City of Fairfield, California

2015 Urban Water Management Plan

Adopted June 7, 2016

City of Fairfield Plan Preparation

Water Utility Information
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Appendix A: UWMP Checklist

Tables[1]:

[1] Numbered tables will be used for the DWR online submittal tool. Other tables are informational only.

Additional Tables and Figures:

Section 1: Introduction and Overview

This report presents the 2015 Urban Water Management Plan (2015 UWMP) for the City of Fairfield. This section describes the legal underpinnings and purpose of the 2015 UWMP, some background of the City and its service area characteristics.

1.1 Background and Purpose

The intent of this plan is to provide the Department of Water Resources (DWR) and the public with information on present and future water sources and demands and to provide an assessment of Fairfield's water needs. Specifically, the 2015 UWMP must provide water supply planning for a 20-year planning period in 5-year increments, identify and quantify adequate water supplies for existing and future demands during normal, dry and drought years, and assure efficient use of urban water supplies. This 2015 UWMP addresses all Water Code requirements for such a plan as shown in the completed DWR UWMP checklist provided in Appendix A.

The City of Fairfield includes a municipal water utility serving 102,809 in 2015. Fairfield is located mid-way between San Francisco and Sacramento and lies on the eastern edge of the SF Bay Area hydrologic region.

Our Municipal Water System operates within the corporate limits of the City of Fairfield, excluding Travis Air Force Base. The Water System's service area encompasses approximately 22 square miles. The Water System's treatment, storage and distribution system consists of 2 treatment plants, 12 reservoirs and approximately 378 miles of distribution lines. The Water System treats and delivers an average of 21 million gallons per day, with a rated treatment capacity of 56.7 million gallons per day to accommodate high use periods. The peak use day for the Water System to date has been 37.6 million gallons. The City presently has approximately 78 million gallons of treated water storage capacity. Fairfield has water rights for both the Solano Project and the State Water Project.

1.2 Urban Water Management Planning and the California Water Code

This Urban Water Management Plan (2015 UWMP) has been prepared in response to the Urban Water Management Planning Act (UWMP Act), California Water Code (CWC) Sections 10610 through 10650. The UWMP Act was adopted by the California Legislature as Assembly Bill 797 during the 1983-84 session and signed into law by Governor Deukmejian on January 1, 1984. The UWMP Act has been amended and expanded since its inception to address new water related issues as they develop. The main purposes of the UWMP Act are to achieve proper water supply planning and conservation.

The UWMP Act requires that "every urban water supplier shall prepare and adopt an Urban Water Management Plan." An urban water supplier is defined as "a supplier, either publicly or privately owned, providing water for municipal purposes either directly

or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually." Fairfield, as defined in the California Water Code Section 10617, qualifies as an "Urban Water Supplier." Fairfield is a public agency directly providing water for municipal purposes to approximately 102,809 customers, which is more than 3,000 customers, so a UWMP is required to be completed for 2015 and every five years thereafter and submitted to the California Department of Water Resources.

In order for an urban water supplier to be eligible for any water management grant or loan administered by DWR, the agency must have a current UWMP on file that has been determined by DWR to address the requirements of the California Water Code (CWC). A current UWMP must also be maintained by the water supplier throughout the term of any grant or loan administered by DWR. A UWMP may also be required in order to be eligible for other State funding, depending on the conditions that are specified in the funding guidelines.

1.2.1 Urban Water Management Planning Act of 1983 (AB 797)

The UWMP Act requires urban water suppliers to report, describe, and evaluate:

- Water deliveries and uses
- Water supply sources
- Efficient water uses
- Demand Management Measures (Conservation Measures), including implementation strategy and schedule

The UWMP Act directs water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies are available to meet existing and future demands. Urban water suppliers are required to assess current demands and supplies over a 20-year planning horizon and consider various drought scenarios. The UWMP Act also requires water shortage contingency planning and drought response actions be included in a UWMP.

This 2015 UWMP meets the requirements of law within the State of California. A checklist of UWMP Act requirements is provided in Appendix A.

1.2.2 Applicable Changes to the Water Code since 2010 UWMPs

Listed below are the applicable changes to the water code since the 2010 Urban Water Management Plan. **Change Number**	**Topic**	**CWC Section**	**Legislation Bill**	**Summary**	**Section in Fairfield 2015 UWMP**

1	Demand Management Measures	10631 (f) (1) and (2)	AB 2067, 2014	Requires water suppliers to provide narratives describing their water demand management measures, as provided. Requires retail water suppliers to address the nature and extent of each water demand management measure implemented over the past 5 years and describe the water demand management measures that the supplier plans to implement to achieve its water use targets.	Chapter 9
2	Submittal Date	10621 (d)	AB 2067, 2014	Requires each urban water supplier to submit its 2015 plan to the Department of Water Resources by July 1, 2016.	Chapter 10
3	Electronic Submittal	10644 (a) (2)	SB 1420, 2014	Requires the plan, or amendments to the plan, to be submitted electronically to the department.	Chapter 10
4	Standardized Forms	10644 (a) (2)	SB 1420, 2014	Requires the plan, or amendments to the plan, to include any standardized forms, tables, or displays specified by the department.	Water agencies are required to submit UWMP data electronically to DWR using standardized tables. Fairfield has chosen to include the UWMP standardized forms as tables throughout this 2015 UWMP.
5	Water Loss	10631 (e) (1) (J) and (e) (3) (A) and (B)	SB 1420, 2014	Requires the plan to quantify and report on distribution system water loss.	Section 4.3, Appendix P
6	Estimating Future Water Savings	10631 (e) (4)	SB 1420, 2014	Provides for water use projections to display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans, when that information is available and applicable to an urban water supplier.	Section 4.4, Appendix E
7	Defining Water Features	10632	AB 2409, 2010	Requires urban water suppliers to analyze and define water features that	Chapter 8, Section 8.2.4

				are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	

1.2.3 Water Conservation Act of 2009 (SB X7-7)

In addition to the UWMP Act, the Water Conservation Act of 2009 (Senate Bill X7-7 or SB X7-7) requires urban water suppliers to report in their UWMPs base daily per capita water use (baseline), urban water use target, interim urban water use target, and compliance daily per capita water use.

Beginning in 2016, retail water suppliers are required to comply with the water conservation requirements in SB X7-7 in order to be eligible for State water grants or loans.

1.3 UWMP Organization

The following information is included in this report and is discussed in individual sections below:

Section 1 – Introduction and Overview: In this introductory chapter, a discussion on the importance of water management planning is provided and the extent of SSWA's efforts in related activities.

Section 2 – Plan Preparation: This section describes the basis for preparing the 2015 UWMP, the regional planning involved, the calendar year and units of measure, and the coordination and outreach efforts SSWA utilized.

Section 3 – System Description: This section of the plan includes maps of Fairfield's service area, a description of the service area and climate. A discussion of the Public Water System, the organizational structure, and the history of the water supplier are also provided.

Section 4 – System Water Use: This section describes the urban water system demands, including calculating baseline water use and interim and urban water use targets. It quantifies the current water system demand by category and projects them over the planning horizon of the 2015 UWMP, including water sales to other agencies, system water losses, and water use target compliance projections.

Section 5 – Baselines and Targets: This section includes information regarding the baselines and targets for Fairfield.

Section 6 – System Supplies: This section describes and quantifies the current and projected sources of water available to Fairfield. A description and quantification of potential recycled water uses and supply availability are also included in this chapter.

Section 7 – Water Supply Reliability: This section describes the reliability of Fairfield's water supply and provides a 20-year reliability projection. This description is provided for normal, single dry years, and multiple dry years.

Section 8 – Water Shortage Contingency Planning: This section provides Fairfield's staged contingency plan to be implemented during water shortages, including catastrophic supply interruption.

Section 9 – Demand Management Measures: Fairfield's efforts to promote conservation and to reduce demand on water supply is detailed in this section, which also specifically addresses several demand management measures.

Section 10 – Plan Adoption, Submittal, and Implementation: This section outlines the steps taken to adopt and submit the 2015 UWMP, including Fairfield's efforts to publicly circulate the plan for review and comment. This section of the plan also includes a discussion of Fairfield's intent to implement the 2015 UWMP.

Section 11 – References: All applicable references contained within this 2015 UWMP are noted in this section.

Section 12 – Appendices: As shown in the Table of Contents, a number of appendices are included consisting of documents related to this 2015 Urban Water Management Plan Preparation.

SECTION 2 – Plan Preparation

2.1 Retail Plan Type and Identification

Fairfield is an individual retail water agency identified as Public Water System 4810003 within the State of California. As such, we are required to prepare an Urban Water Management Plan. Table 2-1 lists the ID number, name, number of connections, and volume of water supplied by the water agency.

Table 2-1 Retail Only: Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
4810003	City of Fairfield	30,716	5,749
	TOTAL	30,716	5,749

Table 2-2: Plan Identification

Select Only One	Type of Plan		Name of RUWMP or Regional Alliance *if applicable* *drop down list*
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		

2.2 Calendar Year and Units of Measure

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	MG

2.3 Coordination

The City of Fairfield reached out within our community and coordinated with surrounding agencies in the preparation of our Urban Water Management Plan. As required under the 2015 UWMP, Table 2-4 lists the Wholesaler the City of Fairfield worked with to coordinate our planning efforts.

Table 2-4 Retail: Water Supplier Information Exchange
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
Solano County Water Agency
NOTES:

The following table outlines the coordination efforts of our City with all connected entities.

Table 2-4a
Coordination with Appropriate Agencies - 2015 update

Coordinating Agencies	Participated in UWMP Development	Commented on the Draft	Attended Public Meetings	Contacted for Assistance	Received Copy of the Draft	Sent notice of intention to adopt
Other Water Suppliers						
Vallejo	X				X	
Suisun City	X				X	
Benicia	X				X	
Vacaville	X				X	
Rio Vista	X				X	
Dixon	X				X	
SID	X				X	
Water Management Agencies						
SCWA	X			X	X	
Relevant Public Agencies						
Solano County						X
FSSD			X			
Other						
General Public			X			X
Public Library					X	
Posted on Internet					X	
Local Newspaper						X
Travis Air Base				X		
Suisun Resource Conservation District				X		
Maine Prairie Water District				X		
Solano Econ Dev Corp				X		
Sierra Club Solano Grp				X		

Notice to Cities and Counties

CWC 10621(b) requires that agencies notify cities and counties to which they serve water that the 2015 UWMP is being updated and reviewed. Fairfield notified the list of cities, counties and other interested parties 60 days prior to our scheduled public hearing.

SECTION 3 – System Description

3.1 SERVICE AREA PHYSICAL DESCRIPTION

The City of Fairfield – water service area population of 102,809 in 2015 - is located mid-way between San Francisco and Sacramento and lies on the eastern edge of the SF Bay Area hydrologic region.

Our Municipal Water System operates within the corporate limits of the City of Fairfield, excluding Travis Air Force Base. The Water System's service area encompasses approximately 22 square miles. The Water System's treatment, storage and distribution system consists of 2 treatment plants, 12 reservoirs and approximately 378 miles of distribution lines. The Water System treats and delivers an average of 21 million gallons per day, with a rated treatment capacity of 56.7 million gallons per day to accommodate high use periods. The peak use day for the Water System to date has been 37.6 million gallons. The City presently has approximately 78 million gallons of treated water storage capacity.

3.2 SERVICE AREA BOUNDARY MAPS

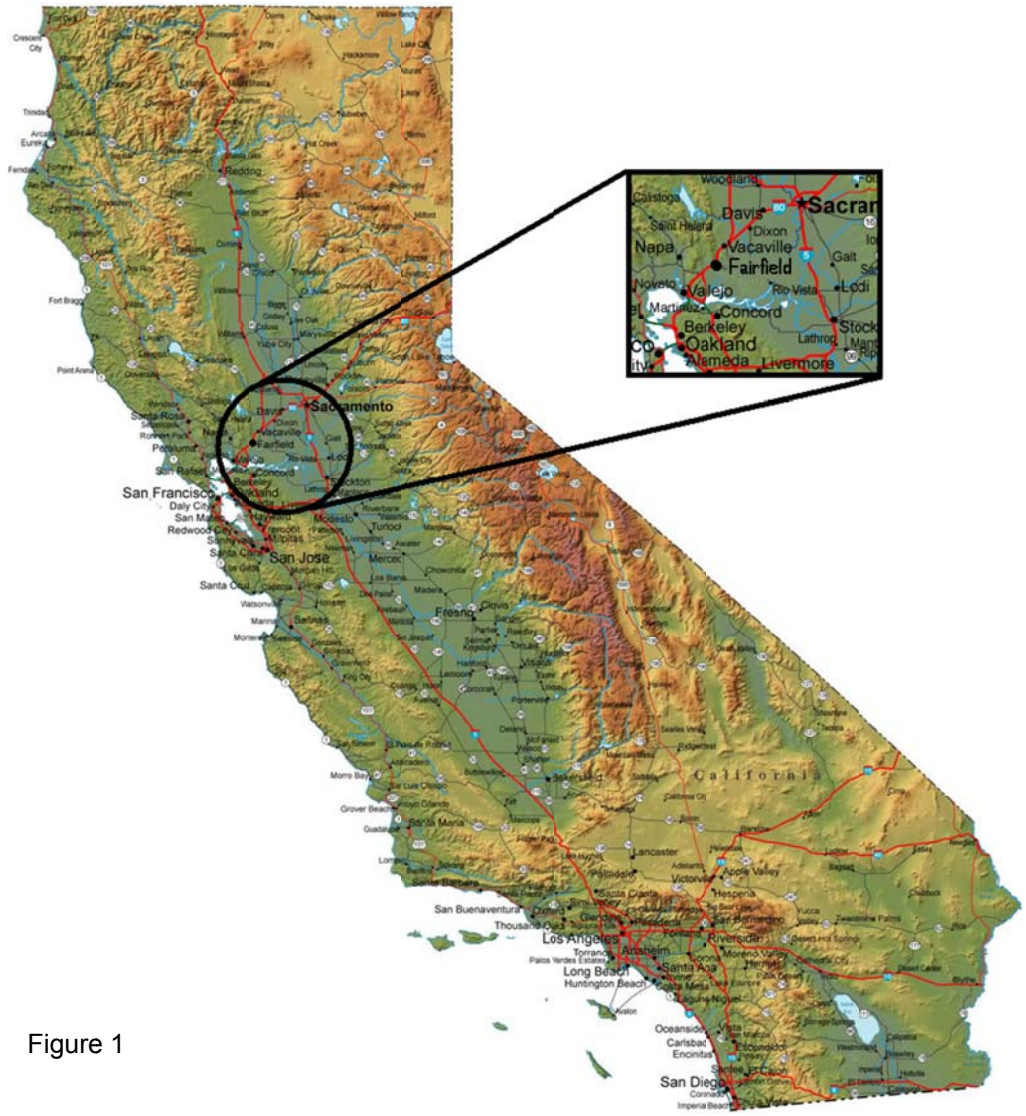

Figure 1

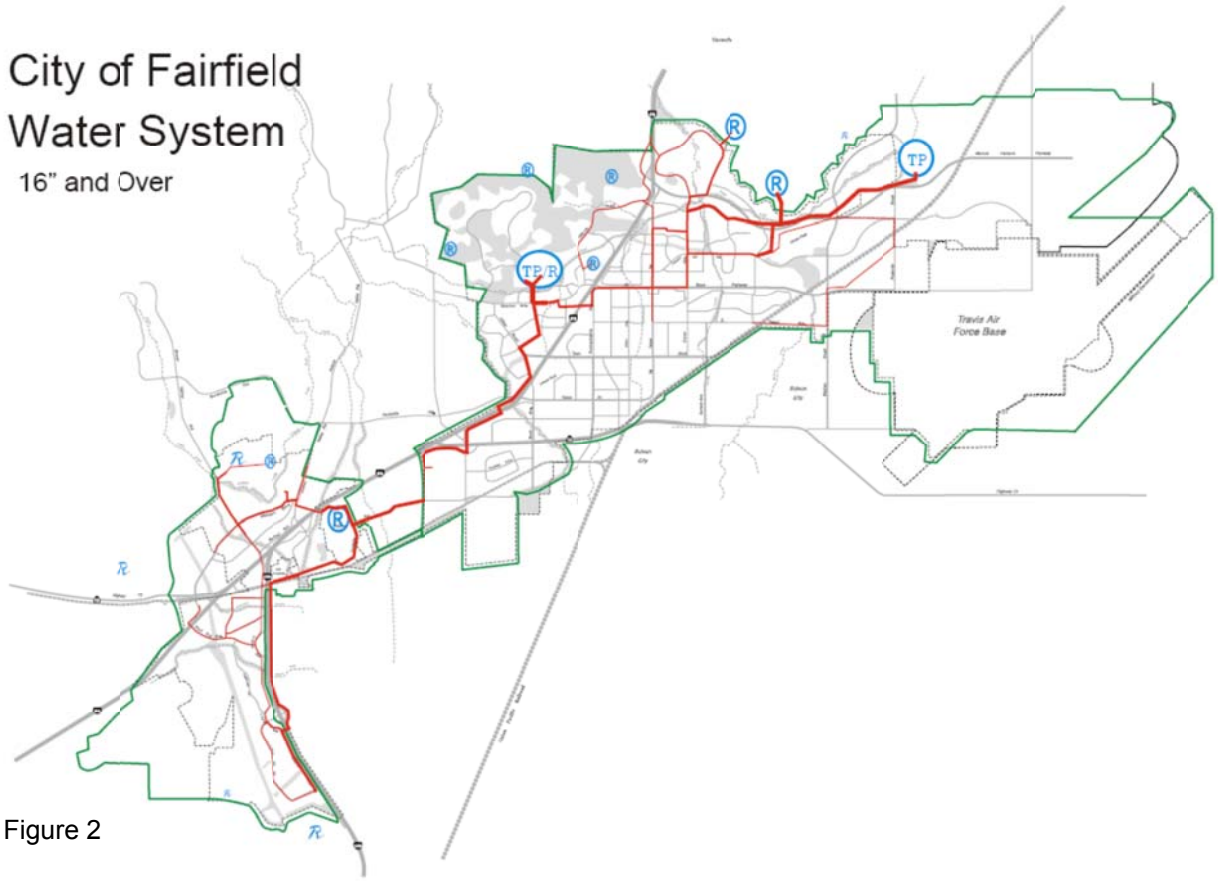

Figure 2

Figure 3

The guidebook has suggested that we include a diagram showing the distribution system. The figure below defines the distribution system delineation of the City of Fairfield. Although there have been adjustments to treatment plants, and additions to the finished water storage system, the fundamental area served has not changed over the base period of this analysis.

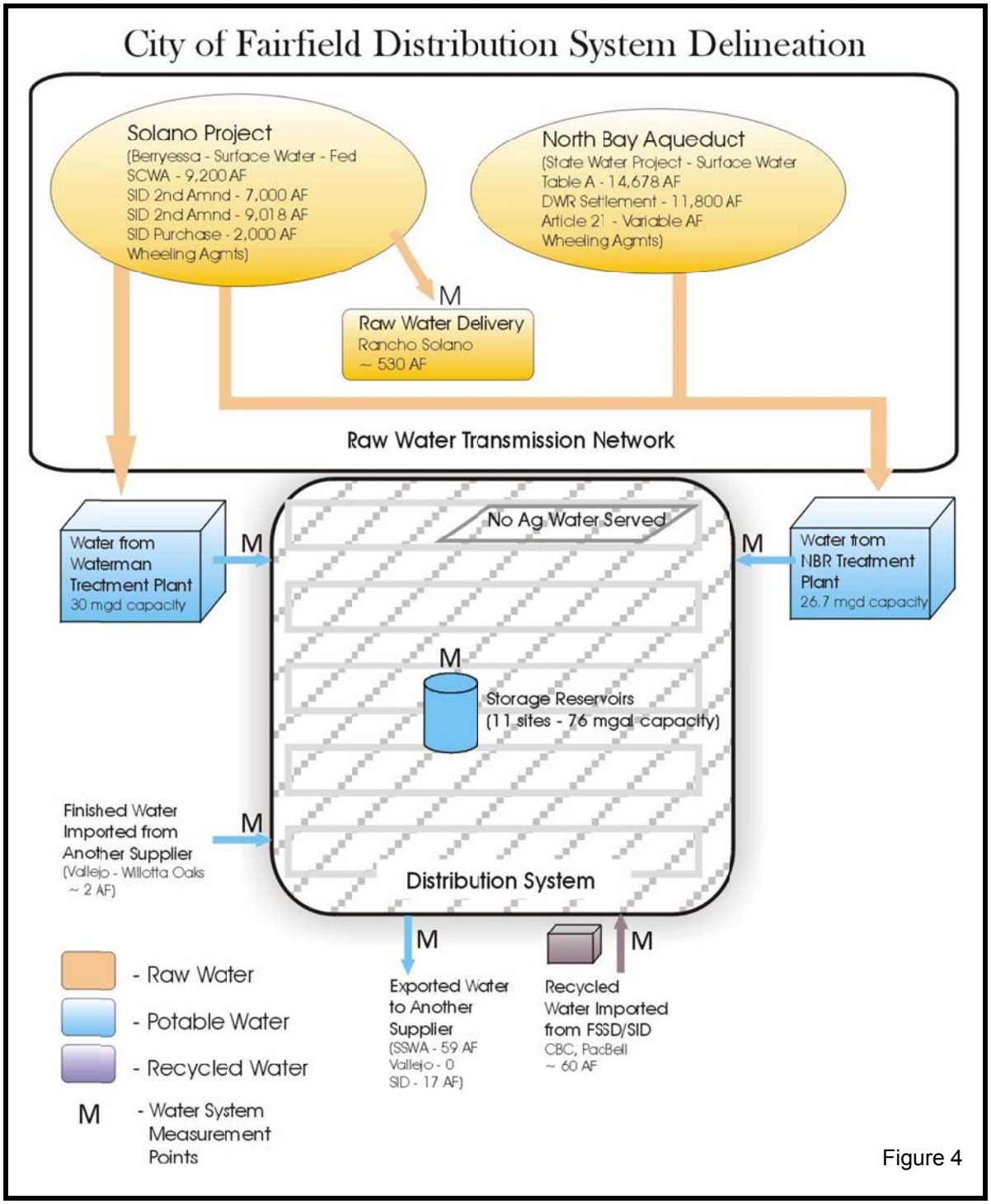

Figure 4

3.3 SERVICE AREA CLIMATE

The average rainfall and average temperature information comes from the National Weather Service station 042934 for the City of Fairfield. The standard monthly average ETo comes from CIMIS stations 123 and 122 on the wwwcimis.water.ca.gov/cimis/welcome.jsp web site.

The City borders the cooler bay area and warmer delta region – making summers 2 to 5 degrees cooler that inland Vacaville to the east and 2 to 5 degrees warmer than coastal Vallejo to the west. The City receives 90 percent of the annual rainfall between October and April. Measurable rainfall occurs on 50 to 60 days per year under normal conditions. The normal growing season is 244 days. There are periodic high winds off the Delta and heavy clay soils often making irrigation difficult. The local climate is classified as semi-arid temperate. Fairfield has a mild two-season Mediterranean climate that is typical of the Central Valley in California. Cool, moist-winters and warm-to-hot, dry summers characterize this area.

Weather Statistics														
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Standard Monthly Avg ETo	CIMIS 123	0.6	1.34	3.01	4.67	5.84	6.96	7.95	6.84	5.25	3.81	1.41	0.88	48.26
	CIMIS 122	1.59	2.20	3.66	5.08	6.83	7.80	8.67	7.81	5.67	4.03	2.13	1.59	57.06
	Avg Precip	4.95	3.98	3.0	1.30	0.52	0.17	0.02	0.07	0.27	1.21	2.86	4.12	22.47
	Avg Temp	46.4	51.3	54.8	58.6	64.2	69.2	72.5	72.4	70.5	64.1	53.9	46.8	60.4
	Max Daily Temp	76	80	89	98	111	111	113	111	112	104	87	78	113
	Min Daily Temp	18	24	20	30	35	37	40	40	39	32	21	17	17

Figure 5

Climate Change

The City of Fairfield is currently preparing a Climate Action Plan. It is expected to be completed and adopted in 2017.

Additional Resources for Water Resources Planning for Climate Change

Much work has been done at State and regional levels to evaluate the effects and impacts of climate change and to develop strategies to support effective statewide, regional, and local water management in the future. The following resources provide additional information describing water resources planning for climate change:

- Progress on Incorporating Climate Change into Planning and Management of California's Water Resources. California Department of Water Resources Technical Memorandum, July 2006. (DWR 2006)
- Climate Change and Water. Intergovernmental Panel on Climate Change, June 2008. (IPCC 2008)

- Managing An Uncertain Future: Climate Change Adaptation Strategies for California's Water. California Department of Water Resources Report, October 2008. (DWR 2008)
- 2009 California Climate Change Adaptation Strategy. California Natural Resources Agency Report to the Governor, December 2009. (CNRA 2009)
- Climate Change and Water Resources Management: A Federal Perspective. U.S. Geological Survey, 2009. (USGS 2009)
- Managing an Uncertain Future. California Water Plan Update 2009. Volume 1, Chapter 5, March 2010. (DWR 2010a)
- Climate Change Characterization and Analysis in California Water Resources Planning Studies. California Department of Water Resources Final Report, December 2010. (DWR 2010b)
- Climate Change Handbook for Regional Water Planning. Prepared for U.S. Environmental Protection Agency and California Department of Water Resources by CDM, November 2011. (CDM 2011)
- Climate Action Plan—Phase 1: Greenhouse Gas Emissions Reduction Plan. California Department of Water Resources, May 2012. (DWR 2012)
- Climate Change and Integrated Regional Water Management in California: A Preliminary Assessment of Regional Perspectives. Department of Environmental Science, Policy and Management, University of California at Berkeley, June 2012. (UCB 2012)
- Managing an Uncertain Future. California Water Plan Update 2013, Volume 1, Chapter 5, October 2014. (DWR 2014)
- West-Wide Climate Risk Assessments: Irrigation Demand and Reservoir Evaporation Projections, Technical Memorandum No. 86-68210-2014-01, U.S. Bureau of Reclamation, 2015. Available at http://www.usbr.gov/watersmart/wcra/index.html. (USBR 2015)
- California Climate Adaption Planning Guide. 2012. California Natural Resources Agency. Available at http://resources.ca.gov/climate/.
- 2015 SID Agricultural Water Climate Management Plan Change Final 6-10, January 2016.
- Perspectives and Guidance for Climate Change Analysis. California Department of Water Resources Climate Change Technical Advisory Group, August 2015.

3.4 SERVICE AREA POPULATION AND DEMOGRAPHICS

The Fairfield water utility service area includes Fairfield City and excludes portions of the Cordelia area and Travis Air Force Base.

Prior projections have been adjusted to compensate for the economic slowdown in the 2010-12 timeframe. Kennedy Jenks reviewed several projections of population in Solano County based on the methodology prescribed by the Department of Water Resources. In the 2015 Urban Water Management Plan we used 2010 data based on an overlay of our service area and the census tract maps. Projections are based on the Projections 2013 document prepared by the Association of Bay Area Governments.

Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040*(opt)*
	102,809	108,622	114,764	121,253	128,109	135,353
NOTES:						

Other demographic factors affecting water management include growth issues in the I-80 corridor between the Bay Area and Sacramento. Solano County, similar to other surrounding counties in the area, has experienced rapid urbanization in the last three decades. This growth is driven primarily by the rising cost of living in the San Francisco Bay Area, the availability of affordable housing in Solano County, and the proximity of these counties to both the Bay Area and Sacramento. The rate of population growth has averaged 2.0% over the past 10 years. One of the more recent factors affecting housing projections is the availability of rail service and the construction of a rail station in the North East Area of Fairfield, which is the major planned growth area of the community.

Economic growth factors affecting water supply include continued industrial growth in the food sector, which has been a water intensive use category.

Water Use Sectors of the Customer Base are addressed in Section 4.

SECTION 4 – System Demands

This section contains a series of tables that review recent water use and projections into the future. All water that is produced and distributed within the Fairfield Water Utility Service area is included in this analysis. Much of the information in this section will be in table form to comply with the requirements of the UWMP Guidebook from DWR.

4.1 RECYCLED VERSUS POTABLE AND RAW WATER DEMAND

This section provides information regarding recycled versus potable and raw water demand. Fairfield does not provide recycled or raw water service. These sources of water within Solano County are provided by other agencies.

4.2 WATER USE BY SECTOR

Actual and projected potable water uses for the various customer types metered are shown in Tables 4-1 to 4-3. All accounts are metered.

Table 4-1 lists Fairfield's actual demand for potable and raw water.

Table 4-1 Retail: Demands for Potable and Raw Water - Actual

Use Type *(Add additional rows as needed)*	2015 Actual		
Drop down list *May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool*	Additional Description *(as needed)*	Level of Treatment When Delivered *Drop down list*	Volume
Single Family		Drinking Water	2,549
Multi-Family		Drinking Water	515
Commercial		Drinking Water	412
Industrial		Drinking Water	535
Institutional/Governmental		Drinking Water	135
Landscape		Drinking Water	928
Other		Drinking Water	25
Losses		Drinking Water	647
Sales/Transfers/Exchanges to other agencies		Drinking Water	3
		TOTAL	5,749

The projected City of Fairfield demand is presented in Table 4-2.

Table 4-2 Retail: Demands for Potable and Raw Water - Projected						
Use Type *(Add additional rows as needed)*	Additional Description *(as needed)*	Projected Water Use *Report To the Extent that Records are Available*				
Drop down list *May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool*		2020	2025	2030	2035	2040-opt
Single Family	R1	2,962	3,130	3,307	3,494	3,691
Multi-Family	R2,R3	599	633	668	706	746
Commercial	C1-7	479	506	535	565	597
Industrial	AB, D1-3	621	657	694	733	774
Institutional/Governmental	D4-8	157	166	175	185	195
Landscape	I2-4,VC	1,079	1,140	1,204	1,272	1,344
Other	I1, K1-3	28	30	32	34	35
Sales/Transfers/Exchanges to other agencies		5	5	6	7	7
Losses		534	564	596	630	665
TOTAL		6,464	6,831	7,217	7,626	8,054

The total water use in Table 4-3 is the sum of water use by customer categories (Table 4-1 and Table 4-2), sales to other agencies and additional water uses. The year 2040 demand is estimated at 1,573 MG which represents a 3% decrease relative to 2015.

Table 4-3 Retail: Total Water Demands						
	2015	2020	2025	2030	2035	2040 *(opt)*
Potable and Raw Water *From Tables 4-1 and 4-2*	5,749	6,464	6,831	7,217	7,626	8,054
Recycled Water Demand* *From Table 6-4*	0	0	0	0	0	0
TOTAL WATER DEMAND	5,749	6,464	6,831	7,217	7,626	8,054

4.3 DISTRIBUTION SYSTEM WATER LOSSES

Distribution system water losses (also known as “real losses”) are the physical water losses from the water distribution system and the supplier’s storage facilities, up to the point of customer consumption.

Presented in Table 4-4, “water loss” is the difference between water production and water consumption and represents “lost” water.

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2013	571.7
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	

4.4 ESTIMATING FUTURE WATER SAVINGS

The projected demands presented in this 2015 UWMP do not include explicit estimates of plumbing code savings. Fairfield has shown sophisticated projections of water use in the past. In the last couple years with the drought conditions, water use has been suppressed to the point that trend analysis has been of very little use. We have estimated a rebound in use as the drought conditions soften, with mild estimations of water-conserving growth.

4.5 WATER USE FOR LOWER INCOME HOUSEHOLDS

The City of Fairfield has operated an affordable housing program since the formation of the Fairfield Redevelopment Agency. In reviewing housing progress between 1995 and 2009 the City was involved in developing or substantially rehabilitating 765 low-income and 505 very low-income households. The City currently has an affordable housing implementation plan which is expected to assist 840 units between now and the end of 2027 when the redevelopment project areas are completed. Much of the housing development and rehabilitation will not increase the water demand to the Fairfield Water Utility. The following table anticipates new development over this window.

Low –Income water projections are based on the historical pattern of Habitat for Humanity construction and an estimation of 25% of new multi-family housing being low-income housing. Fairfield and much of Solano County provides a lower cost housing alternative to the surrounding Bay Area counties.

The Fairfield Water Utility does not expect any limitation on low-income housing based on availability of water supply.

Low Income Additional Annual Water Demand Projections – mg

Table 4-5a Low-income projected Additional Annual Water Demand					
Low Income Water Demands[1]	**2020**	**2025**	**2030**	**2035**	**2040**
Single-family residential	0.77	0.84	0.92	1.00	1.08
Multi-family residential	2.99	4.48	5.98	7.47	8.97
Total	4	5	7	8	10

Units: million gallons per year
[1]Provide demands either as directly estimated values.

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	No
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc… utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	No
NOTES: Fairfield has shown sophisticated projections of water use in the past. In the last couple years with the drought conditions, water use has been suppressed to the point that trend analysis has been of very little use. We have estimated a rebound in use as the drought conditions soften, with mild estimations of water-conserving growth.	

4.6 CLIMATE CHANGE

The City of Fairfield is currently preparing a Climate Action Plan. It is expected to be completed and adopted in 2017. Please find further information on Climate Change in Section 3.3 above.

2015 UWMP – Section 5: SB X7-7 Baseline and Targets

This section provides the target setting requirements for 20 x 2020 water conservation efforts as detailed in the Water Conservation Act of 2009 (also known as SB 7X-7) and the Technical Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use prepared by the California Department of Water Resources. Demand Management Measures to reduce system demands are included in Section 9.

5.1 UPDATING CALCULATIONS FROM 2010 UWMP

The Water Conservation Act of 2009 (also known as SBX7-7) has four basic ways to calculate the 2020 target for each agency. The language describing the target setting is found in state law and online.[2]

We have summarized the requirements for setting targets as follows:

Four Target Methodologies	
Target Options	Summary
1	Eighty percent of the urban retail water supplier's baseline per capita daily water use.
2	Water Efficiency Performance Standard based on the sum of the following: ☐ Indoor residential water use of 55 gallons per capita per day (provisional). ☐ Landscape Irrigation that meets the standards of the state's Model Water Efficient Landscape Ordinance. The limit of irrigation use shall not exceed the Maximum Applied Water Allowance. ☐ Commercial, Industrial and Institutional water use will be reduced 10% from the baseline. Use that falls below these standards in 2015 and 2020 are deemed efficient.
3	Ninety-five percent of the 2020 target for the San Francisco Bay Area hydrologic region.
4	The California Department of Water Resources has detailed a target method as follows: ☐ Residential use that saves 15 gallons per capita per day ☐ Commercial, Industrial and Institutional water use will be reduced 10% from the baseline. ☐ Landscape irrigation and water loss will be reduced by 21.6%

Figure 6

It is critical to note that provisions for economic growth and industrial process water were incorporated into the Water Conservation Act of 2009. Provisions that allow for baseline adjustments are in process at the Department of Water Resources. Fairfield city staff was instrumental in including these provisions and are continuing to work with DWR to protect the economic interests of the City.

In our 2010 UWMP, Fairfield opted to use Method 4. Since there have been a number of adjustments to this methodology, Fairfield has chosen to move to Method 1. Therefore, the option to calculate a 20% reduction of gpcd from our baseline will yield a 2020 target of 181 gpcd. The interim target for 2015 is 204 gpcd, which Fairfield achieved in this 2015 UWMP.

5.2 BASELINE PERIODS

In the Water Conservation Act of 2009, each agency is required to establish a target for water conservation. The first step is to establish the baseline periods.

SB X7-7 Table-1: Baseline Period Ranges

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	7,971	Million Gallons
	2008 total volume of delivered recycled water	17	Million Gallons
	2008 recycled water as a percent of total deliveries	0.21%	Percent
	Number of years in baseline period[1, 2]	10	Years
	Year beginning baseline period range	1996	
	Year ending baseline period range[3]	2005	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range[4]	2007	

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

[2] The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.

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

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

NOTES:

5.3 SERVICE AREA POPULATION

Population figures are simple in the Fairfield service area. The State of California Department of Finance web-site (http://www.dof.ca.gov/budgeting/) includes a Price and Population Factors Used for Appropriations Limit Calculations Report each year for each City in the state. Fairfield has a listing that separates exclusions, in our case Travis Air Force Base, and cleanly represents the water service area of our utility. There have been no changes in the general service area over the timeframe of the baseline calculations.

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☑	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☐	**3. DWR Population Tool**
☑	**4. Other** DWR recommends pre-review
NOTES: Certain adjustments need to be made to exclude Travis Air Force Base from the utility service area.	

SB X7-7 Table 3: Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	1996	77,497
Year 2	1997	79,156
Year 3	1998	81,283
Year 4	1999	83,410
Year 5	2000	85,355
Year 6	2001	89,188
Year 7	2002	90,208
Year 8	2003	93,637
Year 9	2004	94,977
Year 10	2005	97,386
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2003	93,637
Year 2	2004	94,977
Year 3	2005	97,386
Year 4	2006	100,147
Year 5	2007	101,561
2015 Compliance Year Population		
2015		102,809

5.4 GROSS WATER USE

SB X7-7 Table 4: Annual Gross Water Use *								
Baseline Year *Fm SB X7-7 Table 3*		Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water *This column will remain blank until SB X7-7 Table 4-B is completed.*	Water Delivered for Agricultural Use	Process Water *This column will remain blank until SB X7-7 Table 4-D is completed.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1996	6,278			-	-	-	6,278
Year 2	1997	6,928			-	-	-	6,928
Year 3	1998	6,308	65		-	-	-	6,243
Year 4	1999	6,892	6		-	-	-	6,886
Year 5	2000	7,147	10		-	-	-	7,136
Year 6	2001	7,545	20		-	-	-	7,525
Year 7	2002	7,671	3		-	-	-	7,669
Year 8	2003	7,690	0		-	-	-	7,690
Year 9	2004	7,692	0		-	-	-	7,692
Year 10	2005	7,989	5		-	-	-	7,984
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**7,203**
5 Year Baseline - Gross Water Use								
Year 1	2003	7,690	0		-		-	7,690
Year 2	2004	7,692	0		-		-	7,692
Year 3	2005	7,989	5		-		-	7,984
Year 4	2006	7,160	1		-		-	7,159
Year 5	2007	8,190	3		-		-	8,187
5 year baseline average gross water use								**7,742**
2015 Compliance Year - Gross Water Use								
2015		5,749	3		-		-	**5,746**
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3								

Gross Water is calculated at the effluent meters of the City's two water treatment facilities.

5.5 BASELINE DAILY PER CAPITA WATER USE

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Annual Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1996	77,497	6,278	222
Year 2	1997	79,156	6,928	240
Year 3	1998	81,283	6,243	210
Year 4	1999	83,410	6,886	226
Year 5	2000	85,355	7,136	229
Year 6	2001	89,188	7,525	231
Year 7	2002	90,208	7,669	233
Year 8	2003	93,637	7,690	225
Year 9	2004	94,977	7,692	222
Year 10	2005	97,386	7,984	225
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**226**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2003	93,637	7,690	225
Year 2	2004	94,977	7,692	222
Year 3	2005	97,386	7,984	225
Year 4	2006	100,147	7,159	196
Year 5	2007	101,561	8,187	221
5 Year Average Baseline GPCD				**218**
2015 Compliance Year GPCD				
2015		102,809	5,885	**157**

5.6 2015 AND 2020 TARGETS

Table 5-1 Baselines and Targets Summary
Retail Agency or Regional Alliance Only

Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	*1996*	*2005*	*226*	*204*	*181*
5 Year	*2003*	*2007*	*218*		

*All values are in Gallons per Capita per Day (GPCD)

NOTES: Fairfield has opted to change our Method from Option 4 to Option 1 with the changes made by DWR.

5.7 2015 COMPLIANCE DAILY PER CAPITA WATER USE (GPCD)

Table 5-2: 2015 Compliance
Retail Agency or Regional Alliance Only

Actual 2015 GPCD*	2015 Interim Target GPCD*	Optional Adjustments to 2015 GPCD (Enter "0" if no adjustment is made) *From Methodology 8*					2015 GPCD* *(Adjusted if applicable)*	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events*	Economic Adjustment*	Weather Normalization*	TOTAL Adjustments*	Adjusted 2015 GPCD*		
157	204	0	0	0	0	157	157	Yes

All values are in Gallons per Capita per Day (GPCD)

NOTES:

5.8 REGIONAL ALLIANCE

Fairfield is not part of a regional alliance in regard to SB X7-7 compliance.

SECTION 6 – System Supplies

The primary water sources for the City of Fairfield are the Solano Project, the State Water Project, and "settlement water" obtained through negotiations with the Department of Water Resources in 2003. The two projects deliver water from Lake Berryessa and the Sacramento River respectively. Although legally not State Water Project water, settlement water is derived from the yield of the State Water Project.

Recycled water is a minor source of City water supply, but could possibly grow into a significant supply in the future. Potential industrial uses near the Fairfield-Suisun Sewer District have considered using recycled water for cooling towers and non-potable irrigation.

6.1 PURCHASED OR IMPORTED WATER

Source water served in the City of Fairfield comes from our watershed of origin. Contracts for the water are administered by Solano County Water Agency, who acts as the wholesaler of raw water for both the Federal and State Projects serving our community.

6.2 GROUNDWATER

The City of Fairfield does not use groundwater as a supply source. Groundwater in the area is brackish and unsuitable for irrigation or drinking water use without relatively expensive treatment compared to other sources. Groundwater is not used in the municipal water supply of Fairfield and is not considered a viable component of water in Fairfield because of tidal inflows that impact water quality.

Table 6-1 Retail: Groundwater Volume Pumped

☑	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type *Drop Down List May use each category multiple times*	Location or Basin Name	2011	2012	2013	2014	2015
Add additional rows as needed						
	TOTAL	0	0	0	0	0

6.3 SURFACE WATER

Surface water provides all of the water in Fairfield's water portfolio. The primary water sources for the City of Fairfield are the Solano Project, the State Water Project, and "settlement water" obtained through negotiations with the Department of Water

Resources in 2003. The two projects deliver water from Lake Berryessa and the Sacramento River respectively. Although legally not State Water Project water, settlement water is derived from the yield of the State Water Project.

State Water Project (SWP) water and settlement water are delivered to the City via the North Bay Aqueduct (NBA) a component of the SWP. The NBA is 27 miles long starting from Barker Slough in the Delta and ending in Napa County. The Solano County branch of the NBA was complete in 1988. The State of California is the owner of the North Bay Aqueduct, and the Department of Water Resources is the operator. The City obtains SWP water through a "member unit" contract with Solano County Water Agency.

Settlement water is available to the City during delta "excess" conditions when standard water rights Term 91 is not in effect. Excess conditions occur when the SWP and the federal Central Valley Project are unable to control flow to the Sacramento-San Joaquin Delta. Conversely, balanced conditions occur whenever the two projects are in control of delta inflows. Term 91 comes into effect during balanced conditions whenever the projects are required to release stored water to meet delta flow requirements. The City has determined that settlement water is a reliable supply because the City can schedule it to be fully utilized at least 9 out of 10 years.

The City delivers potable water supplies through its pressurized distribution system. Fairfield's treatment and distribution facilities comprise two water treatment plants, 350 miles of pipe, 12 treated water storage reservoirs, and 15 pump stations. The capacity of the system is designed to be able to treat up to 56.7 million gallons per day and store up to 78 million gallons of water.

6.4 STORMWATER

Communities are increasingly implementing opportunities to beneficially use stormwater to meet local water supply demands. These actions are motivated by constrained local water resources, new regulations, and relieving strain on overburdened stormwater infrastructure.

Beneficial reuses include blending with other water supplies for groundwater recharge, redirecting it into constructed wetlands or landscaping, and diverting it to a treatment facility for subsequent reuse. Fairfield is not currently using stormwater as a supply source but could consider this in the future.

6.5 WASTEWATER AND RECYCLED WATER

Recycled Water is planned in limited amounts for the far end of our planning window. Water would be taken from the Fairfield Suisun Sewer District effluent for non-potable use. This would displace the potable uses with non-potable supply within the area served by recycled distribution facilities. Diverting water from the Suisun Marsh

discharge will necessitate environmental review as the water is currently released into the north end of the primary area of the Bay-Delta.

Wastewater from the Fairfield-Suisun area is treated at the Fairfield-Suisun Sewer District (FSSD). Due to requirements for discharge to Suisun Marsh, FSSD has produced tertiary effluent since the 1970s. In 2002, Fairfield entered an agreement with FSSD and Solano Irrigation District that provides the City with up to 12 million gallons per day of effluent for a recycled water supply. FSSD presently provides some recycled water to sites near the FSSD plant site for irrigation and industrial uses. Distribution facilities would need to be constructed to serve additional non-potable sites.

Table 6-2 Retail: Wastewater Collected Within Service Area in 2015

☐	There is no wastewater collection system. The supplier will not complete the table below.
100%	Percentage of 2015 service area covered by wastewater collection system *(optional)*
100%	Percentage of 2015 service area population covered by wastewater collection system *(optional)*

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
Add additional rows as needed						
Fairfield Suisun Sewer District (FSSD)	Estimated	18,700	FSSD	FSSD Water Waste Treatment Plant	No	Yes
Total Wastewater Collected from Service Area in 2015:		18,700				

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015

☑	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level *Drop down list*	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
						Total	0	0	0	0

2015 UWMP – Section 6: System Supplies

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area

☐ Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.

Name of Agency Producing (Treating) the Recycled Water:	Fairfield Suisun Sewer District
Name of Agency Operating the Recycled Water Distribution System:	Fairfield Suisun Sewer District
Supplemental Water Added in 2015	0
Source of 2015 Supplemental Water	none

Beneficial Use Type	General Description of 2015 Uses	Level of Treatment *Drop down list*	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation								
Landscape irrigation (excludes golf courses)	Landscape served by reclaimed water ssyten coming from FSSD plant	Secondary, Disinfected - 23	0	0	200	400	400	400
Golf course irrigation								
Commercial use								
Industrial use	Solano Busiress Park Cooling Towers	Secondary, Disinfected - 23	0	0	0	0	200	200
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wi dlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other *(Provide General Description)*								
		Total:	0	0	200	400	600	600

*IPR - Indirect Potable Reuse

NOTES: Units in MG

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

☑ Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.

Use Type		2010 Projection for 2015	2015 Actual Use
Agricultural irrigation			
Landscape irrigation (excludes golf courses)			
Golf course irrigation			
Commercial use			
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	*Type of Use*		
Total		0	0

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
☐	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
Section 6.5 on Page 33	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Add additional rows as needed			
Recycled Water Pipeline Expansion	Recycled water from the FSSD Treatment Facility can be served once a pipeline connection along Beck Avenue is installed.	2025	200
		Total	200
NOTES: Units in MG			

6.6 DESALINATED WATER OPPORTUNITIES

Fairfield is not planning to pursue any desalinated water opportunities.

6.7 EXCHANGES OR TRANSFERS

The City of Fairfield is not exploring any new out of area transfers or exchanges.

The City of Fairfield has entered into agreements with adjoining agencies to provide water service in case of emergency. These agreements are expected to be limited in amount and irregular in use.

The Solano County Water Agency (SCWA) has provided the following paragraphs as they pertain to transfers and exchanges:

> SCWA, as a wholesaler, does not conduct exchanges or transfers on its own. SCWA does facilitate and assist cities and districts in transfers and exchanges.
>
> A thorough discussion of current transfers and exchanges is included in the Solano Agencies' Integrated Regional Water Management Plan.
>
> One program SCWA is directly involved in is the SWP exchange agreement with the Mojave Water Agency. However, these exchanges only take place if a city provides NBA water for exchange. The amount to be exchanged is a maximum of 10,000 acre feet per year. Since this program is a two-for-one exchange, this would result in a maximum return obligation of 5,000 acre feet per year on the part of the Mojave Water Agency. The cumulative limit of the return obligation of the Mojave Water Agency is 20,000 acre feet at any one time. This is the only "out of county" exchange of transfer program SCWA is currently involved in.

6.8 FUTURE WATER PROJECTS

The City of Fairfield is not pursuing any future water supply projects to provide a quantifiable increase to the agency's water supply. Efforts to improve supply and conservation efforts over the last several years have proved to be successful in offsetting the need for expansive water supply projects in our service area.

Table 6-7 Retail: Expected Future Water Supply Projects or Programs

☑	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
	Provide page location of narrative in the UWMP

Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Agency
	Drop Down List (y/n)	*If Yes, Agency Name*			*Drop Down List*	*This may be a range*
Add additional rows as needed						

6.9 SUMMARY OF EXISTING AND PLANNED SOURCES OF WATER

Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		Actual Volume	Water Quality *Drop Down List*	Total Right or Safe Yield *(optional)*
Add additional rows as needed				
Surface water	SCWA - USBR Solano Project	4,040	Raw Water	
Surface water	SCWA - DWR State Water Project	1,709	Raw Water	
	Total	5,749		0

Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply *Report To the Extent Practicable*									
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		**2020**		**2025**		**2030**		**2035**		**2040** *(opt)*	
		Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*
Add additional rows as needed											
Surface water	SCWA - USBR Solano Project	5,539	9,091	5,865	9,124	6,256	9,124	6,550	9,156	6,550	9,156
Surface water	SCWA - DWR State Water Project	4,269	8,156	4,953	8,156	5,930	8,156	6,647	8,156	6,647	8,156
Recycled Water	FSSD SID Agreement	0	0	196	196	391	391	587	587	587	587
	Total	9,808	17,247	11,014	17,475	12,578	17,671	13,783	17,899	13,783	17,899
NOTES:											

6.10 CLIMATE CHANGE IMPACTS TO SUPPLY

The City of Fairfield is currently preparing a Climate Action Plan. It is expected to be completed and adopted in 2017. As far as supply impacts, the Solano Project will be affected less severely as it is in a coastal range and is not dependent on snowpack. Section 3.3 details a summary of climate change information impacting the Fairfield service area.

SECTION 7 – Water Supply Reliability Assessment

7.1 CONSTRAINTS ON WATER SOURCES

The reliability values for the City of Fairfield are affected dramatically by the storage facilities available to the city (the ability to carryover supplies from both the SWP and Solano Project supplies). Long term storage allows the city to swap single dry year and multiple dry year values in our planning priorities. There is no single year event that carries the weight of multiple dry year events, whereas some utilities must weight their planning toward driest year events.

State Water Project

The City of Fairfield receives water from the State Water Project under two separate arrangements.

First, there is a contractual arrangement as an original contractor with the State of California. This water entitlement is similar in reliability to all other agencies in the project agreement, subject to reductions based on the anticipated deliveries from the project as a whole.

A second portion of water received from the State Water Project is DWR Settlement Agreement water which is based on Watershed of Origin entitlement. This water has a higher level of reliability. The working figures that follow will show the reliability factors of these two portions of State Water Project source water independently. In the tables prepared for submission to DWR, the sources will be blended. Facilities will need to be improved to allow the full use of this water source.

Information on the reliability of the State Water Project (SWP) supply comes from a DWR Study 2009 – SCWA Specific.

In order to categorize the water year type into dry and normal years, the Sacramento Valley Water Year Index, also know as the 40/30/30 index was used. The Sacramento Valley Index uses 40% of April through July runoff, 30% of October through March runoff and 30% of the previous year's index. The Sacramento Valley Index is used to determine water year types in State Water Resources Control Board Decision 1641. We have assigned a Sacramento Valley Index to each of the years that it has hydrologic records.

Note that the SWP also makes available Article 21 water that is available to SWP contractors under specified conditions when the Delta is in excess conditions and there is pumping capacity available. Fairfield receives its water from the North Bay Aqueduct (NBA). Current DWR policy is that Article 21 water is available whenever the Delta is in excess (out of balance) conditions. This makes Article 21 water available to NBA users more frequently than SWP contractors relying upon the Banks pumping plant (South

Delta SWP export facility). For the purposes of this UWMP, Article 21 deliveries are not included although they can be a significant additional supply most years.

There are numerous factors that affect the reliability of SWP supplies. The main factor is hydrologic conditions that result in extremely variable runoff conditions. The SWP has storage from Oroville Reservoir, however most of the SWP water supply comes from Sacramento Valley runoff. There are a myriad of environmental, water quality and legal constraints on the SWP that affect water supply reliability. The water rights for the SWP are conditioned upon meeting various water quality and environmental conditions including the Federal Endangered Species Act. The models used to develop the SWP reliability data incorporate these constraints.

Solano Project

For the Solano Project a similar year type index was developed based upon procedures similar to the Sacramento Valley index. An existing model exists for the Solano Project that uses hydrologic records from 1906 through 2007. Using similar assumptions as the Sacramento Valley 40/30/30 Index, year types were assigned to each of the years in the Solano Project model resulting in a Lake Berryessa Index that identifies wet, normal and dry years.

The Allocation process for water supplies from the Solano Project is very different than for the SWP. For the Solano Project, the contract with USBR calls for the full contract amount to be delivered unless it is physically impossible to deliver the water from Solano Project storage (i.e. reservoir is dry). Therefore, the full contract water supply is allocated until there is no water available in the reservoir.

The Solano Project member agencies (including the City of Fairfield) have entered into a separate agreement to reduce deliveries based upon storage levels in Lake Berryessa. Once the storage level drops below 800,000 acre feet, as measured on April 1, 95% of contract amounts are delivered with 5% being stored in the reservoir as carryover. If the reservoir drops below 550,000 acre feet by April 1, 90% can be delivered and 10% is stored as carryover. The City of Fairfield has the ability to carryover more than this amount if we desire. Once the reservoir level is below 400,000 acre feet on April 1, the member agencies can use their full allocation and any stored carryover. For more information see the Drought Measures Agreement.

7.2 RELIABILITY BY TYPE OF YEAR

The UWMP Act requires analysis of reliability for each of the sources of water supply. The three source tables (7.1) summarize the reliability of supply for each source. The reliability is broken down into "Average Year", "Single-Dry Year" and "Multi-Dry Years".

State Water Project (SWP)

Table 7-1 Retail: Basis of Water Year Data

Year Type	Base Year *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	Available Supplies if Year Type Repeats	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	% of Average Supply
Average Year	2003	3841	100%
Single-Dry Year	1977	1037	22%
Multiple-Dry Years 1st Year	1934	1190	27%
Multiple-Dry Years 2nd Year	1934	1190	27%
Multiple-Dry Years 3rd Year	1934	1190	27%
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			

Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

NOTES: Units in MG. Fairfield has three sources - 1) SCWA - State Water Project, 2) Settlement Water and 3) SCWA - Solano Project. This table outlines base years and volumes for source 1.

Settlement Water

Table 7-1 Retail: Basis of Water Year Data

Year Type	Base Year *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	Available Supplies if	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	% of Average Supply
Average Year	2003	3845	100%
Single-Dry Year	1977	1923	50%
Multiple-Dry Years 1st Year	1934	1923	50%
Multiple-Dry Years 2nd Year	1934	1923	50%
Multiple-Dry Years 3rd Year	1934	1923	50%
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			

Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

NOTES: Units in MG. Fairfield has three sources - 1) SCWA - State Water Project, 2) Settlement Water and 3) SCWA - Solano Project. This table outlines base years and volumes for source 2.

Solano Project

Table 7-1 Retail: Basis of Water Year Data

Year Type	Base Year *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	Available Supplies if ☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____ ☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	% of Average Supply
Average Year	2007	8863	100%
Single-Dry Year	2005	8686	98%
Multiple-Dry Years 1st Year	1994	7888	89%
Multiple-Dry Years 2nd Year	1994	7888	89%
Multiple-Dry Years 3rd Year	1994	7888	89%
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			

Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

NOTES: Units in MG. Fairfield has three sources - 1) SCWA - State Water Project, 2) Settlement Water and 3) SCWA - Solano Project. This table outlines base years and volumes for source 3.

2014 SWP Water Supply Allocation

The extremely dry sequence from the beginning of January 2013 through the end of 2014 was one of the driest two-year periods in the historical record. Water year 2013 was a year with two hydrologic extremes. October through December 2012 was one of the wettest fall periods on record, but was followed by the driest consecutive 12 months on record. Accordingly, the 2013 SWP supply allocation was a low 35% of SWP Table A Amounts. The 2013 hydrology ended up being even drier than DWR's conservative hydrologic forecast, so the SWP began 2014 with reservoir storage lower than targeted levels and less stored water available for 2014 supplies. Compounding this low storage situation, 2014 also was an extremely dry year, with runoff for water year 2014 the fourth driest on record. Due to extraordinarily dry conditions in 2013 and 2014, the 2014 SWP water supply allocation was a historically low 5% of Table A Amounts. The dry hydrologic conditions that led to the low 2014 SWP water supply allocation were extremely unusual, and to date have not been included in the SWP delivery estimates

presented in DWR's 2015 Delivery Capability Report. It is anticipated that the hydrologic record used in the DWR model will be extended to include the period through 2014 during the next update of the model, which is expected to be completed prior to issuance of the next update to the biennial SWP Delivery Capability Report.

7.3 SUPPLY AND DEMAND ASSESSMENT

Average Water Years

Comparison of the projected normal water supply to the projected normal water use over the next 20 years in 5-year increments is shown in Table 7-2 below.

Table 7-2 Retail: Normal Year Supply and Demand Comparison

	2020	2025	2030	2035	2040 *(Opt)*
Supply totals *(autofill from Table 6-9)*	9,808	11,014	12,578	13,783	13,783
Demand totals *(autofill from Table 4-3)*	6,464	7,431	8,417	9,426	9,854
Difference	3,344	3,583	4,161	4,358	3,929
NOTES:					

Single Dry Water Years

Comparison of the projected single-dry-year water supply to the projected single-dry-year water use over the next 20 years, in 5-year increments is shown in Table 7-3 below.

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison

	2020	2025	2030	2035	2040 (Opt)
Supply totals	11,646	11,646	11,646	11,646	11,646
Demand totals	6,464	7,431	8,417	9,426	9,854
Difference	5,182	4,215	3,229	2,220	1,792

Multiple Dry Water Years

Comparison of the projected multiple dry year water supplies to the projected multiple dry year water use over the next 20 years, in 5-year increments is shown in Table 7-4 below.

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	11,001	11,001	11,001	11,001	11,001
	Demand totals	6,464	7,431	8,417	9,426	9,854
	Difference	4,537	3,570	2,584	1,575	1,147
Second year	Supply totals	11,001	11,001	11,001	11,001	11,001
	Demand totals	6,464	7,431	8,417	9,426	9,854
	Difference	4,537	3,570	2,584	1,575	1,147
Third year	Supply totals	11,001	11,001	11,001	11,001	11,001
	Demand totals	6,464	7,431	8,417	9,426	9,854
	Difference	4,537	3,570	2,584	1,575	1,147
Fourth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Fifth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Sixth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
NOTES:						

7.4 REGIONAL SUPPLY RELIABILITY

SCWA and the Participating Agencies entered into the "Solano Project Members' Agreement as to Drought Measures and Water Allocation" (the Drought Measures Agreement) in 1999. Per the Drought Measures Agreement, deliveries of Solano Project water are reduced based upon storage levels in Lake Berryessa. Once the storage level drops below 800,000 AF, as measured on April 1 of each year, 95% of contract amounts are delivered with 5% being stored in the reservoir as carryover. If the reservoir drops below 550,000 AF by April 1, 90% can be delivered and 10% is stored as carryover. Participating agencies have the ability to carryover more than this amount if they desire. Once the reservoir level is below 450,000 AF on April 1, the participating agencies can use their full allocation and any stored carryover. This regional effort adjusts the land use demands to increase the reliability of the water supply from the Solano Project for urban use.

SECTION 8 - WATER SHORTAGE CONTINGENCY PLANNING

The City of Fairfield addresses water shortages through two integrated components. First, we have a standard water shortage contingency plan which is included within this Urban Water Management Plan. Second, Fairfield has entered into the Solano Project Members' Agreement as to Drought Measures and Water Allocation. This agreement allows for the shifting of resources from agricultural to municipal and Industrial uses in the event of drought conditions and storage depletion. This second tier of drought response will provide for a regional approach to drought response.

8.1 STAGES OF ACTION

The City of Fairfield has developed a four staged response program to deal with water shortages. Each stage consists of specific prohibitions, regulations, fines, penalties, and rate structure to encourage the appropriate level of conservation. Even without a stage I declaration, there are a number of actions that are considered wasteful and are subject to restriction and penalties. However, Stages II, III and IV are most restrictive primarily due to the landscape irrigation component, which impose restrictions on landscape irrigation. The following table outlines the stages of action in the Water Shortage Contingency Plan.

Table 8-1 Retail
Stages of Water Shortage Contingency Plan

Stage	Complete Both	
	Percent Supply Reduction[1] *Numerical value as a percent*	Water Supply Condition *(Narrative description)*
Add additional rows as needed		
1	10%	Solano Project At or above 800,000 AF
2	25%	Solano Project 600,000 - 800,000 AF
3	35%	Solano Project 400,000 - 600,000 AF
4	50%	Solano Project 200,000 - 400,000 AF

[1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*

Also impacting the annual allocations from Lake Berryessa, SCWA and the Participating Agencies entered into the "Solano Project Members' Agreement as to Drought Measures and Water Allocation" (the Drought Measures Agreement) in 1999. Per the Drought Measures Agreement deliveries of Solano Project water are reduced based upon storage levels in Lake Berryessa. Once the storage level drops below 800,000 AF,

as measured on April 1 of each year, 95% of contract amounts are delivered with 5% being stored in the reservoir as carryover. If the reservoir drops below 550,000 AF by April 1, 90% can be delivered and 10% is stored as carryover. Participating agencies have the ability to carryover more than this amount if they desire. Once the reservoir level is below 450,000 AF on April 1, the participating agencies can use their full allocation and any stored carryover. For reference the following table has been prepared to clarify the amounts of water delivered and retained in Lake Berryessa depending on the storage in the lake.

Table 8-1a Solano Project Members' Agreement as to Drought Measures and Water Allocation Table of Drought-Induced Curtailments of Solano Project Deliveries					
Storage in Lake Berryessa, in acre-feet		800,000 - 1,600,000	550,000 - 800,000	450,000 - 550,000	less than 450,000
% of Annual Entitlement to be Restricted (Mandatory Curtailments)		0%	5%	10%	0%
% of Annual Entitlement Available		100%	95%	90%	100%
Annual Entitlement in acre-feet					
Solano Project Participating Agency	*Entitlements to Annual Deliveries*				
Solano Irrigation District	141,000	141,000	133,950	126,900	141,000
Fairfield	9,200	9,200	8,740	8,280	9,200
Vacaville	5,600	5,600	5,320	5,040	5,600
City of Suisun City	1,600	1,600	1,520	1,440	1,600
Maine Prairie	15,000	15,000	14,250	13,500	15,000
Vallejo	14,750	14,750	14,013	13,275	14,750
Total	187,150	187,150	177,793	168,435	187,150
Restricted Carryover in acre-feet					
Solano Irrigation District		0	7,050	14,100	0
Fairfield		0	460	920	0
Vacaville		0	280	560	0
City of Suisun City		0	80	160	0
Maine Prairie		0	750	1,500	0
Vallejo		0	738	1,475	0
Total		0	9,358	18,715	0

Note that these Solano Project storage volumes differ from those in the Drought Measures Agreement between Member Agencies. The Water Shortage Contingency Plan stages are meant to reduce demand while the Drought Measures Agreement stages are meant to adjust the supply priority in extreme conditions. Although not required by DWR, the Drought Measures Agreement has significant local impact affecting water supply reliability.

Table 8-1b Drought Response Measures Demand vs. Supply Reductions				
Water Conservation Requirements (Demand Reductions)			**Solano Project Drought Measures Agreement Drought-Induced Curtailments of Deliveries (the Drought Measures Agreement) (Supply Reductions)**	
Water Shortage Stage	Water Use Reduction Target	Solano Project Storage	Solano Project Storage	Percentage of Annual Entitlement to be Restricted
1	10%	Greater than 800,000 af	Greater than 800,000 af	0%
2	25%	600,000 - 800,000 af	550,000 - 800,000 af	5%
3	35%	400,000 - 600,000 af	450,000 - 550,000 af	10%
4	50%	200,000 - 400,000 af	Less than 450,000 af	0%

While tied directly to Lake Berryessa storage volumes, the Water Shortage Stages and Conservation Conditions can be declared by the City of Fairfield in response to any Water Shortage which is required, whether caused by system failures, natural catastrophes or drought conditions.

8.2 PROHIBITIONS ON END USES

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Uses *Drop down list* *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? *Drop Down List*
Add additional rows as needed			
Always	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Controliable water leaks	Yes
Always	Other	New Installation of single pass cooling systems using potable water	No
Always	Landscape - Limit landscape irrigation to specific times	Landscape Irrigation between Noon and 6:00 pm	Yes

Stage 1	Other - Prohibit use of potable water for washing hard surfaces	Washing of paved areas except to protect public health and safety	Yes
Stage 1	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Commercial carwash or with controlled water source and bucket	Yes
Stage 2	Other - Prohibit use of potable water for washing hard surfaces	Running water for washing of buildings	Yes
Stage 2	Landscape - Limit landscape irrigation to specific days	Landscape irrigation limited to 4 days per week	Yes
Stage 2	Water Features - Restrict water use for decorative water features, such as fountains		Yes
Stage 2	CII - Restaurants may only serve water upon request		No
Stage 2	CII - Lodging establishment must offer opt out of linen service		No
Stage 2	Other - Prohibit use of potable water for construction and dust control	Use reclaimed water for construction purposes if feasible	No
Stage 3	Landscape - Limit landscape irrigation to specific days	Landscape irrigation limited to 2 days per week	Yes
Stage 3	Other	Hydrant Flushing except where needed for health and safety	No
Stage 3	Other	Construction of new pools, spas, etc.	No
Stage 3	Other - Prohibit use of potable water for construction and dust control	Use only reclaimed water for construction purposes	No
Stage 4	Other	New Construction (without existing permit)	Yes
Stage 4	Other water feature or swimming pool restriction	Filling of pools, spas, decorative fountains,etc.	Yes
Stage 4	Landscape - Prohibit all landscape irrigation		Yes
Stage 4	Water Features - Restrict water use for decorative water features, such as fountains	Prohibit all water use for decorative fountains and water features	Yes

8.2.1 Landscape Irrigation

The following categories of prohibitions on landscape irrigation are listed in Table 8.2. The section below includes examples of restrictions or prohibitions that may fall within these categories.

- Prohibit runoff from landscape irrigation – The watering of lawns, grass, ground cover, shrubbery, or trees in a manner that causes water to runoff onto adjacent property, non-irrigated areas, or hard surfaces, such as driveways, sidewalks, and streets, is not permitted.
- Prohibit washing hard surfaces – The washing of sidewalks, walkways, driveways, parking lots, and all other hard surfaced areas by direct hosing is not permitted, except as may be necessary to protect public health and safety.
- Limit landscape irrigation to specific days of the week – Houses with even numbered addresses are permitted to irrigate ornamental landscapes and turf only on Monday, Wednesday and Friday. Odd numbered addresses are permitted to irrigate ornamental landscapes and turf only on Tuesdays, Thursdays and Saturdays.
- Limit landscape irrigation to specific times – Irrigation of ornamental landscapes and turf is limited to before noon and after 6 pm.
- Prohibit all landscape irrigation – During a Stage 4 condition, all landscape irrigation is prohibited, except with approved greywater use practices.

8.2.2 Commercial, Industrial, and Institutional (CII)

The following categories of prohibitions on CII are listed in Table 8.2. The section below includes examples of restrictions or prohibitions that may fall within these categories.

- All irrigation restrictions apply to CII properties as well.
- Running water for washing of buildings, etc.
- Lodging establishments must offer opt out of linen service – Lodging establishments are required to place notices in each room that inform the guest that they may opt out of linen service.
- Restaurants may only serve water upon request by a customer.

8.2.3 Water Features and Swimming Pools

The following categories of prohibitions on water features are listed in Table 8.2. The section below includes examples of restrictions or prohibitions that may fall within these categories.

- In stage 3 drought restrictions, no new pools or spas will be permitted. In a stage 4 drought restriction, no pools or spas should be re-filled.
- In stage 2, there are limits on decorative fountains and aesthetic water features that are not recirculating In stage 4, all decorative fountains and aesthetic water features are restricted.

8.2.4 Defining Water Features

Decorative water features serve no recreational or other use than decorative.

8.2.5 Other

The following categories of other prohibitions or restrictions are listed in Table 8.2. The section below includes examples of restrictions or prohibitions that may fall within these categories.

- Customers must repair leaks, breaks, and malfunctions in a timely manner; 24 hours after the leak has been discovered is considered a reasonable time period.
- Require hoses to have automatic shut off nozzles – The use of a hose to wash a motor vehicle is prohibited unless fitted with a shut-off nozzle or similar device that causes it to cease dispensing water immediately when not in use.
- Prohibit use of potable water for washing hard surfaces – Washing impermeable surfaces such as sidewalks, walkways, driveways, parking lots, and all other hard surfaced areas is prohibited, except as may be necessary to protect the public health and safety.

8.3 Penalties, Charges, Other Enforcement of Prohibitions

To enforce the conservation requirements, penalties and charges are established in increasing severity depending on how many offenses have occurred. A summary of the restrictions and the penalties follows.

Prohibitions, Penalties and Consumption Reduction Methods – Summary Table 8-2a

	Normal	Stage 1 – Recovery Program	Stage II – Drought Response	Stage III – Critical Drought	Stage IV – Emergency Response
RATE STRUCTURE		3 Tiers	3 Tiers	4 Tiers	4 Tiers
Single-Family Rates Surcharge/Tier 1	None	25% > 30ccf (approx 750 gpd)	40% > 20ccf (approx 500 gpd)	60% >14 ccf (approx 350 gpd)	100% >8 ccf (approx 200 gpd)
Surcharge/Tier 2	None	50% > 40ccf (approx 1000 gpd)	80% > 30ccf (approx 750 gpd)	120% > 20ccf (approx 500 gpd)	200% > 16ccf (approx 400 gpd)
Surcharge/Tier 3	None	N/A	N/A	200% > 30ccf (approx 750 gpd)	300% > 20ccf (approx 500 gpd)
Exceptions/Water Allotments	None	Large Family Large Lot Medical	Large Family Large Lot Medical	Large Family Medical	Medical
Non Single-Family Commercial/Industrial	No Volume Increase	3% Volume Increase	7% Volume Increase	11% Volume Increase	15% Volume Increase
Multi-family	No Volume Increase	3% Volume Increase	7% Volume Increase	11% Volume Increase	15% Volume Increase
Irrigation	No Volume Increase	5% Volume Increase	11% Volume Increase	500% Volume Increase	1000% Volume Increase
PROHIBITIONS	Controllable water leaks New installation of single-pass cooling systems using potable water Landscape Irrigation between Noon and 6:00 pm (Daylight savings time only)	Normal prohibitions plus… Washing of paved areas except to protect public health and safety Decorative fountains and aesthetic water features that are not recirculating	Stage I prohibitions plus… Running water for washing of buildings, etc. Landscape irrigation (limited to 4 days per week or less)	Stage II prohibitions plus… Landscape irrigation (limited to 2 days per week or less) Hydrant flushing (except where needed for health and safety) Construction of new pools, spas, etc.	Stage III prohibitions plus… New construction (without existing permit) Filling of pools, spas, decorative fountains, etc. Landscape irrigation (none) Decorative fountains and aesthetic water features (all)
REGULATIONS		Washing of vehicles to be done at commercial car wash or with controllable water source such as bucket and hose with shut-off nozzle	Stage I regulations plus… Restaurants serve water only upon request Hotels, etc. to post notice or drought conditions, provide option to not wash towels and linens Reclaimed water for construction if feasible.	Stage II regulations plus… Reclaimed water only for construction projects	Stage III regulations
FINES/PENALTIES					
1st Offense	Written warning	Written warning	Written warning	$50 fine	$100 fine
2nd Offense	$25 fine	$50 fine	$50 fine	$100 fine	$200 fine
3rd Offense	$50 fine	$100 fine	$100 fine	$200 fine	$350 fine
4th Offense	$100 and installation of flow restrictor	$250 and installation of flow restrictor	$250 and installation of flow restrictor	$350 and installation of flow restrictor	$500 and installation of flow restrictor

8.4 CONSUMPTION REDUCTION METHODS

Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference *(optional)*
Add additional rows as needed		
Stage 1 - 4	Implement or Modify Drought Rate Structure or Surcharge	Single Family Tiered Rate Surcharges in blocks (3 or 4 depending on the Stage of Response)
Stage 1 - 4	Improve Customer Billing	Non Single Family Volume Charge Increases
Stage 1 - 4	Other	Behavior Prohibitions as in Table 36
Stage 1 - 4	Other	Regulations imposed on Private, Business and Construction Practices
Stage 1 - 4	Other	Fines and Penalties (Increasing with Stage)
NOTES: Penalty for excess use Stage 0 - 4 Penalty for non-correction of water waste practice Stage 0 - 4 Installation of Flow Restrictor upon 4th offense Stage 0 - 4		

8.5 DETERMINING WATER SHORTAGE REDUCTIONS

The City of Fairfield fully meters our production and consumption. Measurements, along with state mandated requirements will be analyzed to compare water usage between different stages of the WSCP to determine water shortages and conservation savings targets.

8.6 REVENUE AND EXPENDITURE IMPACTS

City of Fairfield revenue monitoring and expenditure plans will be analyzed carefully each month to project when revenue measures will be required to assure financial stability of the water utility.

8.7 RESOLUTION OR ORDINANCE

The resolution adopting the Urban Water Management Plan and approving the Water Shortage Contingency Plan is attached.

CITY OF FAIRFIELD

RESOLUTION NO. 2016 - 137

RESOLUTION OF THE CITY COUNCIL APPROVING THE 2015 CITY OF FAIRFIELD URBAN WATER MANAGEMENT PLAN (UWMP)

WHEREAS, the City of Fairfield prepared and adopted an updated Urban Water Management Plan in conformance with the requirements of state law as administered by the Department of Water Resources; and

WHEREAS, the water conservation programs implemented from the existing Urban Water Management Plan have been measurably successful; and

WHEREAS, the City of Fairfield has reviewed the Urban Water Management Plan and prepared an update in conformance with the State of California Department of Water Resources requirements

NOW, THEREFORE, THE COUNCIL OF THE CITY OF FAIRFIELD HEREBY RESOLVES:

Section 1. The Urban Water Management Plan update is hereby adopted and ordered filed with the City Clerk.

Section 2. The City Manager is hereby authorized and directed to file the UWMP Update with the State of California Department of Water Resources by July 1, 2016, and adjacent cities and counties by July 7, 2016.

Section 3. The City Manager is hereby authorized and directed to implement the Water Conservation Programs as detailed in the adopted Urban Water Management Plan Update, including recommendations to the City Council regarding necessary procedures, rules, and regulations to carry out effective and equitable water conservation programs.

PASSED AND ADOPTED this 7th day of June 2016, by the following vote:

AYES: COUNCILMEMBERS: PRICE/TIMM/BERTANI/MOY/VACCARO

NOES: COUNCILMEMBERS: NONE

ABSENT: COUNCILMEMBERS: Timm

ABSTAIN: COUNCILMEMBERS: NONE

Harry T. Price
MAYOR

ATTEST:
Karen L. Rees
CITY CLERK
pw

8.8 CATASTROPHIC SUPPLY INTERRUPTION

Practices to offset catastrophic losses have been in place for years in the City of Fairfield. The following table lists potential supply interruptions and actions which have been taken to offset these potential disruptions.

Catastrophic Supply Interruption Plan

Possible Catastrophe	Summary of Actions
Regional Power Outage	City has installed approximately 2 days of finished water storage. The system is pressurized almost entirely by gravity feed from the reservoirs. Some pump stations have been affected by power outages in the past. The utility has responded by sending portable generators to provide stop-gap pumping power.
Earthquake	City has installed approximately 2 days of finished water storage. City is constructing a redundant water transmission main to be completed in 2020.
Flooding	Communications systems are prepared to allow for distribution system routing and contamination containment. Public communications are established to notify of any water use restrictions. Distribution testing procedures are established to check for contamination restrictions under backflow or intrusion conditions.
Landslide	Bypass pipelines have been constructed around the most high-risk landslide locations for the Putah South Canal. Second water source bypasses as well.

Figure 7

Any or all of these components in each stage may be enacted, by determination of the Public Works Director, in order to meet the demand reduction goal for that response stage.

8.9 MINIMUM SUPPLY NEXT THREE YEARS

Water Code Section 10632(b) requires that the UWMP estimate 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. Fairfield has two water supply sources, the State Water Project and the Solano Project.

Table 8-4 Retail: Minimum Supply Next Three Years

	2016	2017	2018
State Water Project	1,190	1,190	1,190
Settlement Water	1,923	1,923	1,923
Solano Project	7,888	7,888	7,888
TOTAL	11,001	11,001	11,001

NOTES: This forecast is based on multi-year drought conditions.

SECTION 9 – DEMAND MANAGEMENT MEASURES

9.1 DEMAND MANAGEMENT MEASURES FOR RETAIL AGENCIES

This section describes the planned conservation efforts of the City of Fairfield to meet our water use targets.

9.1.1 Water Waste Prevention Ordinance

(CUWCC Foundational BMP 1)

A water waste ordinance explicitly states that the waste of water is to be prohibited. The ordinance prohibits specific actions that waste water, such as excessive runoff from landscape irrigation, and use of a hose outdoors without a shut off nozzle.

Our water waste prevention ordinance is in place at all times and is not dependent upon a water shortage for implementation. However, the water waste ordinance includes increasingly restrictive prohibitions that are implemented in response to shortages. Details of the ordinance provisions are found in section 8.

Stage 2, 3, & 4 Conditions correlate with increasing severity of water shortage, based on Lake Berryessa storage levels. Residential and commercial watering restrictions also become increasingly strict. In June of 2014, the City of Fairfield declared a Stage 2 Drought Condition in response to the State Water Resources Control Board's Emergency Regulation for Statewide Urban Water Conservation. The City hired an enforcement officer to provide education, issue warnings and issue tickets to those violating the restrictions.

Effectiveness Method for Evaluation of Effectiveness: Fairfield's Water Waste Prohibition ordinance is based on available water supplies, correlated to Stage I – IV water levels at Lake Berryessa. Fairfield considers its customer water use prohibitions to be highly effective and a solid safeguard towards protecting our water supplies in the event of drought or catastrophe. The effectiveness of the ordinance is measured by analyzing the amount of production and water usage during a Stage 1 Minimum Condition compared to a Stage 2 Drought Condition. Water production and usage was significantly lower in 2015, attributed to the Stage 2 watering prohibitions in place.

Estimated Water Savings: While it may be possible to quantify the water savings related to the prohibitions listed above, assumptions must be made as to the performance of the equipment and the amount of equipment and fixtures that are affected.

9.1.2 Metering

(CUWCC Foundational BMP 1)

Fairfield has been fully metered for decades. We currently have installed AMR drive-by meters and read each location monthly. This provides an enormously useful improvement over trend accuracy than our prior (pre July 2014) bi-monthly billing. We are also beginning to install cell-connected meters that provide a daily download of data. This year we will provide a mobile service to all of Fairfield's water service customers that will allow budget notifications on the customer's cell phone or computer. These tools currently help provide long term analytics to address system issues and will soon provide real-time tools to help customers save water and stop leaks within 24 hours.

9.1.3 Conservation Pricing

(CUWCC Foundational BMP 1)

All accounts in Fairfield are charged by volume for at least a portion of their bill. Irrigation accounts are charged exclusively by the use of water. With the court decisions related to tiered pricing, we do not anticipate moving away from our current practice of using a single-tier rate structure.

Effectiveness: Rates can be studied to see if they change customer water use patterns.

Estimated Water Savings: No method has been identified to determine water savings from conservation pricing at this time.

9.1.4 Public Education and Outreach

Public Information
(CUWCC Foundational BMP 2)

As a member of the Solano Urban Water Conservation Committee (UWCC), Fairfield is involved in numerous public information activities. The lead agency for the UWCC is the Solano County Water Agency (SCWA) which has promoted regional collaboration for public information outreach and other water conservation efforts.

Fairfield participates in various local media avenues to dispense water conservation information. Press releases, newspaper articles, radio announcements, and the “Solano Saves Water” website are all components of the public information program. Events include booths at Earth Day and Fourth of July events, where home water conservation items are distributed. Water conservation pamphlets and flyers are posted at City Hall counters and water conservation booths. In addition, a Water-Wise Gardening website is promoted, and a well-received demonstration garden is in nearby Vallejo at the Six Flags Discovery Kingdom amusement park.

Marketing Strategy: The UWCC meets monthly to evaluate public information programs and to plan future water conservation activities. Announcements, flyers, newspaper ads, Facebook or website links have all been methods for marketing the program. Members of the UWCC often attend public events as exhibitors or participants, and are able to assess the effectiveness of programs.

Tracking of Participation: The numbers of attendees at public events are a gauge for tracking participation. Radio listenership, newspaper circulation, and website hits are all reviewed to assess the program's success. Furthermore, the numbers of cards, brochures, and free conservation devices distributed are tabulated to determine public interest.

Planned Implementation Schedule and Budget: Fairfield will maintain the public information program through 2020 with continual evaluation of the program's viability. SCWA will apply for grants on behalf of member agencies if possible.

Method for Evaluation of Effectiveness: The popularity of public programs is a measurement of the effectiveness of the program.

Estimated Water Savings: Estimating water savings is difficult to quantify. The reduction in overall water use by Fairfield in 2015 is strongly attributed to public information efforts, both locally and at the state level.

School Education
(CUWCC Foundational BMP 2)

Fairfield participates in a regional program, the School Water Education Program (SWEP), which retains an education consultant to administer water conservation education. The consultant coordinates K-12 programs regionally for Suisun City, Fairfield, Benicia, Vallejo, Dixon, Vacaville, and Travis Air Force Base. The consultant visits classrooms, provides in-class education, and trains educators. State-wide curriculum teaching standards are adhered to. Activities include school assemblies, field trips, videocontests, and public programs, such as Youth Ag Day. More information on the school educational program can be found on the Solano Resource Conservation District (RCD) website at http://www.solanorcd.org/resources/swep.html

The program is very successful and the education consultant has worked with the following schools located in Suisun City, or with local students that attend nearby schools:
- Suisun Valley Elementary
- Green Valley Middle School
- Green Valley Elementary
- Tolenas Elementary
- Rodriquez High School

Marketing Strategy: SWEP will continue to market the program by maintaining the solid relationships that the program has fostered with schools and educators, and reaching out to other educators.

Tracking of Participation: The number of students, educators, and schools are tracked to evaluate the success of programs.

Planned Implementation Schedule and Budget: Fairfield will continue is partnership with SWEP, and collaborate with other regional efforts that focus on water conservation. Fairfield's share of the SWEP budget is $8,640 per year.

Method for Evaluation of Effectiveness: School response from educators is the greatest way to evaluate effectiveness. Comments from schools have been positive, with numerous invitations for the Education Consultant to return in subsequent school years, and expand the program.

Estimated Water Savings: Considering the difficulty of placing a numerical value for water savings, the effectiveness of the program can be the gauge for the program's success.

9.1.5 Water Loss Prevention and Correction
(CUWCC Foundational BMP 1)

Fairfield uses the American Water Works Association Manual of Practice M36, Water Audits and Loss Control Programs to assess needs in controlling water loss. Losses have been consistently in the 8.5% range.

9.1.6 Water Conservation Program Coordination and Staffing Support
(CUWCC Foundational BMP 1)

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Water Conservation Coordinator
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1000 Webster Street
Fairfield, CA 94533
Phone: (707) 428-7487
E-mail: awalker@fairfield.ca.gov

9.1.7 Other Demand Management Measures

The following efforts listed below are managed on a trial basis, enabling staff time to assess the effectiveness of the programs.

Water Efficiency Landscape Program
(Turf Replacement Rebate Program)
The turf replacement program provides rebates to residential and commercial customers who replace turf with drought tolerant plants. College age interns perform inspections to ensure that applicants meet pre-project and post-project criteria. Turf must have been maintained before removal, and the renovated area must not include artificial turf products or non-permeable surfaces. Plantings must cover at least 50% of the project area when mature. Rebates are offered once per customer, on a first-come-first served basis, and subject to funding availability. The program is projected to continue through 2020 at the same level of participation as in 2015.

Water Survey Programs for Single Family and Multifamily Residential Customers
(CUWCC BMP 3)
Fairfield operates a comprehensive water survey program, in place from spring through fall of each year, and free to its customers. The program includes both Single Family and Multifamily Account holders. A Water Conservation Representative provides on-site checks for leaks and indoor plumbing flow rates, evaluates irrigation system efficiency, and advises on irrigation scheduling and irrigation timer adjustments. In addition, water conservation information and water efficient plumbing devices are distributed to homeowners.

Marketing Strategy: The program is marketed by identifying the top 10-20% of water users, and sending direct mail letters, promoting the program and informing customers of the scope of the surveys. Flyers are also distributed at City Hall, public events, and on the Solano County Water Agency's water conservation website at www.solanosaveswater.com. Interested customers are reached by phone to schedule appointments or answer questions. Follow-up is made by mail or phone. Staff reviews the response rate and may re-send letters or consider expanding the mailing list to the top 20% of water users.

A baseline has been developed to analyze annual participation, determine potential water savings, and evaluate the effectiveness of the program.
Estimated Water Savings: Water savings for this category is difficult to quantify. SSWA could estimate conservation values by comparing pre-survey metering data with post-survey metering data but variables affect the savings calculations such as changes in weather patterns, behavioral changes due to the drought, and, and the homeowner's willingness to implement the survey recommendations.

Residential Plumbing Retrofit to pre-1992 single family and multifamily residences
(CUWCC BMP 3)

The distribution of water-saving devices to single-family and multifamily homes occurs on a year-round basis. The program includes the distribution of indoor plumbing kits, each containing a low-flow shower head, kitchen and bathroom faucet aerators, and a toilet leak detection dye tablet, all free-of charge.

This measure is very popular among residents. Based on replacement rates since 2002, both single-family and multifamily residences have reached the 75% target figure for retrofit.

Marketing Strategy: The indoor kits are available at City Hall, public events, and distributed as part of the residential water survey program. The kits and other devices such as hose shut-off nozzles, shower timers, and garden hose timers are also promoted as part of the Solano Saves Water website, and listed on flyers and cards.

Large Landscape Conservation Programs and Incentives
(Programmatic BMP 5)

Large Landscape Surveys

SCWA offers free large landscape site surveys for commercial and institutional accounts with dedicated irrigation meters. The surveys are conducted by a certified irrigation consultant, and includes an evaluation of water use and irrigation system performance, with recommendations given to improve irrigation efficiency. Landscaped areas are measured by aerial photo or by hand measurement. Water budgets are then developed by comparing actual water use with local evapotranspiration (ETo) rates. As part of the program, a Smart Irrigation Controller rebate is also offered (see web site: http://solanosaveswater.org/).

Marketing Strategy: The program is marketed to large landscape accounts. Commercial and institutional customers are the major participants. Promotion is by phone calls, site visits, direct mail, website, and flyers distributed at public events.

Estimated Water Savings: Pre-audit metering data is compared with post-audit data to estimate water savings. The final audit large landscape audit reports, prepared by consultants, also estimate potential water savings.

Large Landscape Water Budget Program
Fairfield implements a monthly water budget program for large landscape accounts, primarily city parks and schools. Water budgets are developed for each account whereby water use is compared to evapotranspiration rates from the nearest CIMIS station in Concord, CA.
Staff reads water meters on a monthly basis, and a Water Conservation Specialist prepares a monthly report for each account. The report provides account holders with valuable information for reducing water use and meeting water conservation targets.
Effectiveness is determined by tracking pre-budget and post-budget water use for each account holder. SSWA plans to continue the program through 2020.

High-efficiency Washing Machine Rebate Programs
(CUWCC Programmatic BMP 3)

A clothes washer rebate program is ongoing and has been popular program. Goals for the program include providing incentives for homeowners to replace older inefficient washers with models that use up to 70% less water and energy than conventional models. SCWA administers the program on behalf of its member agencies, and PG&E's rebate program for energy conserving washers allows homeowners to benefit from a combination of rebates. In 2015, the rebate amount was $150.00, and plans are in place for $100.00 rebates for 2016-2020.

Marketing Strategy: Information for the program is posted on the Solano Saves Water website http://solanosaveswater.org/. Flyers are posted at City Hall, public events, and articles have been published in local newspapers.

Tracking of Participation: SSWA compiles participation and rebate data annually, and develops baseline levels of participation.

Planned Implementation Schedule and Budget: SCWA will continue the existing program
.
Method for Evaluation of Effectiveness: The program's participation is an intangible measurement of the public's interest in conserving water and energy, and a way to assess effectiveness.

Estimated Water Savings: Water savings are difficult to quantify due to the lack of data for the older replaced washers. Tracking the ratings of the old washers could provide an estimated water savings per household, but many variables exist, including behavioral changes in water usage due to the drought.

Commercial, Industrial and Institutional Conservation Programs
(CUWCC Programmatic BMP 4)

In conjunction with SCWA and the UWCC, we implement a water conservation program for our CII customers. The program is regionally based and a Water Conservation Specialist is retained to manage the effort. The CII program consists of complimentary indoor water use surveys, outdoor irrigation system audits, and direct installation of efficiency fixtures, such as showerheads, and high efficiency toilets.

Financial incentives to upgrade irrigation systems, plumbing fixtures, and/or water using appliances are offered through the Water Savings Incentives Program (WSIP). Up to $10,000 in rebates may be available to public service agencies, and a maximum of $5,000 is available to commercial and customers. Customers must agree to a water survey as part of eligibility.

Marketing Strategy: SSWA conducts outreach and researches grants to strengthen its programs. Current marketing components include:

- Telephone calls and site visits to CII customers
- Marketing the program on the Solano Saves Water website (http://solanosaveswater.org/)
- Generate and distribute flyers that advertise the program
- Conduct audits as requested

Tracking of Participation: Participation rates of three account holders per year are expected to continue for the CII and WSIP programs through 2020.

Method for Evaluation of Effectiveness: The effectiveness of the program is determined by reviewing the numbers of participants, analyzing costs versus benefits, and estimating water savings.

Estimated Water Savings: Water savings from the CII program is calculated pre-installation water demand compared to post-installation demand. However, CII customers have reduced water use due to the drought, especially outdoor irrigation, and therefore water savings estimates are challenging.

Residential ULFT Replacement Program
(CUWCC Foundational BMP 3)

The California State website SaveOurWater.com offers economic incentives to individual home owners for the purchase and installation of high efficiency toilets (HETs). The HETs must meet the current Water Sense Specifications (WSS) or updated standards. Qualifying HETs must replace units using 3.5 gallons or more per flush (gpf). Residential rebates are $100 each, with a maximum of one HET. Commercial rebates are available through the Water Savings Incentive Program (WSIP), and the criteria and rebated amount are managed on a case by case basis. Replacements through the WSIP are completed by a professional plumbing contractor at no cost to the owner.

Marketing Strategy
Marketing avenues for 2015 – 2020 include telephone calls, direct mail, website, and flyers placed at City Hall and public events booths.
Tracking of Participation: The number of replacements and rebates are tracked and reviewed to gauge participation levels.
Planned Implementation Schedule and Budget: The state and local programs will continue to participate in the High Efficiency Toilet Program, and continue to apply for grants to assist with funding. The emphasis on toilet retrofits may increase in the next few years as legislative timelines come into effect.
Method for Evaluation of Effectiveness: An analysis of cost vs. benefit can be performed, combined with estimated water savings, and the participation levels of residents and commercial accounts.

9.2 Implementation over the Past Five Years

Conservation achievements from 2010 to 2015 is best illustrated by the following set of graphs.

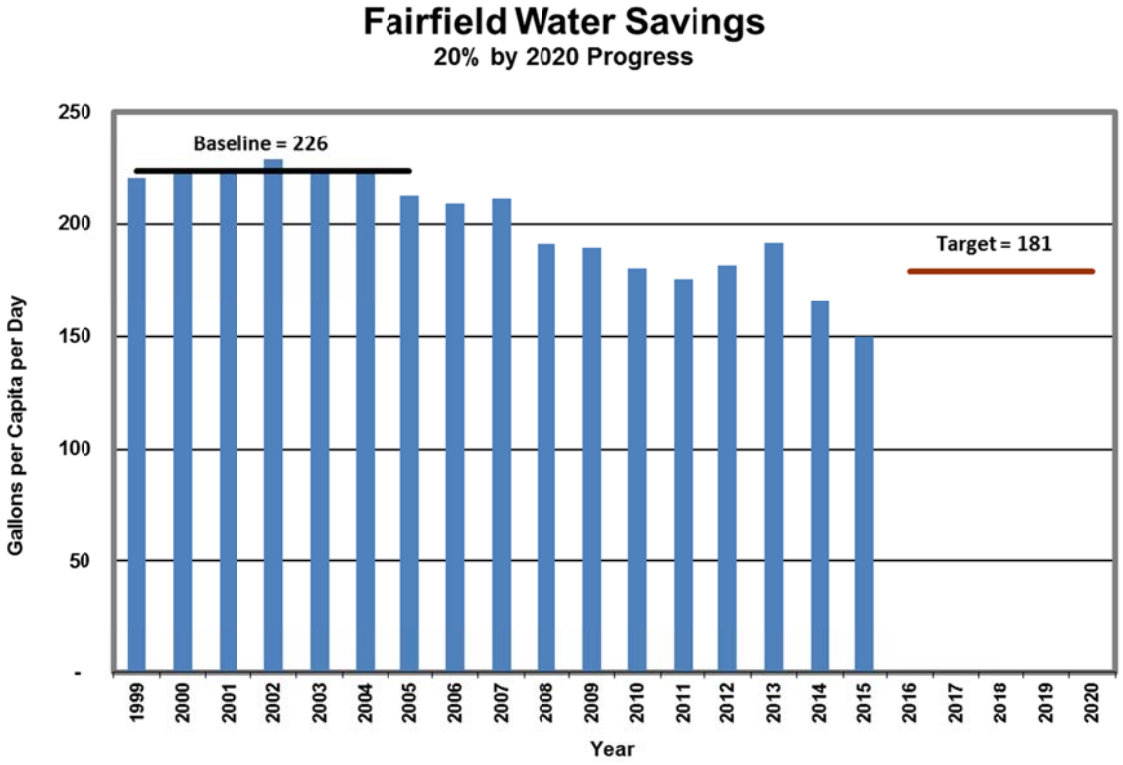
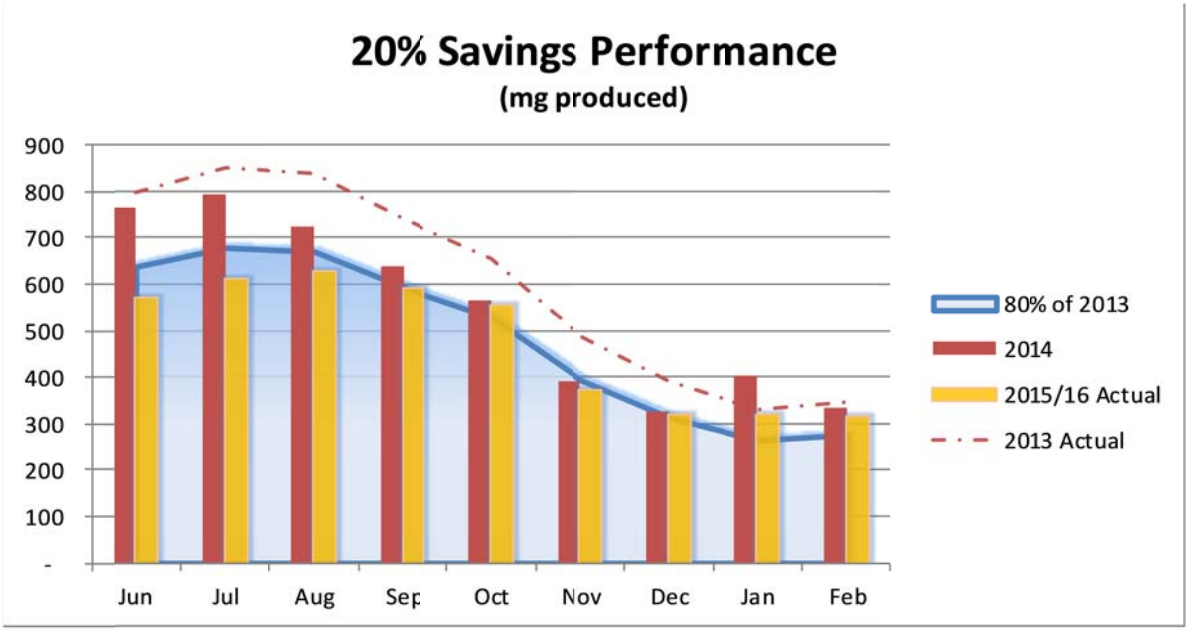


Figure 8

This graph shows the gallons per capita per day beginning in baseline years. The baseline is 226 gallons per capita per day. Our interim target for 2015 is 10% reduction or 204 gpcd. Our 2020 target is a 20% reduction, or 181 gpcd. In 2015 the gallons per capita per day was 150, a 33.6% reduction from our baseline water use per person.

Since the mandatory restrictions were imposed by the State Water Resources Control Board in June 2014, Fairfield has had an aggressive savings effort. The City achieved a cumulative 21% savings against our 20% target over the window of June 2014 to February 2015.



80% Production Targets

mg	2013 Actual	80% of 2013	2014 Actual	2015/16 Actual	% Saved
Jun	798	639	764	573	28.2%
Jul	849	679	793	615	27.6%
Aug	837	669	724	628	24.9%
Sep	742	593	639	595	19.8%
Oct	656	525	567	555	15.5%
Nov	490	392	389	372	24.0%
Dec	389	311	324	319	17.9%
Jan	330	264	403	322	2.4%
Feb	345	276	335	317	8.0%

Figure 9

The nature and extent of each measure that has been implemented by the City of Fairfield over the past five years, from 2010 through 2015, is presented by measure in the previous section.

9.3 Planned Implementation to Achieve Water Use Targets

The City of Fairfield will continue to implement the programs under section 9.1 and carefully monitor water savings over the next five years.

9.4 Members of the California Urban Water Conservation Council

The City of Fairfield will continue to implement the sound water conservation practices outlined in the California Urban Water Conservation Council Memorandum of Understanding.

As a part of this report, CUWCC members are to incorporate our annual conservation reports. The attached reports are still subject to approval and modification to represent the conservation activities of the City of Fairfield. As changes are made over the next several years, conservation practices will be adjusted to reflect the Best Management Practices of the water industry.

SECTION 10 - PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

There is an extensive set of notifications during the adoption process, documentation of submissions to the Department of Water Resources, and distribution of completion notices that are a required part of this Urban Water Management Plan. The following documents and actions are listed as requirements of the 2015 UWMP.

- A copy of the adoption resolution
- Documentation about how the 2015 Urban Water Management plan will be implemented.
- Documentation that within 30 days of submitting the Urban Water Management Plan to DWR, the adopted UWMP has been or will be submitted to the California State Library and any city or county to which the supplier provides water.
- Documentation that within 30 days of submitting the UWMP to DWR, the adopted UWMP has been or will be available for public review during normal business hours.

Many of these actions and documentation that demonstrate compliance with the UWMP development guidelines will be completed after this draft is reviewed and acted on by the City of Fairfield.

10.1 NOTICE OF PUBLIC HEARING

Fairfield provided the following letter to the surrounding water agencies and interested parties to give notice of the Public Hearing set for adopting the 2015 Urban Water Management Plan. Table 10-1 shows the listing of surrounding cities and counties receiving notice. In addition to the Cities and Solano County, Fairfield sent notifications to the following entities:

Solano County Public Works
Maine Prairie Water District – Don Holdener
Solano Economic Development Corp
Solano County Water Agency - Roland Sanford, General Manager
Suisun Resource Conservation District – Steve Chappel
Solano County Department of Resource Management - Bill Emlen
Sierra Club Solano Group
TAFB - 60 AMW Public Affairs
Fairfield-Suisun Sewer District -Talyon Sortor
Solano Irrigation District - Kevin King
Suisun -Solano Water Authority - Paul Lum
Solano County Water Agency - Andy Florendo

CITY OF FAIRFIELD

Founded 1856 — Incorporated December 12, 1903

Home of
Travis Air Force Base

DEPARTMENT OF PUBLIC WORKS — March 16, 2016

City of Fairfield - Andy Walker
1000 Webster Street
Fairfield, CA 94533-4883

Re: City of Fairfield – Notice of Intent to Update Urban Water Management Plan (UWMP)

Dear Mr. Walker

This letter serves as notice that the City of Fairfield intends to update its current Urban Water Management Plan (UWMP). Updates are required every five (5) years. This effort helps ensure we can proCity of Fairfield - Andy Walkervide the community we serve with a reliable supply of high-quality water to meet current and future demands.

To ensure sufficient opportunity of public feedback and suggestions, the City of Fairfield UWMP will be available at the City of Fairfield's Public Works department on the 3rd Floor of City Hall or on the city of Fairfield's website (www.fairfield.ca.gov) by the May 17, 2016 public hearing. The plan will be considered for adoption on June 7, 2016 at the City of Fairfield City Council Meeting. You may submit comments in writing to:

Andrew K. Walker
PW Department
1000 Webster Street,
Fairfield, CA 94533

Should you have any questions, please feel free to contact me at either awalker@fairfield.ca.gov or at (707) 428-7487.

Sincerely,

Andrew K. Walker
Senior Management Analyst

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
City of Benicia	☑	☑
City of Dixon	☑	☑
City of Fairfield	☑	☑
City of Rio Vista	☑	☑
City of Suisun	☑	☑
City of Vacaville	☑	☑
City of Vallejo	☑	☑
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Solano County	☑	☑

10.2 PUBLIC HEARING AND ADOPTION

To ensure sufficient opportunity of public feedback and suggestions, the City of Fairfield UWMP was made available prior to the May 17, 2016 public hearing. The plan was considered for adoption on June 7, 2016 at the City of Fairfield City Council Meeting.

10.3 PLAN SUBMITTAL

To satisfy Water Code Section 10635(b), within 30 days of adoption, the City of Fairfield was required to submit a copy of the 2015 UWMP to the DWR, the California Library Records Hall (Sacramento), and to any city or county to which Fairfield provides water.

10.4 PUBLIC AVAILABILITY

To ensure sufficient opportunity of public feedback and suggestions, the City of Fairfield UWMP will be available at the City of Fairfield's Public Works department on the 3rd Floor of City Hall and on the city of Fairfield's website (www.fairfield.ca.gov/gov/depts/pw/utility/water/default.asp).

CITY OF FAIRFIELD

RESOLUTION NO. 2016 - 137

RESOLUTION OF THE CITY COUNCIL APPROVING THE 2015 CITY OF FAIRFIELD URBAN WATER MANAGEMENT PLAN (UWMP)

WHEREAS, the City of Fairfield prepared and adopted an updated Urban Water Management Plan in conformance with the requirements of state law as administered by the Department of Water Resources; and

WHEREAS, the water conservation programs implemented from the existing Urban Water Management Plan have been measurably successful; and

WHEREAS, the City of Fairfield has reviewed the Urban Water Management Plan and prepared an update in conformance with the State of California Department of Water Resources requirements

NOW, THEREFORE, THE COUNCIL OF THE CITY OF FAIRFIELD HEREBY RESOLVES:

Section 1. The Urban Water Management Plan update is hereby adopted and ordered filed with the City Clerk.

Section 2. The City Manager is hereby authorized and directed to file the UWMP Update with the State of California Department of Water Resources by July 1, 2016, and adjacent cities and counties by July 7, 2016.

Section 3. The City Manager is hereby authorized and directed to implement the Water Conservation Programs as detailed in the adopted Urban Water Management Plan Update, including recommendations to the City Council regarding necessary procedures, rules, and regulations to carry out effective and equitable water conservation programs.

PASSED AND ADOPTED this 7th day of June 2016, by the following vote:

AYES: COUNCILMEMBERS: PRICE/TIMM/BERTANI/MOY/VACCARO

NOES: COUNCILMEMBERS: NONE

ABSENT: COUNCILMEMBERS: Timm

ABSTAIN: COUNCILMEMBERS: NONE

Harry T. Price
MAYOR

ATTEST:
Karen L. Rees
CITY CLERK
pw

Appendix

UWMP Checklist

This checklist is developed directly from the Urban Water Management Planning Act and SB X7-7. It is provided to support water suppliers during preparation of their UWMPs. Two versions of the UWMP Checklist are provided – the first one is organized according to the California Water Code and the second checklist according to subject matter. The two checklists contain duplicate information and the water supplier should use whichever checklist is more convenient. In the event that information or recommendations in these tables are inconsistent with, conflict with, or omit the requirements of the Act or applicable laws, the Act or other laws shall prevail.

Each water supplier submitting an UWMP can also provide DWR with the UWMP location of the required element by completing the last column of eitherchecklist. This will support DWR in its review of these UWMPs. The completed form can be included with the UWMP.

If an item does not pertain to a water supplier, then state the UWMP requirement and note that it does not apply to the agency. For example, if a water supplier does not use groundwater as a water supply source, then there should be a statement in the UWMP that groundwater is not a water supply source.

Checklist Arranged by Water Code Section

CWC Section	UWMP Requirement	Subject	Guidebook	UWMP Location

2015 UWMP – Appendix Checklist

			Location	*(Optional Column for Agency Use)*
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Page 31**
10608.20(e)	Retail suppliers shall 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.	Baselines and Targets	Chapter 5 and App E	**Page 25**
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Page 30**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Page 31**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**N/A**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Page 70**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**N/A**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Page 31**
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year	Plan Preparation	Section 2.1	**Page 12**

	after it has become an urban water supplier.			
10620(d)(2)	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.	Plan Preparation	Section 2.5.2	**Page 13,14**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Page 39**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Page 68**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Page 70**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Page 15**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Page 18**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Page 20**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Page 20**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Page 19**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Page 32**
10631(b)	Indicate whether groundwater is an	System	Section 6.2	**Page 32**

	existing or planned source of water available to the supplier.	Supplies		
10631(b)(1)	Indicate whether a groundwater management plan has 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.	System Supplies	Section 6.2.2	**N/A**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**N/A**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**N/A**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**N/A**
10631(b)(3)	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	System Supplies	Section 6.2.4	**N/A**
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**N/A**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Page 39**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Page 41**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace	Water Supply Reliability Assessment	Section 7.1	**N/A**

	that source.			
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Page 36**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Page 21**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Page 22**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Page 58**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**N/A**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Page 37**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**N/A**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**N/A**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**N/A**

10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**N/A**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Page 23**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Page 47**
10632(a)(2)	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.	Water Shortage Contingency Planning	Section 8.9	**Page 56**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Page 56**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Page 50**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Page 55**
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Page 53**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the	Water Shortage Contingency Planning	Section 8.6	**Page 55**

	urban water supplier, and proposed measures to overcome those impacts.			
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Page 55**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Page 55**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Page 33, 13**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Page 34**
10633(b)	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.	System Supplies (Recycled Water)	Section 6.5.2.2	**Page 34**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Page 34**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Page 35**
10633(e)	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.	System Supplies (Recycled Water)	Section 6.5.4	**Page 35**

10633(f)	Describe the actions 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.	System Supplies (Recycled Water)	Section 6.5.5	**Page 35**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Page 35**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Page 39**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Page 41**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**N/A**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Page 13**
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Page 68**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier	Plan Adoption, Submittal, and Implementatio	Sections 10.2.1	**Page 68**

	provides water.	n		
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Page 70**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Page 70**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Page 70**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Page 70**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Page 70**

Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Page 12**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the	Plan Preparation	Section 2.5.2	**Page 13**

	area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.			
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Page 13**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Page 15**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Page 18**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Page 19**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Page 19**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Page 19, 27**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Page 21**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Page 22**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Page 23**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Page 31**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along	Baselines and Targets	Chapter 5 and App E	**Page 25**

	with the bases for determining those estimates, including references to supporting data.			
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Page 31**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Page 31**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Page 31 – N/A**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**N/A**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Page 31**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Page 38**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Page 32**
10631(b)(1)	Indicate whether a groundwater management plan has 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.	System Supplies	Section 6.2.2	**N/A**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**N/A**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description	System Supplies	Section 6.2.2	**N/A**

	of the amount of water the supplier has the legal right to pump.			
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**N/A**
10631(b)(3)	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	System Supplies	Section 6.2.4	**N/A**
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**N/A**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Page 36**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Page 37**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**N/A**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**N/A**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**Page 39**

10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Page 33**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Page 33**
10633(b)	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.	System Supplies (Recycled Water)	Section 6.5.2.2	**Page 33**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**N/A**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Page 33**
10633(e)	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.	System Supplies (Recycled Water)	Section 6.5.4	**Page 35**
10633(f)	Describe the actions 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.	System Supplies (Recycled Water)	Section 6.5.5	**Page 33**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Page 33**
10620(f)	Describe water management tools and options to maximize resources and	Water Supply Reliability	Section 7.4	**Page 46**

	minimize the need to import water from other regions.	Assessment		
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Page 39**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Page 41**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**N/A**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Page 39**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Page 41**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Page 47**
10632(a)(2)	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.	Water Shortage Contingency Planning	Section 8.9	**Page 56**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Page 56**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency	Section 8.2	**Page 50**

		Planning		
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Page 55**
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Page 53**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Page 55**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Page 55**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Page 55**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Page 58**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**N/A**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**N/A**

10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Page 70**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Page 68**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Page 70**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**N/A**
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Page 68**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Page 68**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Page 70**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Page 70**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Page 70**

	later than 30 days after adoption.			
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Page 70**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Page 70**