extraction and Treatment

(GET) Water pursuant to the 2007 Aerojet Agreement⁶¹ and other potential groundwater within the City's water service area. The City does not currently pump groundwater for use in its service area, and has not pumped groundwater in the past five years.⁶²

In previous years, the City of Folsom relied on groundwater to serve the area south of U.S. Highway 50, including the areas within the Aerojet area (referred to as the Natomas Nimbus service subarea). During the late 1970's to 1980's, the City recognized the need to develop the conjunctive use of groundwater and surface water to meet future water demands. However, with the recognized contamination of groundwater within the City's water service area from the 1990's to present, the City pursued surface water as the primary and only source of water supplies, and a reliance on other agencies outside of the Folsom water service area to meet any conjunctive use plans for dry-year water supplies.

4.1.5.1 Groundwater Extraction and Treatment (GET) Water

Pursuant to terms of the 2007 Aerojet Agreement between the City and Aerojet, the City acquired rights to treated groundwater produced by Aerojet's Groundwater Extraction and Treatment Facilities A and B (GET A and GET B).⁶³ The GET A facility consists of extraction wells and a treatment facility. It is currently undergoing modification to increase extraction.

Upon completion of those modifications, the facility's 17 wells will produce treated water of approximately 537 gallons per minute (GPM). The GET B Facility, also currently consisting of extraction wells and a treatment facility, is undergoing modification to increase extraction and treatment. Upon completion of modifications, the GET B Facility will be extracting approximately 2,077 GPM, of which approximately 1,477 GPM will be made available to the City.

The modifications of the GET facilities are being undertaken pursuant to the Partial Consent Decree which Aerojet entered with the United States Environmental Protection Agency and state agencies. Operationally, these GET facilities will pump at the indicated rates on a year-round basis. Therefore, when

⁶¹ This Agreement replaced the 1986 agreement between the City and Aerojet. This Agreement releases the City from the obligation to supply Aerojet's "Industrial Property" with water from the City's existing supplies, but requires the City to supply that "Industrial Property" with either GET water or new supplies to be acquired by the City at Aerojet's cost and excludes Easton Place/Glenborough from that "Industrial Property."

⁶² As described above, there are groundwater wells and groundwater use within Folsom's service area, but there uses are not controlled by the City of Folsom.

⁶³ As described previously, this Agreement is not effective yet as the conditions within the Agreement have not been satisfied. Nevertheless, there is nothing to suggest that the conditions will not be satisfied.

combined, these facilities will provide the City with an additional water supply of approximately 3,250 acre-feet per year. Water derived from the GET facilities will be used to meet industrial demands within the Aerojet Industrial Property (projected to average 2,731 acre-feet per year) as well as other potential non-potable demands throughout the City.

Because the City has not yet developed additional non-potable uses for the GET water supply, the amount of GET water represented will show this supply as only that which is projected to be used by Aerojet industrial facilities. Any GET water remaining above and beyond the demonstrated use by Aerojet can be used by the City for other non-potable demands.

4.1.5.2 Other Groundwater within the City's Water Service Area

Other groundwater use within the City's service area is limited to private use by the Empire Ranch Golf Course and as an emergency supply for Intel Corporation. The golf course uses groundwater in the spring and early summer months as a primary source of irrigation water. As the irrigation season progresses, groundwater levels typically decline and the golf course purchases supplemental potable surface supplies from the City. Intel has established two emergency backup wells capable of delivering 100 GPM and 15 GPM, respectively.

To better understand the groundwater conditions and supply potential that may underlie the golf course and other areas within the City limits, the City completed a Groundwater Resources Investigation through an AB 303 grant. Two test wells were installed for this study in localized areas of high electrical resistivity in ancestral paleochannels of the American River. These wells are considered to be of the South American Groundwater Sub-basin (5-21.65) of the Sacramento Valley Basin. The two test wells yielded 200 to 400 GPM during short-term pumping tests, but additional aquifer testing would be required to confirm the sustainability of the yields.

The wells were constructed with steel casing so they can be utilized as irrigation supply wells at some point in the future if desired by the City. Although analyses indicate good water quality in both wells, supply wells constructed for potable use must have a sanitary seal of at least 50 feet bgs. Wells constructed with the minimum seal would most likely result in a significant reduction in groundwater production, thereby resulting in a non-economic municipal groundwater supply. Moreover, additional groundwater protection would need to be considered if the aquifer were used for a potable supply since the dredge tailings are highly

permeable. Some of the limitations of groundwater within the City are described below.

- ◆ The area in which groundwater can be produced in significant quantities is less than half the total area of the City's limits.
- ◆ Areas within the City that are underlain by Mesozoic bedrock have little or no potential for significant well yields
- ◆ Because the alluvial aquifer that underlies the City is fairly thin, the operable capacity is somewhat limited
- ◆ Since the alluvial deposits are relatively narrow, groundwater production can be adversely affected by boundary effects
- ◆ Based on the conceptual model of deposits in the study area, groundwater in much of the eastern part of the study area could be subject to natural depletion due to natural drainage from downslope flow and stratigraphic control (sloping bedrock contact), especially during periods of drought

Based on the initial findings of the AB 303 Groundwater Resources Investigation, the City does not currently have a reliable groundwater supply. In order to explore the potential use of groundwater supplies within the City, the City would need to conduct additional electrical resistivity analysis, continue well monitoring to document water level fluctuations, and conduct additional tests to determine recharge sources and rates.

4.2 Planned Sources of Surface Water Supply

The Folsom SPA water demands will be met by securing an assignment of a Sacramento River surface water supply from the Natomas Central Mutual Water Company (NCMWC) pursuant to NCMWC's contract with the United States Bureau of Reclamation (USBR).⁶⁴ The water supply to be assigned is a long-term "Project Water" supply.⁶⁵ An initial purchase and sale agreement between South Folsom Properties LLC (SFP) and NCMWC is in place and identifies the conditions which ultimately need to be satisfied by both parties to finalize the sale, which will ultimately lead to an assignment to the City. See **sub-section 5.5** for sufficiency analysis of this water supply. Any reductions associated with this supply are distinct from the reductions assigned to the City in the Water Forum Agreement.

⁶⁴ Contract No. 14-06-200-885A-R-1.

⁶⁵ "Project Water" is "... all surface water diverted ... each month during the period April through October ... from the Sacramento River which is in excess of Base Supply." "Base Supply" is "... the quantity of surface water ... which may be diverted ... from the Sacramento River each month during the period April through October of each year without payment to the United States for such quantities diverted."

Currently, NCWMC diverts water and conveys it to its shareholders that apply water to agricultural lands in northern Sacramento County and southern Sutter County. NCMWC's contract provides for delivery of Project Water on an agricultural schedule, with the Project Water delivered during the late irrigation season in the months of July and August. Under the plan, the City will seek modification of the Project Water delivery schedule from the USBR such that water will be delivered to the City on a municipal and industrial (M&I) schedule.⁶⁶ The City will divert the assigned Project Water at the Freeport Regional Water Authority's Freeport diversion facility on the Sacramento River in southern Sacramento County. Water will be conveyed from the Freeport diversion facility to the Folsom SPA via both FRWA facilities, which are already under construction, as well as facilities that will be constructed by the City of Folsom. The water may be either treated by SCWA or the City of Folsom pending further review of various conveyance and treatment alternatives.⁶⁷

The City of Folsom and Sacramento County Water Agency (SCWA) have signed the Memorandum of Understanding Between the City of Folsom and Sacramento County Water Agency Concerning the Folsom Sphere of Influence Area and Sharing of Freeport Project Capacity (City – SCWA MOU). The City – SCWA MOU commits each party to try to find a mutually agreeable solution to the issue of system capacity in the FRWA facilities so that the City of Folsom can deliver Sacramento River water to the Folsom SPA. The water supply in the City – SCWA MOU will be used in both Folsom's and EID's service areas within the Folsom SPA and will not impact either the City's or EID's existing water supplies or conveyance facilities.

Surface water will be obtained from the NCMWC pursuant to a series of agreements. Initial agreements include one between SFP and NCMWC, and the second between SFP and the City of Folsom. The agreement between SFP and the NCMWC has been executed.⁶⁸ The City of Folsom and SFP have executed a non-binding memorandum of understanding. The City and SFP cannot sign a binding legal agreement until after the environmental review is completed. The ultimate goal is to have USBR assign a portion of NCMWC's Project Water supply to the City of Folsom pursuant to NCMWC – Bureau contract provisions in NCMWC's contract with USBR.⁶⁹

NCMWC entered into Contract No. 14-06-200-885A (Settlement Contract) with the USBR in 1964. The Settlement Contract is based on NCMWC's pre-existing licenses and

⁶⁶ A M&I schedule is generally one with the highest daily demands during the height of the outdoor irrigation season and lower daily demands in the spring and fall and even lower daily demands throughout the winter.

⁶⁷ Conveyance alternatives are analyzed in Chapter B2.3 of the Draft EIR/EIS.

⁶⁸ On December 17, 2007, SFP and NCMWC entered into an agreement entitled *Terms and Conditions of Purchase and Sale of Water Entitlements*. (SFP-NCMWC Agreement)

⁶⁹ Assignments are allowed under Article 23 of the 2005 Contract between the United States and the Natomas Central Mutual Water Company (Renewal Contract).

permit to divert water. The Settlement Contract provides for delivery of water to NCMWC during the months of April through October. Effective on May 10, 2005, the Settlement Contract was renewed for a 40-year term (Renewal Contract).

Under the Renewal Contract, in addition to its Base Supply, NCMWC is entitled to divert up to 22,000 acre-feet of “Project Water” which is available during July and August. The Renewal Contract limits NCMWC’s annual diversions of water from the Sacramento River to the total quantities included in its Base and Project Supplies regardless of the entitlement pursuant to which the water is diverted.

Table 4-2. City of Folsom current and projected water supplies.

Water Source	Contracted Volume	2010	2015	2020	2025	2030	2035
San Juan Water District ⁷⁰	n/a	1,322	1,540	1,540	1,540	1,540	1,540
Pre-1914 (USBR)	22,000	22,000	22,000	22,000	22,000	22,000	22,000
Pre-1914 (SCWC)	5,000	5,000	5,000	5,000	5,000	5,000	5,000
CVP (SCWA) ⁷¹	7,000	7,000	7,000	7,000	7,000	7,000	7,000
NCMWC - Planned	8,000	0	8,000	8,000	8,000	8,000	8,000
GET Water	3,250	3,250	3,250	3,250	3,250	3,250	3,250
Total	46,582	46,790	46,790	46,790	46,790	46,790	46,790

4.3 Transfer Opportunities

The purpose of this section of the Urban Water Management Plan (UWMP) update is to describe the opportunities for exchanges or transfers of water on a short-term or long-term basis. Water exchanges and transfers are an integral part of sound water management. This section of the UWMP will break down the water exchange and transfer discussion into two categories: Objectives and Mechanisms to meet those objectives. On February 24, 2009, the Folsom City Council adopted Resolution 8457, which allows the City of Folsom to retain the rights of all water conserved.

As part of efforts to secure reliable dry-year supplies as provided for in the Water Forum Agreement, the City is investigating water transfer and exchange opportunities with a number of water purveyors. Specifically, the City is looking to other regional water

⁷⁰ The 2007 *San Juan Water District and City of Folsom Wholesale Water Supply Agreement* did not specify a contracted volume. Instead, San Juan Water District will make available to the City the supplies of treated water at the Point of Delivery that are scheduled by the City. The City will make reasonable and beneficial use of the water supplies provided to the City by San Juan, in a manner that is consistent with the terms of San Juan’s Water Rights and Entitlements. See **Section 5.1.3** for supply reliability. The values supplied in **Table 4-2** are projected demands.

⁷¹ The analyses in this assessment will limit reliance upon the City’s CVP entitlement to 75% of the contract amount, or 5,250 acre-feet per year, as a result of potential reductions pursuant to Reclamation’s municipal and industrial shortage policy, which could potentially be triggered even in what appear to be normal hydrologic years.

purveyors to fulfill their commitments in the Water Forum Agreement to supplement Folsom’s water supply under certain conditions.

4.3.1 Water Forum Agreement Provision

The Water Forum Agreement signed by the City included a key provision that, in consideration for its reduction in diversion and use of its surface water entitlements from Folsom Reservoir and the American River, “Folsom will enter into agreements with other purveyors that have access to both surface water and groundwater for an equivalent exchange of the amount of reduction needed by Folsom as outlined above in the 3 stages of reduction.” (WFA at 178). In the event the City foregoes water supplies to other purveyors as part of an exchange opportunity, the City will retain ownership of the water and the authority as to where the water will go. The City will not lose control of its water even if required to send water down the American River as part of the Water Forum Agreement.

The City seeks to develop these arrangements with regional water purveyors as it fulfills its obligation to reduce diversions in certain year types under the Water Forum Agreement. All signatories to the Water Forum Agreement have, among other things, agreed to assist each other in meeting supply reliability objectives.

The City is in the midst of developing a comprehensive water management strategy that, among other elements, includes identifying and evaluating opportunities with other local purveyors. This strategy is based on the negotiated terms of the Water Forum Agreement and is consistent with the two co-equal objectives of the Water Forum Agreement. Two primary opportunities have been identified to date:

- ◆ Transfer based on Demand Modification and Local Recycling
- ◆ Transfer based on Replacement Agreements

4.3.2 Transfer Based on Demand Modification and Local Recycling

Under this concept, the City would work with regional water purveyors to identify American River surface water supplies that may be available for transfer. This purchase would include developing all necessary conveyance improvements to divert these supplies and implementing all necessary demand management measures. These supplies could be derived from:

- ◆ Assessing the availability of water supplies that may exceed a purveyor’s long-term projected demands;
- ◆ Evaluating the timing and extent of regional water demand realization; and
- ◆ Identifying possible water conservation and local recycling opportunities that exceed those planned by the participating agency to satisfy its reliability goals.

4.3.3 Transfer Based on Replacement Arrangements

Under this concept, the City would purchase American River surface water supplies from participating agencies and pay for replacement surface water or groundwater supplies for participating agencies. This purchase would include developing all necessary conveyance improvements to divert these supplies, as well as paying for all necessary conveyance, pumping, and replacement water supplies. Replacement supplies could be derived from any individual or combination of:

- ◆ Groundwater – this replacement supply could be developed through passive or active groundwater management projects.
- ◆ Surface Water Supply Pooling – this replacement supply could be developed as part of a regional collaboration.
- ◆ Import Supplies – this replacement supply depends upon the ability to secure the water supply and deliver this supply to participating agencies.
- ◆ Sacramento Regional County Sanitation District Imported Recycled Supplies – this replacement supply requires integrating proposed regional facilities with framework participants.

4.3.4 Water Transfer Objectives

The City of Folsom has three primary objectives in assessing water exchange and transfer opportunities. The City considers these objectives as both a water provider that could make water available for other purposes as well as a water receiver in obtaining water supplies for certain beneficial purposes.

4.3.4.1 Improved dry-year reliability

The City would consider water transfer opportunities in the context of improved dry year reliability. There are several unknowns related to dry year reliability that may affect the City in the future including hydrological changes related to climate change, the Water Forum Agreement implementation, groundwater contamination, and regulatory-induced shortage issues associated with existing water supplies. The City may pursue water transfers and exchanges to address these potential issues should they arise.

4.3.4.2 Water asset management

The City may also pursue water transfers and exchanges in the interest of managing its water assets in order to provide statewide, regional and local benefits. Delta water supply issues, climate change, fisheries issues, and aging infrastructure may all impact numerous purveyors' water management planning activities. The City is open to pursuing opportunities to improve statewide,

regional and local water planning objectives through water transfers and exchanges.

4.3.4.3 Water supply for potential growth

The City may consider water transfers and exchanges as a viable water supply option for potential new growth within or without its existing boundaries that has not been contemplated in the planning horizon presented in this Urban Water Management Plan. Although the City currently has no intent to expand its service area beyond the discussions in existing planning documents, or provide any permanent supplies outside its service area boundary, in the event such a potential action were to happen or unforeseen significant increased industrial development occurs within its service area (due to high water using industries) the City may consider entering water exchange or transfer arrangements.

4.3.5 Water Transfer Mechanisms

There are numerous mechanisms that may be used to meet Folsom's water transfer objectives described above. Below is a discussion of some of these mechanisms that may be available to the City.

4.3.5.1 Water conservation

The City is undertaking aggressive activities to meet water conservation objectives. These conservation activities include assessing infrastructure and end-user water conveyance and use. In particular, the City has embarked on a System Optimization Review Program in conjunction with the United States Bureau of Reclamation in order to improve its short-term and long-term water management efforts. All water supplies conserved through the City's efforts will be retained by the City and potentially made available for alternative uses as provided under California Water Code Section 1011. These new water supplies that have not been used in the City's service area may be made available for other beneficial uses within the City's service area.

4.3.5.2 Water management

The City is actively engaged in water management activities to optimally control its surface water and groundwater supplies for the best available uses. The City intends to pursue groundwater banking and storage arrangements in the context of regional cooperation and activities. Specifically, the City is actively engaged in the Central Sacramento County Groundwater Management program as well as working within its SOR Program to identify water storage and banking opportunities. These banking and storage opportunities in both efforts will be developed in order to flexibly and reliably manage the City's entire water supply portfolio for beneficial purposes within and without its service area.

4.3.5.3 Water Forum

The City may re-manage its water supplies in order to meet the Water Forum Agreement MOU objectives. Such management may include engaging in exchange arrangements in order to meet lower American River flow objectives and acquiring water supplies in order to make up deficits associated with meeting flow objectives. As noted in the Water Forum Agreement, such short-term arrangements will include controlling water below the confluence of the American River and the Sacramento River and applying that water to other beneficial uses. These uses may include bringing the water supplies back to the City's service area or engaging in transfer and exchange arrangements with other water purveyors.

4.3.5.4 Conveyance and wheeling

The City will work with regional purveyors as well as other public and private entities to assess conveyance and wheeling arrangements that may impact water transfer and exchange opportunities. Such conveyance and wheeling arrangements may improve water supply reliability and have economic advantages.

4.3.5.5 Acquisition of other water supplies

The City may acquire additional water supplies, including recycled water assets or GET supplies, to meet needs within its service area. These alternative supplies may relate to contamination issues in the City's service area or to meet growth objectives beyond the existing supply capacity. Development of additional water supplies may make transfer and exchange arrangements available for optimal water asset management.

4.4 Desalinated Water Opportunities

There are no desalinated water opportunities for the City of Folsom. Due to the location of the City with respect to salinated water supplies, the cost of this type of opportunity is prohibitive.

4.5 Recycled Water Opportunities

During the preparation of the 2005 UWMP, the City of Folsom began a *Water Recycling Feasibility Study*. This study evaluated the potential use of recycled water for the Ashland Service Area, Folsom Service Area – West, Folsom Service Area – East, Glenborough at Easton and Easton Place, and the Folsom SPA. The study identified two categories of potential recycled water use, landscape irrigation use and non-potable, non-irrigation uses. Landscape Irrigation uses include the following:

- ◆ Golf courses
- ◆ Parks
- ◆ School fields and playgrounds
- ◆ Street median landscape (streetscape)
- ◆ Commercial, industrial and office (C/I/O) property landscape
- ◆ Single family residential landscape
- ◆ Multi-family residential landscape

Non-potable, non-irrigation uses include the following:

- ◆ C/I/O toilet flushing
- ◆ Industrial uses: cooling, process, and boiler feed
- ◆ Construction water
- ◆ Fire fighting

Industrial uses and C/I/O toilet flushing represent significant long-term viable uses. Construction water and fire fighting only represent temporary, intermittent uses. Industrial can represent significant demands but are highly dependent on water quality and must be evaluated on a case-by-case basis. Based on the finding of the report, a future City of Folsom recycling program would likely be limited by the availability of supplies and seasonal storage. At this time, the City does not have a source of recycled water.

4.6 Wastewater Collection System

The Sacramento Regional County Sanitation District (SRCSD) is responsible for the transmission, treatment, and disposal or reuse of the wastewater generated in the City. The City owns and operates the local collection system. The wastewater is collected by gravity in a series of main, trunk, and interceptor sewers. Collected wastewater is transported to the Sacramento Regional Wastewater Treatment Plant (SRWTP) in Elk Grove. The regional plant serves the entire Sacramento metropolitan area including the unincorporated county areas adjacent to the Cities of Sacramento, Citrus Heights, Elk Grove, Rancho Cordova as well as the City of Folsom (City). The City does not treat any wastewater. See **Table 4-3** for wastewater treatment information for the SRWTP.

Table 4-3. SRWTP treatment information.

Treatment Plant	Treatment Level (1, 2, 3)	Year <u>2009</u> (AF) ⁷²	Disposal to
SRWTP	2	168,033	Sacramento River
SRWTP (Reclaimed Water)	3	958	Sacramento County Water Agency and SRWTP
	Total	168,991	
Total discharged to ocean	Saline sink	0	

4.7 Future Water Projects

Currently, the City does not propose any future water supply projects or programs to increase the amount of water supply available to the City during average, single-dry, and multiple dry-weather years. As a signatory to the Water Forum Agreement, the City will pursue regional agreements for an equivalent exchange of the amount of reduction needed under the three stages of reduction described in the WFA and other possible transfer and exchange agreements as necessary. The City will also meet reductions through the water use reduction plan described in **sub-section 3.8**.

⁷² Information obtained from the 2009 SRCSD State of the District Report.

Section 5. Water Supply Reliability and Water Shortage Contingency Planning

This section describes the City's water supply reliability, water shortage contingency planning, water quality, and drought planning. This section compares projected water supplies and demands, assesses the overall reliability of future supplies, analyzes planning for changes or shortages in water supplies, and considers the reliability of water supplies during single-dry and multiple-dry years. Included are the City's diversion reduction provisions under the Water Forum Agreement and the contractual reductions under the Central Valley Project. Both of these agreements can affect supplies available in the City's water service areas.

5.1 Water Supply Reliability

The following sub-sections examine two key agreements that may reduce the City's water supply under certain described conditions. **Sub-section 5.1.1** describes the water diversion reduction provisions under the Water Forum Agreement and **sub-section 5.2.2** describes the City's contractual reductions under its Central Valley Project contract. Both of these agreements affect supplies the Folsom Service Area. **Sub-section 5.1.3** describes supply reliability for the San Juan Water District wholesale water supply to the City, which services the Ashland Water Service Area.

5.1.1 Water Forum Agreement

The City is a signatory to the January 2000 Water Forum Memorandum of Understanding or the Water Forum Agreement (WFA) in furtherance of the coequal objectives to provide a reliable and safe water supply for the region's economic health and planned development to the year 2030 and preserve the fishery, wildlife, recreational and aesthetic values of the lower American River.

The WFA is a nonbinding memorandum of understanding, and the assurances and commitments set forth therein are intended to be implemented through specific actions. The City's purveyor-specific agreement is set forth at pages 176 through 185 of the WFA, and recognizes that the City does not currently have access to groundwater supplies to meet water demands within its service area.

Therefore, the WFA provides that the City's will meet its needs of surface water diversion in dry years (discussed below) through a combination of (1) conservation measures; and (2) the City entering into "agreements with other purveyors that have access to both surface water and groundwater for an equivalent exchange of the amount of reductions needed by Folsom as outlined above in the 3 stages of reduction. Under these arrangements, other purveyors will use groundwater in lieu of

surface water equivalent to the amount Folsom would continue to divert.⁷³ The City's commitments to reduce water diversions in dry years under the WFA would be implemented in an agreement with Reclamation in a form comparable to the form of agreement set forth in Appendix F of the WFA. Currently, the City has not developed any agreements with other water purveyors or with Reclamation.

Under the WFA, the City would have a negotiated baseline water supply and would reduce its surface water diversions from Folsom Reservoir in certain year types. The City's baseline surface water supply from the American River in average and wet years will increase from the 1999 estimated delivery of 20,000 acre-feet per year to 34,000 acre-feet per year by 2030⁷⁴ to reflect expected growth in demand. An average or wet year is defined under the WFA as unimpaired inflow into Folsom Reservoir from March through November that exceeds 950,000 acre-feet per year. The probability of an average or wet year inflow of this volume is 82 percent, meaning that this inflow has occurred approximately 8 out of every 10 years.⁷⁵ Accordingly, the City has a high probability of receiving its full annual surface water supply from Folsom Reservoir in any given year. And in other years, the Water Forum provides the City with make-up supplies.

In drier years – defined by the WFA as Stages 1, 2, and 3 – the City would reduce its diversions from Folsom Reservoir. These reductions are proportional to reductions in March through November unimpaired inflow into Folsom Reservoir where that unimpaired inflow is less than 950,000 but equal to or more than 400,000. The decreased inflows would provide for the City's allowable surface diversions under its existing surface water rights to drop from 34,000 acre-feet to 22,000 acre-feet, separated into a three-stage stepped and ramped reduction in proportion to the decreased inflows. These reductions are known as “the Water Forum Wedge.”

- ◆ Under Stage 1 reductions where the unimpaired inflow to Folsom Reservoir is greater than 870,000 acre-feet but less than 950,000 acre-feet, the City would divert a decreasing amount from 34,000 acre-feet to 30,000 acre-feet in proportion to the reduced flow into Folsom Reservoir. For instance, if the inflow was 900,000 acre-feet (approximately 95 percent of 950,000 acre-feet),

⁷³ Discussed on Page 178 of the Water Forum Agreement.

⁷⁴ 2030 was the projection date used by the Water Forum, but the City expects that 2030 level of demand to be reached at an earlier date. This projection has no bearing on the usability of this supply.

⁷⁵ The State of California Department of Water Resources (DWR) conducts annual snowpack surveys and provides a forecast of runoff for the American River watershed along with other watersheds in the State beginning in February and ending in May of each year. Results of these four surveys are published annually in a series of State DWR Bulletins (Bulletin 120-1 through 120-4) and are the basis for determining the unimpaired inflow into Folsom Reservoir; Water Forum Proposal Final EIR, October 1999 at Appendix I.

then the City's diversions would be limited to 95 percent of 34,000 acre-feet, or about 32,210 acre-feet.

- ◆ Under Stage 2 reductions where the unimpaired inflow to Folsom Reservoir in March through November is greater than 650,000 acre-feet but less than or equal to 870,000 acre-feet, the City would divert a maximum of 27,000 acre-feet.
- ◆ Under Stage 3 when the unimpaired inflow to Folsom Reservoir in March through November is equal to or greater than 400,000 acre-feet but less than or equal to 650,000 acre-feet, the City would divert a maximum of 22,000 acre-feet.

The differences in these staged reductions are important. Stage 1 reductions are different from Stage 2 and Stage 3 reductions because the reduced Stage 1 surface supply diversion is directly proportional to the decreased inflow. Under Stages 2 and 3, maximum diversion rates are set based on the stated range of inflow into Folsom Reservoir. Accordingly, diversion reductions under Stage 1 may require different types of supply augmentation mechanisms than those required under the other two stages.

In the driest years – also called the “conference years” – when the March through November unimpaired inflow to Folsom Reservoir is less than 400,000 acre-feet, the City would reduce diversions to a maximum of 20,000 acre-feet. The City would further reduce diversions in the driest years to 18,000 acre-feet by imposing extraordinary conservation measures throughout its service area. **Table 5-1** represents various City surface water diversion scenarios under the Water Forum Agreement. The Water Forum Agreement has the following caveat regarding such an extremely dry year:

[I]t is recognized that in years when the projected unimpaired inflow to Folsom Reservoir is less than 400,000 acre-feet there may not be sufficient water available to provide the purveyors with the driest years quantities specified in their agreements and provide the expected driest years flows to the mouth of the American River. In those years the City will participate in a conference with other stakeholders on how the available water should be managed.

In the event the City foregoes water supplies to other purveyors as part of an exchange opportunity, the City will retain ownership of the water and the authority as to where the water will go. The City will not lose control of its water even if required to send water down the American River as part of the WFA. **Figure 5-1** provides a

representation of the potential frequency of staged reductions faced by the City under potential Water Forum Agreement conditions.

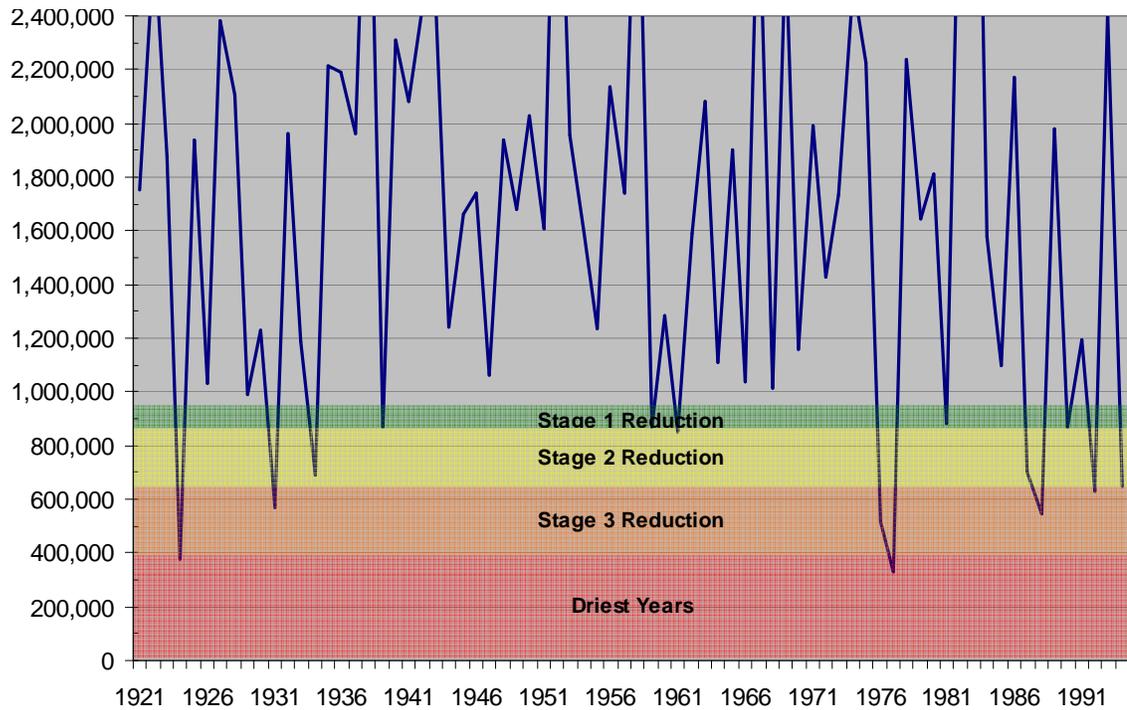


Figure 5-1. Representative frequency of staged reductions under the Water Forum Agreement.

Table 5-1. City of Folsom surface water diversion scenarios under the WFA.

Surface Water Diversion Scenarios under the Water Forum Agreement				
Water Forum Year Type	City of Folsom Unimpaired Inflow	City of Folsom Surface Water Diversion	Probability of year type or above ⁷⁶	Probability of Water Year Triggering Stage
Average or Wet Year	Greater than 950,000 AF	34,000 AF	82%	18%
Stage 1	950,000 to 871,000 AF	34,000 to 30,000 AF	90%	10%
Stage 2	870,000 to 651,000 AF	27,000 AF	95%	5%
Stage 3	650,000 to 400,000 AF	22,000 AF	97%	3%
Driest Years (conference years)	<400,000 AF	20,000 to 18,000 AF	99%	1%

The Water Forum Agreement also provides that the City would enter into agreements with other suppliers that have access to both surface water and groundwater for an equivalent exchange of the amount of reduction needed by the City, as outlined above

⁷⁶ DWR Bulletins (Bulletin 120-1 through 120-4) and are the basis for determining the unimpaired inflow into Folsom Reservoir.

in the three stages of reduction. Under these arrangements, those suppliers would use other surface or groundwater supplies in lieu of surface water taken from the American River that is equivalent to the amount that the City will continue to divert.⁷⁷ Accordingly, the Water Forum stakeholders have agreed to support the City entering into agreements to augment supplies in dry years.

In summary, the Water Forum Agreement could affect how the City would use its surface water allocation from the American River in specified dry years, but assumes that the City would enter into agreements with other suppliers to offset all or a portion of this reduction. Under the Water Forum Agreement, however, in any given year the City has a 95 percent probability of diverting at least 27,000 acre-feet of its surface diversion rights from Folsom Reservoir because there is a 95 percent probability in any given year of there being sufficient inflow to Folsom Reservoir to avoid Stage 2 reductions under that Agreement (see **Table 5-1**). In addition, the WFA includes provisions that will provide Folsom with alternative water supplies in years when its diversion might be reduced. Unknown future conditions related to climate change may have an impact on the historical probability calculation.

5.1.2 Central Valley Project Contract Supply

For the water supply discussed in Section 4.1, the primary SCWA-U.S. Bureau of Reclamation contract addresses supply reductions. The contract states that if the CVP supply is reduced because of “physical operations of the Project, drought, or other physical causes beyond the control of [the Bureau]” Reclamation “shall apportion the available Project Water supply . . . among existing contracts and future contracts” Accordingly, when supply reductions to municipal and industrial users (M&I) are required, water will be allocated by Reclamation. There are no required reductions for American River water purveyors.

The supply forecasts coupled with Reclamation’s discretion often result in deliveries that do not match the contract supply. During the projection period, Reclamation may declare a “reduced supply” based on hydrologic conditions. Based on that declaration, Reclamation, as a matter of policy, may reduce municipal and industrial deliveries to a minimum of 75% of the contract entitlement, but retains the discretion to require greater reductions.

Reclamation also uses another accounting technique that further diminishes the supply allocations. Reclamation delivers only 75% of the contracting entities’ historical use based on the last three years of full deliveries. For example, if the City

⁷⁷ In some instances, suppliers may transfer excess surface water supplies to Folsom, but the Water Forum Agreement is silent on this issue.

had only used an average of 4,000 acre-feet of water over the last three years of full deliveries from Reclamation, when Reclamation declares a water short year the City would only be entitled to use 3,000 acre-feet (75% of 3 year full demand) instead of 5,250 acre-feet (75% of full contract entitlement). Currently, Reclamation has not developed a policy for purveyors along the American River. The reduction technique currently used by Reclamation for the Sacramento River was also used as the approach for limiting the supply allocation for American River water purveyors.

5.1.3 Summary of Supply Reliability

As discussed in the previous sub-sections, the water supply available to the City could be affected by the Water Forum Agreement. Staged reductions in diversions, as specified under the WFA, could occur based on determinations of the unimpaired inflow to Folsom Lake. But, under the WFA, the City will be provided additional supplies from Water Forum participants to make up for supplies foregone to meet lower American River flow standards under the Agreement.

Because there can be various permutations of single and multiple dry year scenarios as a result of these staged reductions, the City is identifying temporary demand reduction actions as well as securing dry-year water supply agreements to meet demand during multiple dry years. More details regarding potential shortfalls and associated water management strategies are included in **Section 5-4 and 5-5**, respectively.

5.2 Water Shortage Contingency Planning

The purpose of this section is to integrate the City's supply and demand projections for purposes of urban water management planning. As noted in **Section 4**, the City has a total water supply of 35,500 acre-feet in normal years for Folsom Service Area – West, Folsom Service Area – East, and the Nimbus Service Area. This supply may be reduced based on CVP M&I shortage policies and in stages pursuant to the Water Forum Agreement as inflow into Folsom Reservoir drops below 950,000 acre-feet per year. For the Folsom SPA, the City has a total water supply of 8,000 acre-feet in normal years.

The Water Forum Agreement may require the City to reduce its total diversions from Folsom Reservoir proportionately from 34,000 acre-feet to 30,000 acre-feet under a Stage 1 cutback. The City supply is reduced to only 27,000 acre-feet during a Stage 2 cutback. Under a Stage 3 cutback, the supply is reduced to only 22,000 acre-feet. In the driest years (i.e. conference years), the City has agreed to reduce its supply to 20,000 acre-feet with a potential to reduce supplies as low as 18,000 acre-feet.

In addition to the Water Forum Agreement supply reductions, a portion of the City's water supply – specifically CVP Fazio supply – may be subject to reduction because of

Reclamation's M&I shortage policy. This shortage policy states that in certain undefined year types, Reclamation will cut CVP M&I supplies by 25 percent. Reclamation calculates this supply reduction after assessing a unique baseline: the previous three years average CVP Project Supply use. As such, if the City were to use, on average over a three year period, only 50 percent of its CVP supply, then the CVP reduction would be 25 percent of 50 percent of the Fazio supply. Accordingly, the CVP M&I shortage policy imparts risk to the City's ability to use all of its Fazio water supply.

The City of Folsom has adopted by Ordinance 1118, Chapter 13.26 of the Folsom Municipal Code (FMC), Water Conservation. Chapter 13.26 establishes a five stage water conservation program with conservation goals and water use restrictions. In addition, the City of Folsom Water System Emergency Response Plan, December 28, 2004, identifies emergency resources and alternative and backup water sources. This plan is consistent with and incorporates provisions in the City of Folsom Emergency Operation Plan, 2004. Procedures for distribution of water during varying periods of outages or in a disaster are identified and are consistent with guidelines prepared by the California Office of Emergency Services (OES) and California Utilities Emergency Association. Both the City of Folsom Water System Emergency Response Plan, and the City of Folsom Emergency Operation Plan, due to their size, are not attached to this document but are available for viewing at the Folsom Water Treatment Plant.

The City of Folsom's water shortage contingency plan, which is summarized in the FMC Chapter 13.26, has five stages of conservation, each of which is intended to achieve a given percentage reduction in water use. The City Manager is authorized to implement and enforce whatever conservation measures are deemed necessary to achieve the water reduction requirements of the declared conservation stage.

In determining the City water system's water conservation stage, the City Manager shall determine whether that system's water supplies available for potable use are sufficient to meet the current customer demands on that system and shall consider, unless otherwise excluded by this section, all relevant factors. The City Manager shall consider, among other things: (A) any variations in the reliability of the water supplies available to the city water system; (B) any declarations by the Bureau of Reclamation concerning its ability to deliver water under Central Valley Project water-service contracts; (C) availability of non-potable water to meet non-potable demands on the city water system; (D) the success, or lack thereof, of previous declarations of a less stringent water conservation stage in causing the water-use reductions sought by the city; and (E) any agreements between the city and local water purveyors for deliveries of additional water supplies to the city. The five stages and their conservation goal relative to the base stage are as listed below:

- ◆ Stage one ("Basic Stage") is for the normal water supply

- ◆ Stage two (“Water Alert”) shall achieve a 12 % reduction
- ◆ Stage three (“Water Warning”) shall achieve a 20% reduction
- ◆ Stage four (“Water Crisis”) shall achieve a 35% reduction
- ◆ Stage five (“Water Emergency”) shall achieve a 50% reduction

As the conservation stages increases, non-health and safety uses of water such as landscape watering are limited and then eliminated. The contingency plan also identifies and prioritizes water uses to support water shortage use policies. Ordinance 1118 is shown in **Attachment E**. Chapter 13.26 of the City’s Municipal Code is shown in **Attachment F**.

The following describes in more detail the five temporary demand reduction stages of City Municipal Code Chapter 13.26:

- ◆ Stage 1: Normal Water Supply – Stage 1 requires water to be put to beneficial use and prohibits wasteful uses of water; requires water to be confined to the customer’s property; prohibits free-flowing hoses or filling apparatus; requires leaking infrastructure to be repaired in at least five days; requires recirculation devices on pools, ponds and artificial lakes.
- ◆ Stage 2: Water Alert – Stage 2 incorporates all of the provisions of Stage 1, and: limits landscape and pasture irrigation to 3 days per week according to an odd/even address schedule, allows automatic sprinkling only during off-peak hours; prohibits street and driveway washing; requires restaurants to only serve water upon request; requires manual watering on an odd/even schedule; requires medians to be watered only on odd/even schedule.
- ◆ Stage 3: Water Warning – Stage 3 incorporates all of the provisions of Stage 2, and further limits landscape and pasture irrigation to only 2 days per week according to an odd/even address schedule. The 2 day, odd/even schedule also applies to manual and median watering.
- ◆ Stage 4: Water Crisis – Stage 4 incorporates all of the provisions of Stage 3, and further limits landscape and pasture irrigation to only 1 day per week according to an odd/even address schedule. The 1 day, odd/even schedule also applies to manual and median watering. Stage 4 also prohibits filling or refilling pools and ponds; prohibits water use for ornamental ponds and fountains; requires car and equipment washing to be done on the lawn or at a commercial establishment that uses recycled or reclaimed water; prohibits water use for construction purposes, including dust control and compaction.
- ◆ Stage 5: Water Emergency – Stage 5 incorporates all of the provisions of Stage 4, and prohibits all landscape and pasture irrigation; prohibits sewer and fire hydrant flushing except for emergencies; requires car and equipment washing to be done only at a commercial establishment that uses recycled or reclaimed water.

Municipal Code Section 13.26.06 has specific penalty provisions for violations under Stages 1-5. **Table 5-2** shows the various penalties associated with violating water shortage restrictions and prohibitions. **Figure 5-2** shows the City’s water treatment plant production decreased after the City announced a Stage 2 water reduction in September 2008. **Figure 5-3** shows daily flows during this same period, with no landscape irrigation allowed on Mondays of each week. After the Stage 2 declaration, the City noticed almost a 20% reduction in water demands from the projected deliveries in September 2008. For the Calendar Year 2009, there was approximately a 12% reduction in water demands from the projected USBR deliveries to the City’s WTP.

Table 5-2. Penalties associated with violating water shortage restrictions.

Violation	Penalty
First	Personal or written notification of penalty
Second (within 3 months of first violation)	Written notification and issuance of notice to correct
Third (within 6 months of first violation)	Issuance of administrative penalty, mandatory installation of water meter, discontinued water service, and/or other penalties as provided in the notice of violation and as determined by the Utilities Director

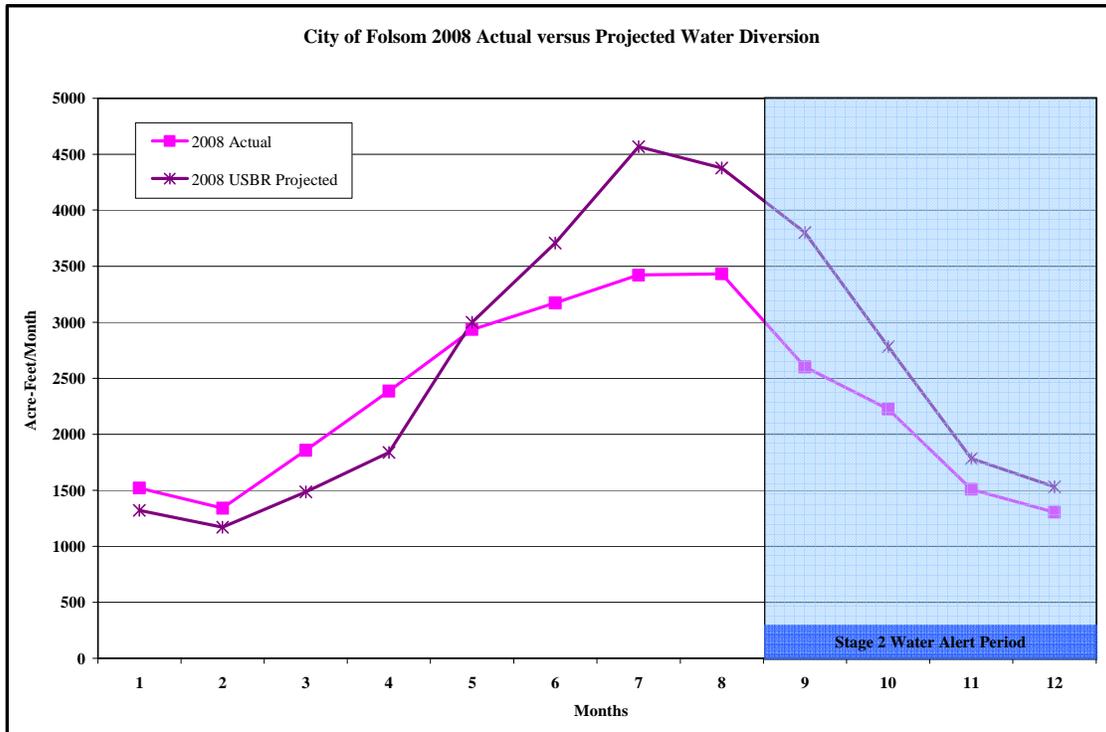


Figure 5-2. Water Treatment Plant production after Stage 2 declaration.

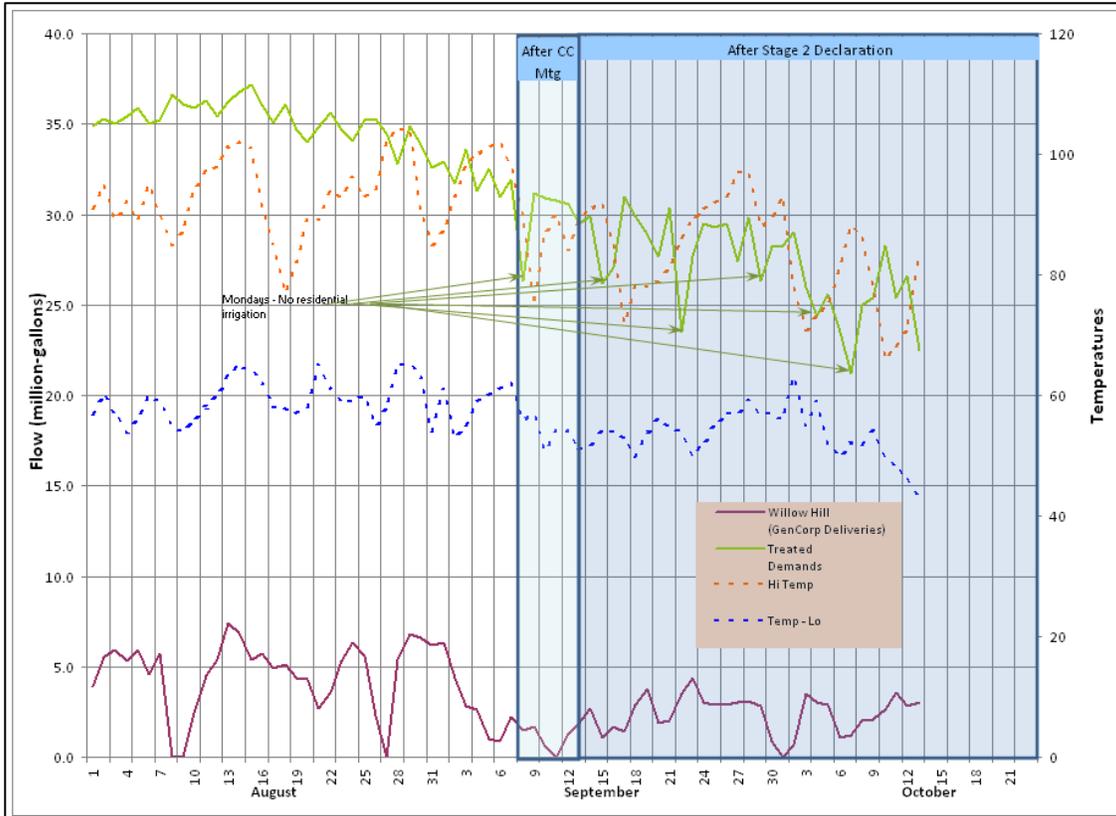


Figure 5-3. 2008 daily flows showing reductions from Stage 2 declaration.

5.3 Water Quality

The City of Folsom’s water quality sampling requirements are mandated under Title 22 of the California Code of Regulations. The City’s Water Quality Division and Water Treatment Plant staff collect the samples for the categories listed below in **Table 5-3**. In addition to State and Federal Regulations, the City performs supplemental monitoring to obtain additional information on system operation and to help assess any water quality concerns. This monitoring includes Heterotrophic Plate Count samples when new water lines are added to the system or system repairs are conducted.

The 2009 annual consumer confidence report is shown in **Attachment D**. The report summarizes the surface water quality testing results. There are no current water quality concerns and/or problems. As discussed in the Aerojet 2007 Agreement, Aerojet will have to undertake modifications to the GET A/B Facilities as may be required by the Environmental Requirements and on schedules approved by the Environmental Protection Agency for industrial uses.⁷⁸

⁷⁸ There is a requirement under EPA Unilateral Order 2002-13 that requires Aerojet to remediate groundwater for all current and future obligations.

Table 5-3. City of Folsom water quality sampling requirements.

Category	Sampling Frequency	Sampling Location
Inorganic compounds ⁷⁹	Quarterly and annually	Upstream of the entrance to water distribution system
Volatile organic compounds	Annually	Raw water intake to WTP
Synthetic organic compounds	2 quarters per 3 year period	Raw water intake to WTP
Radionuclides	Every 9 years	Raw water intake to WTP
Disinfectants and Disinfection By-Products ⁸⁰	Weekly, quarterly, and monthly	Various locations within the distribution system
Coliforms	Weekly	Various location within the distribution system
Lead and Copper	Every 3 years	Various locations within the distribution system
Secondary contaminants	Annually	Upstream of entrance to distribution system

5.4 Drought Planning for Folsom Service Area – West, Folsom Service Area – East and the Nimbus Area

The Water Forum Agreement provides the hydrological framework for determining drought conditions for the City of Folsom. As described above, the dry year conditions are based upon total measured inflow into Folsom Reservoir. When inflows into Folsom Reservoir drop below 950,000 acre-feet, the staged surface diversion cutbacks are triggered and the City is obligated to reduce surface water diversions.

The supply and demand integration analysis in this chapter is separated into three hydrologic conditions: (1) normal year; (2) single dry year; and (3) multiple dry years. As described previously, the City has pre-1914 water rights, a contract with Reclamation for CVP water, and GET water associated with groundwater extraction and treatment on the Aerojet industrial properties. The GET water is an anticipated City supply that will not be used for potable purposes.

The City is a signatory to the Water Forum Agreement, which is a non-binding memorandum of understanding with several provisions associated with reductions in surface diversions and acquisitions of replacement water. The assurances and commitments set forth in the Water Forum Agreement are intended to be implemented through specific actions (such as entering into a contract), which have not yet occurred.

⁷⁹ General inorganic compounds are sampled annually, nitrates and nitrites are sampled quarterly, and asbestos every nine years

⁸⁰ Free chlorine is tested weekly, Total organic carbon is tested monthly, and Total Trihalomethanes and Haloacetic Acids are tested quarterly

This Urban Water Management Plan assesses the City’s water supplies based on: (1) the City’s existing water supplies as required by Water Code §10610; and (2) the Water Forum Agreement’s dry year diversion reduction and replacement water supply provisions. The average, or normal, water year supply projections are 37,250 acre-feet. This does not account for the 8,000 acre-feet of water for the Folsom SPA, as the WFA was developed prior to the City acquiring this water supply. As noted in **sub-section 4.2**, these supplies are distinct from the overall reductions assigned to the City in the Water Forum Agreement.

5.4.1 Single Dry Year

Based on the Water Forum Agreement, the unimpaired inflows to Folsom Reservoir are equivalent to those experienced in 1977 (approximately 332,000 acre-feet) and the Water Forum Agreement triggers a “conference year”. The City’s diversions are limited to 20,000 acre-feet, and agreements with other water suppliers are triggered to offset a portion of the City’s reduction. For purposes of this Urban Water Management Plan, these agreements are assumed to provide an additional 7,000 acre-feet of water because the provision of such an amount of water by other water suppliers consistent with the provisions of the Water Forum Agreement.⁸¹ In addition, GET A & B facility water of 3,250 acre-feet is available. Projected supplies are 30,250 acre-feet.

5.4.2 Multiple Dry Years

For multiple dry years, the unimpaired inflows to Folsom Reservoir are equivalent to those experienced for the three driest consecutive years of record – namely 1987, 1988 and 1989 (approximately 705,000 acre-feet, 545,000 acre-feet, and 1,979,000 acre-feet, respectively) and the Water Forum Agreement triggers a Stage 2 reduction the first year, a Stage 3 reduction the second year, but no reduction in the third year.⁸² The City’s diversions would be limited to 27,000 acre-feet in Year 1, and 22,000 acre-feet in Year 2. No reductions would occur in Year 3. Similar to the Single Dry Year condition and pursuant to the Water Forum Agreement, agreements with other water suppliers would be triggered in Year 2 to provide an additional 5,000 acre-feet. In addition, GET A & B facility water of 3,250 acre-feet is available. Projected water supplies are 30,250 acre-feet, 30,250 acre-feet and 37,250 acre-feet, for Year 1, Year 2, and Year 3 respectively.

⁸¹ The Water Forum Agreement includes provisions for the City to offset reductions through agreements for water supplies from other water suppliers. Though these replacement water supply agreements are not yet in place, the City anticipates agreements to provide replacement supplies to levels allowed under the City’s Pre-1914 water rights.

⁸² These years were chosen from the 72-year record of unimpaired flows used for the analysis in Water Forum Agreement EIR.

Table 5-4. City of Folsom basis for base water years.

Basis of Water Year Data	
Water Year Type	Base Year(s)
Average Water Year	1999
Single-Dry Water Year	1977
Multiple-Dry Water Years	1987, 1988, 1989

Table 5-5. Supply reliability for the City of Folsom under the WFA.

Supply Reliability (Acre-Feet)				
Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years		
		Year 1	Year 2	Year 3
37,250	30,250	30,250	30,250	37,250
Percent of Average/Normal Year:	81%	81%	81%	100%

For purposes of the sufficiency analysis, this reduction results in 30,250 acre-feet being available in both single and multiple-dry year conditions. As illustrated in **Table 5-6**, the City has sufficient water in normal years to meet projected demands of the Folsom Service Area – West, Folsom Service Area – East and Glenborough/Easton. However, modest shortfalls between available supplies and baseline demands would be expected in Single Dry Year and Multiple Dry Year conditions.

At 2030, this shortfall is estimated to be no larger than 1,519 acre-feet. To offset this projected shortfall during the infrequent dry hydrologic conditions represented, the City will declare a water shortage condition and implement actions allowed under its FMC 13.26. A temporary reduction in demand of about 6 percent would provide about 1,920 acre-feet, enough to balance available supplies with customer demands. Therefore, with the combination of available pre-1914 water rights, GET A & B facility water, supplemental surface water from other purveyors, and moderate temporary demand reduction measures, the City will also have sufficient water during Single Dry Year and Multiple Dry Year conditions.

Table 5-6. FSA-West, FSA-East and Glenborough/Easton supply and demand.

Year	Projected Baseline Water Demand (AF/YR)	Surface Water		Project Shortfall / Surplus (AF/YR)	
		Hydrologic Year Type	Available Water Supply (AC/YR)		
2010	25,691	Normal		11,559	
	26,975	Single Dry		3,275	
		Multiple Dry	Year 1	30,250	3,275
			Year 2	30,250	3,275
Year 3	37,250		10,275		
2015	26,181	Normal		11,069	
	27,490	Single Dry		2,760	
		Multiple Dry	Year 1	30,250	2,760
			Year 2	30,250	2,760
Year 3	37,250		9,760		
2020	28,335	Normal		8,915	
	29,752	Single Dry		498	
		Multiple Dry	Year 1	30,250	498
			Year 2	30,250	498
Year 3	37,250		7,498		
2025	29,668	Normal		7,582	
	31,152	Single Dry		-902	
		Multiple Dry	Year 1	30,250	-902
			Year 2	30,250	-902
Year 3	37,250		6,098		
2030	30,256	Normal		6,994	
	31,769	Single Dry		-1,519	
		Multiple Dry	Year 1	30,250	-1,519
			Year 2	30,250	-1,519
Year 3	37,250		5,481		

5.5 Drought Planning for the Folsom SPA

Based upon the City of Folsom’s plan to ultimately secure an assignment of a portion of NCMWC’s Project Water supply, the normal year supply contractually available for the Folsom SPA is projected to be 8,000 AF/YR, though the maximum diversion for the Folsom SPA will be 6,000 AF/YR. The existing agreement between South Folsom Properties (SFP) and NCMWC, and the existing non-binding memorandum of understanding between SFP and the City, provides the foundation for the City to obtain an entitlement to the water supply through an assignment approved by USBR. As noted in **sub-section 4.2**, these supplies are distinct from the overall reductions assigned to the City in the Water Forum Agreement.

Annual water deliveries to the NCMWC from the USBR pursuant to the Renewal Contract are determined on the basis of natural inflow to Shasta Lake (the Shasta Index).

In a normal year when there is ample water in the Central Valley Project (CVP) system, NCMWC receives 100% of its Renewal Contract entitlement. The maximum reduction in NCMWC's diversions during any "Critical Year" is 25% of both Base Supplies and Project Water.⁸³ For example, during a "Critical Year," NCMWC receives no less than 75% of its normal year Project Water entitlement, or 16,500 acre-feet. A "Critical Year" means any year in which either of the following conditions exist:

- ◆ The forecasted full natural inflow to Shasta Lake for the current Water Year (October 1 through September 30), as such forecast is made by the United States on or before February 15 and reviewed as frequently thereafter as conditions and information warrant, is equal to or less than 3.2 million acre-feet; or
- ◆ The total accumulated actual deficiencies below 4 million acre-feet in the immediately prior Water Year or series of successive prior Water Years each of which had inflows of less than 4 million acre-feet, together with the forecasted deficiency for the current Water Year, exceed 800,000 acre-feet.

"Critical Years" occur relatively infrequently. Over 85 years of record (1921-2006), a Shasta Index "Critical Year" would have been triggered only nine times (1924, 1931, 1932, 1933, 1934, 1977, 1991, 1992, and 1994). This results in the occurrence of a "Critical Year" less than once every nine years. Any reduction in water supplies related to the WFA may be made up with alternative supplies from other WFA signatories.

Consistent with the dry-year shortage provisions in the Renewal Contract, the supply ultimately assigned to the City of Folsom will be subject to a 25% reduction in "Critical Years." For purposes of the sufficiency analysis, this reduction results in 6,000 AF being available in both single and multiple-dry year conditions. In a dry year in 2035, supplies are still estimated to exceed demand by about 423 AF/YR because annual dry-year demand will be approximately 5,577 AF/YR and supplies will be approximately 6,000 AF/YR. See **Table 5-7** for supply and demand for the Folsom SPA.

⁸³ Article 5(a), Renewal Contract. Article 5(a) is the exclusive provision governing dry-year reductions of NCMWC's water supplies under the Renewal Contract. The Bureau's *2001 M&I Shortage Policy* will not apply to the NCMWC water supply because NCMWC is a settlement contractor, and its Renewal Contract therefore specifically defines the maximum possible reductions.

Table 5-7. Folsom SPA supply and demand.

Year	Projected Baseline Water Demand (AF/YR)	Surface Water		Project Shortfall / Surplus (AF/YR)	
		Hydrologic Year Type	Available Water Supply (AF/YR)		
2015	413	Normal		7,587	
	425	Single Dry		5,575	
		Multiple Dry	Year 1	6,000	5,575
			Year 2	6,000	5,575
Year 3	6,000		5,575		
2020	1,434	Normal		6,566	
	1,475	Single Dry		4,525	
		Multiple Dry	Year 1	6,000	4,525
			Year 2	6,000	4,525
Year 3	6,000		4,525		
2025	3,339	Normal		4,661	
	3,434	Single Dry		2,566	
		Multiple Dry	Year 1	6,000	2,566
			Year 2	6,000	2,566
Year 3	6,000		2,566		
2030	4,463	Normal		3,537	
	4,591	Single Dry		1,409	
		Multiple Dry	Year 1	6,000	1,409
			Year 2	6,000	1,409
Year 3	6,000		1,409		
2035	5,422	Normal		2,578	
	5,577	Single Dry		423	
		Multiple Dry	Year 1	6,000	423
			Year 2	6,000	423
Year 3	6,000		423		

5.6 Catastrophic Interruption of Water Supplies

This subsection discusses actions that City of Folsom can undertake to prepare for and implement during a catastrophic interruption of water supplies. This includes dam failure, power failure, flooding, and earthquakes. Several of these disaster events can lead to limited or no supply of water for the City.

5.6.1 Dam Failure

In the event of a dam failure, the City could lose its main supply of water to serve Folsom Service Area – West, Folsom Service Area – East, the Nimbus Service Area, and the Ashland Service Area. The City is currently working on an emergency intertie with El Dorado Irrigation District that would allow the City to obtain up to 2,500 gallons per minute of treated water. The City currently has an intertie with San Juan

Water District, but under the conditions of a dam failure, this intertie would likely be unavailable, since this supply of water is also served from the Folsom Dam.

5.6.2 Power Failure

In the event of a power failure, the City has stand-by generators at the Water Treatment Plant and each of the pump stations within the distribution system. The City performs monthly maintenance checks for each of the locations to ensure proper operation and fuel levels of the standby generators and equipment. Depending on the length of the power failure, the City would have to ensure that fuel levels are maintained at each of the standby generators for each location.

5.6.3 Flooding

In the event of flooding, there are several concerns. First, if the flooding would cause a dam failure or a breach at the dam, then the City would have to implement the proposed limited emergency connections discussed in **sub-section 5.6.1**. If the flooding does not cause any damage to the dam, there is a potential for water quality degradation of existing surface water supplies due to runoff into the American River. The City has the capacity to continue its water treatment process and can make changes to adjust to the incoming surface water quality.

5.6.4 Earthquakes

In the event of an earthquake, severe damage could occur if the damage causes a dam failure. In the case of a dam failure, refer to **sub-section 5.6.1**. If the extent of the damage does not cause damage to the dam, there is a potential to damage and cause failure to underground water distribution infrastructure and structural damage to the Water Treatment Plant infrastructure. Depending on the extent of the damage to the Water Treatment Plant, the City could use emergency intertie connections to serve potable water to various parts of the City.

Another possible scenario includes damage and/or failure to the existing raw water supply pipe to the Water Treatment Plant. Since this is the only surface water supply to the City, the failure of this pipe would cause surface water supply interruption to the City's WTP. During this time, the City would initiate an emergency water supply shortage proclamation. The City would also utilize existing emergency interties. In February 2009, the City of Folsom experienced a failure of the existing 42-inch raw water main that delivers untreated surface water to the City's WTP. Due to the time of year of the pipeline failure, the City was able to maintain potable water service to existing customers through existing water storage tanks.

In the event that this type of failure were to occur during the middle of the day in the summer, the City could only expect to delivery up to half a day of potable water or less, depending on the storage levels at the time of failure. In this scenario, the City would ask residents to limit water use and consumption. The City would also use the emergency intertie connections to help supplement potable water. The City is actively working with regional water purveyors to create redundant supply systems that could provide water in the event of a catastrophic failure.

5.6.5 Revenues and Expenditures Affected by Water Shortages

The City is currently working with Regional, State, and Federal agencies to develop a conjunctive use program that will help address the potential impacts of water shortages. This program may offset potential shortages in revenues and additional expenditures. The City may also consider adopting drought rates to address potential water shortages.

Section 6. Demand Management Measures

Water Code Section 10631 requires that an UWMP include a description of the urban water supplier’s water demand management measures (DMMs). As discussed throughout this UWMP, demand management is an integral part of the City of Folsom’s long term water management strategy. Potential demand management programs are evaluated at the same level of detail as other supply options. In some instances, it may be more cost-effective to implement demand management programs than it would be to secure additional supplies and production/treatment facilities to meet existing and growing demands.

Table 6-1 summarizes the City of Folsom’s following demand management measures as required by Water Code Section 10631:

Table 6-1. City of Folsom Demand Management Measures (DMM)

Demand Management Measure	DMM Description
A	Water survey programs for single family and multi-family residential customers
B	Residential plumbing retrofit
C	System water audits, leak detection, and repair
D	Metering with commodity rates for all new connections and retrofit of existing connections
E	Large landscape conservation programs and incentives
F	High-efficiency washing machine rebate program
G	Public information programs
H	School education programs
I	Wholesale agency programs
J	Conservation programs for commercial, industrial, and institutional
K	Conservation pricing
L	Water conservation coordinator
M	Water waste prohibition
N	Residential ultra-low flush toilet replacement program
O	California Urban Water Conservation Council GPCD reporting method

6.1 DMM A – Water survey programs for single family and multi-family residential customers

The City of Folsom began implementing this program on August 1, 2000 and, because it is successful, anticipates continuing the program indefinitely. These programs generally involve sending a qualified water auditor to customer locations to audit water use, including a survey of both indoor and outdoor components. The indoor component checks for leaks in toilets, faucets, and meters, and checks showerhead, toilet, and aerator flow rates, offering replacements for high-flow devices. The outdoor survey includes checks of the irrigation system and control timers, and a review of, or development of, a customer’s landscape irrigation schedule.

The City of Folsom’s water survey program currently includes the following:

- ◆ Marketing of the program through:
 - City website
 - City newsletter
 - Local print media (Folsom Telegraph weekly newspaper)
 - Contact at public events
 - Follow up from water waste complaints
 - Cold calls to resident managers (multifamily only)
- ◆ Survey details:
 - Discuss interior fixture conservation measures
 - Explain ultra low flow toilet replacement and rebate program
 - Check irrigation timer
 - Run all zones of the sprinkler system
 - Note damage to the irrigation system and discuss necessary repairs
 - Note inefficient irrigation elements and discuss improvements
 - Review timer programming with homeowner/manager
 - Develop irrigation schedule
 - Deliver conservation packet
- ◆ Conservation packet includes:
 - Literature
 - “Sometimes less is more...water wisely!” (RWA)
 - “Water Management Program” (City of Folsom)
 - “ULFT rebate program” (RWA and SRCSD)
 - “There’s a better way to water!” (City of Folsom)
 - “Smart Water and Energy Use in the West” (Sunset Magazine)
 - “How to Water Your Garden” (Sunset Magazine)
 - “Water Efficient Landscapes” (DWR, Office of Water Use Efficiency)
 - “Water Efficient Landscaping” (UC Extension, Master Gardeners)
 - “Landscape Design II” (Water Education Foundation)
 - Devices
 - Toilet tank tummy.
 - Toilet tank leak dye
 - Low flow shower head
 - Low flow kitchen sink aerator
 - Low flow bathroom sink aerator
 - Garden hose nozzle

6.2 DMM B – Residential plumbing retrofit

The City of Folsom began implementing this program on August 1, 2000, and because it is successful, anticipates continuing the program indefinitely. These programs generally involve sending a qualified water auditor to customer locations to audit water use, including a survey of both indoor and outdoor components. The indoor component checks for leaks in toilets, faucets, and meters and checks showerhead, toilet, and aerator flow rates and offering replacements of high-flow devices. A water conservation packet with retrofit devices is delivered to the customer at the time of the survey.

The City of Folsom’s residential plumbing retrofit program currently includes the following:

- ◆ Marketing of the program through:
 - City website
 - City newsletter
 - Contact at public events
 - Follow up from water waste complaints
 - Cold calls to resident managers (multifamily only)
- ◆ Conservation packet includes:
 - Literature
 - “Sometimes less is more...water wisely!” (RWA)
 - “Water Management Program” (City of Folsom)
 - “ULFT rebate program” (RWA and SRCSD)
 - “There’s a better way to water!” (City of Folsom)
 - “Smart Water and Energy Use in the West” (Sunset Magazine)
 - “How to Water Your Garden” (Sunset Magazine)
 - “Water Efficient Landscapes” (DWR, Office of Water Use Efficiency)
 - “Water Efficient Landscaping” (UC Extension, Master Gardeners)
 - “Landscape Design II” (Water Education Foundation)
 - Water Wise Gardening Interactive CD
 - Devices
 - Toilet tank tummy.
 - Toilet tank leak dye
 - Low flow shower head
 - Low flow kitchen sink aerator
 - Low flow bathroom sink aerator
 - Garden hose nozzle

Table 6-2. Historic residential plumbing retrofits.

Historic Plumbing Retrofit Activities					
	2006	2007	2008	2009	2010
Single family devices	1736	1701	1924	1844	942
Multi-family devices	152	432	260	312	200
Actual expenditures - \$	\$9,855	\$11,134	\$11,400	\$11,254	\$5,961

See DMM – O for more information on planned retrofits and the City’s transition to the CUWCC gallons per capita per day reporting method.

6.3 DMM C – System water audits, leak detection, and repair

The City plans to fully implement this DMM when meter coverage is sufficient to allow for meaningful results from meter data. As discussed in DMM D, full metering will occur

during the planning horizon of this document (January 2013). During the 2011 Calendar Year, the City will also install three (3) new zone meters at the City's water treatment plant to improve meter reading efficiencies for treated water entering the City's distribution system.

In January 2011, the City of Folsom, under a contract with Water System Optimization, Inc. (WSO), began a 2-Year Water Management Control Program. This water management control program is the foundation of the City's System Optimization Review (SOR), as it helps identify areas of conserved water and improves system efficiencies. The goal of these efforts is to ensure the long-range reliability of water supply for the region, as well as preserving our natural resources and the American River. The program consists of the following:

- ◆ Perform an initial comprehensive leak detection campaign using portable acoustic leak detection equipment of the entire water distribution system; (276 miles)
- ◆ Convert the water pressure zones 1-7 into District Metering Areas (DMAs) which allows for specific monitoring locations within the distribution system;
- ◆ Compare the water usage for each of the DMAs and potential system improvements;
- ◆ Develop system pressure management strategies;
- ◆ Quantify potential water savings;
- ◆ Design and implement a data analysis and water management system for the City;
- ◆ Establish water management, data handling, and data management systems to track long-term measurable results

Throughout the two year water management control program WSO will continuously train City of Folsom personnel on water loss management activities, data handling and data management, and data analysis. WSO will provide the City with clear procedures on how to manage and analyze the data necessary for a successful non-revenue water control program. Extensive training will be provided on the use of the DMA data and non-revenue water monitoring system designed and implemented by WSO.

WSO will manage the entire water management control program in conjunction with the City. WSO will prepare a detailed final report at the end of the water management control program period that describes in detail all the work undertaken, the methodologies used, the findings of the program and recommended strategy for continued non-revenue water management by the City. The final report will be submitted in PDF format and will document all data collected and work performed. See **Figure 6-1** and **Figure 6-2** for the proposed schedule of the 2-Year Water Management Control Program.

Task	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11
Project Kick Off												
Initial Comprehensive Leak Detection Campaign												
Field Tests to Verify Zone Integrity of Zone1 and 4,5,6												
Convert Zone1 and 4,5,7 Into Permanent DMAs												
Initial Leakage Level Measurement in DMA Zone1 and 4,5,6												
Comparison of Initial DMA Leakage Levels Against Water Audit Results												
Quantify Savings Achieved Through First Round of Leak Detection												
Design and Pilot Leakage Monitoring System for DMA Zone 1 and 4,5,6												
Second Round of Comprehensive Leak Detection Campaign												
Final leakage level measurement in DMA zone 1 and zone 4,5,6												
Quantify Savings Achieved Through Second Round of Leak Detection												
Calculate Background Leakage in DMA Zone1 and 4,5,6 and Extrapolate to Rest of System												
Convert Zone 2 and 3 Into Permanent DMAs												
Design Data Analysis and Management System for Leakage Monitoring in All DMAs												
Collect and Then Evaluate Pressure and Flow Data From All DMAs												
Training of COF Personnel on Water Loss Management, Data Handling and Data Management												
Project Management of Entire Water Loss Control Program												
Preparation of Monthly Progress Reports												

Figure 6-1. Tasks for Year 1 of the Water Management Control Program

The proposed water management control program will potentially achieve a savings of approximately 2,500 acre-feet of water per year. The results of this water management control program will also place the City in a position for future grant opportunities through the Bureau's Water Marketing and Efficiency Grant program.

Task	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
Assess Potential for Subdividing Zone 2 into two DMAs and Subdivide if Possible												
Collect and Then Evaluate Pressure and Flow Data From All DMAs												
Design Advanced Pressure Management Schemes												
Pilot Advanced Pressure Management in One DMA												
Full Scale Implementation of Advanced Pressure Management												
Calculate Economic Leakage Intervention Levels of Each DMA												
Training of COF Personnel on Water Loss Management, Data Handling and Data Management												
Project Management of Entire Water Loss Control Program												
Preparation of Monthly Progress Reports												

Figure 6-2. Tasks for Year 2 of the Water Management Control Program

6.4 DMM D – Metering with commodity rates for all new connections and retrofit of existing connections

In 2007, the City completed a Water Meter Implementation Plan to facilitate compliance with state law and to ensure a smooth and cost-effective implementation of a water metering program for the City. Implementation of the Folsom water metering program will primarily involve installing individual water meters at existing homes without meters, reading of installed meters, and a transition from monthly flat rate billing to monthly billing based on metered consumption.

In 2009, the City of Folsom completed the installation of approximately 5,400 residential water meters on homes built prior to 1992. During the installation of water meters, the City also selected and began the installation of a fixed network meter reading system. This system uses a remote radio transmitter on the meter to send meter reading information to a main database.

The City of Folsom requires meters to be installed for all new connections, and bills on a volumetric basis for commercial, industrial, institutional, and multi-family customers. In addition, the Ashland Service Area is billed by volumetric use for all customers, residential and non-residential. For the customers that are not currently billed by volumetric use, the City plans to provide one year of comparative meter reading data, beginning in January 2012. Metered billing would begin in January 2013 for all residential customers currently on a flat rate for water service. During the preparation of this report, the City was developing City-wide water meter rates for all residential and non-residential customers within the City’s water service area.

For the purposes of this UWMP, the City assumed a 10% water savings when metered billing is implemented. These savings only apply for the Folsom Service Area – West and Folsom Service Area – East. The Ashland Service Area is fully metered. The Glenborough at Easton, Easton Place, and Folsom SPA developments will be billed based on volumetric use at the time of development, and therefore will not see the same savings as current customers who are not billed on volumetric use.

6.5 DMM E – Large landscapes conservation programs and incentives

The City of Folsom began implementing this program in 1998 and because it is successful, anticipates continuing the program indefinitely. These programs generally involve sending a qualified water auditor to large landscape customer locations to audit water use and inspect irrigation components. Incentives are offered through a DWR Proposition 50 grant program administered by the Regional Water Authority (RWA)⁸⁴. The annual expected water savings is 39 acre-feet.

The City of Folsom’s large landscape conservation program currently includes the following:

- ◆ Marketing of the program through:
 - City website
 - City newsletter
 - Contact at public events
 - Communication with other city departments responsible for large landscape sites; Parks and Recreation, Lighting and Landscape Districts, and Public Works
 - Communication with homeowner associations and property management companies
- ◆ Water audits include
 - Irrigation system inspection
 - Can test to determine distribution uniformity
 - Measure landscaped area
 - Establishing a water budget according to IA guidelines
 - Review or develop an irrigation schedule
 - Document damage and necessary repairs
 - Present upgrade opportunities for water efficiency
 - Determine eligibility for grants and incentives

6.6 DMM F – High-efficiency washing machine rebate programs

The City of Folsom has implemented this program from 2006 through 2010. The City of Folsom’s program was a joint effort with the RWA and SMUD to administer the rebates.

⁸⁴ The Regional Water Authority (RWA) is a joint powers authority formed in 2001 to promote collaboration on water management and water supply reliability programs in the greater Sacramento, Placer, and El Dorado County region.

The program was a cooperative effort between the membership of RWA and energy providers. Only Tier 2 and Tier 3 washing machines listed by the Consortium for Energy Efficiency qualify for a rebate. The annual expected water savings is 4 acre-feet.

The City of Folsom's high-efficiency washing machine rebate programs will include the following:

- ◆ Marketing of the program through:
 - City website
 - City newsletter
 - Contact at public events
 - Follow up from water waste complaints
 - Cold calls to resident managers (multifamily only)
 - Cold calls to Laundromats.
 - Cold calls to hotel managers.

The program was eliminated in December of 2010 as the City shifted its resources to the CUWCC GPCD water savings method. During the program the City issued 810 rebates of \$50.00 per unit for a total of \$40,500.

6.7 DMM G – Public information programs

The City of Folsom maintains an active public information campaign to promote and educate customers regarding water conservation and efficient irrigation, including:

- ◆ Provision of speakers to employee, community and media groups to promote conservation
- ◆ Paid Advertising
- ◆ Bill inserts/newsletters/brochures
- ◆ Highlighting water usage on water bills
- ◆ Coordination with other government agencies, industry groups, public interest groups, and media to promote conservation efforts regionally

During the 2010 Calendar Year, the City of Folsom staff participated in 22 presentations special events with a total of 6,680 attendees. **Table 6-3** highlights specific 2010 outreach activities and workshops presented by the City of Folsom. Since water savings for this DMM is difficult to quantify, the City will begin reporting to the CUWCC using the gallons per capita per day, or GPCD method. At the time this report was prepared, the CUWCC reporting tables and documents were not available.

The City fully participates in the Regional Water Efficiency Program (RWEF) Public Information Campaign. The Regional Water Efficiency Program has a regional outreach program coordinated with support from a Public Outreach and School Education Committee comprised of RWEF member conservation coordinators and Public Information Officers.

Table 6-3. City of Folsom workshops and attendance.

Date	Event	Topic	Number of Attendees
2/6/2010	FOHC Workshop	Water Efficient Irrigation	30
3/10/2010	SJUSD Adult Ed Hort Class	Water Efficient Irrigation	15
3/25/2010	Rules of Thumb Workshop #1	Water Efficient Landscaping	56
4/22/2010	Western Power Admin. Earth Day Event	Water Conservation	40
4/22/2010	Western Power Admin. Earth Day Event	Water Conservation	40
4/24/2010	Hinkle Creek Earth Day Event	Water Conservation	250
4/25/2010	Folsom Garden Club Tour	Water Conservation	300
4/29/2010	Rules of Thumb Workshop #2	Water Efficient Landscaping	55
5/1/2010	Get Wet	Water Conservation	200
5/8/2010	Home Depot Event	Water Conservation	50
5/25/2010	Rotary Luncheon	Water Conservation	22
5/27/2010	Rules of Thumb Workshop #3	Water Efficient Landscaping	53
6/24/2010	Rules of Thumb Workshop #4	Water Efficient Landscaping	61
8/7/2010	Harvest Day	Water Efficient Landscaping	100
8/7/2010	Harvest Day	Water Efficient Landscaping	2,000
9/1/2010	Green Gardener Irrigation Class	Irrigation	16
9/16/2010	RFL Workshop #1	Irrigation	22
10/2/2010	FOHC Workshop	Irrigation	26
10/2/2010	Folsom Family Expo & Wellness Festival	Water Conservation	3,250
10/2/2010	Hinkle Creek WEL Garden Event	Water Efficient Landscaping	28
10/9/2010	RFL Workshop #2	Irrigation/Water Efficient Landscaping	54
11/29/2010	Renaissance HOA Board Meeting	Water Conservation/Meters/Rebates	12

In 2005, the Regional Water Efficiency Program developed a new logo and theme for the “Be Water Smart” public information campaign. To kick off the campaign, RWA undertook a host of outreach activities including a region-wide “Ultimate Garden Makeover Contest” in 2008 and 2009. Overall, goals of the Be Water Smart program are to:

- ◆ Increase the number of Water-Wise House Call requests
- ◆ Increase visibility for RWA’s water conservation messages in the local media
- ◆ Drive traffic to the RWA website and Be Water Smart hotline

In 2010, the Regional Water Authority (RWA) and 19 local water providers announced a new public outreach and advertising campaign called “Blue Thumb”. The campaign is designed to help residents use less water outdoors. With the Sacramento region's hot, dry

climate and long summer season, more than 65 percent of a household's yearly water consumption typically goes toward landscape irrigation. Of that, 30 percent is lost due to overwatering or evaporation, and is the target of the campaign messaging with the call for customer behavioral changes in watering practices.

Goals for the Regional Public Information Campaign

- ◆ Raise awareness about the need to use water efficiently outdoors.
- ◆ Motivate target audience to undertake key behaviors that are most likely to reduce outdoor water use.

Target Audience for the Regional Public Information Campaign

- ◆ Residential water customers within the RWEPP participant area.
- ◆ In particular, RWA and ACWA surveys show women over age 50 are most willing to adopt water-efficient behaviors

The ongoing regional campaign shows residents how to use water efficiently outdoors through every-day tasks such as adjusting their irrigation system according to the season or using a shut-off nozzle on their hose. It stars well-known community influencers, including Sacramento Mayor Kevin Johnson, Meteorologist Elissa Lynn and Dinger of the Sacramento River Cats, plus six local residents showing off their “Blue Thumb” and demonstrating how they made a personal commitment to use water wisely.

The Blue Thumb Campaign has a web site (BeWaterSmart.info) where visitors can take the pledge to use water wisely and view video clips from spokespersons, such as Sacramento Mayor Kevin Johnson, and campaign participants explaining how they earned their Blue Thumb. The web site has been expanded to be a more comprehensive water conservation related site.

RWA provides avenues and tools for program participants to carry the Blue Thumb campaign in their own outreach efforts. Tools include key messages, Web site/newsletter text, bill insert template, Blue Thumb pledge and collateral materials. Outreach avenues include the opportunity to nominate customers to star in the outreach campaign, participation in the Home Depot partnership by featuring their logo on the in-store banners and connecting with customers at events. One water provider whose customer was selected to star in television advertising posted the customer’s Blue Thumb interview to YouTube with a link to their Web site. Others included campaign information on their Web sites, newsletters, billing envelopes and “on-hold” phone messages, as well as collected pledges via the form or pledge banner at community events.

The following marketing strategies were used as tactics to meet the goals of the Public Information Campaign. Specifically for the program, tactics used in the period of 2005-2009 included:

- ◆ Planned and executed the 2008 and 2009 Ultimate Water Smart Garden Makeover Contest as a regional media event which included a full remake of the winner's front yard landscape with donated time and materials worth \$40,000
- ◆ Public service announcements (hundreds of airings on radio and TV)
- ◆ Paid advertisements (print ad, television segments)
- ◆ Manage Be Water Smart hotline, 1-888-WTR-TIPS
- ◆ 5 Be Water Smart e-blasts to 40,000 people
- ◆ Participation at public events
- ◆ Bill inserts, brochures (e.g. River-Friendly Landscaping and Rules of Thumb for Water Wise Gardening)
- ◆ Demonstration garden support to the Fair Oaks Horticulture Center managed by the Sacramento County University of California Cooperative Extension (UCCE)
- ◆ Develop partnerships for co-promotion of programs including the following agencies:
 - Sacramento Municipal Utility District (SMUD)
 - Sacramento Regional County Sanitation District (SRCSD)
 - Sacramento Area Water Forum
 - Sacramento Bee
 - Sacramento Stormwater Quality Partnership
 - University of California Cooperative Extension

In addition, the tactics to meet the 2011 and future goals of the revised Public Information campaign include:

- ◆ Campaign web site (BeWaterSmart.info) where visitors can take the pledge to use water wisely and view video clips from campaign participants explaining how they earned their Blue Thumb
- ◆ A statistically valid telephone survey completed in 2009 of 604 adults to provide insight into attitudes, behaviors, messages and methods of communication. The survey will be repeated in September 2011 to evaluate the campaign.
- ◆ A unique and eye-catching campaign graphic identity

- ◆ Media outreach to announce the campaign and promote the opportunity for residents to star in advertising, as well as a campaign launch press event
- ◆ Television and radio advertising (paid) on KOVR (CBS TV), Comcast Cable, Capitol Public Radio and Clear Channel radio stations
- ◆ Public Service Announcements (PSAs) (no-cost placement) distributed to television and radio stations throughout the Sacramento region
- ◆ Promotional partnership with WaterSense and 16 Home Depots throughout the Sacramento region for Water Awareness Month in May. This included training by RWA on water efficient topics for Home Depot associates, promoting RWA's "Top 10 List" of water efficient products either via end-cap displays or table displays, in-store banners promoting Water Awareness Month and events where water providers connected with customers at Home Depot stores
- ◆ Partnership with the Sacramento River Cats (Sacramento's popular minor league baseball team) and Save Our Water that included placing water efficiency advertisements in 110 bathroom stalls at Raley Field, a blast e-mail by the Sacramento River Cats to 1,700 fans promoting the Blue Thumb Web site pledge and inclusion of a promotional flyer in 1,000 Save Our Water totes distributed at the California State Fair
- ◆ Collateral materials such as garden gloves, lawn signs, pledge banner and T-shirts with the Blue Thumb logo as an incentive for taking the Blue Thumb pledge online or at events

RWA also hosts a Speakers Bureau. For example in 2009-11, speaking engagements included the following by RWA staff and by Regional Water Efficiency Program participants from the Cities of Folsom and Roseville:

- ◆ Northern California Ace Hardware stores on regional water efficiency programs, Home Depot associates on water efficient products, rebates, and Water Awareness Month, LOWE's stores throughout the region on water efficient products, rebates, and Water Awareness Month promotion, Rainbird Training Academy on local efforts of AB1881, UC Davis WaterWise Symposium on Blue Thumb campaign and local efforts of AB1881, Association of Professional Landscape Architects on local landscape programs, Association of Professional Landscape Designers on local efforts of AB1881 and River Friendly Turf Management Workshop on local agency landscape efficiency rebate program
- ◆ California Green Summit on future green jobs in the water industry, River Friendly Landscaping Homeowner Workshop Series on irrigation efficiency,

irrigation controller scheduling, water efficiency in the landscape, Raley Field Turf Management Workshop on RWA programs

- ◆ Department of Water Resources training on local agency implementation of AB1881, California Association of Public Information Officials state conference about Blue Thumb Neighbors

In the future, RWA will continue to work with participating agencies on a regional outreach message appropriate for the current year's water outlook. RWA will continue to provide key messages and update water provider tools as necessary, track the number of media stories (or hits), interviews conducted, and number of impressions of audience viewings. After the first year of the "Blue Thumb" program, results were tracked for 2010 and include the following outcomes:

- ◆ Nearly 30 earned media hits covering topics such as the campaign announcement/search for residents to participate, campaign launch, Home Depot events/Water Awareness Month and Blue Thumb Web site pledge.
- ◆ Interviews on multiple public service radio programs, including Clear Channel (where the host even took the Blue Thumb pledge on the air!) which broadcast on five local stations and Family radio, which aired on two local stations
- ◆ Nearly 3.9 million impressions via paid television advertising and 6.3 million impressions via paid radio advertising
- ◆ More than 1.2 million impressions for the (no-cost) television PSA (worth an estimated \$24,500) and over 3 million impressions for the radio PSA (worth an estimated \$96,264)

The general schedule for the regional public information campaign follows the annual calendar with the following seasonal activities:

Winter – planning for upcoming year's activities, continue to promote participation in the City's programs, such as high efficiency toilet and clothes washer rebates.

Spring – ramping up messaging and strong focus in soliciting media coverage and paid advertising in support of May as Water Awareness Month. Messaging surrounds the traditional spring planting season and checking of irrigation systems as they are turned on and taking the "Blue Thumb Pledge" to lower outdoor water use this season.

Summer – key messaging hits on the issues of efficient irrigation techniques, avoiding water waste, and lowering peak demands on hot summer days.

Fall – participating in local Harvest day events and providing efficient landscape irrigation trainings for professionals that focus on selecting more water efficient plants and irrigation equipment, and when the weather cools and rains return, then messaging calls for shutting down irrigation systems for the winter months.

The implementation schedule for 2011-2015 includes plans to continue to promote water conservation through the Regional Water Efficiency Program’s outreach program supplemented by our own City outreach efforts. In addition, the City will continue to support community events similar to those conducted in the past as described above. The annual budget for direct expenses to continue with the regional outreach campaign is planned for 2011-2015 to be \$160,000 each fiscal year.

RWA will conduct an evaluation on a minimum of a bi-annual basis to determine the campaign’s effectiveness using the following means:

- ◆ Statistically valid post-campaign telephone survey (results compared to 2009 pre-campaign survey responses).
- ◆ Tracking of pledges secured both online and by individual RWEF member utility efforts.
- ◆ Web site analytics analysis.
- ◆ Tracking water provider materials that carry Blue Thumb messages.
- ◆ Media and online mentions and content analysis of hits.
- ◆ Impressions for television and radio advertising and public service announcements
- ◆ Impressions for partner activities (such as the Sacramento River Cats).

For the Community Based Social Marketing (CBSM) program: Internet/written surveys (and potentially informal phone interviews) and water use data tracking.

In the future, RWA will conduct another random survey of Sacramento area residents, which will seek to measure if the following goals for the campaign are being achieved:

- ◆ Increase the number of residents willing to utilize various yard design and maintenance practices promoted by the campaign.
- ◆ Increase the number of residents who say they have adopted yard design and maintenance practices promoted by the campaign.
- ◆ Increase the number of residents that have seen, read or heard news stories, public information, advertisement or other messages regarding water efficiency in the past six months.

- ◆ Increase the number of residents naming key messages promoted by the campaign in verbatim responses about the advertising or messages they heard.

Based on the results of the post-campaign survey, RWA is expecting to measure the success of this DMM based on the metrics listed above. If the campaign is not proving effective based on these metrics, then RWA will update or revise the campaign, or if necessary begin a new campaign, to garner more customer participation.

There is no current method in the industry to evaluate water savings for this program. The popularity of public programs can be measured through the acceptance of brochures and attendance at various water conservation related events, etc.

6.8 DMM H – School Education Programs

The City of Folsom participates in a regional school education program in partnership with Regional Water Authority and its 19 member agencies. The program consists of special assemblies and classroom materials provided by the Sacramento Bee's News In Education program. The program reaches approximately 3,000 students every year.

The City of Folsom fully participates in the RWEF School Education Program. The RWEF program has focused mainly on K-8 programs. RWEF has continued to use the legacy Sacramento Bee Newspapers in Education (NIE), now called Media in Education (MIE) program that originated back in the mid-1990s as part of the Sacramento Area Water Works Association (SAWWA) program in order to meet the baseline requirements for school education outreach. It includes an annual Water Conservation Pledge and Quiz Contest. It is estimated that a total of 33,932 students have been educated since inception.

Historically between 2004 and 2008, RWEF also sponsored the Great Water Mystery School Assembly program that was co-funded with the Sacramento Stormwater Quality Partnership. Over the years, a total of 60,208 students in Grades 3-6 were educated about benefits of better water management practices at home to save water resources and reduced polluted stormwater runoff.

In FY 2011, RWEF embarked on a new program, in partnership with the Bureau of Reclamations' American River Water Education Center, and the Water Education Foundation to include sponsorship of Project WET school teacher workshops. A total of 25 teachers attended the first workshop in April 2011.

The RWEF is in the process of evaluating whether a more effective school program that will reach more students is warranted. Working with the RWEF members and local

educators, RWA plans to: (1) evaluate the existing program; (2) evaluate the success of other programs in the region and around the state; (3) develop objectives and a target audience (e.g., grade level); (4) materials; and (5) an implementation strategy for the school education program into the future.

The current marketing strategy for the SacBee MIE program is both email to teachers that have participated in the past and direct mail campaign to local schools for the whole series of topics throughout the year. Each teacher decides on which week's topics to participate in that cover a wide range of education topics including RWEF's sponsored week of "Be Water Smart News, Water the Never Ending Story."

The Project WET workshops are marketed to teachers and environmental educators by the local California Regional Environmental Education Community (CREEC) Network representatives, to water educators through Project WET newsletters, and by RWA through direct mail and contacts with local school administrations and teachers.

RWA continues to track by a variety of means participation in the regional school education program. For the SacBee MIE Program, the metrics tracked annually include:

- ◆ Number of teacher guides downloaded
- ◆ Number of schools
- ◆ Number of classrooms
- ◆ Number of students reached
- ◆ Number of students participating in the pledge (Grades K-3) or contest (Grades 4-8) entries received by the SacBee
- ◆ Comments back from teachers

For the Project WET teacher training program, the following metrics are also tracked annually:

- ◆ Number of teachers attending workshops
- ◆ Which school districts
- ◆ Number of schools
- ◆ Estimated number of students reached
- ◆ Teacher workshop evaluations

RWEP plans to continue with regional school education program activities along with distribution of school-age educational materials and Project WET Workshops. The school schedule dictates when participation in the RWEP school education program occurs and follows the months that schools are in session from August to the following May. The annual budgeted direct expenses for the regional school education program have been \$20,000 and will continue at this level for the foreseeable future.

Based on the annual results of the participation levels tracked, RWA is expecting to measure the success of this DMM based on the metrics listed above. As described above, RWA is currently conducting an evaluation process of the existing regional school education program, which includes interviews of local school teachers at a variety of grade levels. The program will continue as currently planned until the evaluation process is complete and the program's content and/or implementation strategy may be revised in the future

It is unknown what changes in water using behavior may arise from student and educators participation in the regional school education programs. Considering the difficulty of placing a numerical value for water savings, an intangible method of effectiveness and resulting water savings, can be determined by the amount of voluntary classroom and school participation with available K-12 water conservation programs.

6.9 DMM I – Conservation programs for commercial, industrial, and institutional accounts

The City of Folsom began implementing this program in 2005, and, because of the success of other water districts and energy companies, will continue the program indefinitely. The City of Folsom is performing water surveys through a cooperative program with the RWA and CUWCC. This program involves a site visit by the City of Folsom's Water Conservation Division, who performs a water survey and provides recommendations for the replacement of the existing pre-rinse hand valves in kitchen facilities with an efficient low-flow model. The City is also coordinating with RWA to implement a rebate program for tank toilets, and is evaluating the opportunity to extend to flush valve systems. The City of Folsom's CII program includes the following:

- ◆ Marketing of the program through:
 - City website
 - City newsletter
 - Contact at public events
 - Follow up from water waste complaints
 - Cold calls by the contractor
- ◆ CII water surveys include:
 - Site visit by the contractor
 - Evaluation of water use

- Recommendations to improve water efficiency
- Explanation of rebate programs
- Replace pre-rinse hand valve with a low flow model

The annual expected water savings is 74 acre-feet. See **Table 6-4** completed surveys and projected surveys for commercial, industrial, and institutional accounts.

Table 6-4. Historic CII Conservation Surveys

Historic CII Conservation Program					
	2006	2007	2008	2009	2010
Surveys completed	26	22	28	20	5
Incentives provided?	YES	YES	YES	YES	YES
Follow-up visits	0	0	0	0	0
Actual expenditures - \$	\$3,016	\$2,552	\$3,248	\$2,320	\$580

See DMM – O for more information on CII conservation surveys and the City’s transition to the CUWCC gallons per capita per day reporting method.

6.10 DMM J – Wholesale agency programs

The City of Folsom is solely a retail water supplier, and therefore Demand Management Measure J does not apply.

6.11 DMM K – Conservation pricing

Metered billing would begin in January 2013 for all residential customers currently on a flat rate for water service. During the preparation of this report, the City was developing City-wide water meter rates for all residential and non-residential customers within the City’s water service area. All industrial and commercial connections are currently metered with water use charges.

Most residential connections are not currently metered, except for those in the Ashland Water Service Area. Because conservation pricing requires a volumetric rate, all water services need to be metered and billed based on consumption. As mentioned above, the City will develop water meter rates for all customers. In an effort to develop conservation pricing, the City of Folsom plans to create a tiered rate structure for all metered customers, which will apply in January 2013.

6.12 DMM L – Water Conservation Coordinator

The City of Folsom created the Water Management Coordinator position in December of 2000 to oversee water conservation activities. The position is a permanent full time position. The coordinator is required to possess a Water Conservation Practitioner certification from the AWWA and be an Irrigation Association Certified Landscape

Irrigation Auditor. The coordinator’s background includes experience in landscape, horticulture, irrigation, plumbing, public speaking, and administrative or business management.

- ◆ The City of Folsom’s Water Management Coordinator is Don Smith.
- ◆ Experience
 - Landscape contractor
 - Irrigation technician
 - Plumbing
 - Public speaking
 - Water Conservation Practitioner
 - Certified Landscape Irrigation Auditor
 - Owned and operated a landscape service

Table 6-5. Water Conservation staffing levels.

Water Conservation Staffing Level										
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Full-time positions	2	2	2	2	3	3	3	3	3	3
Full/part-time staff	0	0	0	0	0	0	0	0	0	0

6.13 DMM M – Water waste prohibition

The City of Folsom has adopted by Ordinance 1118, Chapter 13.26 of the Folsom Municipal Code (FMC), Water Conservation. Chapter 13.26 establishes a five stage water conservation program with conservation goals and water use restrictions. In addition, the City of Folsom Water System Emergency Response Plan, December 28, 2004, identifies emergency resources and alternative and backup water sources. This plan is consistent with and incorporates provisions in the City of Folsom Emergency Operation Plan, 2004. Procedures for distribution of water during varying periods of outages or in a disaster are identified and are consistent with guidelines prepared by the California Office of Emergency Services (OES) and California Utilities Emergency Association. Both the City of Folsom Water System Emergency Response Plan, and the City of Folsom Emergency Operation Plan, due to their size, are not attached to this document but are available for viewing at the Folsom Water Treatment Plant.

The City of Folsom’s water shortage contingency plan which is summarized in the FMC Chapter 13.26 has five stages of conservation, each of which is intended to achieve a given percentage reduction in water use. Decreases in available water, as determined by the City Manager, increase the Water Conservation Stage identify additional water use restrictions which may be augmented by other restrictions as deemed necessary. The five stages and their conservation goal relative to the base stage are as listed below:

- ◆ Stage one (“Basic Stage”) is for the normal water supply

- ◆ Stage two (“Water Alert”) shall achieve a 12 % reduction
- ◆ Stage three (“Water Warning”) shall achieve a 20% reduction
- ◆ Stage four (“Water Crisis”) shall achieve a 35% reduction
- ◆ Stage five (“Water Emergency”) shall achieve a 50% reduction

As the conservation stages increases, non health and safety uses of water such as landscape watering are limited and then eliminated. Enforcement and penalties for the wasteful use of water, which are applicable during all stages of conservation, are specified in the Ordinance.

6.14 DMM N – Residential ultra-low-flush toilet replacement program

The City of Folsom began implementing this program in 2003 and, because it is successful, anticipates continuing the program indefinitely. This program generally involves sending a qualified water conservation staff person to customer locations to insure that the toilet being replaced is a pre-1994 high water use model. The customer is responsible to purchase and install their own toilets. After the toilet is installed the customer completes an application and sends it in with the original receipts or invoices for processing. The rebate amount is a maximum of \$125.00 per toilet. The program is a cooperative effort with the City of Folsom, the Sacramento Regional County Sanitation District (SRCSD), and the RWA. SRCSD contributes \$75.00 of the \$125.00 rebate per toilet. The City anticipates reaching a saturation rate at some point in the future, at which time it will be inefficient to continue the program.

The City of Folsom’s High Efficiency Toilet (HET) replacement program currently includes the following:

- ◆ Marketing of the program through:
 - City website
 - City newsletter
 - Contact at public events
 - Follow up from water waste complaints
 - Cold calls to resident managers (multifamily only)

Table 6-6. Historic ultra-low-flush toilet replacements.

Historic Ultra Low Flush Toilet Replacements					
	Single-Family				
	2006	2007	2008	2009	2010
ULF rebates	26	71	248	511	300
Actual expenditures - \$	\$3,250	\$8,875	\$32,250	\$72,225	\$52,500
Actual water savings - AFY	23	42	53	53	53

See DMM – O for more information on ultra low flow toilet replacement and the City’s transition to the CUWCC gallons per capita per day reporting method.

6.15 DMM O – California Urban Water Conservation Council GPCD reporting

Beginning in the Calendar Year 2011, The City of Folsom plans to enhance its water conservation efforts and achieve compliance with all programmatic BMPs and DMMs through the CUWCC’s GPCD reporting option. Gallons per capita daily (GPCD) is the third compliance approach for the MOU. The combined water savings from implementation of the Foundational and Programmatic BMPs should produce greater water savings than the Programmatic BMPs themselves. Since most Foundational BMPs are not quantified, the GPCD approach evaluates compliance by evaluating the overall reduction in per capita water demand over time. One measure of efficiency, GPCD, indicates the increase in efficiency in water demand over time, by dividing demand by population, which gives average water consumption value per person served.

Irrigation Efficiency

Outdoor water use represents the largest demand on our system and provides the greatest opportunity for savings. The City will direct more of its resources towards residential and large landscape irrigation efficiency. The landscape irrigation program will include:

- ◆ Residential Water-Wise House Calls - Trained staff familiar with landscape and irrigation will perform assessments of irrigation systems and one on one education for residential single family customers.
- ◆ Large Landscape Irrigation Audits - Certified auditors will perform irrigation audits of large landscapes at parks, municipal facilities, schools, churches, commercial, and other properties. Water budgets will be established and property owners or managers will receive regular updates on their progress. Updates will include information on actual water use compared to water budgets utilizing DWR’s spatial ETo information and the financial benefits of reduced water use. Currently the City of Folsom’s Water Management Program has two Irrigation Auditors on staff certified by the Irrigation Association.
- ◆ Rebates - The City of Folsom will concentrate its rebate programs on landscape and irrigation programs. Current programs featuring rebates of up to \$500 for the installation of weather based (smart) irrigation controllers and \$200 for the improvement of in-ground equipment will be continued and enhanced.
- ◆ Outreach and Education - Each year the City will conduct a series of homeowner workshops focusing on water conservation in the landscape. Workshops will use local experts, academics, and the Sacramento County Master Gardeners. Subject

matter will include water efficient landscape design, plant selection, irrigation, composting, and River Friendly Landscaping Principles. The City is currently cooperating regionally through the Regional Water Authority to provide training to landscape professionals with the Green Gardener Training Program as well as a variety of seminars throughout the year. Don Smith, the City's Water Management Coordinator serves as the Chair of the Regional Water Authority's Landscape Committee.

The estimated annual budget for our Irrigation Efficiency Program is \$119,410.

Section 7. Climate Change

Climate change may affect water demand, water supply, and water quality. The potential for early runoff or reduced snowpack are two of the climatic changes that could have a direct affect on the City of Folsom's supply and water quality. Based on future water demand requirements, the City does not anticipate that climatic change will affect the current and proposed water supplies. Determining the exact implications of climate change at this time is speculative.

Global climate change may ultimately affect the amount of water stored within the California Sierra Nevada snowpack, alter the amount of precipitation in the Sacramento and American River watersheds, and increase temperatures. Because the snowpack acts as additional water storage, a reduced snowpack or reduced total precipitation may affect the amounts of water stored in reservoirs, including CVP reservoirs, the timing of reservoir releases, and the total water volumes available for spring and summer diversion and use. None of these changes are currently foreseeable and will be monitored in the future to assess trends in snowpack, runoff patterns, and consumer use.

Section 8. Urban Water Management Plan Checklist

The Urban Water Management Plan checklist is developed by the Department of Water Resources and is directly from the Urban Water Management Plan Act and the Water Conservation Bill of 2009. The checklist used by the City of Folsom is organized according to law. The location of the required element in the checklist is indicated in the last column, which identifies the location within the document where the information can be found. This checklist was downloaded directly from the Department of Water Resources *Urban Water Management* website.

Table 8-1. 2010 UWMP Checklist.

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)	System Demands		Section 3.7
2	<i>Wholesalers:</i> Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. <i>Retailers:</i> Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	System Demands	Retailer and wholesalers have slightly different requirements	Section 1.2
3	Report progress in meeting urban water use targets using the standardized form.	10608.40	Not applicable	Standardized form not yet available	
4	Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)	Plan Preparation		Section 1.2
5	An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.	10620(f)	Water Supply Reliability . . .		Section 5.1 & 5.2

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
6	Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.	10621(b)	Plan Preparation		Section 1.2
7	The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).	10621(c)	Plan Preparation		Section 1.3
8	Describe the service area of the supplier	10631(a)	System Description		Section 2.1
9	(Describe the service area) climate	10631(a)	System Description		Section 2.3
10	(Describe the service area) current and projected population . . . The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier . . .	10631(a)	System Description	Provide the most recent population data possible. Use the method described in “Baseline Daily Per Capita Water Use.” See Section M.	Section 2.4
11	. . . (population projections) shall be in five-year increments to 20 years or as far as data is available.	10631(a)	System Description	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Section 2.4

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
12	Describe . . . other demographic factors affecting the supplier's water management planning	10631(a)	System Description		Section 5
13	Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).	10631(b)	System Supplies	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Section 4.1 & 4.2
14	(Is) groundwater . . . identified as an existing or planned source of water available to the supplier . . . ?	10631(b)	System Supplies	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Section 4.1.5

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
15	(Provide a) copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management. Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)	System Supplies		Section 4.1.5.1
16	(Provide a) description of any groundwater basin or basins from which the urban water supplier pumps groundwater.	10631(b)(2)	System Supplies		Section 4.1.5
17	For those basins for which a court or the board has adjudicated the rights to pump groundwater, (provide) a copy of the order or decree adopted by the court or the board	10631(b)(2)	System Supplies		Section 4.1.5
18	(Provide) a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.	10631(b)(2)	System Supplies		Section 4.1.5.1
19	For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.	10631(b)(2)	System Supplies		Section 4.1.5

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
20	(Provide a) detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.	10631(b)(3)	System Supplies		Section 4.1.5
21	(Provide a) detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.	10631(b)(4)	System Supplies	Provide projections for 2015, 2020, 2025, and 2030.	Section 4.1.5.1
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) An average water year, (B) A single dry water year, (C) Multiple dry water years.	10631(c)(1)	Water Supply Reliability . . .		Section 5.4 & 5.5
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)	Water Supply Reliability . . .		Section 5.2
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)	System Supplies		Section 4.3

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
25	Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof;(I) Agricultural.	10631(e)(1)	System Demands	Consider “past” to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Section 3.5
26	(Describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) Water survey programs for single-family residential and multifamily residential customers; (B) Residential plumbing retrofit; (C) System water audits, leak detection, and repair; (D) Metering with commodity rates for all new connections and retrofit of existing connections; (E) Large landscape conservation programs and incentives; (F) High-efficiency washing machine rebate programs; (G) Public information programs; (H) School education programs; (I) Conservation programs for commercial, industrial, and institutional accounts; (J) Wholesale agency programs; (K) Conservation pricing; (L) Water conservation coordinator; (M) Water waste prohibition;(N) Residential ultra-low-flush toilet replacement programs.	10631(f)(1)	DMMs	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	Section 6

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
27	A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.	10631(f)(3)	DMMs		Section 6
28	An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.	10631(f)(4)	DMMs		Section 6
29	An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following: (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors; (2) Include a cost-benefit analysis, identifying total benefits and total costs; (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost; (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.	10631(g)	DMMs	See 10631(g) for additional wording.	Section 6

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
30	(Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.	10631(h)	System Supplies		Section 4.6
31	Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.	10631(i)	System Supplies		Section 4.4
32	Include the annual reports submitted to meet the Section 6.2 requirement (of the MOU), if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	DMMs	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	Section 6

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
33	Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).	10631(k)	System Demands	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	Section 3.2
34	The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)	System Demands		Section 3.6
35	Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.	10632(a)	Water Supply Reliability . . .		Section 5.1
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)	Water Supply Reliability . . .		Section 5.4 & 5.5

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
37	(Identify) actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)	Water Supply Reliability . ..		Section 5.6
38	(Identify) additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)	Water Supply Reliability . ..		Section 5.2
39	(Specify) consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)	Water Supply Reliability . ..		Section 5.2
40	(Indicated) penalties or charges for excessive use, where applicable.	10632(f)	Water Supply Reliability . ..		Section 5.2
41	An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)	Water Supply Reliability . ..		Section 5.6.5
42	(Provide) a draft water shortage contingency resolution or ordinance.	10632(h)	Water Supply Reliability . ..		Attachments E & F
43	(Indicate) a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)	Water Supply Reliability . ..		Section 5.2

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
44	Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area	10633	System Supplies		Section 4.5
45	(Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)	System Supplies		Section 4.6
46	(Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)	System Supplies		Section 4.6
47	(Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)	System Supplies		Section 4.5
48	(Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)	System Supplies		Section 4.5
49	(Describe) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.	10633(e)	System Supplies		Section 4.5

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
50	(Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)	System Supplies		Section 4.5
51	(Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)	System Supplies		Section 4.5
52	The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.	10634	Water Supply Reliability . . .	For years 2010, 2015, 2020, 2025, and 2030	Section 5.3
53	Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)	Water Supply Reliability . . .		Section 5.4 & 5.5

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
54	The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.	10635(b)	Plan Preparation		Section 1
55	Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642	Plan Preparation		Section 1.2
56	Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area.	10642	Plan Preparation		Section 1.2
57	After the hearing, the plan shall be adopted as prepared or as modified after the hearing.	10642	Plan Preparation		Section 1.3
58	An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.	10643	Plan Preparation		Section 1.3

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
59	An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.	10644(a)	Plan Preparation		Section 1.3
60	Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.	10645	Plan Preparation		Section 1.3

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

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

Attachment A

Copy of coordination letter sent to local agencies



CITY OF
FOLSOM
DISTINCTIVE BY NATURE

RECEIVED

APR 04 2011

EL DORADO :
UTILITIES DEPARTMENT
50 NATOMA STREET
FOLSOM, CALIFORNIA 95630
916.355.7200 / 916.351.5603 FAX

March 30, 2011

Jim Abercrombie
El Dorado Irrigation District
2890 Mosquito Road
Placerville 95667

RE: CITY OF FOLSOM 2010 URBAN WATER MANAGEMENT PLAN UPDATE

Dear Jim Abercrombie,

This letter is to inform you that the City of Folsom is currently preparing a 2010 Urban Water Management Plan (UWMP) Update. The Update, required by the Urban Water Management Planning Act (Water Code Section 10610), describes and evaluates sources of water supply, efficient uses of water, and demand management measures, as well as describes program implementation strategies and schedules. This effort helps ensure we can provide our customers a reliable, high-quality supply of water, now and into the future.

A draft of the 2010 UWMP Update will be available for review prior to adoption by the City in June 2011. Prior to adopting the 2010 UWMP Update, the City will make the plan available for public inspection and will hold a hearing. Prior to the hearing, notice of the time and place of hearing will be published within the jurisdiction of the City pursuant to Section 6066 of the Government Code. If you have any questions or comments about this effort, please contact Marcus Yasutake at 916-351-3528.

Sincerely,

Kenneth V. Payne
Chief, Environmental & Water Resources Development

Attachment B

Copy of Resolution No. 8857

RESOLUTION NO. 8857

**A RESOLUTION ADOPTING THE 2010 URBAN WATER
MANAGEMENT PLAN AND AUTHORIZING THE CITY MANAGER TO SUBMIT
THE PLAN TO THE CALIFORNIA DEPARTMENT OF WATER RESOURCES**

WHEREAS, the Urban Water Management Planning Act requires every urban water supplier providing water for municipal purposes to more than 3,000 customers to adopt and submit a Urban Water Management Plan to the California Department of Water Resources every five years; and,

WHEREAS, the City of Folsom wishes to comply with California Water Code Section 10610 regarding the preparation of an Urban Water Management Plan; and,

WHEREAS, the City of Folsom wishes to comply with Senate Bill X7-7, also known as the Water Conservation Bill of 2009, to target and track progress towards the State's 20% reduction by 2020; and,

WHEREAS, an adopted Urban Water Management Plan is required for an urban water supplier to be eligible for grants administered by the Department of Water Resources; and,

WHEREAS, the City of Folsom has prepared the required plan, published a Notice of Public Hearing pursuant to California Government Code 6066, published May 25, 2011, and June 1, 2011, and held the appropriate Public Hearing:

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Folsom adopt the 2010 Urban Water Management Plan and Authorizing the City Manager to Submit the Plan to the California Department of Water Resources.

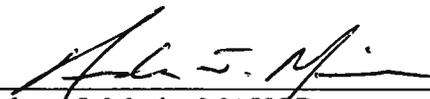
PASSED AND ADOPTED on this 14th day of June 2011, by the following roll-call vote:

AYES: Council Member(s): Starsky, Howell, Miklos, Sheldon, Morin

NOES: Council Member(s): None

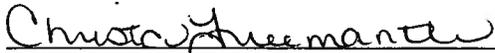
ABSENT: Council Member(s): None

ABSTAIN: Council Member(s): None



Andrew J. Morin, MAYOR

ATTEST:



Christa Freemantle, CITY CLERK

Attachment C

City of Folsom Public hearing notice for 2010 UWMP

NOTICE OF PUBLIC HEARING

16401472

NOTICE OF PUBLIC HEARING

Adoption of 2010 Urban Water Management Plan

NOTICE IS GIVEN HEREWITH that the **City of Folsom City Council**, at its regular meeting on Tuesday, June 14, 2011, at 6:30 pm, in the City Council Chambers, 50 Natoma Street, Folsom, California, will hold a public hearing in accordance with Section 6066 of the California Government Code to consider adoption of the City of Folsom's 2010 Urban Water Management Plan (UWMP).

The purpose of this UWMP is to document the City's water supply planning strategies for the existing municipal jurisdiction. The Urban Water Management Plan, as required by Urban Water Management Act and the Water Conservation Bill of 2009, contains an assessment of current and projected supplies, an evaluation of the reliability of these supplies given a range of hydrologic conditions, an assessment of demands by customer type, and an explanation of water management strategies designed to integrate supply and demand conditions.

Copies of the Draft Urban Water Management Plan are on file and available for public review at the Utilities Department on the first floor of City Hall at 50 Natoma Street and at the City Clerk's office. Interested persons are invited to express their opinion. If you challenge the action in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice or written correspondence delivered to the City Council at, or prior to, the public hearing.

Christa Freemantle
City Clerk
City of Folsom

PUBLISHED IN FOLSOM TELEGRAPH: MAY 25, JUNE 1, 2011

The above space is reserved for Court/County Filed Date Stamp

**PROOF OF PUBLICATION
(2015.5 C.C.P.)**

**STATE OF CALIFORNIA
County of Sacramento**

I am a citizen of the United States and employed by a publication in the County aforesaid. I am over the age of eighteen years, and not a party to the mentioned matter. I am the principal clerk of **The Folsom Telegraph**, a newspaper of general circulation, in the **City of Folsom**, which is printed and published in the **County of Placer**. This newspaper has been judged a newspaper of general circulation by the Superior Court of the State of California, in and for the **County of Sacramento**, on the date of April 3, 1952, Superior Court Order Number 89429. The notice, of which the attached is a printed copy (set in type not smaller than nonpareil) has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

MAY 25

JUNE 1

I certify, under penalty of perjury, that the foregoing is true and correct.



Terry Clark

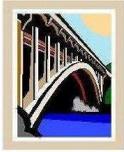
Dated in Folsom, California

JUNE 1, 2011

**PROOF OF PUBLICATION
THE FOLSOM TELEGRAPH
921 Sutter Street
Folsom, CA 95630**

Attachment D

City of Folsom 2009 Consumer Confidence Report



Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien. (This report contains important information about your drinking water. Translate it, or speak with someone who understands it.)

HIGH QUALITY DRINKING WATER IS FOLSOM'S PRIMARY CONCERN

The City of Folsom is committed to providing our customers with high quality drinking water. Last year, as in years past, your tap water met all U.S. Environmental Protection Agency (USEPA) and State drinking water health standards. The City of Folsom takes every effort to safeguard its water supply and once again we are proud to report that our system has never violated a maximum contaminant level or any other water quality standard.

The California Department of Public Health (Department) requires that state certified water treatment operators and distribution operators monitor and sample your drinking water from source to tap on an hourly, daily, monthly, quarterly, and annual basis using state-of-the-art equipment and state-certified labs.

ABOUT THE CONSUMER CONFIDENCE REPORT

The Consumer Confidence Report (CCR) is an annual summary of the results of ongoing tests for contaminants in drinking water. The report is designed to inform you of the quality of your drinking water. Each year, the Department and USEPA require the City of Folsom to compile and distribute a CCR to all of our water customers. The report includes a comparison of the city's water quality to state and federal standards.

WHERE YOUR WATER COMES FROM

The City of Folsom receives all of its drinking water from Folsom Lake. Water drawn from the lake is piped to the Folsom Water Treatment Plant where it undergoes several treatment processes before it is delivered to our customers.

YOUR DRINKING WATER – WHAT YOU SHOULD KNOW

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

Contaminants that may be present in source water include:

- *Microbial contaminants such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;*

- *Inorganic contaminants such as salts and metals that can be naturally occurring or result from urban storm water runoff and residential uses;*

- *Pesticides and herbicides, that may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.*

- *Organic chemical contaminants including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production, or from gas stations, urban storm water runoff, and septic systems; and*

- *Radioactive contaminants, that can be naturally occurring or be the result of oil and gas production and mining activities.*

In order to ensure that tap water is safe to drink, USEPA and the Department prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

The City of Folsom conducted lead and copper sampling in July 2008 and found the water supply did not exceed any mandated standards. Copper or lead contamination may occur from the internal corrosion of household plumbing systems or the erosion of natural deposits. Copper contamination may also occur from the leaching from wood preservatives, and lead contamination may also occur from discharges from industrial manufacturers.

Adverse health effects are possible with excess consumption of many water constituents, including lead and copper. Copper may cause gastrointestinal distress or kidney or liver failure with long-term excess exposure. Long-term excess exposure to lead may cause developmental delays in children and kidney problems or high blood pressure in adults.

INFORMATION ABOUT POTENTIAL SOURCES OF POLLUTION

The Department requires water providers to conduct a source water assessment to help protect the quality of future water supplies. The assessment describes where a water system's drinking water comes from, the types of polluting activities that may threaten source water quality and an evaluation of the water's vulnerability to those threats.

A source water assessment was conducted for the City of Folsom's water supply from Folsom Lake in March 2002. The assessment concluded that the City of Folsom's water source is considered most vulnerable to the following activities associated with contaminants detected in the water supply: Folsom Lake State Recreation Area facilities (marina, restrooms, recreational areas, parking lots, and storm drains) and residential sewer and septic systems. The assessment also concluded that source is most vulnerable to the following activities not associated with any detected contaminants: illegal activities, dumping, fertilizer, pesticide and herbicide application, and high-density housing developments.

A copy of the complete assessment is available at the California Department of Public Health, Sacramento District Office, 1616 Capitol

Avenue, Sacramento, CA. You may request a summary of the assessment be sent to you by contacting Dave Lancaster, Sacramento District Engineer, or James Bridges, Folsom Water Treatment Plant Supervisor, at (916) 355-8339.

IMPORTANT NOTICE FOR SENSITIVE POPULATIONS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

READING THE WATER QUALITY DATA

1. Identify constituents in the left hand column.
2. Compare detection range to the state (MCL/PHG) standards.
3. Confirm that your water meets state drinking water health standards.

WATER QUALITY DEFINITIONS

The following definitions are listed to help you understand the information recorded in the water quality chart:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Primary Drinking Water Standard (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Maximum Residual Disinfectant Level (MRDL): The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. Environmental Protection Agency.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

HAVE QUESTIONS?

For a complete list of constituents tested or to request additional copies of the Consumer Confidence Report, please contact the Water Quality Division at (916) 355-8338 or email waterquality@folsom.ca.us. The Consumer Confidence Report is also available at our website at www.folsom.ca.us.

NEED CONSERVATION TIPS?

For water conservation tips and free supplies, please contact the Conservation Coordinator at (916) 355-7252 or visit our website at www.folsom.ca.us.

GET INVOLVED

The Folsom City Council meetings are open to the public and are held on the 2nd and 4th Tuesdays of each month at 6:30 p.m. Meetings are located at City Hall, 50 Natoma Street. Meetings are also broadcast on Metro Cable Channel 14 at 9:00 a.m. on Friday and Saturday of meeting weeks.

The information provided in this water quality chart is required by law to be issued to every water user. Property Owners – Please share this information with your tenants!

**City of Folsom
2009 Water Quality Report**

Contaminant	Units	MCL	PHG	Ashland				Folsom				Major Sources in Drinking Water
				Range		Average	Exceeds MCL?	Range		Average	Exceeds MCL?	
				Min	Max			Min	Max			
% Coliform Present		5% ^(a)	(0)						1.6%		No	Naturally present in the environment
Alkalinity	ppm			20	30	24		18	30	23		
Bicarbonate	ppm			20	26	23		<DLR	30	24		
Calcium	ppm			8.5	11	9.1		4.6	6.8	5.4		
Carbonate	ppm			<DLR	6.8	6.8						
Chloride	ppm	500*		3.2	3.7	3.4		5.2	6.0	5.6		Runoff/leaching from natural deposits; seawater influence
Chlorine	ppm	4 ^(b)		0.5	1.3	0.78		0.67	1.3	1.0		Drinking water disinfectant added for treatment
Haloacetic Acids ^(c)	ppb	60	n/a	16	38	23 (24)	No	7.5	36	20 (18)	No	By-product of drinking water chlorination
Hardness	ppm			27	36	30		18	25	21		
Magnesium	ppm			1.4	2.2	1.8		<DLR	2.2	1.8		
pH	Units			7.6	8.8	7.9		7.1	7.6	7.4		
Sodium	ppm			1.9	3.9	2.7		4.4	7.1	5.5		
Specific Conductance	mS/cm	1600*		66	93	75		63	80	71		
Sulfate	ppm	500*		6.3	9.4	7.2		1.5	3.1	2.1		Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids	ppm	1000*		43	59	48		34	70	44		Runoff/leaching from natural deposits
Total Organic Carbon (effluent)	TT		n/a					0.83	1.2	0.99		Various natural and man-made sources
Total Trihalomethanes ^(c)	ppb	80	n/a	26	75	43 (46)	No	6.1	42	22 (21)	No	By-product of drinking water chlorination
Turbidity	TT		n/a					0.02	0.19	100% ^(d)		Soil runoff

* Secondary Maximum Contaminant Level
 (a) Percentage of coliform samples reported as "present" for coliform per month
 (b) MRDL
 (c) Running annual average of monitoring sites given in parentheses
 (d) Percentage of monthly total of combined filter effluent samples less than 0.3 NTU

The City of Folsom purchases water for the Ashland water system from San Juan Water District. Ashland is bounded on the north by the Placer County line, on the west by Baldwin Dam Road, and by the American River on the south and east.

Attachment E

City of Folsom Ordinance 1118

ORDINANCE NO. 1118

**ORDINANCE OF THE CITY OF FOLSOM REPEALING AND REPLACING
CHAPTER 13.26 OF TITLE 13 OF THE FOLSOM MUNICIPAL CODE CONCERNING
WATER CONSERVATION**

THE CITY COUNCIL OF THE CITY OF FOLSOM DOES ORDAIN AS FOLLOWS:

SECTION 1 PURPOSE AND INTENT

The purpose of this ordinance is to repeal and re-enact Chapter 13.26 of Title 13, and to repeal section 3.20.120 of the Folsom Municipal Code (the "code") pertaining to Water Conservation. Water is a precious resource and sustainable water use practices are needed for normal, dry, and drought years. Chapter 13.26 will align the Code requirements with current and future water conservation requirements and efforts that will enable the City to achieve the required conservation levels dictated by the availability of water.

SECTION 2 REPEAL AND RE-ENACTMENT

Chapter 13.26 of the Folsom Municipal Code is repealed and re-enacted to read as follows:

Chapter 13.26

WATER CONSERVATION

Sections:

13.26.005	Definitions
13.26.010	Application
13.26.020	City Responsibility
13.26.030	Water Conservation Program and Landscape Guidelines
13.26.040	Base Allocation of Water
13.26.050	Wasteful Use of Water
13.26.060	Determination of Water Conservation Stage
13.26.070	Water Conservation Stages
13.26.080	Water Use Restrictions
13.26.090	Construction Water
13.26.100	Sustainable Landscaping
13.26.110	Irrigation System Inspection
13.26.120	Discontinuance of Water Service
13.26.130	Unauthorized Water Use
13.26.140	Cross Connection Control Requirements
13.26.150	Violation Declared a Nuisance
13.26.160	Enforcement
13.26.170	Penalties
13.26.180	Remedies Cumulative
13.26.190	Variances

13.26.200 Fire and Other Emergencies

13.26.05 Definitions

A. **“Base Allocation”** means the amount of water allocated to each customer class for both interior and exterior use on a monthly or billing cycle basis.

B. **“Best Management Practice”** (BMP) means a policy, program, practice, rule, regulation ordinance or the use of devices, equipment or facilities that result in more efficient use or conservation of water.

C. **“Certified Landscape Irrigation Auditor”** means a person certified to perform landscape irrigation audits by a professional trade organization or other educational organization.

D. **“CDPH”** means the California Department of Public Health.

E. **“City”** means the City of Folsom.

F. **“City Manager”** means the City of Manager of the City of Folsom or his or her designee unless otherwise stated or indicated by context.

G. **“City water system”** means those facilities within and without the City of Folsom that the City uses to deliver water as the water purveyor recognized by the California Department of Public Health.

H. **“Customer”** means any person or entity using water supplied by the City water system. “Customer” includes tenants of single family dwellings or duplexes, owners of real property and management companies responsible for property management of real property.

I. **“CUWCC”** means the California Urban Water Conservation Council.

J. **“Department”** means the City of Folsom, Utilities Department.

K. **“Director”** means the City of Folsom Director of Utilities or his or her designee unless otherwise stated or indicated by context.

L. **“Discontinued Service”** means having the water service turned off by the Department.

M. **“Fire Chief”** means the Fire Chief of the City of Folsom, or designee unless otherwise stated or indicated by context.

N. **“Irrigation Service”** means a water service that is exclusively for landscape irrigation purposes.

O. **“Non-residential customer”** means a customer of the City water system on whose property a residence is not situated.

P. **“Person”** means any person, business, firm, partnership, association, corporation, company or organization of any kind.

Q. **“Private Fire Service”** means a private fire service main and appurtenances installed in accordance with NFPA 24 on private property and maintained by the property owner for the explicit intent of providing fire flows either through fire hydrants, fire sprinkler systems, or other water-based fire protection systems.

R. **“Residential customer”** means a customer of the City water system on whose property, whether owned or rented, at least one person resides.

S. **“Sustainable Landscaping Practice”** means the use of best management practices in the planning and maintenance of water efficient landscaping, as discussed in Section 13.26.100 Sustainable Landscaping.

T. **“Water conservation”** means the best management practices for the reasonable and efficient use of water for both indoor and outdoor water demands.

U. **“Water Conservation Program Guidelines”** means the program guidelines developed, maintained, and managed by the Director pursuant to this chapter.

V. **“Water Management Coordinator”** means the Water Management Coordinator in the Utilities Department.

W. **“Wasteful use of water”** is as defined in Section 13.26.050.

13.26.010 Application

The provisions of this ordinance shall apply to all customers of the City water system.

13.26.020 City responsibility

The City, and its duly authorized agents, servants and employees, shall have the exclusive right to deliver water within the City’s water service area. The city shall also have the right to manage water demand within the City’s water service area.

13.26.030 Water Conservation Program and Landscape Guidelines

A. The Director is authorized to develop sustainable landscape practices consistent with the water conservation intent of this chapter, CUWCC best management practices and any applicable laws. The sustainable landscape practices shall be included as a condition of approval for any development project with new or rehabilitated landscaping for which the City has discretionary approval authority where such landscape area is greater than 2,500 square feet or as otherwise determined by the Director to achieve the City’s water conservation goals.

B. The Director shall oversee this chapter's implementation, compliance with the CUWCC best management practices and any laws mandating water conservation. The Director shall, from time to time, but at least annually, review the sustainable landscape practices and determine if such practices are reasonable and achieve the level of conservation required under this chapter for the declared Water Conservation Stage, taking into account the burden imposed on property owners.

13.26.040 Base Allocation of Water

The Director may develop a base allocation for each class of customer account taking into account the needs and characteristics of each customer class. This base allocation may be used to evaluate compliance with the conservation stage in effect and to encourage the reasonable and efficient use of water.

13.26.050 Wasteful Use of Water

Any of the following acts or omissions, whether intentional, unintentional, willful or negligent, shall constitute the wasteful use of water:

- A. Water flowing away from a property caused by excessive application(s) of water beyond reasonable or practical irrigation rates, duration of application, or other than incidental applications to impervious surfaces.
- B. Causing or permitting an amount of water to discharge, flow, run to waste into or flood any gutter, sanitary sewer, water course or storm drain, or to any adjacent lot, from any tap, hose, faucet, pipe, sprinkler, or nozzle. In the case of irrigation, "discharge," "flow" or "run to waste" means that water is applied to the point that the earth intended to be irrigated has been saturated with water so that additional applied water then flows over the earth. In the case of washing, "discharge," "flow" or "run to waste" means that water in excess of that necessary is applied to wash, wet or clean the dirty or dusty object, such as an automobile, sidewalk, or parking area.
- C. Allowing water fixtures or heating or cooling devices to leak or discharge water.
- D. Maintaining ponds, waterways, decorative basins or swimming pools without water recirculation devices or with known leaks, both seen and unseen.
- E. Discharging water from, and refilling, swimming pools, decorative basins or ponds in excess of the frequency reasonably necessary to maintain the health, maintenance or structural considerations of the pool, basin or pond, as determined by the Director.
- F. Continued operation of an irrigation system that applies water to an impervious surface or that is in disrepair.
- G. Use of a water hose not equipped with a control nozzle capable of completely shutting off the flow of water except when positive pressure is applied.

- H. Irrigation of lawns or landscaping when it is raining.
- I. Overfilling of any pond, pool or fountain which results in water discharging from the pond, pool or fountain.
- J. Failure to repair customer pipes, faulty sprinklers or other water-related fixtures that leak water, within five working days, unless the Director informs the customer that the leak must be repaired more quickly, in which case the customer shall repair the leak in the time specified by the Director.
- K. Irrigating lawns or landscaping between the hours of 10:00 a.m. and 10:00 p.m., with the exception of drip irrigation as otherwise authorized pursuant to this chapter, unless a variance is granted by the Director.
- L. Using potable water from the City water system for compaction, dust control or other construction purposes without first obtaining approval from the Director as provided in Section 13.26.090 and a meter from the City.
- M. Installing a single-pass cooling system, such as water cooled air compressor, in any property that is newly connected to the City water system. This does not apply to evaporative cooling systems.
- N. Installing a non-recirculating system in any new automatic car wash or new commercial laundry system or failure to utilize current best management practices for water conservation that are industry standards.

13.26.060 Determination of Water Conservation Stages

In determining the City water system's water conservation stage, the City Manager shall determine whether that system's water supplies available for potable use are sufficient to meet the current customer demands on that system and shall consider, unless otherwise excluded by this section, all relevant factors. The City Manager shall consider, among other things: (a) any variations in the reliability of the water supplies available to the City water system; (b) any declarations by the Bureau of Reclamation concerning its ability to deliver water under Central Valley Project water-service contracts; (c) availability of non-potable water to meet non-potable demands on the City water system; (d) the success, or lack thereof, of previous declarations of a less stringent water conservation stage in causing the water-use reductions sought by the City; and (e) any agreements between the City and local water purveyors for deliveries of additional water supplies to the City. The City Manager will select the necessary stage for conservation under Section 13.26.070.

13.26.070 Water Conservation Stages

The City Manager is authorized to implement and enforce whatever conservation measures are deemed necessary to achieve the water reduction requirements of the declared conservation stage. For each stage, the water use reduction for customers shall be as follows:

A. Stage one ("Basic Stage") shall be in effect at all times unless the City Manager determines that a more restrictive conservation stage is appropriate. Base allocation of water may be used to determine allowable water use for each customer in this stage and compliance with the following conservation stages.

B. Stage two ("Water Alert") shall achieve a reduction of up to 12% relative to the base allocation of water.

C. Stage three ("Water Warning") shall achieve a reduction of up to 20% relative to the base allocation of water.

D. Stage four ("Water Crisis") shall achieve a reduction of up to 35% relative to the base allocation of water.

E. Stage five ("Water Emergency") shall achieve a reduction of up to 50% relative to the base allocation of water, or any other reduction the City Manager determines, in writing, are necessary to protect public health and safety in the City during the actual situation presented by a Stage Five Water Emergency.

13.26.080 Water Use Restrictions

Water use restrictions during the various conservation stages shall, at a minimum, be as listed below and may be augmented by other restrictions as determined necessary by the City Manager.

A. During the Stage One ("Basic Stage") conservation stage, the following restrictions shall be enforced:

1. Water will be used for beneficial uses; all Wasteful Use of Water are prohibited.

2. Water shall be confined to the customer's property and shall not be allowed to run off to adjoining property or to the roadside ditch or gutter. Care shall be taken not to water past the point of saturation.

3. Free flowing hoses are prohibited for all uses including landscape watering, vehicle and equipment washing, ponds, evaporative coolers and livestock watering troughs. Automatic shut-off devices shall be installed on any hose or filling apparatus in use.

4. All pools, spas and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak proof. Pool draining and refilling shall be allowed only to the extent required for health, maintenance, or structural considerations, and must otherwise comply with all applicable federal, state and local stormwater management requirements, including but not limited to Chapter 8.70 of Folsom Municipal Code, Stormwater Management and Discharge Control.

B. During the Stage Two ("Water Alert") conservation stage, the following restrictions shall be enforced:

1. All Stage One (Basic Stage) restrictions shall continue to be enforced, except to the extent they are replaced by more restrictive requirements imposed by this section.

2. Landscape and pasture irrigation shall be limited to a maximum of 3 days per week based on the following odd-even schedule, with the exception of drip irrigation, which may be conducted on any day.

a. Customers with street addresses that end with an odd number may irrigate only on Tuesdays, Thursdays and Saturdays.

b. Customers with street addresses that end with an even number may irrigate only on Wednesdays, Fridays and Sundays.

c. No irrigation is permitted on Mondays.

3. Hand and manual watering follows the same odd/even day schedule and may be done anytime during the day.

4. Washing of streets, parking lots, driveways, sidewalks, buildings or other hardscape surfaces is prohibited except as necessary for health, sanitation or fire protection purposes.

5. Restaurants shall serve water only upon specific request.

6. Public and private streetscape landscaping (medians and frontage) may be watered only on the same schedule as Customers with street addresses that end with an even number.

C. During the Stage Three ("Water Warning") conservation stage, the following restrictions shall be enforced.

1. All Stage Two restrictions shall continue to be enforced, except to the extent they are replaced by more restrictive requirements imposed by this section.

2. Landscape and pasture irrigation shall be limited to a maximum of 2 day per week based on the following odd-even schedule, with the exception of drip irrigation, which may be conducted on any day.

a. Customers with street addresses that end with an odd number may irrigate only on Tuesdays and Saturdays.

b. Customers with street addresses that end with an even number may irrigate only on Wednesdays and Sundays.

c. No irrigation is permitted on Mondays, Thursdays and Fridays.

d. Irrigation for public parks and other public grounds, including landscaping and lighting district property, shall only be allowed with an irrigation plan and irrigation system audit that has been approved by the Director in accordance with Section 13.26.110, irrespective of size.

3. No water from the City water system shall be used for construction purposes such as dust control, compaction, or trench jetting, unless the use is approved by the Director consistent with the provisions of section 13.26.090.

D. During the Stage Four ("Water Crisis") conservation stage, the following restrictions shall be enforced:

1. All Stage Three restrictions shall continue to be enforced, except to the extent they are replaced by more restrictive requirements imposed by this section.

2. Landscape and pasture irrigation, including drip irrigation, shall be limited to a maximum of 1 day per week based on the following odd-even schedule.

a. Customers with street addresses that end with an odd number may irrigate only on Tuesdays.

b. Customers with street addresses that end with an even number may irrigate only on Wednesdays.

c. No irrigation is permitted on Mondays, Thursdays, Fridays, Saturday and Sunday.

3. Public and private streetscape landscaping (medians and frontage) may be watered only on the same schedule as Customers with street addresses that end with an even number.

4. No water from the City water system shall be used to drain and refill swimming pools, artificial lakes, ponds or streams and no new permits for swimming pools, artificial lakes, ponds or streams shall be issued until the water conservation stage has been declared to be Stage One.

5. Water use for ornamental ponds and fountains is prohibited unless required to maintain existing vegetation or to sustain existing fish/animal life.

6. New or expanded landscaping on properties is limited to drought-tolerant trees, shrubs, and ground cover and no new turf or grass shall be planted, hydro-seeded or laid.

7. Washing of automobiles or equipment shall be done on the lawn or at a commercial establishment that uses recycled or reclaimed water.

8. All water leaks shall be repaired within 24 hours of notification by the Utilities Department or service may be discontinued.

E. During the Stage Five ("Water Emergency") conservation stage, the following restrictions shall be enforced.

1. All Stage Four restrictions shall continue to be enforced, except to the extent they are replaced by more restrictive requirements imposed by this section.

2. No Landscape and/or pasture irrigation shall be allowed.

3. Flushing of sewers or fire hydrants is prohibited except in case of an emergency and for essential operations.

4. Flushing of fire protection systems is prohibited except for during required maintenance or servicing of the system.

5. Water use for ornamental ponds and fountains is prohibited.

6. Washing of automobiles or equipment shall be done at a commercial establishment that uses recycled or reclaimed water.

7. Installation of any new lawns or landscaping is prohibited.

8. No water from the City water system shall be used for construction purposes such as dust control, compaction, or trench jetting, unless the use is necessary for fire protection system testing, maintenance, or acceptance by the Fire Chief.

13.26.090 Construction Water

Water for construction purposes obtained from the City's water supply may only be used in the City's water service area. Water for dust control, compaction and other construction activities shall be subject to the following conditions:

A. Use of water from the City water system for construction purposes shall require a City-issued construction water meter and a refundable security deposit that includes a monthly meter rental fee as established by the Department. Prior to such water use, the construction water customer must obtain approval from the Director to use the water for construction and agree to comply with all of the requirements of this chapter. The Director may impose such additional conditions on the use of such water, including, but limited to, conditions regulating the purpose for the use of the water, rate of use, location, frequency and quantity of use, and such other conditions as deemed reasonably necessary by the Director to effectuate the purposes of this chapter. The construction meter shall be located by the Department and shall only be relocated

or removed by the Department. Unauthorized relocation or removal of a construction meter shall be deemed theft and the offender shall be subject to the penalties set forth in Section 13.26.170.

B. Construction water shall only be drawn through a construction water meter. Construction water drawn through an unmetered connection shall be deemed theft of water and shall be grounds for the deposit on the construction meter to be forfeited. The offender shall also be subject to the penalties specified in Section 13.26.170. In the event the person identified as drawing water without a metered connection does not have a meter, the action shall be deemed theft and the offender shall be subject to the penalties specified in Section 13.26.170.

C. These requirements for construction water use may be modified or supplemented by other conservation measures as determined appropriate by the Director for the declared Conservation Stage. The Director may terminate the approval granted to use the construction water based on water use restriction stages, violation of the terms and conditions of use, and/or for conduct that amounts to Wasteful Use of Water.

13.26.100 Sustainable Landscaping

Where this chapter permits or prohibits acts based upon whether or not a planting, tree, shrub, or groundcover is "drought-tolerant" or "sustainable" the determination shall be made based upon: (a) Sunset's "The Western Garden Book" (February 2007), Sunset Books Publishing; (b) Robert Perry, "Trees and Shrubs for Dry California Landscapes;" (c) EBMUD, "Water Wise Gardening;" (d) UC Davis Arboretum's "All Stars" plant database (www.arboretum.ucdavis.edu) or as determined by the Director.

13.26.110 Irrigation System Inspections

All customers, public and private, with a parcel over 5 acres and with a separate irrigation service shall conduct an annual irrigation system inspection prior to the start of the irrigation season on April 1. This inspection shall be performed by Certified Landscape Irrigation Auditor or Licensed Landscape or Irrigation Contractor and the results forwarded to the Department in accordance with the procedure outlined in the Water Conservation Program Guidelines. This requirement will be waived for one full year if a full landscape water audit has been performed in the previous year by the Department's Water Management Staff, who are available on a limited basis. Single family residences are exempt unless the Director determines there has been wasteful use of water on a customer's premises and the conditions have not been corrected within five days after the city provides written notification to discontinue such practice.

Customers that have a current irrigation system check-up on file with the Department will be allowed one courtesy water waste warning before being deemed in violation of this chapter.

13.26.120 Discontinuance of Water Service

The Director may discontinue service to a customer's connection to the City water system at the time that the Director issues to the customer: (i) a notice of a third violation of this chapter during the Stage One "Basic Stage", or Stage Two "Water Alert" within two months; (ii) a notice of a second violation of this chapter during a Stage Three "Water Warning" or a Stage Four "Water Crisis" within one month; or (iii) a notice of a second violation during a Stage Five "Water Emergency", irrespective of time. If the customer's water service is discontinued due to violations of this chapter, the customer shall be subject to the penalties specified in Section 13.26.170. Upon seeking renewed service from the City, the customer shall pay the City's Water Turn Off/On Service fee as set by Ordinance or Resolution of the City Council.

13.26.130 Unauthorized Water Use

- A. An illegal connection to the City water system shall either be metered by the property owner within the time specified by the Department or disconnected at the discretion and direction of the Director, and the offender shall be subject to the penalties specified in Section 13.26.170.
- B. Unauthorized use of a fire hydrant, public or private, for anything other than fire flows or permitted and metered construction water shall subject the offender to the penalties specified in Section 13.26.170 and Chapter 8.36 Folsom Fire Code.
- C. Private fire services with an observed demand that is deemed not to be fire flow by the Department, shall have a meter and appropriate cross-connection control device installed by the property owner, upon approval by the Director and the Fire Chief. Prior to making any modifications or alteration to the on-site fire service, a permit shall be obtained from the Fire Department in accordance with Chapter 8.36. Upon written notification of the requirement to install a meter and cross-connection control device, the property owner shall have 30 calendar days to submit a plan of correction to the Director. Failure to comply with this section shall subject the property owner to the penalties specified in Section 13.26.170 Penalties and the service may be disconnected at the discretion of the Director and the Fire Chief.

13.26.140 Cross Connection Control Devices

All connections to the City's water system shall have the appropriate cross-connection control device as required by CDPH regulations and enforced by the Department in accordance with Chapter 13.22 Water System Cross-Connection Control. These devices shall be from the approved and published list maintained by the University Southern California (USC) or other list as approved by the Director and shall be tested annually in accordance with the Department's policies and procedures. Devices used on private fire services shall be listed for fire service use and maintained in accordance with State Fire Marshall regulations.

13.26.150 Violation Declared a Nuisance

Any activity in violation of this chapter will adversely and seriously affect the public health, safety and welfare, is hereby declared to be a public nuisance and may be remedied as provided in this chapter, any other applicable portion of the Folsom Municipal Code or applicable state law.

13.26.160 Enforcement

A. This chapter shall be enforced pursuant to the provisions of Chapter 1.08 to 1.10, inclusive, of Title 1 of the Folsom Municipal Code and any other enforcement mechanism available to the City under the Folsom Municipal Code and/or applicable law.

B. Unless otherwise expressly provided in this chapter, the Director shall enforce the provisions of this chapter.

13.26.170 Penalties

A. The goal of the provisions of this chapter are to achieve voluntary compliance from the customer, and the City will take reasonable measures to assure the customer has information available to promptly and efficiently address water use issues. Where voluntary compliance cannot be achieved through initial contacts and warnings, then appropriate administrative penalties and further action are required. Except as otherwise provided herein, violations of any provision of this chapter shall be addressed as follows:

Violation	Penalty
First	Personal or written notification of the violation.
Second (Within three months of first violation)	Written notification and issuance of a Notice to Correct.
Third (Within six months of first violation)	Issuance of an Administrative Penalty, Mandatory Installation of a Water Meter, Discontinued Water Service and/or other Penalties as provided in the Notice of Violation and as determined by the Utilities Director.

B. Penalties

1. A violation of this chapter shall also be an administrative violation as defined in Section 1.08.020.

2. Each of the sanctions for administrative violations identified in Section 1.09.013 shall be available for enforcement of the provisions of this chapter. Based on the criteria for imposition of administrative sanctions set forth in Section 1.09.014, each day a violation of this

chapter continues it shall be deemed a Level A Violation as that term is described in Section 1.09.012 with an initial penalty of up to one hundred (\$100.00) dollars.

3. In addition to any other penalties provided by this chapter, if a customer of the City water system violates any of the water use restrictions during a stage two, three, four, or five water conservation stage as set forth in section 13.26.080, and such conditions are not corrected within five days after the customer is given written notice, the City is authorized to do any or all of the following:

a. Meter any flat rate service connection and apply the regularly established metered rates. If the parcel has over 2,500 square feet of landscaping a separate landscape meter may be installed. Costs for the water meters and installation shall be paid by the property owner.

b. If the service is metered, the customer shall be billed at twice the metered rate during the time that the violation continues. If more than 2,500 square feet are irrigated and the parcel does not have a separate irrigation meter, then an irrigation meter may be installed. The customer shall be billed at twice the metered rate during the time the violation continues. Costs for the water meter, and for any required cross connection controls and installation, shall be paid by the property owner.

C. Appeal

There shall be no appeal of the water use restriction identified in Section 13.26.080 and any appeal of administrative penalties shall follow the request for hearing procedures provided in Chapter 1.09. Any order to install a mandatory water meter, discontinue water service or any other orders or decisions of the Director shall be appealable to the City Manager pursuant to Section 2.08.060, provided, however, that the City Manager's decision shall be final and there shall be no right of appeal to the City Council.

13.26.180 Remedies Cumulative

The remedies set forth in this chapter are cumulative to any other remedy available to the City. Pursuit of one remedy shall not preclude any other remedy, and nothing contained in this chapter shall limit or be deemed to prevent the City from pursuing any other remedy available to the City under the Folsom Municipal Code or other applicable law.

13.26.190 Variances

In unusual circumstances, application of this chapter may cause unnecessary hardships or results inconsistent with this chapter's purposes and intent. Therefore, variances to some of the requirements of this chapter may be appropriate as delineated below.

A. Authority to Grant Variances

The Director may grant variances from this chapter's provisions during a Stage One, Two, or Three conservation stage as specified in Section 13.26.080 Water Use Restrictions. During Stage Four or Five conservation stage as specified in that section, any previously granted variances shall be suspended without notice, unless they are based on a critical health need as determined by a licensed medical professional, with such determination being provided to the Director.

B. Landscape Variances

Applications for landscape variances shall be obtained from, and filed with, the Utilities Department. The Director may grant any such applications in his or her discretion in light of the condition of the water supply for the City water system. Any such variance shall be subject to the conditions presented in the Water Conservation Program and Landscape Guidelines.

C. Other Variances

Customers who seek a variance from this chapter for any reason other than the needs of new landscaping shall submit to the Utilities Department a written request for variance, setting forth, in detail, the extraordinary circumstances that support the application. The Director may approve the application in his or her discretion, provided that the variance allows the applicant to use only the minimum amount of water in addition to that allowed by this chapter that the Director reasonably believes is necessary to satisfy the circumstances that support the application. Any such variance shall terminate one year after its issuance, subject to an application for its renewal.

Section 13.26.200 Fire and Other Emergencies

Nothing in this chapter limits, or may be construed as limiting the availability of water for extinguishing fires, meeting the demands of any other similar emergency, or routine inspection and maintenance of fire hydrants.

SECTION 3 REPEAL

Section 3.20.120 of the Folsom Municipal Code is hereby repealed as of the effective date of this Ordinance.

SECTION 4 SEVERABILITY

If any section, subsection, clause, phrase, or portion of this ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance. The City Council hereby declares that it would have adopted this ordinance and each section, subsection, sentence, clause, phrase or portion thereof, irrespective of the fact that any one or more sections, subsections, clauses, phrases or portions be declared invalid and unconstitutional.

SECTION 5 EFFECTIVE DATE

This ordinance shall become effective thirty (30) days from and after its passage and adoption, providing it is published in full or in summary within twenty (20) days after its adoption in a newspaper of general circulation within the City of Folsom.

This ordinance was introduced at the regular meeting of the City Council on February 10, 2009, and the second reading occurred at the regular meeting of the City Council on February 24, 2009.

On a motion by Council Member Morin, seconded by Council Member Howell the foregoing ordinance was passed and adopted by the City Council of the City of Folsom, State of California, this 24th day of February, 2009 by the following vote, to wit:

AYES: Council Member(s): Howell, Morin, Sheldon, Starsky, Miklos

NOES: Council Member(s): None

ABSENT: Council Member(s): None

ABSTAIN: Council Member(s): None



Stephen E. Miklos, MAYOR

ATTEST:



Christa Schmidt, CITY CLERK

Effective: March 26, 2009

Attachment F

Folsom Municipal Code Section 13.26

Sections:

- [13.26.005](#) Definitions.
- [13.26.010](#) Application.
- [13.26.020](#) City responsibility.
- [13.26.030](#) Water conservation program and landscape guidelines.
- [13.26.040](#) Base allocation of water.
- [13.26.050](#) Wasteful use of water.
- [13.26.060](#) Determination of water conservation stages.
- [13.26.070](#) Water conservation stages.
- [13.26.080](#) Water use restrictions.
- [13.26.090](#) Construction water.
- [13.26.100](#) Sustainable landscaping.
- [13.26.110](#) Irrigation system inspections.
- [13.26.120](#) Discontinuance of water service.
- [13.26.130](#) Unauthorized water use.
- [13.26.140](#) Cross-connection control devices.
- [13.26.150](#) Violation declared a nuisance.
- [13.26.160](#) Enforcement.
- [13.26.170](#) Penalties.
- [13.26.180](#) Remedies cumulative.
- [13.26.190](#) Variances.
- [13.26.200](#) Fire and other emergencies.

13.26.005 Definitions.

- A. "Base allocation" means the amount of water allocated to each customer class for both interior and exterior use on a monthly or billing cycle basis.
- B. "Best management practice (BMP)" means a policy, program, practice, rule, regulation ordinance or the use of devices, equipment or facilities that result in more efficient use or conservation of water.
- C. "Certified landscape irrigation auditor" means a person certified to perform landscape irrigation audits by a professional trade organization or other educational organization.
- D. "CDPH" means the California Department of Public Health.
- E. "City" means the city of Folsom.
- F. "City manager" means the city manager of the city of Folsom or his or her designee unless otherwise stated or indicated by context.
- G. "City water system" means those facilities within and without the city of Folsom that the city uses to deliver water as the water purveyor recognized by the California Department of Public Health.
- H. "Customer" means any person or entity using water supplied by the city water system. "Customer" includes tenants of single-family dwellings or duplexes, owners of real property and management companies responsible for property management of real property.
- I. "CUWCC" means the California Urban Water Conservation Council.
- J. "Department" means the city of Folsom utilities department.
- K. "Director" means the city of Folsom director of utilities or his or her designee unless otherwise stated or indicated by context.
- L. "Discontinued service" means having the water service turned off by the department.
- M. "Fire chief" means the fire chief of the city of Folsom or designee unless otherwise stated or indicated by context.
- N. "Irrigation service" means a water service that is exclusively for landscape irrigation purposes.
- O. "Nonresidential customer" means a customer of the city water system on whose property a residence is not situated.
- P. "Person" means any person, business, firm, partnership, association, corporation, company or organization of any kind.
- Q. "Private fire service" means a private fire service main and appurtenances installed in accordance with NFPA 24 on private

property and maintained by the property owner for the explicit intent of providing fire flows either through fire hydrants, fire sprinkler systems, or other water-based fire protection systems.

R."Residential customer" means a customer of the city water system on whose property, whether owned or rented, at least one person resides.

S."Sustainable landscaping practice" means the use of best management practices in the planning and maintenance of water efficient landscaping, as discussed in Section [13.26.100](#), Sustainable landscaping.

T."Water conservation" means the best management practices for the reasonable and efficient use of water for both indoor and outdoor water demands.

U."Water conservation program guidelines" means the program guidelines developed, maintained, and managed by the director pursuant to this chapter.

V."Water management coordinator" means the water management coordinator in the utilities department.

W."Wasteful use of water" is as defined in Section [13.26.050](#). (Ord. 1118 § 2 (part), 2009)

13.26.010 Application.

The provisions of this chapter shall apply to all customers of the city water system. (Ord. 1118 § 2 (part), 2009)

13.26.020 City responsibility.

The city, and its duly authorized agents, servants and employees, shall have the exclusive right to deliver water within the city's water service area. The city shall also have the right to manage water demand within the city's water service area. (Ord. 1118 § 2 (part), 2009)

13.26.030 Water conservation program and landscape guidelines.

A.The director is authorized to develop sustainable landscape practices consistent with the water conservation intent of this chapter, CUWCC best management practices and any applicable laws. The sustainable landscape practices shall be included as a condition of approval for any development project with new or rehabilitated landscaping for which the city has discretionary approval authority where such landscape area is greater than two thousand five hundred square feet or as otherwise determined by the director to achieve the city's water conservation goals.

B.The director shall oversee this chapter's implementation, compliance with the CUWCC best management practices and any laws mandating water conservation. The director shall, from time to time, but at least annually, review the sustainable landscape practices and determine if such practices are reasonable and achieve the level of conservation required under this chapter for the declared water conservation stage, taking into account the burden imposed on property owners. (Ord. 1118 § 2 (part), 2009)

13.26.040 Base allocation of water.

The director may develop a base allocation for each class of customer account taking into account the needs and characteristics of each customer class. This base allocation may be used to evaluate compliance with the conservation stage in effect and to encourage the reasonable and efficient use of water. (Ord. 1118 § 2 (part), 2009)

13.26.050 Wasteful use of water.

Any of the following acts or omissions, whether intentional, unintentional, willful or negligent, shall constitute the wasteful use of water:

A.Water flowing away from a property caused by excessive application(s) of water beyond reasonable or practical irrigation rates, duration of application, or other than incidental applications to impervious surfaces.

B.Causing or permitting an amount of water to discharge, flow, run to waste into or flood any gutter, sanitary sewer, water course or storm drain, or to any adjacent lot, from any tap, hose, faucet, pipe, sprinkler, or nozzle. In the case of irrigation, "discharge," "flow" or "run to waste" means that water is applied to the point that the earth intended to be irrigated has been saturated with water so that additional applied water then flows over the earth. In the case of washing, "discharge," "flow" or "run to waste" means that water in excess of that necessary is applied to wash, wet or clean the dirty or dusty object, such as an automobile, sidewalk, or parking area.

C.Allowing water fixtures or heating or cooling devices to leak or discharge water.

D.Maintaining ponds, waterways, decorative basins or swimming pools without water recirculation devices or with known leaks, both seen and unseen.

E.Discharging water from, and refilling, swimming pools, decorative basins or ponds in excess of the frequency reasonably necessary to maintain the health, maintenance or structural considerations of the pool, basin or pond, as determined by the

director.

F.Continued operation of an irrigation system that applies water to an impervious surface or that is in disrepair.

G.Use of a water hose not equipped with a control nozzle capable of completely shutting off the flow of water except when positive pressure is applied.

H.Irrigation of lawns or landscaping when it is raining.

I.Overflowing of any pond, pool or fountain which results in water discharging from the pond, pool or fountain.

J.Failure to repair customer pipes, faulty sprinklers or other water-related fixtures that leak water within five working days, unless the director informs the customer that the leak must be repaired more quickly, in which case the customer shall repair the leak in the time specified by the director.

K.Irrigating lawns or landscaping between the hours of 10:00 a.m. and 10:00 p.m., with the exception of drip irrigation as otherwise authorized pursuant to this chapter, unless a variance is granted by the director.

L.Using potable water from the city water system for compaction, dust control or other construction purposes without first obtaining approval from the director as provided in Section [13.26.090](#) and a meter from the city.

M.Installing a single-pass cooling system, such as water cooled air compressor, in any property that is newly connected to the city water system. This does not apply to evaporative cooling systems.

N.Installing a nonrecirculating system in any new automatic car wash or new commercial laundry system or failure to utilize current best management practices for water conservation that are industry standards. (Ord. 1118 § 2 (part), 2009)

13.26.060Determination of water conservation stages.

In determining the city water system's water conservation stage, the city manager shall determine whether that system's water supplies available for potable use are sufficient to meet the current customer demands on that system and shall consider, unless otherwise excluded by this section, all relevant factors. The city manager shall consider, among other things: (A) any variations in the reliability of the water supplies available to the city water system; (B) any declarations by the Bureau of Reclamation concerning its ability to deliver water under Central Valley Project water-service contracts; (C) availability of nonpotable water to meet nonpotable demands on the city water system; (D) the success, or lack thereof, of previous declarations of a less stringent water conservation stage in causing the water-use reductions sought by the city; and (E) any agreements between the city and local water purveyors for deliveries of additional water supplies to the city. The city manager will select the necessary stage for conservation under Section [13.26.070](#). (Ord. 1118 § 2 (part), 2009)

13.26.070Water conservation stages.

The city manager is authorized to implement and enforce whatever conservation measures are deemed necessary to achieve the water reduction requirements of the declared conservation stage. For each stage, the water use reduction for customers shall be as follows:

A.Stage one (basic stage) shall be in effect at all times unless the city manager determines that a more restrictive conservation stage is appropriate. Base allocation of water may be used to determine allowable water use for each customer in this stage and compliance with the following conservation stages.

B.Stage two (water alert) shall achieve a reduction of up to twelve percent relative to the base allocation of water.

C.Stage three (water warning) shall achieve a reduction of up to twenty percent relative to the base allocation of water.

D.Stage four (water crisis) shall achieve a reduction of up to thirty-five percent relative to the base allocation of water.

E.Stage five (water emergency) shall achieve a reduction of up to fifty percent relative to the base allocation of water, or any other reduction the city manager determines, in writing, is necessary to protect public health and safety in the city during the actual situation presented by a stage five water emergency. (Ord. 1118 § 2 (part), 2009)

13.26.080Water use restrictions.

Water use restrictions during the various conservation stages shall, at a minimum, be as listed below and may be augmented by other restrictions as determined necessary by the city manager.

A.During the stage one (basic stage) conservation stage, the following restrictions shall be enforced:

1.Water will be used for beneficial uses; all wasteful use of water is prohibited.

2.Water shall be confined to the customer's property and shall not be allowed to run off to adjoining property or to the roadside ditch or gutter. Care shall be taken not to water past the point of saturation.

3.Free flowing hoses are prohibited for all uses including landscape watering, vehicle and equipment washing, ponds, evaporative coolers and livestock watering troughs. Automatic shut-off devices shall be installed on any hose or filling apparatus in use.

4.All pools, spas and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak proof. Pool draining and refilling shall be allowed only to the extent required for health, maintenance, or structural considerations, and must otherwise comply with all applicable federal, state and local stormwater management requirements, including but not limited to Chapter [8.70](#), Stormwater Management and Discharge Control.

B.During the stage two (water alert) conservation stage, the following restrictions shall be enforced:

- 1.All stage one (basic stage) restrictions shall continue to be enforced, except to the extent they are replaced by more restrictive requirements imposed by this section.
- 2.Landscape and pasture irrigation shall be limited to a maximum of three days per week based on the following odd-even schedule, with the exception of drip irrigation, which may be conducted on any day.
 - a.Customers with street addresses that end with an odd number may irrigate only on Tuesdays, Thursdays and Saturdays.
 - b.Customers with street addresses that end with an even number may irrigate only on Wednesdays, Fridays and Sundays.
 - c.No irrigation is permitted on Mondays.
- 3.Hand and manual watering follows the same odd/even day schedule and may be done anytime during the day.
- 4.Washing of streets, parking lots, driveways, sidewalks, buildings or other hardscape surfaces is prohibited, except as necessary for health, sanitation or fire protection purposes.
- 5.Restaurants shall serve water only upon specific request.
- 6.Public and private streetscape landscaping (medians and frontage) may be watered only on the same schedule as customers with street addresses that end with an even number.

C.During the stage three (water warning) conservation stage, the following restrictions shall be enforced:

- 1.All stage two restrictions shall continue to be enforced, except to the extent they are replaced by more restrictive requirements imposed by this section.
- 2.Landscape and pasture irrigation shall be limited to a maximum of two days per week based on the following odd-even schedule, with the exception of drip irrigation, which may be conducted on any day.
 - a.Customers with street addresses that end with an odd number may irrigate only on Tuesdays and Saturdays.
 - b.Customers with street addresses that end with an even number may irrigate only on Wednesdays and Sundays.
 - c.No irrigation is permitted on Mondays, Thursdays and Fridays.
 - d.Irrigation for public parks and other public grounds, including landscaping and lighting district property, shall only be allowed with an irrigation plan and irrigation system audit that has been approved by the director in accordance with Section [13.26.110](#), irrespective of size.
- 3.No water from the city water system shall be used for construction purposes such as dust control, compaction, or trench jetting, unless the use is approved by the director consistent with the provisions of Section [13.26.090](#).

D.During the stage four (water crisis) conservation stage, the following restrictions shall be enforced:

- 1.All stage three restrictions shall continue to be enforced, except to the extent they are replaced by more restrictive requirements imposed by this section.
- 2.Landscape and pasture irrigation, including drip irrigation, shall be limited to a maximum of one day per week based on the following odd-even schedule.
 - a.Customers with street addresses that end with an odd number may irrigate only on Tuesdays.
 - b.Customers with street addresses that end with an even number may irrigate only on Wednesdays.
 - c.No irrigation is permitted on Mondays, Thursdays, Fridays, Saturdays and Sundays.
- 3.Public and private streetscape landscaping (medians and frontage) may be watered only on the same schedule as customers with street addresses that end with an even number.
- 4.No water from the city water system shall be used to drain and refill swimming pools, artificial lakes, ponds or streams and no new permits for swimming pools, artificial lakes, ponds or streams shall be issued until the water conservation stage has been declared to be stage one.
- 5.Water use for ornamental ponds and fountains is prohibited unless required to maintain existing vegetation or to sustain existing fish/animal life.
- 6.New or expanded landscaping on properties is limited to drought-tolerant trees, shrubs, and ground cover and no new turf or grass shall be planted, hydro-seeded or laid.
- 7.Washing of automobiles or equipment shall be done on the lawn or at a commercial establishment that uses recycled

or reclaimed water.

8.All water leaks shall be repaired within twenty-four hours of notification by the utilities department or service may be discontinued.

E.During the stage five (water emergency) conservation stage, the following restrictions shall be enforced:

1.All stage four restrictions shall continue to be enforced, except to the extent they are replaced by more restrictive requirements imposed by this section.

2.No landscape and/or pasture irrigation shall be allowed.

3. Flushing of sewers or fire hydrants is prohibited, except in case of an emergency and for essential operations.

4.Flushing of fire protection systems is prohibited, except during required maintenance or servicing of the system.

5.Water use for ornamental ponds and fountains is prohibited.

6.Washing of automobiles or equipment shall be done at a commercial establishment that uses recycled or reclaimed water.

7.Installation of any new lawns or landscaping is prohibited.

8.No water from the city water system shall be used for construction purposes such as dust control, compaction, or trench jetting, unless the use is necessary for fire protection system testing, maintenance, or acceptance by the fire chief. (Ord. 1118 § 2 (part), 2009)

13.26.090 Construction water.

Water for construction purposes obtained from the city's water supply may only be used in the city's water service area. Water for dust control, compaction and other construction activities shall be subject to the following conditions:

A.Use of water from the city water system for construction purposes shall require a city-issued construction water meter and a refundable security deposit that includes a monthly meter rental fee as established by the department. Prior to such water use, the construction water customer must obtain approval from the director to use the water for construction and agree to comply with all of the requirements of this chapter. The director may impose such additional conditions on the use of such water, including, but limited to, conditions regulating the purpose for the use of the water, rate of use, location, frequency and quantity of use, and such other conditions as deemed reasonably necessary by the director to effectuate the purposes of this chapter. The construction meter shall be located by the department and shall only be relocated or removed by the department. Unauthorized relocation or removal of a construction meter shall be deemed theft and the offender shall be subject to the penalties set forth in Section [13.26.170](#).

B.Construction water shall only be drawn through a construction water meter. Construction water drawn through an unmetered connection shall be deemed theft of water and shall be grounds for the deposit on the construction meter to be forfeited. The offender shall also be subject to the penalties specified in Section [13.26.170](#). In the event the person identified as drawing water without a metered connection does not have a meter, the action shall be deemed theft and the offender shall be subject to the penalties specified in Section [13.26.170](#).

C.These requirements for construction water use may be modified or supplemented by other conservation measures as determined appropriate by the director for the declared conservation stage. The director may terminate the approval granted to use the construction water based on water use restriction stages, violation of the terms and conditions of use, and/or for conduct that amounts to wasteful use of water. (Ord. 1118 § 2 (part), 2009)

13.26.100 Sustainable landscaping.

Where this chapter permits or prohibits acts based upon whether or not a planting, tree, shrub, or groundcover is "drought-tolerant" or "sustainable" the determination shall be made based upon: (A) Sunset's The Western Garden Book (February 2007), Sunset Books Publishing; (B) Robert Perry, Trees and Shrubs for Dry California Landscapes; (C) EBMUD, Water Wise Gardening; (D) UC Davis Arboretum's All Stars plant database (www.arboretum.ucdavis.edu) or as determined by the director. (Ord. 1118 § 2 (part), 2009)

13.26.110 Irrigation system inspections.

All customers, public and private, with a parcel over five acres and with a separate irrigation service shall conduct an annual irrigation system inspection prior to the start of the irrigation season on April 1st. This inspection shall be performed by certified landscape irrigation auditor or licensed landscape or irrigation contractor and the results forwarded to the department in accordance with the procedure outlined in the water conservation program guidelines. This requirement will be waived for one full year if a full landscape water audit has been performed in the previous year by the department's water management staff, who are available on a limited basis. Single-family residences are exempt unless the director determines there has been wasteful use of water on a customer's premises and the conditions have not been corrected within five days after the city

provides written notification to discontinue such practice.

Customers that have a current irrigation system check-up on file with the department will be allowed one courtesy water waste warning before being deemed in violation of this chapter. (Ord. 1118 § 2 (part), 2009)

13.26.120 Discontinuance of water service.

The director may discontinue service to a customer's connection to the city water system at the time that the director issues to the customer: (A) a notice of a third violation of this chapter during the stage one (basic stage), or stage two (water alert) within two months; (B) a notice of a second violation of this chapter during a stage three (water warning) or a stage four (water crisis) within one month; or (C) a notice of a second violation during a stage five (water emergency), irrespective of time. If the customer's water service is discontinued due to violations of this chapter, the customer shall be subject to the penalties specified in Section [13.26.170](#). Upon seeking renewed service from the city, the customer shall pay the city's water turn off/on service fee as set by ordinance or resolution of the city council. (Ord. 1118 § 2 (part), 2009)

13.26.130 Unauthorized water use.

A. An illegal connection to the city water system shall either be metered by the property owner within the time specified by the department or disconnected at the discretion and direction of the director, and the offender shall be subject to the penalties specified in Section [13.26.170](#).

B. Unauthorized use of a fire hydrant, public or private, for anything other than fire flows or permitted and metered construction water shall subject the offender to the penalties specified in Section [13.26.170](#) and Chapter [8.36](#), Folsom Fire Code.

C. Private fire services with an observed demand that is deemed not to be fire flow by the department shall have a meter and appropriate cross-connection control device installed by the property owner, upon approval by the director and the fire chief. Prior to making any modifications or alteration to the on-site fire service, a permit shall be obtained from the fire department in accordance with Chapter [8.36](#). Upon written notification of the requirement to install a meter and cross-connection control device, the property owner shall have thirty calendar days to submit a plan of correction to the director. Failure to comply with this section shall subject the property owner to the penalties specified in Section [13.26.170](#), Penalties, and the service may be disconnected at the discretion of the director and the fire chief. (Ord. 1118 § 2 (part), 2009)

13.26.140 Cross-connection control devices.

All connections to the city's water system shall have the appropriate cross-connection control device as required by CDPH regulations and enforced by the department in accordance with Chapter [13.22](#), Water System Cross-Connection Control. These devices shall be from the approved and published list maintained by the University of Southern California (USC) or other list as approved by the director and shall be tested annually in accordance with the department's policies and procedures. Devices used on private fire services shall be listed for fire service use and maintained in accordance with State Fire Marshall regulations. (Ord. 1118 § 2 (part), 2009)

13.26.150 Violation declared a nuisance.

Any activity in violation of this chapter will adversely and seriously affect the public health, safety and welfare, is hereby declared to be a public nuisance and may be remedied as provided in this chapter, any other applicable portion of the Folsom Municipal Code or applicable state law. (Ord. 1118 § 2 (part), 2009)

13.26.160 Enforcement.

A. This chapter shall be enforced pursuant to the provisions of Chapter [1.08](#) to [1.10](#), inclusive, of Title 1 of the Folsom Municipal Code and any other enforcement mechanism available to the city under the Folsom Municipal Code and/or applicable law.

B. Unless otherwise expressly provided in this chapter, the director shall enforce the provisions of this chapter. (Ord. 1118 § 2 (part), 2009)

13.26.170 Penalties.

A. The goal of the provisions of this chapter are to achieve voluntary compliance from the customer, and the city will take reasonable measures to assure the customer has information available to promptly and efficiently address water use issues. Where voluntary compliance cannot be achieved through initial contacts and warnings, then appropriate administrative penalties and further action are required. Except as otherwise provided herein, violations of any provision of this chapter shall be addressed as follows:

Violation	Penalty
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First	Personal or written notification of the violation.
Second (Within three months of first violation)	Written notification and issuance of a notice to correct.
Third (Within six months of first violation)	Issuance of an administrative penalty, mandatory installation of a water meter, discontinued water service and/or other penalties as provided in the notice of violation and as determined by the utilities director.

B. Penalties.

1. A violation of this chapter shall also be an administrative violation as defined in Section [1.08.020](#).
2. Each of the sanctions for administrative violations identified in Section [1.09.013](#) shall be available for enforcement of the provisions of this chapter. Based on the criteria for imposition of administrative sanctions set forth in Section [1.09.014](#), each day a violation of this chapter continues it shall be deemed a Level A violation as that term is described in Section [1.09.012](#) with an initial penalty of up to one hundred dollars.
3. In addition to any other penalties provided by this chapter, if a customer of the city water system violates any of the water use restrictions during a stage two, three, four, or five water conservation stage as set forth in Section [13.26.080](#), and such conditions are not corrected within five days after the customer is given written notice, the city is authorized to do any or all of the following:
 - a. Meter any flat rate service connection and apply the regularly established metered rates. If the parcel has over two thousand five hundred square feet of landscaping a separate landscape meter may be installed. Costs for the water meters and installation shall be paid by the property owner.
 - b. If the service is metered, the customer shall be billed at twice the metered rate during the time that the violation continues. If more than two thousand five hundred square feet are irrigated and the parcel does not have a separate irrigation meter, then an irrigation meter may be installed. The customer shall be billed at twice the metered rate during the time the violation continues. Costs for the water meter, and for any required cross-connection controls and installation, shall be paid by the property owner.

C. Appeal. There shall be no appeal of the water use restriction identified in Section [13.26.080](#) and any appeal of administrative penalties shall follow the request for hearing procedures provided in Chapter [1.09](#). Any order to install a mandatory water meter, discontinue water service or any other orders or decisions of the director shall be appealable to the city manager pursuant to Section [2.08.060](#); provided, however, that the city manager's decision shall be final and there shall be no right of appeal to the city council. (Ord. 1118 § 2 (part), 2009)

13.26.180 Remedies cumulative.

The remedies set forth in this chapter are cumulative to any other remedy available to the city. Pursuit of one remedy shall not preclude any other remedy, and nothing contained in this chapter shall limit or be deemed to prevent the city from pursuing any other remedy available to the city under the Folsom Municipal Code or other applicable law. (Ord. 1118 § 2 (part), 2009)

13.26.190 Variances.

In unusual circumstances, application of this chapter may cause unnecessary hardships or results inconsistent with this chapter's purposes and intent. Therefore, variances to some of the requirements of this chapter may be appropriate as delineated below.

A. Authority to Grant Variances. The director may grant variances from this chapter's provisions during a stage one, two, or three conservation stage as specified in Section [13.26.080](#), Water use restrictions. During stage four or five conservation stage as specified in that section, any previously granted variances shall be suspended without notice, unless they are based on a critical health need as determined by a licensed medical professional, with such determination being provided to the director.

B. Landscape Variances. Applications for landscape variances shall be obtained from, and filed with, the utilities department. The director may grant any such applications in his or her discretion in light of the condition of the water supply for the city water system. Any such variance shall be subject to the conditions presented in the water conservation program and landscape guidelines.

C. Other Variances. Customers who seek a variance from this chapter for any reason other than the needs of new landscaping shall submit to the utilities department a written request for variance, setting forth, in detail, the extraordinary circumstances

that support the application. The director may approve the application in his or her discretion; provided, that the variance allows the applicant to use only the minimum amount of water in addition to that allowed by this chapter that the director reasonably believes is necessary to satisfy the circumstances that support the application. Any such variance shall terminate one year after its issuance, subject to an application for its renewal. (Ord. 1118 § 2 (part), 2009)

13.26.200 Fire and other emergencies.

Nothing in this chapter limits, or may be construed as limiting the availability of water for extinguishing fires, meeting the demands of any other similar emergency, or routine inspection and maintenance of fire hydrants. (Ord. 1118 § 2 (part), 2009)