JULY 2011

City of Woodland

FINAL

2010 URBAN WATER MANAGEMENT PLAN

Prepared for
CITY OF WOODLAND

Prepared by
WEST YOST ASSOCIATES

Urban Water Management Plan

Prepared for

City of Woodland

July 2011

WEST YOST ASSOCIATES
Consulting Engineers

204-00-09-28

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ES.1 INTRODUCTION

This 2010 Urban Water Management Plan (UWMP) has been prepared for the City of Woodland (City) by West Yost Associates (West Yost). This 2010 UWMP for the City describes the current and future water uses, sources of supply and its reliability, and existing and planned conservation measures.

This 2010 UWMP complies with the Urban Water Management Planning Act (UWMP Act), which was originally established by Assembly Bill 797 (AB 797) on September 21, 1983. The law requires water suppliers in California providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet per year (AFY) of water to prepare and adopt an UWMP every five years.

Several changes to the UWMP Act have been approved in recent years. Revisions to the UWMP Act include requiring a robust supply and demand comparison, as well as detailed discussion of groundwater resources, water recycling and desalination. Also, this 2010 UWMP is required to comply with the requirements of the Water Conservation Act of 2009 Senate Bill x7-7 (SBx7-7) which was enacted in November 2009. SBx7-7requires urban retail water suppliers, such as the City, to develop per capita water use targets to be met by 2015 and 2020. The overall statewide objective of SBx7-7 is to reduce per capita water use by 20 percent by the year 2020.

The requirements of SBx7-7 extended the deadline for adoption of the 2010 UWMPs for urban retail water suppliers from December 31, 2010 to July 1, 2011.

ES.2 PLAN ADOPTION

The City held a Public Hearing on July 19, 2011 to receive comments from members of the public and other interested parties. City Resident Christine Shewmaker provided comments which included adding a summation of climate change in the Executive Summary, incorporating an action item for the City's continued adaption and mitigation related to climate change, addressing the energy embodied in water, and encouraging rainwater capture. The comments and how they are addressed in the final 2010 UWMP are included in Appendix I.

The City adopted this 2010 UWMP on _____, 2011. Copies of the adoption resolution are included in Appendix C.

Following plan adoption, the 2010 UWMP was submitted to the Department of Water Resources (DWR) and to the California State Library. Copies of the adopted 2010 UWMP were also provided to the following agencies within 30 days of adoption:

- Yolo County Flood Control District
- RD 2035
- Farm Bureau
- Woodland Chamber of Commerce, Water Task Force
- Water Resources Association of Yolo County
- Yolo County
- City of Davis
- Woodland-Davis Clean Water Agency

Within 30 days of submitting the adopted 2010 UWMP to DWR, copies of the adopted 2010 UWMP will be made available during normal business hours at the following location:

- City of Woodland, Public Utilities Department Engineering Division, 655 North Pioneer Avenue

The adopted 2010 UWMP will also be available on the City's website (www.cityofwoodland.org).

Should this 2010 UWMP be amended or changed, copies of amendments or changes to the plan shall be submitted to DWR, the California Stat Library, and any city or county within which the City provides water supplies within 30 days after adoption.

ES.3 PLAN OVERVIEW

ES.3.1 Service Area

The City and water service area encompass an area of approximately 14.5 square miles. Located within an important agricultural region, the City is completely surrounded by agricultural lands. The City serves the entire area encompassed by its City Limits including residential, commercial, industrial, and fire use. Municipal water supply for the City is currently based solely on groundwater. However, a joint project between the City of Woodland, the City of Davis, and the University of California, Davis is currently under way to incorporate surface water as a primary water supply source.

The City's population has grown at an average rate of 1.2% from 2000 through 2010 according to population estimates from DOF. Growth in the last few years has slowed significantly due to the national and statewide economic downturn.

For this 2010 UWMP, growth projections are based on recently updated growth projections from the Sacramento Area Council of Governments (SACOG) which takes into consideration the economic downturn and other local events. The recently published projections available from SACOG provide population estimates for the years 2013, 2018, and 2035. A straight-line interpolation was used to determine the population for the years ending in 0 or 5.

ES.3.2 Water Demand

Unlike past UWMPs, the projected water demand in this 2010 UWMP is primarily driven by the per capita water use targets mandated by the Water Conservation Act of 2009 (SBx7-7). As part of the City's compliance with SBx7-7, the City has established its baseline per capita water use and has established and adopted a 2015 interim per capita water use target and a 2020 final per capita water use target. The development of the City's baseline and target per capita water use are described in Chapter 4 and Appendix E and are summarized as follows:

- Baseline Per Capita Water Use: 289 gallons per capita per day (gpcd)
- 2015 Interim Per Capita Water Use Target: 260 gpcd
- 2020 Final Per Capita Water Use Target: 231 gpcd

Projected water demands were then determined by multiplying the per capita water use targets by the projected service area populations. Projected water demands are summarized in Table ES-1.

Table ES-1. City of Woodland Projected Water Use[(a)]

Service Area	2015 Water Use, af/yr	2020 Water Use, af/yr	2025 Water Use, af/yr	2030 Water Use, af/yr	2035 Water Use, af/yr
City of Woodland	16,400	15,650	16,600	17,550	18,500

(a) Based on projected population multiplied by the SBx7-7 per capita water use targets.
(b) Totals rounded to nearest 10 af/yr.

ES.3.3 Demand Management and Water Conservation

The City's compliance with the established SBx7-7 targets will be achieved through the implementations of the City's conservation efforts. As described in Chapter 8, the City has implemented or is in the process of implementing several of the Best Management Practices (BMPs) included in the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU).

Implementation of these programs will allow the City to achieve the water reduction goals required by SBx7-7. In particular, the City's residential meter implementation program and billing based on metered usage, anticipated to be completed by the end of 2011, will help the City to monitor and track actual water use and reduce per capita water use through the City's water service area. The completion of the metering program will also allow the City to perform system water audits and assist the City in identifying and reducing system losses due to pipeline leaks.

ES.3.4 Projected Water Supply

As described in Chapter 5, the City currently relies solely on groundwater to meet all customer demand needs. However, plans are proceeding to integrate surface water as a supply source into the system. The City is currently not pursuing recycled water opportunities beyond the current effluent discharge to Tule Canal primarily due to the high EC levels in the effluent. Once surface water is integrated into the City's supply system, the City will determine the economic feasibility of including recycled water in the future.

The City currently relies completely on groundwater to meet all system water demands. Even though the City is able to achieve compliance with drinking water standards, the City will struggle more and more in the future to meet its wastewater discharge requirements because of natural concentrations of salinity, boron, and selenium in its groundwater supply. In addition, while the City meets all current drinking water standards changes in the requirements may severely impact the City's ability to meet chromium IV (Cr 6) based on proposed standards. The current proposed public health goal (PHG) is 0.02 µg/l. The groundwater wells within the City have been tested for Cr 6 and the results show a range of 10 to 35 µg/l and an average of 19 µg/l. The introduction of surface water as a primary supply source in the future will greatly improve the water quality for these constituents. While the City is planning to use surface water as a

primary supply starting in 2016, groundwater will continue to supply all water needs until 2016 and will be used to supplement surface water in the future.

The City currently does not use surface water supplies to meet demands. However, the City has partnered with the City of Davis (Davis) and the University of California at Davis (UCD) (collectively referred to as the Woodland-Davis Clean Water Agency (WDCWA)) for a joint project that would provide surface water supply for use within each of their service areas to meet a portion of their respective water supply needs. The new surface water supply will be integrated into a conjunctive use supply program, with surface water serving as the City's primary water supply in the future, and groundwater being used to help meet summer peak and emergency demands. The new surface water supply will be somewhat limited in summer months during drought periods, and groundwater pumping will be used in these periods to provide a larger portion of the water supply.

Table ES-2 summarizes the anticipated use of available water supplies to meet future demands.

Table ES-2. City of Woodland Current and Planned Water Supplies, af/yr

Water Supply	Existing and Future Water Supplies during Normal Years					
	2010 (actual)	2015	2020	2025	2030	2035
Primary Water Right (30358)[a,b,c]	—	—	11,470	12,158	12,684	13,197
CPG Water Right[a,b]	—	—	5,750	5,750	5,750	5,750
Available Groundwater[d]	13,921	16,400	14,7050	13,620	12,550	12,550

(a) Surface water treatment plant to be on-line in 2016.
(b) Initial phase of surface WTP to be constructed to a capacity of 40 mgd. Woodland capacity of WTP approximately 57.5 percent.
(c) Three months of Term 91 restrictions (June through August) for normal years based on historic Term 91 information.
(d) Groundwater supplies all water needs through 2015. After surface water is available, the City will maintain adequate groundwater to meet emergency conditions in the future.

As described in Chapter 7, based on the anticipated reliability of the City's water supplies and conservation measures during normal, single dry, and multiple dry years, the City anticipates that it has adequate water supplies to meet projected water demands during all hydrologic conditions through 2035.

ES.3.5 Water Shortage Contingency Plan

During events of water shortages due to prolonged drought conditions or other water supply outages, the City has an established Water Conservation Regulations Ordinance which specifies reduction objectives ranging from 15 to 50 percent of normal demand, depending on the water shortage stage declared. Currently the stages of action are determined by the City Council based on hydrologic conditions. In the future, with the addition of surface water as the primary water supply, the City is reviewing the triggers for declaring the various stages based on Term 91 and Shasta Critical Year Reduction information. The City plans to have updated triggers for the declaration of a Stage of Action for the 2015 UWMP.

ES.3.6 Climate Change

Although the DWR Guidebook notes that a climate change discussion is optional for an UWMP and not required by the UWMP Act, the following information and analysis is provided to ensure a comprehensive and conservative presentation of information for purposes of the City's 2010 UWMP.

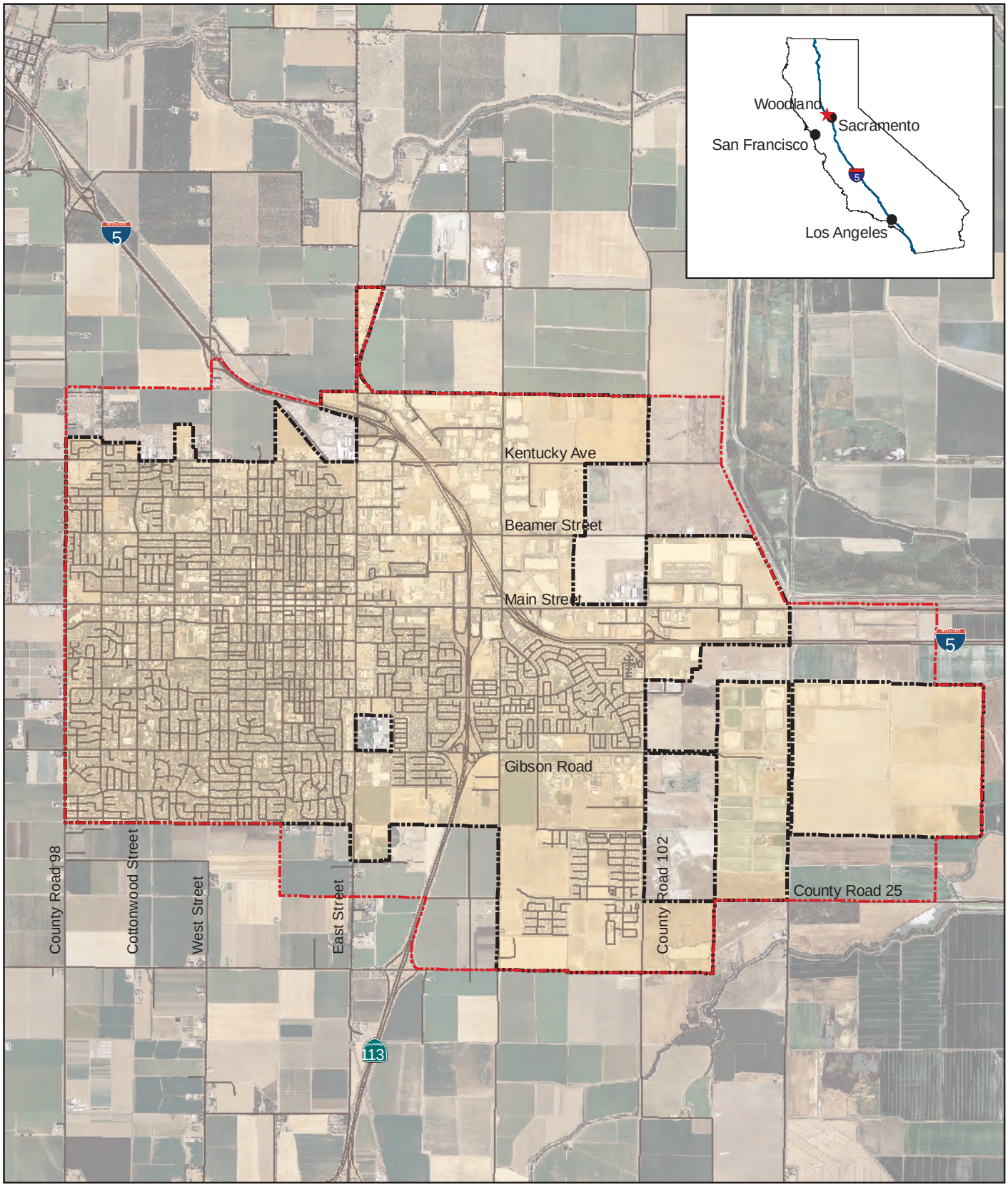
ES.4 ON-LINE SUBMITTAL TO DWR USING DOST

This 2010 UWMP will be submitted to DWR using the DWR On-line Submittal Tool (DOST) when the DOST system becomes available.

ES.5 DEOMONSTRATION OF PLAN COMPLETENESS

This 2010 UWMP complies with the requirements of the Urban Water Management Planning Act, as amended by recently enacted legislation. DWR's Urban Water Management Plan Checklist, as provided in the 2010 UWMP Guidebook as completed by West Yost for demonstration of the plan's compliance with applicable requirements. A copy of the completed checklist is included in Chapter 11.

N:\Clients\204 Woodland\00-09-28 City of Woodland 2010 UWMP Update\GIS\Figures\Figure 3-1 Service Area.mxd 4/11/2011



LEGEND

Planning Area Boundary

City Limits

N

0 2,500 5,000

Scale in Feet

FIGURE ES-1

City of Woodland
Urban Water Management Plan 2010

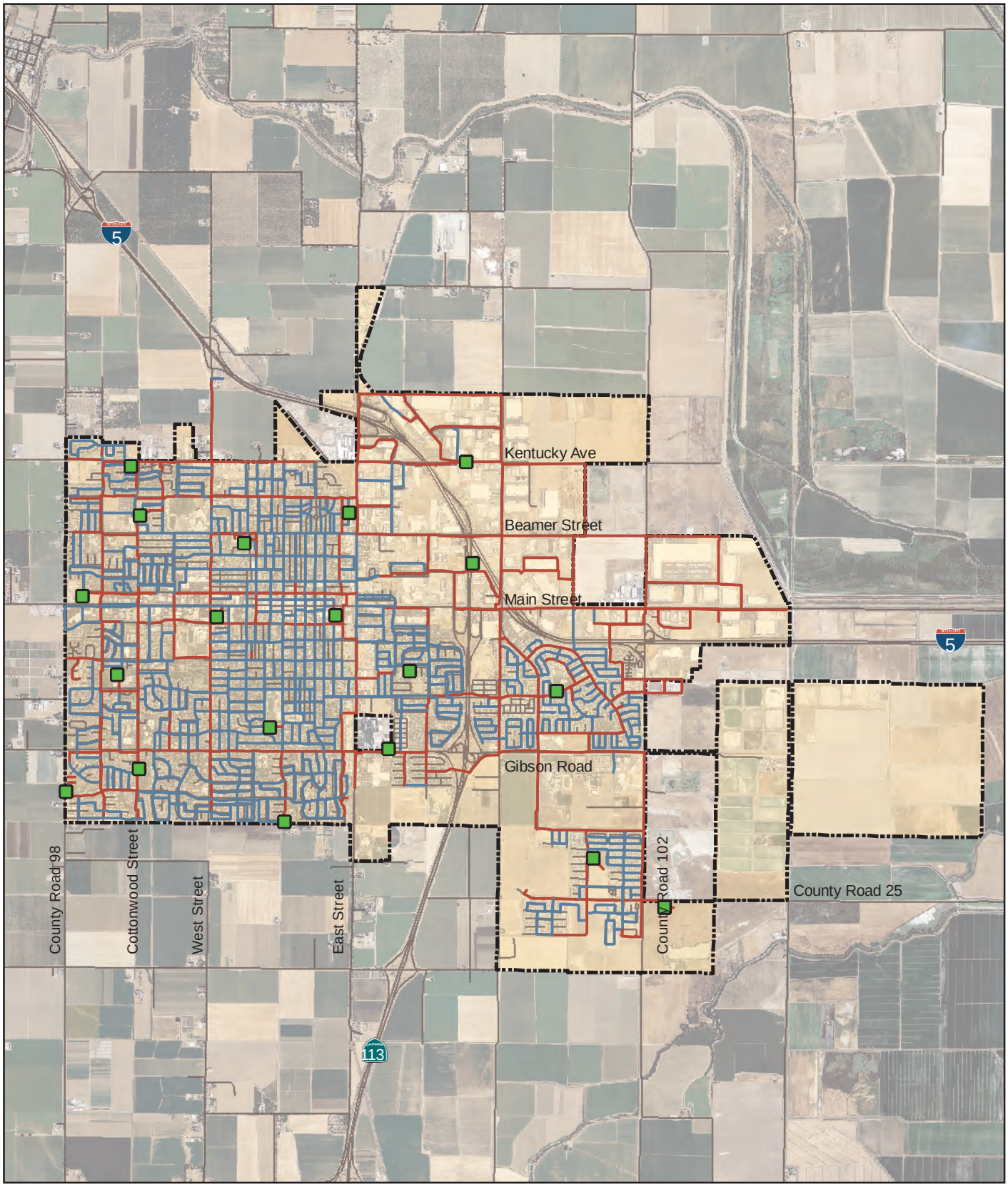
SERVICE AREA

WOODLAND

WEST YOST ASSOCIATES

Consulting Engineers

N:\Clients\204 Woodland\00-09-28 City of Woodland 2010 UWMP Update\GIS\Figures\Figure 3-2 System Facilities.mxd 4/13/2011



LEGEND

- Existing Well
- 8" and less diameter
- 10" and greater diameter
- City Limits

N

0 2,500 5,000

Scale in Feet

FIGURE ES-2

City of Woodland
Urban Water Management Plan 2010

EXISTING SYSTEM FACILITIES

WOODLAND

WEST YOST ASSOCIATES
Consulting Engineers

1.1 PURPOSE

10620 (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

10621 (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.

10608.20 (j) An urban retail water supplier shall be granted an extension to July 1, 2011 for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

In accordance with Urban Water Management Planning Act, California Water Code, Division 6, Part 2.6, Section 10610 et seq. (UWMP Act), every urban water supplier in California 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, is required to prepare and adopt an Urban Water Management Plan (UWMP). The adopted UWMP must then be updated at least once every five years on or before December 31, in years ending in five and zero. An urban water supplier that does not prepare, adopt and submit its UWMP to the California Department of Water Resources (DWR) is ineligible to receive certain grant funding or receive drought assistance from the state.

The approval of Senate Bill 7 on November 10, 2009, California Water Code, Division 6, Part 2.55, Section 10608 et seq. (SBx7-7), resulted in changes to the reporting requirements of the 2010 UWMP and extended the deadline for urban retail water suppliers to adopt their 2010 UWMPs to July 1, 2011. Under SBx7-7, DWR was tasked with establishing technical methodologies by October 1, 2010 for calculating, among other things, baseline demand and urban water use targets. SBx7-7 also required DWR to develop a fourth alternative method for calculating base daily per capita water use by December 31, 2010.

Preparation and adoption of an UWMP, including a discussion on the status of the City's implementation of demand management measures, is required for an urban water supplier to be eligible to receive a water management grant or loan administered by DWR, the State Water Resources Control Board (SWRCB), or the Delta Stewardship Council (California Water Code Sec 10631.5(a)).

In 2010, the City of Woodland (City) supplied 13,920 acre-feet (af)[1] of potable water to 14,352 water services[2] in the City's water service area. Accordingly, the City is an "urban retail water supplier" that is subject to the requirements of both the UWMP Act and SBx7-7.

[1] Source: City of Woodland Pumping Production Records (1960-present annual water production.xls), water supply shown is for 2010 calendar year.

1.2 PLAN CONTENTS, ORGANIZATION AND FORMAT

This 2010 UWMP for the City has been prepared in accordance with the requirements of the UWMP Act and SBx7-7 and pursuant to guidance provided by DWR in its Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan (March 2011), which includes, among other things, the DWR Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (For the Consistent Implementation of the Water Conservation Act of 2009) (February 2011). (These DWR guidance documents are collectively referred to herein as the DWR Guidebook.) This 2010 UWMP contains information which is necessary to plan for the efficient use of urban water supplies within the City's water service area. This information is contained in the following chapters:

- Chapter 1: Introduction
- Chapter 2: Plan Preparation, Coordination and Adoption
- Chapter 3: System Description
- Chapter 4: System Demands
- Chapter 5: System Supplies
- Chapter 6: Water Supply Reliability and Water Shortage Contingency Planning
- Chapter 8: Supply vs. Demand
- Chapter 8: Demand Management Measures
- Chapter 9: Climate Change
- Chapter 10: Adoption and Implementation of the UWMP
- Chapter 11: Completed UWMP Checklist

Appendices to this UWMP include the following additional information:

- Appendix A: UWMP Act
- Appendix B: Agency and Public Notices Regarding UWMP Preparation and Adoption
- Appendix C: Resolution to adopt this updated UWMP
- Appendix D: Woodland Housing Element Update
- Appendix E: SBx7-7 Technical Memorandum
- Appendix F: City of Woodland Groundwater Management Plan, CD
- Appendix G: Public Comments Addressed from GWMP
- Appendix H: Water Conservation Regulations Ordinance
- Appendix I: Response to Public Comments

[2] Source: City of Woodland, Public Water System Statistics for Calendar Year 2010.

To demonstrate compliance with applicable requirements of the UWMP Act and SBx7-7, applicable water code provisions are shown in italics at the beginning of each chapter or section. Furthermore, to demonstrate completeness and assist DWR in their review of this 2010 UWMP, where applicable, tables in this 2010 UWMP include corresponding DWR table numbers from the DWR Guidebook.

1.3 GLOSSARY OF TERMS AND ACRONYMS

The following terms and acronyms have been used throughout this 2010 UWMP to improve document clarity and readability.

ADAF	Average day annual flow
ADWF	Average dry weather flow
Af	Acre-feet
afa, af/yr	Acre-feet per year
BMPs	Best Management Practices
CEQA	California Environmental Quality Act
Cfs	Cubic feet per second
CI	Commercial and industrial
CII	Commercial, industrial and institutional
CIMIS	California Irrigation Management Information System
City	City of Woodland
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
DMMs	Demand Management Measures; fourteen water conservation measures included in the UWMP Act
DOF	State of California Department of Finance
DWR	State of California Department of Water Resources
Et_o	Evapotranspiration
FY	Fiscal year
FYP	Flex Your Power
GIS	Geographic Information System
gpcd	Gallons per capita per day
gpd	Gallons per day
GWMP	Groundwater Management Plan
HCF	Hundred cubic feet
MEF	Modified Energy Factor
MG	Million gallons
mgd	Million gallons per day

Mg/L	Milligrams per liter
MOU	Memorandum of Understanding
NRDC	National Resources Defense Council
OES	Office of Emergency Services
PG&E	Pacific Gas and Electric Company
RWQCB	Regional Water Quality Control Board
RWRF	Regional Wastewater Reclamation Facility
SACOG	Sacramento Area Council of Government
SOI	Sphere of Influence
SWRCB	State Water Resource Control Board
SWTF	Surface Water Treatment Facility
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UAFW	Unaccounted-for Water
ULFT	Ultra Low Flush Toilet
USBR	United States Bureau of Reclamation
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act; enacted in 1983; establishes requirements for a UWMP
WDCWA	Woodland-Davis Clean Water Agency
WF	Water Factor
WMP	Water Master Plan
WRCC	Western Regional Climate Center
WRF	Wastewater Reclamation Facility
West Yost	West Yost Associates; preparer of this UWMP

2.1 PLAN PREPARATION

10620 (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3.

10620 (e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

In September 2010, the City of Woodland (City) authorized West Yost Associates (West Yost) to prepare the City's updated 2010 UWMP (Water Code § 10620(e).). The information contained herein is based on data obtained from City staff, data included in available water supply planning documents, and review and update of data contained in the City's previous UWMPs. The City's first UWMP was prepared in 1985 and the most recent UWMP was prepared in 2005.

As discussed in Chapter 4, this 2010 UWMP is also consistent with the City's future water supply plan recommended in the City's on-going Davis Woodland Water Supply Project.

2.1.1 Public Involvement

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies.

It is the City's policy to encourage public participation when adopting plans such as the 2010 UWMP. Therefore, the City sought public input while developing this 2010 UWMP. The Draft 2010 UWMP was available for public review at least two weeks prior to the scheduled Public Hearing, which was held on July 5, 2011. During this review period, the Draft 2010 UWMP was available at the City's offices during normal business hours, posted on the City's web page, distributed to interested parties (see below), and made available at the Woodland Public Library. In accordance with applicable law, including but not limited to Water code sections 10608.26 and 10642, and Government Code sections 6066, notices for the Public Hearing were published in the Daily Democrat newspaper, a publication of general circulation within the City's jurisdiction. Copies of the public notices are provided in Appendix B of this 2010 UWMP.

2.1.2 Other Agency Involvement

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

10621 (b) Every urban water supplier required to prepare a plan pursuant to this part shall notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

The City Public Works Department staff met and coordinated the development of this 2010 UWMP with the City Council and other City departments. Information from the City's Draft Water Focus Study, Groundwater Management Plan, and General Plan was used in preparation of this UWMP.

The City is a member agency of the Water Resources Association (WRA) of Yolo County. Groundwater for the City is obtained from a common groundwater basin that is utilized by local agricultural operations. The City notified the County, and the other local water purveyors regarding the preparation of this 2010 UWMP and distributed copies of the Draft 2010 UWMP for their review and comment. Copies of the agency notices are provided in Appendix B of this 2010 UWMP. Applicable comments were then incorporated into the final adopted 2010 UWMP. Table 2-1 provides a summary of coordination with these other agencies.

Table 2-1. Coordination with Other Agencies (DWR Table 1)

Agency	Was Notified about UWMP Preparation	Was Sent Copy of Draft UWMP	Commented on the Draft UWMP	Attended Public Meetings
Yolo County Flood Control and Water Conservation District	✓	✓		
Reclamation District (RD) 2035	✓	✓		
Farm Bureau	✓	✓		
Woodland Chamber of Commerce, Water Task Force	✓	✓		
Water Resources Association of Yolo County	✓	✓		
Yolo County	✓	✓		
City of Davis	✓	✓		
Woodland-Davis Clean Water Agency	✓	✓		

2.1.3 Plan Adoption

10642. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

Following the public hearing held on July 5, 2011, the Woodland City Council adopted the 2010 UWMP on July 19, 2011 (see City Resolution in Appendix C).

In accordance with Sections 10635(b) and 10644 of the UWMP Act, the City will submit copies of the adopted 2010 UWMP to the Department of Water Resources (DWR), the California State Library, and Yolo County within 30 days after its adoption. In accordance with Section 10645, the City will also make the adopted 2010 UWMP available for public inspection during normal business hours by maintaining a copy at the City's Public Utilities Department Engineering Division office (located at 655 N. Pioneer Ave) and posting a copy on the City webpage at www.cityofwoodland.org.

2.1.4 Plan Review and Update

10640. The supplier shall …. periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10621 (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.

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

The City will periodically review the adopted 2010 UWMP to determine if any amendments or changes are warranted. Amendments or changes to the UWMP will be adopted pursuant to the requirements of the UWMP Act (Water Code § 10640.). Copies of amendments or changes to the UWMP will be submitted to DWR, the California State Library, and Yolo County within 30 days after adoption (Water Code § 10644).

Per the UWMP Act, the next required update of the City's UWMP will be due by December 31, 2015.

2.1.5 Compliance with the California Environmental Quality Act

10652. The California Environmental Quality Act does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish or wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

As set forth in Section 10652 of the UWMP Act, the California Environmental Quality Act (CEQA) does not apply to the preparation and adoption of UWMPs or the implementation of potential actions included in the Water Shortage Contingency Plan (per Section 10632) (see Chapter 6).

However, in compliance with CEQA requirements, the City has prepared an Environmental Impact Report for the proposed future water supply discussed in this UWMP (see Chapter 5).

2.1.6 Resource Maximization and Import Minimization

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

The City currently relies on local groundwater for all their water supplies and they have strived to maximize use of this limited water resource. The groundwater supply has been able to meet the state and federal drinking water requirements. However, natural concentrations of salinity, boron, and selenium in the groundwater supply have made it difficult for the City to meet its wastewater discharge requirements. In the future, the City is planning on introducing a surface water supply source to their system. The surface water is expected to improve treated wastewater effluent quality discharged by the City.

The City currently relies on local groundwater for all of its water supplies and it has strived to maximize use of this limited water resource. The groundwater supply has been able to meet the state and federal drinking water requirements. However, natural concentrations of salinity, boron, and selenium in the groundwater supply have made it difficult for the City to meet its wastewater discharge requirements. In the future, the City is planning on introducing a surface water supply source to its system. The surface water is expected to improve treated wastewater effluent quality discharged by the City. (A full discussion of the City's current and projected surface and groundwater supplies is included in Chapter 5 of this 2010 UWMP.)

The City continues to implement new operational and management measures to improve efficiency within the system. A few of the measures include: installing a SCADA system to monitor and record well and tank flows as well as pressures in the system; once meter installation is complete, the City will bill all customers on a tier rate based on water consumption; an optimization report was prepared for the City to provide alternatives for managing and blending the future water supply to maintain the best water quality for all customers; and, the City will initiate feasibility and pilot studies on the use of Aquifer Storage and Recover (ASR) in the future to maximize the use of surface water throughout the year and various hydrologic conditions.

By reducing the demand of current water customers and assuring that all new water uses are efficient, the amount of water the City will need to serve existing and future customers has been reduced.

3.1 WATER SERVICE AREA

10631 (a) Describe the service area of the supplier; including current and projected population, climate and other demographic factors affecting the supplier's water management planning. The project population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

3.1.1 Service Area Physical Description

The City of Woodland (City), incorporated in 1871, is located in the Sacramento Valley, approximately six miles west of the Sacramento River and about 20 miles northwest of the City of Sacramento. The City and water service area encompass an area of approximately 14.5 square miles. Located within an important agricultural region, the City is completely surrounded by agricultural lands. The City serves the entire area encompassed by its City Limits including residential, commercial, industrial, and fire use. Figure 3-1 provides a location map of the service area. Municipal water supply for the City is currently based solely on groundwater. However, a joint project between the City of Woodland, the City of Davis, and the University of California, Davis is currently under way to incorporate surface water as a primary water supply source. (Please see additional discussion in Chapter 5 below.

3.1.2 Climate

Woodland has a Mediterranean climate. Summers are mild to hot and dry, and winters are cool and rainy, with an annual average precipitation of approximately 18 inches. The local annual average of maximum daily temperature is 76 degrees (F). Average rainfall over the last six years was 19.1 inches. The region is subject to wide variations in annual precipitation. Water year 2006 was a relatively wet year with 28.7 inches of rainfall while water year 2007 was relatively dry with only 9.4 inches of rain. Table 3-1 presents climatic data for the Woodland area.

These climate characteristics highly influence the City's water use. As described in Chapter 4, the City's water use in the summer months is significantly higher than that in the winter, reflecting increased water use for irrigation purposes during the hot, dry summers.

3.2 SERVICE AREA POPULATION

Historical and projected population were developed using data collected from the City, Sacramento Area Council of Governments (SACOG) and the California Department of Finance (DOF). The actual methodology used to develop existing and future population estimates is described in more detail below.

Table 3-1. Climate Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Average Et_o, inches[a]	0.99	1.73	3.37	5.47	6.89	8.12	8.49	7.48	5.79	4.24	2.04	1.16	55.77
Average Max Temperature, °F[b]	54.0	60.5	66.8	73.9	82.4	90.5	96.4	94.9	90.0	79.4	65.2	54.8	75.7
Average Min Temperature, °F[b]	37.5	40.9	43.6	46.8	51.8	56.1	57.8	56.6	55.3	49.7	42.6	37.8	48.0
Average Rainfall, inches[b]	3.92	3.52	2.48	1.24	0.51	0.17	0.01	0.04	0.25	0.91	2.03	3.33	18.42

(a) Source: CIMIS Website: wwwcimis.water.ca.gov, Station 6 Davis, California (1982 to Present), Monthly Average Et_o Report, August 2006.
(b) Source: Western Regional Climate Center (WRCC) website: www.wrcc.dri.edu, Station 049781 Woodland 1 WNW, California. Period of record: 3/1/1906 to 8/31/2009.

3.2.1 Historical Water Service Area Population

The City's population has grown at an average rate of 1.2% from 2000 through 2010 according to population estimates from DOF. Household size within the City is estimated at about 2.9 persons per household with approximately 19,806 total households in 2010. Table 3-2 shows historical population and annual growth rate for the City from 2000 through 2010.

3.2.2 Projected Future Water Service Area Population

In the future, the population of the City's water service area is anticipated to continue to grow. A range of projected populations has been made based on different projection methodologies. The first methodology was based on the projections developed by SACOG for the year 2025. The 2025 estimates were then extrapolated through 2035 based on continuation of the long-term population trends. This estimate was used to determine projected water use for the Davis Woodland Water Supply Project (DWWSP) EIR prepared in 2007.

SACOG recently updated their population projections to the year 2035 based on current economic and housing trends. The updated projections reflect a slower growth than what was used when the DWWSP EIR was prepared. The recently published projections available from SACOG provide population estimates for the years 2013, 2018, and 2035. A straight-line interpolation was used to determine the population for the years ending in 0 or 5.

Table 3-2. City of Woodland Water Service Area Population (2000-2010)

Year	City of Woodland Population[a,b]	Annual Growth Rate
2000	49,155	—
2001	50,897	3.5%
2002	51,483	1.2%
2003	51,790	0.6%
2004	52,755	1.9%
2005	53,535	1.5%
2006	53,193	-0.6%
2007	54,318	2.1%
2008	55,664	2.5%
2009	56,464	1.4%
2010	55,468	-1.8%

(a) 2000-2009 population estimates from State of California, DOF, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 benchmark. Sacramento, California, May 2010.
(b) 2010 population estimates from State of California, DOF, Census 2010 Redistricting Data Summary File, March 8, 2011.

In comparison to the estimates used for the DWWSP EIR, the updated estimates from SACOG results in lower population projections and are considered to reflect the current trends in the housing market and economy. Table 3-3 summarizes both the high and low projected population estimates for the City's water service area.

Table 3-3. City of Woodland Water Service Area Population Projections (DWR Table 2)

Population Projection	2010	2015	2020	2025	2030	2035
High Estimate: Davis Woodland Water Supply Project EIR	58,093	62,509	67,487	72,518	77,602	82,738
Low Estimate: SACOG adjusted population projections	55,468	56,300	60,471	64,147	67,824	71,500

(a) Davis Woodland Water Supply Project Table4-1, Projected Partners Future Population Estimate.
(b) SACOG population estimates for 2013, 2018, and 2035 used with straight-line interpolation used to determine population for the 5 year increments in table.

The updated population projections from SACOG are considered to be most representative of the City's current growth pattern, and are used in the 2010 UWMP for determining future water demands.

3.3 OTHER DEMOGRAPHIC FACTORS

A number of other demographic factors also influence water use in the City. Most of the City's water customers are single-family residential homes, which are currently not billed on consumptive water use. Because they are not billed on consumption, customers are unaware of the water that they actually use and have had no real incentive for water conservation since they are billed on a flat rate structure. This undoubtedly contributes somewhat to the high water demands experienced in the City in the summer months. Table 3-4 shows a breakdown of the City's water customers. As the City implements its Water Metering Program and related conservation programs (see Chapter 8), fewer and fewer customers will be unmetered and more customers will become aware of the quantity of water they use, and the need for and benefits of water conservation.

The City has substantial agriculture basis in its economy and is surrounded on all sides by productive land. Corn, tomatoes, alfalfa, sugar beets, safflower and wheat are important crops. Also, several companies in the City carry out significant seed research and development work. The local groundwater basin's natural recharge is supplemented by percolating irrigation water imported for farming surrounding the City's service area.

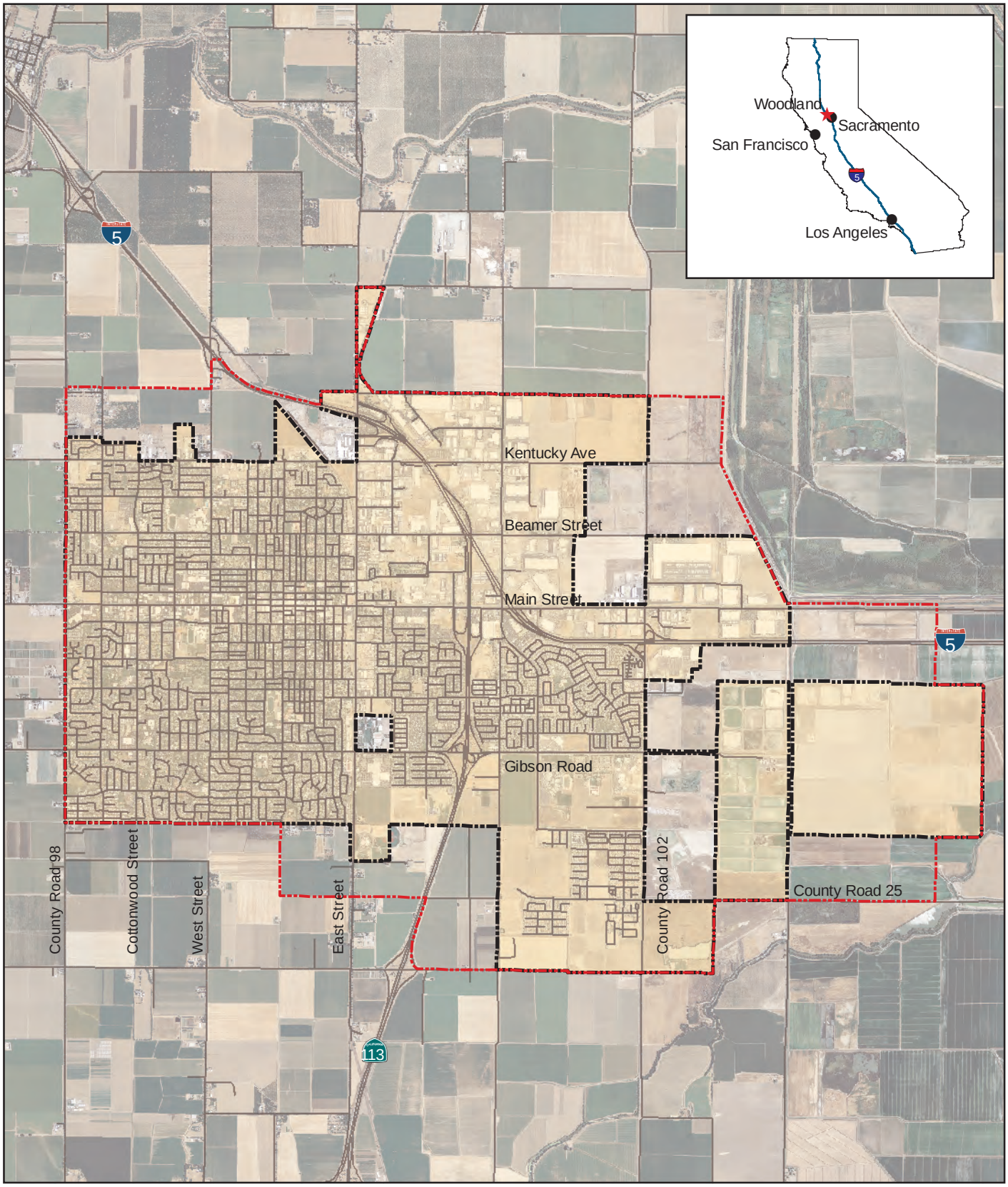
Table 3-4. City of Woodland Water Customer by Percentage

Account Type	2005	2010
Single Family Residential	86.7%	86.7%
Multi-Family Residential	5.6%	5.1%
Commercial	5.3%	5.7%
Institutional	0.7%	0.7%
Industrial	0.2%	0.1%
Landscape Irrigation	1.7%	1.6%

3.4 EXISTING WATER SYSTEM

The City's existing water system consists of about 160 miles of transmission and distribution pipelines, 20 groundwater wells, and a 400,000 gallon elevated storage tank. Of the 190 wells, 16 have been in operation for 29 years or longer with 5 wells at 40 years of service or longer. The distribution system operates as a single pressure zone. However, the City is split by Highway 113 and Interstate 5 which limits the number of pipeline connections between the areas east and west of the highway. The age and lack of metered consumption use has made it difficult to account for the City's system losses. Figure 3-2 shows the City's existing water system facilities.

N:\Clients\204 Woodland\00-09-28 City of Woodland 2010 UWMP Update\GIS\Figures\Figure 3-1 Service Area.mxd 4/11/2011



LEGEND

Planning Area Boundary

City Limits

N

0 2,500 5,000

Scale in Feet

FIGURE 3-1

City of Woodland
Urban Water Management Plan 2010

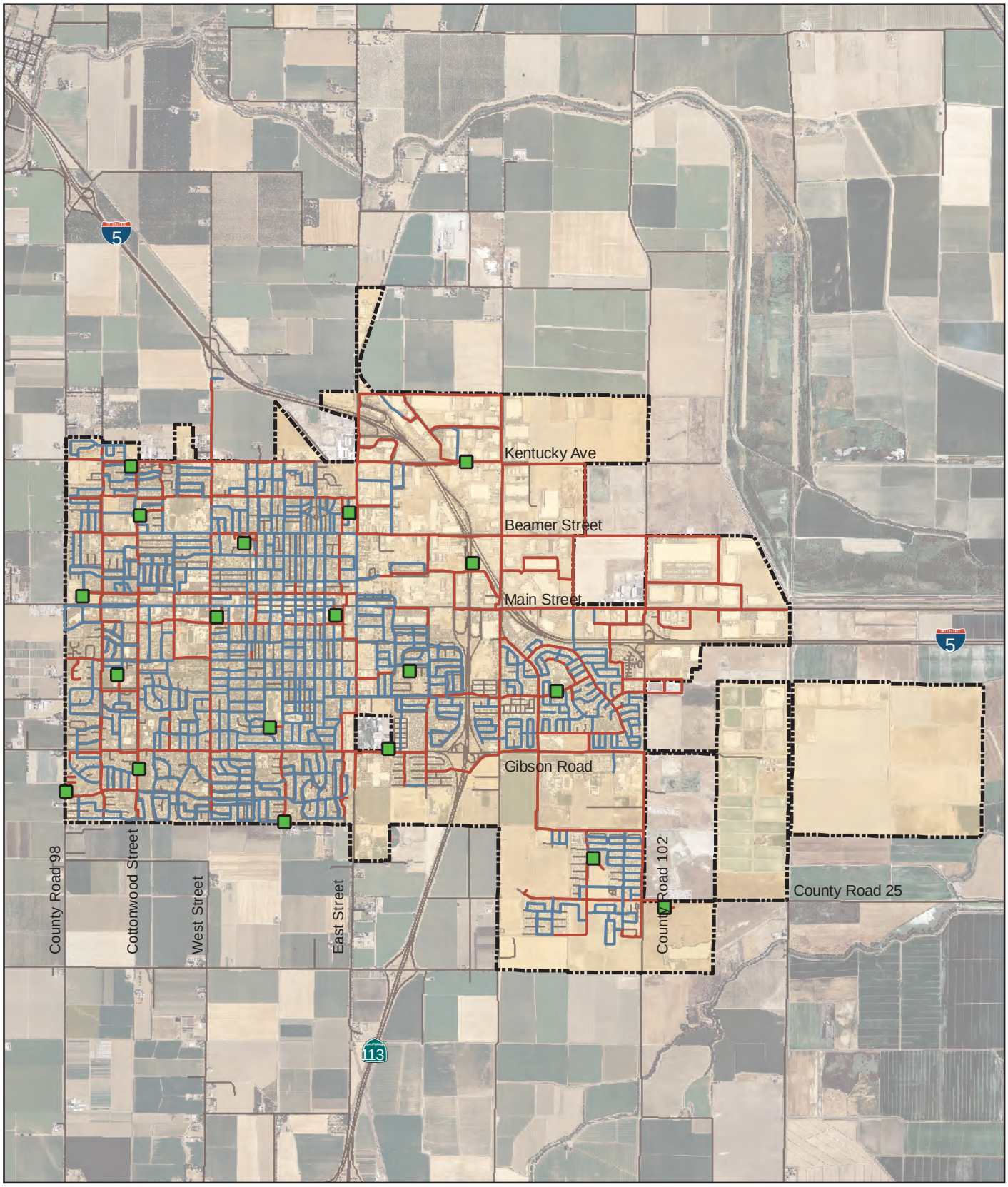
SERVICE AREA

WOODLAND

WEST YOST ASSOCIATES

Consulting Engineers

N:\Clients\204 Woodland\00-09-28 City of Woodland 2010 UWMP Update\GIS\Figures\Figure 3-2 System Facilities.mxd 4/13/2011



LEGEND

- Existing Well
- 8" and less diameter
- 10" and greater diameter
- City Limits

N

0 2,500 5,000

Scale in Feet

FIGURE 3-2

City of Woodland
Urban Water Management Plan 2010

EXISTING SYSTEM FACILITIES

WOODLAND

WEST YOST ASSOCIATES

Consulting Engineers

4.1 OVERVIEW OF WATER USE

As described in Chapter 3, the City's water service area is mostly residential accounts. The City is currently in the process of converting all residential unmetered accounts to metered usage. The Meter Implementation Program is anticipated to be completed by the Fall of 2011.

Past water use, based on groundwater well production records, is shown in Table 4-1.

Table 4-1. City of Woodland Water Use—Actual (2005 and 2010)[(a)]

2005 Water Use, af/yr	2010 Water Use, af/yr	Percent Difference from 2005
15,257	13,921	9%

(a) Source: City of Woodland pumping production records, "1960-present annual water production.xls"

As shown in Table 4-1, water use in the City's water service area dropped significantly from 2005 to 2010. There are two primary reasons for this drop in water use: drought conditions and economic conditions. From 2008 to 2010, California experienced drought conditions which resulted in increased water conservation and water use awareness both locally and statewide which resulted in reduced water use by customers. Secondly, in that same period, California experienced an economic downturn which resulted in numerous housing foreclosures, unsold existing homes and business closures. This in turn, resulted in reduced water use as a result of numerous unoccupied homes and closed businesses within the City's service area. This reduction in water use in the last few years has been experienced in many communities in California.

Future water use in the City's water service area has been projected based on the projected service area populations and the City's per capita water use targets, as established in accordance with SBx7-7 (described in this chapter). These projected future water uses are summarized in Table 4-2.

Table 4-2. City of Woodland Water Use—Projected (2015 to 2035)[(a)]

Service Area	2015 Water Use, af/yr	2020 Water Use, af/yr	2025 Water Use, af/yr	2030 Water Use, af/yr	2035 Water Use, af/yr
City of Woodland	16,400	15,650	16,600	17,550	18,500

(a) Based on projected population multiplied by the SBx7-7 per capita water use targets.
(b) Totals rounded to nearest 10 af/yr.

4.2 PAST AND CURRENT WATER USE BY WATER USE SECTOR

10631 (e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

Water production is the combined quantity of water produced by the City's groundwater wells, while water consumption is the quantity of water actually consumed or used. As will be discussed later, the difference between production and consumption is unaccounted-for water (UAFW). The demands shown in this chapter are based on the best available information at this time. The City has started collecting water use information from the recently installed meters. The City intends to track the demand uses by account type and will be able to updated demand by water use sectors based on this data for the 2015 UWMP.

The City currently tracks all of the water produced by its wells. As discussed in Chapter 8, the City is completing work on its Water Meter Implementation Plan and anticipates having the entire City on meters by the end of 2011.

Actual water use by the City's customers, by water use sector, in 2005 is summarized in Table 4-3.

Table 4-3. City of Woodland Water Deliveries—Actual (2005) (DWR Table 3)

Water Use Sectors	2005				
	Metered		Non Metered		Total Deliveries, AFY
	# of Accounts[a]	Deliveries, af/yr[b]	# of Accounts[a]	Deliveries, af/yr[c]	
Single Family	3	2.6	11,587	—	2.6
Multi-Family	229	753.4	515	—	753.4
Commercial	640	951.5	62	—	951.5
Industrial	21	86.6	0	—	86.6
Institutional/Governmental	75	387.9	17	—	387.9
Landscape	215	3,758.6	6	—	3,758.6
Other – Unmetered Production	—	—	—	9,316	9,316.0
Total[d]	**1,183**	**5,940.6**	**12,187**	**9,316**	**15,256.5**

(a) Number of 2005 accounts based on "2005-2009 accounts.xls" as compiled by City Staff.
(b) Number of 2005 deliveries based on "2005-2009 accounts.xls" as compiled by City Staff.
(c) Actual non-metered deliveries not available by water use sector.
(d) Include unaccounted for water.

Actual water use by the City's customers, by water use sector, in 2010 is summarized in Table 4-4.

Table 4-4. City of Woodland Water Deliveries—Actual (2010) (DWR Table 4)

Water Use Sectors	2010				
	Metered		Non Metered		Total Deliveries, AFY
	# of Accounts[a]	Deliveries, af/yr[b]	# of Accounts[a]	Deliveries, af/yr[c]	
Single Family	3,485	1,650.9	9,109	—	1,650.9
Multi-Family	266	1,147.1	474	—	1,147.1
Commercial	805	1,345.0	29	—	1,345.0
Industrial	22	43.4	0	—	43.4
Institutional/Governmental	99	453.5	17	—	453.5
Landscape	223	1,087.6	6	—	1,088
Other – Unmetered Production	—	—	—	8,194	8,194
Total[d]	**4,900**	**5,727.5**	**9,618**	**8,194**	**13,921**

(a) Number of 2010 accounts based on "2010 consumption by type with services.xls" as compiled by City Staff.
(b) Number of 2010 deliveries based on "2010 consumption by type with services.xls" as compiled by City Staff.
(c) Actual non-metered deliveries not available by water use sector.
(d) Include unaccounted for water.

4.3 PROJECTED WATER USE BY WATER USE SECTOR

The projected water use by the City's customers is based on the best available information at this time. The City has historically not been able to track actual water use by customers due to the lack of meters in the system. With the water meter implementation program being completed in 2011, the City will be able to track actual demand use by sector type and provide more detailed information in future reports.

Projected water use by the City's customers, by water use sector, in 2015 is summarized in Table 4-5. These projections are calculated using demand projections determined pursuant to SBx7-7.

Table 4-5. City of Woodland Water Deliveries—Projected (2015) (DWR Table 5)

Water Use Sectors	2015				
	Metered		Non Metered		Total Deliveries, af/yr
	# of Accounts[(a)]	Deliveries, af/yr[(b)]	# of Accounts	Deliveries, af/yr	
Single Family	13,685	8,364	0	—	8,364
Multi-Family	745	2,952	0	—	2,952
Commercial	991	1,312	0	—	1,312
Industrial	23	164	0	—	164
Institutional/Governmental	107	492	0	—	492
Landscape	237	3,116	0	—	3,116
Other – Unmetered Production	—	—	—	0	0
Total[(c)]	**15,788**	**16,400**	**0**	**0**	**16,400**

(a) Number of accounts projected based on 1.7 percent annual increase in the number of connections (based on annual increase in number of total connections from 2005 to 2010).
(b) Deliveries by water use sector based on the average rations of water use by water use sector between 2005 and 2010.
(c) Include unaccounted for water.

Projected water use by the City's customers, by water use sector, in 2020 is summarized in Table 4-6. These projections are calculated using demand projections determined pursuant to SBx7-7.

Table 4-6. City of Woodland Water Deliveries—Projected (2020) (DWR Table 6)

Water Use Sectors	2015				
	Metered		Non Metered		Total Deliveries, af/yr
	# of Accounts[a]	Deliveries, af/yr[b]	# of Accounts	Deliveries, af/yr	
Single Family	14,870	7,982	0	—	7,982
Multi-Family	750	2,817	0	—	2,817
Commercial	1,177	1,252	0	—	1,252
Industrial	24	157	0	—	157
Institutional/Governmental	115	470	0	—	470
Landscape	246	2,973	0	—	2,973
Other – Unmetered Production	—	—	—	0	0
Total[c]	**17,182**	**15,650**	**0**	**0**	**15,650**

(a) Number of accounts projected based on 1.7 percent annual increase in the number of connections (based on annual increase in number of total connections from 2005 to 2010).
(b) Deliveries by water use sector based on the average rations of water use by water use sector between 2005 and 2010.
(c) Include unaccounted for water.

Projected water use by the City's customers, by water use sector, in 2025, 2030, and 2035 is summarized in Table 4-7. These projections are calculated using demand projections determined pursuant to SBx7-7.

Table 4-7. City of Woodland Water Deliveries—Projected (2025, 2030 and 2035) (DWR Table 7)

Water Use Sectors	Metered					
	2025		2030		2035	
	# of Accounts[a]	Deliveries, af/yr[b]	# of Accounts[a]	Deliveries, af/yr[b]	# of Accounts[a]	Deliveries, af/yr[b]
Single Family	16,159	8,466	17,558	8,951	19,079	9,435
Multi-Family	755	2,988	760	3,159	765	3,330
Commercial	1,398	1,328	1,661	1,404	1,974	1,480
Industrial	25	166	26	176	28	185
Institutional/Governmental	123	498	133	527	143	555
Landscape	255	3,154	264	3,335	274	3,515
Other	—	—	—	—	—	—
Total[c]	**18,715**	**16,600**	**20,402**	**17,550**	**22,263**	**18,500**

(a) Number of accounts projected based on 1.7 percent annual increase in the number of connections (based on annual increase in number of total connections from 2005 to 2010).
(b) Deliveries by water use sector based on the average rations of water use by water use sector between 2005 and 2010.
(c) Include unaccounted for water.

4.3.1 Affordable Housing Water Use

10631.1 (a) The water use projections required by 10631 shall include projected water use for single-family and multi-family residential housing needed for lower income households as identifies in the housing element of any city or county in the service area of the supplier.

Senate Bill 1087 (SB 1087) approved on October 7, 2005 added certain provisions to the Government Code and amended a portion of the UWMP Act. As it relates to the UWMP Act, SB 1087 requires the water use projections of an UWMP to include the projected demands for single-family and multi-family residential housing needed for lower income households as identified in the housing element of any city or county in the service area of the supplier (Water Code § 10631(a).)

The City is a member of Sacramento Area Council of Governments' (SACOG) and participates in the Regional Housing Needs Plan (RHNP) which allocates participating cities and counties their "fair share" of the region's projected housing needs. The RHNP is updated every five years and provides the housing units that a city or county must plan for within a 7.5 year time period. The SACOG 2006-2013 RHNP was adopted February 21, 2008. This information is used by cities and counties to update their General Plan Housing Elements. The City adopted its 2008 Housing Element Update on March 24, 2009, and the number of existing lower income households within the City is a part of the update (see Appendix D.)

Table 4-8 shows projected demands for low income housing based on housing unit projections provided by the City. These projections are calculated using demand projections determined pursuant to SBx7-7.

Table 4-8. City of Woodland Low Income Projected Water Demands (DWR Table 8)

Low Income Water Demands	2015, af/yr	2020, af/yr	2025, af/yr	2030, af/yr	2035, af/yr
Single Family Residential	77	104	177	249	322
Multi-Family Residential[(a)]	400	443	624	805	986
Total	**477**	**547**	**801**	**1,054**	**1,308**

[(a)] Based on housing projections provided by City of Woodland Redevelopment Department.

4.4 SALES TO OTHER AGENCIES

The City does not currently sell water to other agencies and does not have plans to sell water in the future.

4.5 ADDITIONAL WATER USES AND LOSSES

Additional water uses include such uses as saline barriers and groundwater recharge. The City does not use water for such uses. Water losses occur due to distribution system leaks and other unmetered water uses (such as firefighting, main flushing, etc.). Actual water losses within the City's water system cannot be confirmed until the City has completed its current efforts to implement metering City-wide. Therefore, unaccounted for water and system losses are accounted for in the overall water demands discussed above. Once the City completes its on-going water metering program (anticipated by 2011), actual water losses can be determined. The City will include detailed information on UAFW in the 2015 UWMP.

4.6 COMPLIANCE WITH SBX7-7

SBx7-7 was one of the four policy bills enacted as part of the November 2009 Comprehensive Water Package. The Water Conservation Act of 2009 provides the regulatory framework to support the statewide reduction in urban per capita water use described in the 20x2020 Water Conservation Plan (DWR and others 2010). It also addresses agricultural water and commercial, industrial, and institutional (CII) water use.

Per SBx7-7, each urban retail water supplier must determine and report its existing baseline water consumption and urban water use targets. Agencies have the option of individually reporting and implementing their urban water use targets or reporting and implementing cooperative targets as part of a regional alliance. The reporting requirements of SBx7-7 begin with 2010 UWMPs.

The City's compliance with SBx7-7 is described in detail in the August 2010 technical memorandum included in Appendix E of this 2010 UWMP. The City developed its baseline and target per capita water uses on an individual basis, and did not participate in any regional alliance. As described in the technical memorandum and summarized below, the City utilized Target Method 1 to establish an Interim (2015) Per Capita Water Use Target of 260 gpcd, and a Final (2020) Per Capita Water Use Target of 231 gpcd.

4.6.1 Determination of Baseline and Target Per Capita Water Use

As described in Appendix E, the City's baseline per capita water uses were determined based on the methodologies described in DWR's October 1, 2010 *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (DWR Methodologies).

Consistent with DWR Methodology 1 (Gross Water Use), the City's gross water use is based on the metered quantity of groundwater pumped by the City from its municipal production wells for municipal use and the City's service area population.

Consistent with DWR Methodology 2 (Service Area Population), the City's service area population has been estimated using DOF and the United States Census Bureau to the extent that it is available. As described in Chapter 2, the City serves areas inside the City limits

The City's baseline per capita water use was based on the parameters shown in Table 4-9.

Table 4-9. Base Period Ranges (DWR Table 13)

Base	Parameter	Value	Units
10- to 15-year base period	2008 total water deliveries	16,691	af/yr
	2008 total volume of delivered recycled water	0	af/yr
	2008 recycled water as a percent of total deliveries	0	Percent
	Number of years in base period[a]	10	Years
	Year beginning base period range	1995	
	Year ending base period range[b]	2004	
5-year base period	Number of years in base period	5	Years
	Year beginning base period range	2003	
	Year ending base period range[c]	2007	

Units = af/yr
[a] If the 2008 recycled water percent is less than 10 percent, then the base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater; the base period is a 15-year period.
[b] The ending year must be between December 31, 2004 and December 31, 2010.
[c] The ending year must be between December 31, 2007 and December 31, 2010.

Since the City had no recycled water deliveries in 2008, a 10-year base period was used to calculate the City's baseline per capita water use (for purposes of Water Code Section 10608.20). The calculation of this 10-year baseline per capita water use is summarized in Table 4-10.

Table 4-10. Base Daily Per Capita Water Use: 10- to 15-Year Range (DWR Table 14)

Base Period Year		Distribution System Population	Daily System Gross Water Use, MGD	Annual Daily Per Capita Water Use, gpcd
Sequence Year	Calendar Year			
Year 1	1995	43,788	11.7	267
Year 2	1996	45,028	12.3	274
Year 3	1997	46,108	13.7	297
Year 4	1998	46,975	12.4	264
Year 5	1999	48,075	15.3	319
Year 6	2000	49,155	15.0	306
Year 7	2001	50,897	15.2	298
Year 8	2002	51,483	15.1	293
Year 9	2003	51,790	14.2	274
Year 10	2004	52,755	15.6	296
Base Daily Per Capita Water Use[a]				289

[a] Average of annual daily per capita water use for the 10-year period from 1995 to 2004.

The calculation of the City's 5-year baseline per capita water use (for purposes of Water Code Section 10608.22) is shown in Table 4-11.

Table 4-11. Base Daily Per Capita Water Use: 5-Year Range (DWR Table 15)

Base Period Year		Distribution System Population	Daily System Gross Water Use, MGD	Annual Daily Per Capita Water Use, gpcd
Sequence Year	Calendar Year			
Year 1	2003	51,790	14.2	274
Year 2	2004	52,755	15.5	295
Year 3	2005	53,535	13.6	254
Year 4	2006	53,193	14.2	267
Year 5	2007	54,318	14.8	272
Base Daily Per Capita Water Use[(a)]				272

[(a)] Average of annual daily per capita water use for the 5-year period from 2003 to 2007.

Using Target Method 1, the City's interim (2015) per capita water use target is 260 gpcd (90 percent of the 10-year baseline per capita water use of 289 gpcd). The City's final (2020) per capita water use target is 231 gpcd (80 percent of the 10-year baseline per capita water use of 289 gpcd).

These interim and final targets comply with the minimum water use reduction requirement of 258 gpcd (based on 95 percent of the 5-year baseline per capita water use of 272 gpcd).

These interim and final targets have been used to project the City's future water demands (described above) using the City's projected future service area population.

4.6.2 City Programs to Achieve Water Demand Reduction Goals

The City is in the process of completing its Water Meter Implementation program and billing based on metered usage, anticipated to be completed in 2011. The meters will help the City to monitor and track actual water use and reduce per capita water use throughout the City's water service area. The City is also actively looking at ways to reduce landscape water use. The City's other demand management measures are further discussed in Chapter 8.

4.6.3 Progress Toward Meeting the Urban Water Use Targets

10608.40 Urban retail water suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631.

The City will report its progress in meeting the established 2015 and 2020 per capita water use targets in the 2015 and 2020 UWMP.

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

The City currently uses groundwater exclusively to meet its demands. However, plans are proceeding to integrate surface water as a supply source into the system. The City's existing and future supply sources are described below.

5.1 SURFACE WATER SUPPLIES

The City currently does not use surface water supplies to meet demands. However, the City has partnered with the City of Davis (Davis) and the University of California at Davis (UCD) (collectively referred to as the Woodland-Davis Clean Water Agency (WDCWA)) for a joint project that would provide surface water supply for use within each of their service areas to meet a portion of their respective water supply needs. The new surface water supply will be integrated into a conjunctive use supply program, with surface water serving as the City's primary water supply in the future, and groundwater being used to help meet summer peak and emergency demands. The new surface water supply will be somewhat limited in summer months during drought periods, and groundwater pumping will be used in these periods to provide a larger portion of the water supply.

The WDCWA received approval of their Water Right Application (Permit 30358) from the State Water Resources Control Board (SWRCB) on March 1, 2011. The maximum amount allowed to be diverted under this permit shall not exceed 45,000 ac-ft/yr. This permit is also subject to Term 91, which results in curtailment of diversion under specific hydrologic conditions. The SWRCB evaluates the hydrologic conditions and the operation of the California Valley Project (CVP) and State Water Project (SWP) each year to determine if and when Term 91 conditions will begin and end.

In an effort to plan for the potential curtailment of surface water due to Term 91 conditions, the WDCWA entered into a Water Purchase Agreement with Conaway Preservation Group (CPG) to purchase post-1914 appropriative water rights of 10,000 ac-ft/yr of Base Supply water from the Sacramento River for diversion from April through October. Diversion of this water supply is limited from July through September to no more than 7,500 ac-ft/yr. The remaining 2,500 af can be diverted in the period from April – June, or in October. This water will be diverted under a Bureau of Reclamation Settlement Contract, and is subject to the Lake Shasta Critical Year Reduction which results in a 25 percent reduction of the permitted diversion when inflow to Shasta falls below specific minimum levels.

This new surface water supply will be conveyed from a new Sacramento River intake shared with RD 2035, through untreated and treated-water conveyance pipelines, and delivered to a new water treatment plant (WTP). Surface water diverted from the Sacramento River would consist of water appropriated for use by the WDCWA under the water rights described above. The first phase of the WTP is expected to be able to treat up to 40 mgd of surface water beginning in 2016. Ultimately, the WTP will be expanded to deliver 52 mgd. The expansion of the plant capacity to the ultimate size is currently expected to occur after 2035.

Table 5-1 provides a summary of the City's existing and projected surface water supplies based on the information described above. The supplies shown in Table 5-1 are the City's portion of the WDCWA surface water project and do not reflect Davis or UCD supply totals. As shown, the City's projected future surface water supplies in normal years are expected to be available in 2016.

Table 5-1. Existing and Future Surface Water Supplies during Normal Years

Surface Water Supply	Existing and Future Surface Water Supplies during Normal Years					
	2010	2015	2020	2025	2030	2035
Primary Water Right (30358)	—	—	11,470	12,158	12,684	13,197
CPG Water Right	—	—	5,750	5,750	5,750	5,750

(a) Surface water treatment plant to be on-line in 2016.
(b) Initial phase of surface WTP to be constructed to a capacity of 40 mgd. Woodland capacity of WTP approximately 57.5 percent.
(c) Three months of Term 91 restrictions under Permit 30358 (June through August) for normal years based on historic Term 91 information.

5.2 GROUNDWATER SUPPLIES

The City currently relies completely on groundwater to meet all system water demands. Even though the City is able to achieve compliance with drinking water standards, the City will struggle more and more in the future to meet its wastewater discharge requirements because of natural concentrations of salinity, boron, and selenium in its groundwater supply. In addition, while the City meets all current drinking water standards changes in the requirements may severely impact the City's ability to meet chromium IV (Cr 6) based on proposed standards. The current proposed public health goal (PHG) is 0.02 µg/l. The groundwater wells within the City have been tested for Cr 6 and the results show a range of 10 to 35 µg/l and an average of 19 µg/l. The introduction of surface water as a primary supply source in the future will greatly improve the water quality for these constituents. While the City is planning to use surface water as a primary supply starting in 2016, groundwater will continue to supply all water needs until 2016 and will be used to supplement surface water in the future.

5.2.1.1 Groundwater Overview

The City of Woodland is located in the Yolo Sub-basin (Sub-basin 5-21.67) of the Sacramento Valley Groundwater Basin as defined in the California DWR Bulletin 118 update (DWR, 2003). Figure 5-1 shows the location of the City in relation to the boundaries of other local agencies overlying the groundwater basin areas. The Yolo Sub-basin is bounded by Cache Creek on the north; the Sacramento River on the east; Putah Creek on the south; and the Coast Range on the west (DWR, 2004).

The City currently maintains 19 municipal supply wells within the Yolo Subbasin, and currently relies solely on pumped groundwater to meet the water demands within its service area. Of the City's 19 wells, one well has been taken out of service (Well 5) to ensure water quality conformance. The use of another well (Well 10) may be discontinued in the future to ensure acceptable nitrate levels.

5.2.1.2 Groundwater Management

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

The City adopted a Groundwater Management Plan on March 15, 2011. This Groundwater Management Plan was developed in coordination with the other local agencies with adopted plans and other basin stakeholders. Public participation was sought during the development of this plan, and the adopted version of the Groundwater Management Plan reflects input received from members of the public.

A copy of the final City of Woodland Groundwater Management Plan is provided in Appendix F of this UWMP. Some questions raised during the development of the Groundwater Management Plan have been addressed in this UWMP. Appendix G contains the public comments received for the Groundwater Management Plan that have been addressed in this document.

5.2.1.3 Description of Groundwater Basin

10631 (b)(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

As indicated above, the City is located in the Yolo Subbasin (Subbasin 5-21.67) of the Sacramento Valley Groundwater Basin as defined in the California Department of Water Resources (DWR) Bulletin 118 update (DWR, 2003). Figure 5-1 shows the location of the groundwater subbasin. The Yolo Subbasin is bounded by Cache Creek on the north; the Sacramento River on the east; Putah Creek on the south; and the Coast Range on the west (DWR, 2004).

Land surface elevations within the Yolo Subbasin range from approximately 0 feet above sea level along the southeastern edge to approximately 800 feet along the western edge. Except near the western edge of the basin, where land surface elevations increase with proximity to the Coast Range, the topographic relief is low. Land surface elevations within the City service area range from approximately 30 to 80 feet. The Plainfield Ridge, the topographic expression of the Dunnigan Hills anticline, is an area of slightly elevated rolling hills located approximately four miles west of Woodland. The Yolo Basin, the flood basin of the Sacramento River, is located approximately three miles east of Woodland (Figure 5-1).

The Yolo Subbasin, which includes the groundwater basin underlying the City, has documented groundwater issues, including inelastic land subsidence due to groundwater withdrawal and water quality concerns. Among the more significant of these water quality concerns are elevated nitrate, boron, selenium, and salinity levels (additional discussion regarding water quality issues is provided below).

5.2.1.3.1 Aquifer Formations

The Sacramento Valley in the vicinity of the City of Woodland is filled by a thick sequence of marine sedimentary rock of Late Jurassic (159 million years [my] before present) to Eocene (34 my) age, unconformably overlain by a relatively thin sequence of continental sedimentary deposits of Pliocene (5 my) and younger age (Harwood and Helley, 1987). A generalized geologic cross section for the Sacramento Valley is shown in Figure 5-2.

The older, deeper marine rocks contain saline water. The freshwater aquifers in the vicinity of the City occur in the overlying continental sedimentary deposits.

Shallow groundwater in the Woodland area occurs under unconfined conditions in the Holocene stream channel deposits, except where these units are overlain by Holocene Basin Deposits, creating confined conditions (DWR, 1978). At greater depths, groundwater occurs under mostly semiconfined to confined conditions in a single heterogeneous aquifer system, composed of predominantly fine-grained sediments enclosing discontinuous lenses of sand and gravel. The aquifer properties, including hydraulic conductivity, vertical leakance and degree of confinement are dependent on the properties of the fine grained units (Williamson, et. al., 1989; Bertoldi, et. al., 1991). The geologic formations comprising the freshwater aquifer are discussed from oldest to youngest in the following sections.

5.2.1.3.2 Tehama Formation

The Tehama Formation consists of up to 2,500 feet of moderately compacted silt, clay, and silty fine sand enclosing thin, discontinuous lenses of sand and gravel, silt and gravel deposited in a fluvial (river-borne) environment. The permeability of the Tehama Formation is highly variable but generally less than the overlying Quaternary alluvium. Because of the relatively large thickness, wells can yield up to several thousand gpm (DWR, 2004). The majority of irrigation and public supply wells in the Woodland area are completed in the Tehama Formation (DWR, 2004).

5.2.1.3.3 Riverbank and Modesto Formations

The Tehama Formation is overlain by the late Pleistocene age Riverbank and Modesto Formations. These formations consist of up to 200 feet of loose to moderately compacted silt, silty clay, sand and gravel deposited in alluvial depositional environments during periods of world-wide glaciation (Lettis, 1988; Weissmann, et. al., 2002; DWR, 2004). Wells penetrating the sand and gravel units of the Riverbank and Modesto Formations produce up to about 1,000 gpm (DWR, 2004). The majority of the domestic wells in the Woodland area are completed in the Riverbank and Modesto Formations (DWR, 2004).

5.2.1.3.4 Holocene Stream Channel and Basin Deposits

Holocene stream channel and basin deposits are the youngest sediments in the region, with ages of 10,000 years or less. The stream channel deposits consist of up to 80-foot sections of unconsolidated clay, silt, sand and gravel reworked from older formations by streams. Because of their low permeability, limited extent, and general poor water quality, Holocene flood basin deposits are typically not used for groundwater production (DWR, 2004).

5.2.1.4 Groundwater Flow Trends

Generally, groundwater flow is from the margins of the Sacramento Valley toward the Sacramento River and then southward towards the Sacramento-San Joaquin Delta. Groundwater pumping in several areas has created cones of depression that disrupt this pattern. Historically, groundwater elevations in the region have ranged from roughly -20 feet to 50 feet above mean sea level (msl). In the vicinity of Woodland, the base of fresh groundwater occurs at a depth of approximately 2,500 feet below msl, implying that the fresh water aquifer is about 2,500 feet thick (DWR, 1978).

5.2.1.5 Groundwater Level Trends

Groundwater elevation measurements have been recorded in the Woodland area for over 50 years and are available through the DWR Water Data Library at http://wdl.water.ca.gov. The historical records show that groundwater elevations declined through the 1950s and 1970s. Groundwater elevations increased thereafter, in response to regional water supply projects implemented by Yolo County Flood Control and Water Conservation District.

Groundwater elevations have also fluctuated in response to changes in precipitation. The area experienced multiple years of below normal precipitation in 1976 through 1977 and 1987 through 1991 and more recently in 2007. Groundwater elevations in the falls of 1977 and 1992 dropped significantly in relation to the average measurements. The maximum groundwater elevation measurements were recorded in spring 1983, the same year that the maximum annual precipitation was recorded.

5.2.1.6 Groundwater Sustainable Yield

Continuing groundwater withdrawals from the deep aquifer may cause, or contribute to, ground surface subsidence in the City and surrounding areas. Based on surveys conducted by the Yolo County Subsidence Monitoring Network, approximately three inches of subsidence have occurred in the City service area from 1999 to 2006. Adverse effects associated with ground-level subsidence include reductions in groundwater aquifer storage capacity, modified surface drainage patterns, reduced flood protection, and damage to the City's facilities and other infrastructure. To maintain sustainable groundwater yield, the City is implementing a surface water supply project to reduce its groundwater extractions.

5.2.2 Groundwater Quality

Constituents of concern found within the City's municipal production wells include TDS, nitrate, boron, selenium, and chromium. Some of these constituents are of concern from a drinking water standpoint, and others are of concern from the standpoint of existing or future wastewater discharge requirements.

TDS is above the applicable secondary maximum contaminant level (MCL) in half of the City's production wells, while somewhat elevated TDS levels are present in the other wells throughout the City. The secondary MCL for TDS is based on taste and odor considerations and is a non-enforceable limit that essentially serves as a guideline rather than an actual limit. Thus, the quality of drinking water is considered to have somewhat reduced aesthetic characteristics when TDS levels exceed the secondary MCL, but immediate corrective action is not needed or required to satisfy applicable potable drinking water standards.

Nitrate concentrations in drinking water are regulated by the primary MCL of 45 mg/L as nitrate, which equates to 10 mg/L as nitrogen. Several City production wells have had recent average nitrate concentrations over 30 mg/L. Due to high nitrate concentrations, one well has been taken out of service, three wells have been recommended for replacement, and one well has been recommended for increased water quality monitoring. If nitrate concentrations continue to rise, many wells may reach the end of their useful life sooner than the 30 to 50 years normally assumed.

Boron has been detected in all of the City wells, but is not limited by drinking water standards. However, a wastewater discharge limit for boron of 700 µg/L may be implemented in the future, in which case the City will need to supplement its groundwater supplies with other supplies having lower boron levels.

Total chromium has been detected at concentrations below the current MCL of 50 µg/L in all of the City's wells. The presence of total chromium is a potential concern because the majority of the total chromium is believed to be hexavalent chromium, which is a known carcinogen that may be regulated by drinking water standards in the future. City wells have not been tested for hexavalent chromium since 2004 when the average concentration in all City wells (except for Well 26, which was not owned by the City and has never been tested for hexavalent chromium) exceeded 10 µg/L. In August 2009, the Cal/EPA Office of Environmental Health Hazard Assessment issued an initial draft public health goal of 0.06 µg/L, and subsequently released a revised draft public health goal of 0.02 µg/L for public comment in December 2010. First, it is widely recognized that neither of these public health goals would be achievable for the vast majority of groundwater supplies in California, and that a performance-based goal may ultimately be issued. Moreover, public health goals serve as a guideline rather than a regulatory limit that would prevent the use of groundwater supplies that exceed such concentrations. Nevertheless, because the City's measured hexavalent chromium levels are higher than average among California municipalities, a performance-based hexavalent chromium limit could limit the City's ability to use its groundwater wells as a municipal supply source in the future, depending on whether and the extent to which new regulatory, enforceable standards may be promulgated.

Selenium is regulated by a primary drinking water MCL of 50 µg/L, which has never been exceeded among the City's water supply wells. However, the City currently has a wastewater discharge limit of 3.2 µg/L, which has been exceeded on prior occasions due to selenium levels in the groundwater supply wells. Because selenium concentrations are highly variable from well to well, it may be possible to manage City well operations to ensure compliance with the wastewater discharge limit.

5.2.3 Current Groundwater Pumpage

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

Groundwater pumpage by the City over the last five years is summarized in Table 5-2. As shown, the City currently relies 100 percent on groundwater.

Table 5-2. Groundwater Volume Pumped by City of Woodland (DWR Table 18)

Basin Name	Groundwater Pumpage by City of Woodland, af/yr[(a)]				
	2006	2007	2008	2009	2010
Sacramento Valley Groundwater Basin: Yolo Sub-basin	15,879	16,560	16,690	15,330	13,921
% of Total Water Supply	100%	100%	100%	100%	100%

[(a)] Based on actual groundwater well production information.

The City was able to meet all of the system needs for the past 5 years with the existing groundwater wells. As described in this 2010 UWMP, the City plans to reduce groundwater pumpage quantities in the future and use groundwater for peak and emergency demands to supplement surface water supplies.

5.2.4 Projected Groundwater Pumpage

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

Table 5-3 summarizes the groundwater projected to be available to the City in the future in normal years. As shown, the City intends to maintain groundwater to continue to supply 100 percent of the City's emergency water needs. The City plans to rely on groundwater to meet peak demands as well as emergency conditions to provide a reliable supply system to their customers.

It is anticipated the WDCWA will begin supplying surface water to the City in 2016 and will meet the average demands in the City. However, groundwater will continue to be an important component of the City's water supplies. The City intends to maintain adequate groundwater to be used as supplemental water to the surface for peak demand or emergency conditions. Terms of the City's Primary Sacramento River Water Rights and CPG Water Rights are subject to being cut back based on different hydrologic conditions as discussed in Section 5.1.1.

Table 5-3. Groundwater Volume Projected to be Pumped (DWR Table 19)

Sacramento Valley Groundwater Basin: Yolo Subbasin	Groundwater Projected to be Available to City of Woodland, af/yr				
	2015	2020	2025	2030	2035
Available Groundwater[(a)]	16,400	14,750	13,650	12,550	12,550
Projected Pumped Groundwater[(b)]	16,400	4,700	4,980	5,270	5,550
% of Total Water Supply[(b)]	100%	30%	30%	30%	30%

(a) Based on firm capacity of groundwater wells which assumes two wells out of service for maintenance or water quality issues. The City intends to maintain enough groundwater pumping capacity to supply emergency needs in the future.

(b) The projected pumped groundwater and percentage of total water supply is based on the assumption the City will be able to utilize approximately 30% of groundwater to meet total demand and maintain all water quality and wastewater permit requirements in the future.

5.3 TRANSFER AND EXCHANGE OPPORTUNITIES

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

The City historically has not had the opportunity for transfer or exchanges of water supplies. The City and partners for the WDCWA are exploring options for future water transfer and exchange opportunities to supplement potential surface water reductions discussed above.

5.4 DEVELOPMENT OF DESALINATED WATER

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

Because the City is not located in a coastal area, seawater desalination is not applicable to the City and is not considered a technically or economically feasible opportunity to explore. In addition, the groundwater that underlies the City is not brackish in nature and does not require desalination. As such, the City does not have any plans to incorporate desalinated or treated brackish water into its water supply portfolio.

5.5 RECYCLED WATER OPPORTUNITIES

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier.

Currently, the City is not able to use recycled water due to the high Electrical Conductivity (EC) levels found in the groundwater supply. However, the City does plan on studying the feasibility of using recycled water in the future with the addition of the improved EC levels expected from the use of the future surface water supply.

5.5.1 Existing Wastewater Collection Systems

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

The City's Wastewater Operations group manages wastewater collection and treatment for the City's service area. The City wastewater collection system conveys wastewater by gravity pipelines to the Wastewater Treatment Plant (WWTP) located east of the City along County Road 103. The average dry weather flow is currently about 5.8 million gallons per day (mgd).

5.5.2 Existing Wastewater Treatment Systems

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

The current wastewater treatment is located at the City's County Road 103 facility. The WWTP includes the following processes:

1. Oxidation Ditches
2. Secondary Clarification
3. Polymer chemical addition
4. Cloth media filtration
5. UV disinfection
6. Discharge

The facility was constructed in 1989 and upgraded in 1999 utilizing mechanical equipment. In 2006 construction was started to expand and upgrade the treatment plants capacity from 7.8 mgd to 10.4 mgd and tertiary treatment. The tertiary facility includes filtration and ultra violet (UV) light disinfection process instead of chlorination. Treated effluent from the wastewater treatment facility is discharged to a large unimproved channel which eventually drains to the Tule Canal on the east side of the Yolo Bypass.

The City also owns and operates an Industrial Wastewater Treatment Process that is used to treat wastewater from a tomato processing facility. This plant is located adjacent to the wastewater treatment facility. Cannery waste flows are treated using aerated treatment ponds followed by site application.

Table 5-4 provides a summary of current and projected wastewater collection and treatment.

Table 5-4. Wastewater Collection and Treatment, mgd (DWR Table 21)

Type of Wastewater	Wastewater Influent, mgd[a]					
	2010	2015	2020	2025	2030	2035
Wastewater collected and treated in service area	5.6	6.6	6.3	6.7	7.1	7.4
Volume that meets recycled water standards	4.8	5.9	5.7	6.0	6.4	6.7

[a] Future wastewater influent are based on approximately 45 percent of the potable water demand.

Treated effluent from the wastewater treatment facility is discharged to a large unimproved channel which eventually drains to the Tule Canal on the east side of the Yolo Bypass. Table 5-5 provides a summary of the method of disposal and treatment level for wastewater flows

Table 5-5. Wastewater Disposal, mgd (DWR Table 22)

Method of Disposal	Level of Treatment	Wastewater Effluent, mgd[a]					
		2010	2015	2020	2025	2030	2035
Disposal to Channel		4.8	5.9	5.7	6.0	6.4	6.7

[a] Future wastewater effluent are based on approximately 90 percent of the influent wastewater.

5.5.3 Current Recycled Water Use

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

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

Treated wastewater is discharged to a large unimproved channel which eventually drains to the Tule Canal on the east side of the Yolo Bypass. The Tule Canal is used by farmers to irrigate crops. Currently, the tertiary treated wastewater is not being directly used for purposes of recycled water reuse, due to the high Electrical Conductivity (EC) in the effluent, which makes it unsuitable for beneficial agricultural or other beneficial use. EC indicates the amount of dissolved salts or salinity of water. An excess EC level can impact plant growth rate. A report titled "City of Woodland Salinity Control and Minimization Workplan (NexGen Utilities Management, May 2009) examined the sources of salinity in City wastewater and determined salinity enters the system from three major sources: groundwater supplies; self-regenerating water softeners; and consumptive use.

The City is in the design stage of a surface water treatment plant that will reduce the EC levels in the potable water and in-turn, reduce the WWTP effluent EC levels and potentially make the water practical for recycled water applications. The City plans to study the future use of recycling wastewater prior to the surface water treatment plant being on-line. Several studies are currently being conducted to determine the improvement to the City's overall water quality with the introduction of surface water sources. Table 5-6 summarizes the current recycled water uses, which do not differ in comparison to the uses previously projected by the City in its 2005 UWMP.

5.5.4 Potential and Projected Recycled Water Use

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

In addition to the discussion above regarding current limitations on the City's use of recycled water, past studies conducted for use of recycled water have indicated a prohibitively high cost of installing purple pipes and tanks specifically for recycled water and the high cost of regulatory compliance of recycled water operations. Based on these issues, the City currently is not able to use treated tertiary wastewater for agriculture, landscape, wildlife habitat, wetland, industrial, commercial, or groundwater recharge operations. However, the City will continue to evaluate the technical and economic viability of utilizing recycled water as a component of the City's water resources.

Once surface water is integrated as a water supply source, the City will prepare a feasibility study to identify potential recycled water use for the future growth areas and other areas within the City, as well as plan for the recycled water infrastructure required to serve these areas.

5.5.5 Methods to Encourage Recycled Water Use

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

As discussed above, the high EC of the current influent makes the use of recycled water unsuitable for agricultural and other beneficial uses within the City. Once surface water has been integrated into the City's water supply sources, the impacts to the EC levels are expected to decrease. The City will conduct economic, financial, and environmental analyses to determine the feasibility of implementing a recycled water project with the improved influent EC quality. Financial incentives will also be evaluated in connection with the City's review.

To encourage and support future recycled water use, the City may consider the following future policies and programs with regard to recycled water use:

- Require new developments City-wide to install purple pipe for recycled water use on parks, common areas, roadway medians, etc.;
- Look for opportunities to install purple pipe near existing landscaped areas (e.g., parks, sports fields) (i.e., piggyback on other pipeline installation/replacement projects);

- Allow new development to create "new" supplies by participation in the implementation of recycled water facilities; and,
- Provide additional staff and program-specific financial resources required to implement/manage the future recycled water use program.

5.5.6 Optimizing the Use of Recycled Water

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

The City must address the water quality challenges of its influent and effluent before embarking on a comprehensive recycled water. As described in greater detail above, the City will continue to evaluate issues such as benefits of introducing new surface water supply, blending requirements between surface and groundwater, treatment of existing well water, additional treatment of the wastewater, dual plumbing and distribution systems, and other means of promoting and facilitating the increased use of recycled water within or outside its service area.

5.6 WHOLESALE SUPPLIES

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

The City does not rely upon a wholesale agency for a source of water; therefore, the wholesale supply provisions of the UWMP Act do not apply to the City.

5.7 PLANNED SUPPLY PROJECTS AND PROGRAMS

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

The City has developed a water supply plan to meet future demands using currently available and new water supply sources. The plan consists of several components including:

- Design and construction of surface water treatment plant;
- Continued groundwater use;
- Aquifer storage and recovery (ASR) wells;
- SCADA integration; and
- Ground level tanks.

Each of these projects is described below.

5.7.1 Surface Water Treatment Plant Project

The WDCWA is in the process of contracting for the design and construction of the planned Surface Water Treatment Plant (SWTP). The project involves design and construction of an ultimate 52 mgd intake facility on the Sacramento River, raw water pipelines from the intake facility to the SWTP, an initial phase 40 mgd SWTP, and regional transmission pipelines to convey the treated water to the water systems of the City and other participating agencies.

The SWTP project is expected to be completed and operational by the year 2016. The City is entitled to 57.5 percent of the initial 40 mgd available surface water supply. The actual amount will vary based on Term 91 and Shasta Critical Year Reductions imposed on the surface water rights.

5.7.2 Continued Groundwater Use

The City plans to maintain and replace groundwater wells as needed to maintain all demands for the near-term and provide a minimum emergency supply capacity in the future. The City will closely monitor all existing wells and perform any required rehabilitation or replacement needed to maintain all demands prior to surface water availability in 2016. After 2016, the City will determine which wells provide the greatest benefit based on location, water quality, age, and reliability, and will maintain a minimum number of wells in order to supplement surface water for peak and emergency demand conditions. The City is also studying the possibility of converting existing or planning for future wells to be ASR wells. Groundwater supply well maintenance is ongoing, and the City will continue to monitor and evaluate its wells for water quality, production, and structural and operational reliability to ensure that near-term and future demands for groundwater are capable of being met.

5.7.3 ASR Wells

The City is in the process of studying the potential for ASR wells in the future conjunctive use system. The ASR concept would allow the City to pump higher quality surface water into an ASR well to improve the groundwater quality and allow for extraction when needed. Typically, ASR operations would follow a seasonal pattern, with injections occurring during the cooler, low-demand months, and extractions occurring during the warmer, high-demand months. The City has already taken steps to implement ASR by requiring any new or replacement wells to be designed for conversion to ASR in the future.

The City is in the early process of studying the potential benefits that ASR wells may have on future groundwater quality. The City plans to conduct a pilot test for ASR once surface water is available in 2016.

Finally, the City is studying the need for additional supplies, in addition to available groundwater supplies, for periods when surface water availability may be curtailed under Term 91. The current studies and planned pilot test for ASR will be used to determine whether ASR can be used to meet all potential demand scenarios, or whether additional supplies will need to be obtained.

5.7.4 Supervisory Control and Data Acquisition (SCADA)

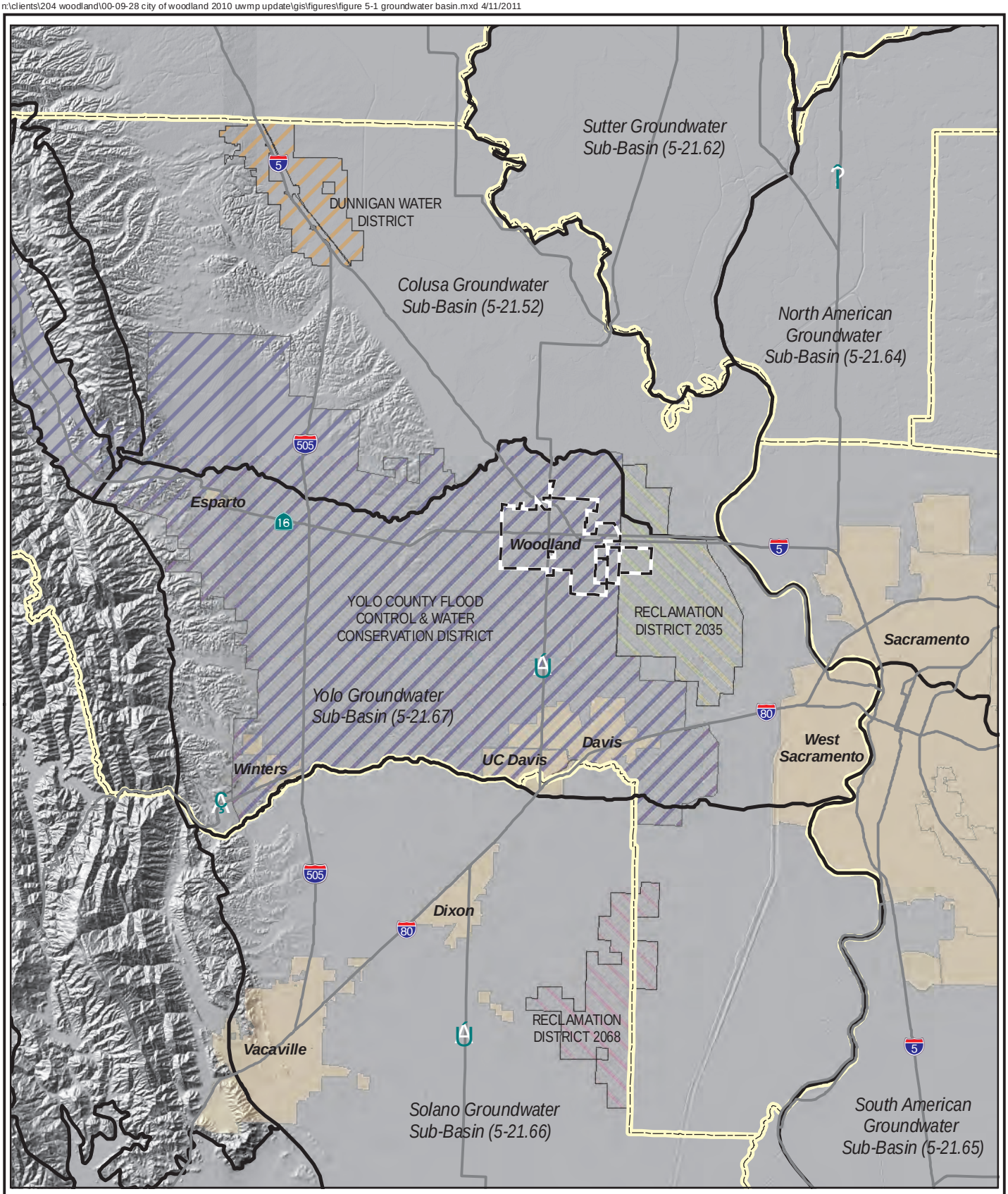
The City anticipates having a SCADA system operational by the Fall of 2011. While the SCADA system will not contribute an actual new supply to the City's system, the SCADA is expected to help the City better monitor the production of wells and the level in the elevated storage tank. By monitoring the production of wells and level in the elevated tank the City anticipates being able to prevent the tank from over flowing and reducing system losses.

5.7.5 Ground Level Tanks

The City has historically been able to rely on their groundwater supply to meet all demand conditions within their system. As the City moves towards a conjunctive use system with surface water as the primary supply source, future use of groundwater wells is being reviewed to ensure the City does not design and build excess groundwater wells. As part of this planning, the City is looking at using system storage tanks to meet peak demand conditions and defer the drilling of new wells to meet peak demands within the system. These storage tanks will also provide for blending of groundwater and surface water sources in the future system to maintain water quality to all customers.

The City is currently designing a 3.0 million gallon tank and plans to have it on-line the end of 2012. This tank will off-set the need for two new groundwater wells to meet peak hour conditions within the system. The City is also planning a 2.0 million gallon tank and expects to have it on-line the end of 2013. This tank will off-set the need for one new groundwater well to meet peak hour demands.

n:\clients\204 woodland\00-09-28 city of woodland 2010 uwmp update\gis\figures\figure 5-1 groundwater basin.mxd 4/11/2011



LEGEND

- City Limit
- DWR Groundwater Basin
- Reclamation District 2035
- YCFC&WCD
- Reclamation District 2068
- Dunnigan Water District
- County Boundary

N

0 15,000 30,000

Scale in Feet

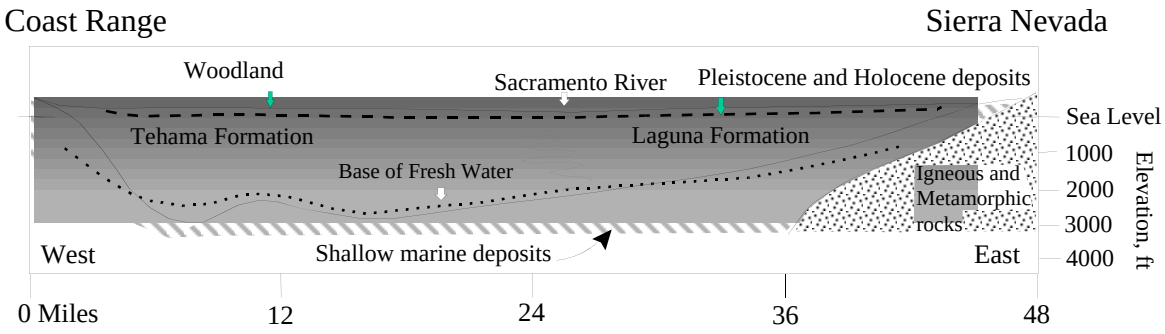
FIGURE 5-1

City of Woodland
Urban Water Management Plan 2010

GROUNDWATER BASIN

WOODLAND

WEST YOST ASSOCIATES
Consulting Engineers



Source: California Department of Water Resources, 1978

Figure 5-2. Generalized Sacramento Valley Geologic Cross Section

6.1 WATER SUPPLY RELIABILITY

10631 (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(1) An average water year

(2) A single-dry water year

(3) Multiple-dry water years

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

6.1.1 Hydrologic Year Conditions

Determination of the available surface water supply for the City can be affected by several factors. In determining the average water year, single dry water year, and multiple dry water year factors affecting future supplies, historic information was used based on past reductions and hydrologic conditions.

The City's available surface water supply during average water year conditions was determined by reviewing past information on how often and when Term 91 conditions were imposed. Changes to when the State Water Resources Control Board (SWRCB) declares that Term 91 conditions apply were also factored into determining future supply availability. For an average water year, approximately three months of Term 91 restrictions, from June to August, are assumed to occur. The potential effects of Term 91 conditions on water supply reliability are further discussed in Section 6.1.2.

The City's available surface water supply during single dry water year conditions was determined based on historic records of annual runoff. The single driest year between 1922 to 2010 period for the Sacramento River watershed was 1977. Historically, the Shasta Critical Year Reductions were in effect during this hydrologic year (discussed in Section 6.1.3) which would reduce the availability of the CPG surface water by 25 percent. Term 91 was adopted and first implemented by the SWRCB in 1984. To determine the approximate number of days Term 91 condition would have applied for the 1977 hydrologic condition, a model was developed and used to determine how the Term 91 conditions would have been applied to the historical conditions of 1977. According to the model, approximately seven months of Term 91 restrictions, from April to October, are assumed to occur.

The City's available surface water supply during multiple dry water year conditions were evaluated according to 1990 to 1992 hydrologic conditions. Historically, the Shasta Critical Year Reduction occurred in both 1991 and 1992 (year two and three of the multiple dry water years). In addition, Term 91 conditions were applied in each year: 1990 imposed approximately four months of restrictions (April, June to August), 1991 imposed approximately three months of restrictions (June through August), and 1992 imposed approximately seven months of restrictions (May through November).

Table 6-1 shows the basis of the water year conditions discussed above.

Table 6-1. Basis of Water Year Data (DWR Table 27)

Water Year Type	Base Year(s)
Average Water Year	The historic median occurrence of Term 91 curtailments.
Single Dry Water Year	1977
Multiple Dry Water Years	1990-1992

6.1.2 Surface Water and Potential Term 91 Limitations

Generally, Term 91 applies to all appropriative water rights, with priorities of 1965 or later, within the Sacramento River watershed. Based on hydrologic conditions and Central Valley Project and State Water Project operations, the SWRCB will determine when and how long Term 91 curtailments will be imposed on water users subject to the provisions every year. The WDCWA's primary water right (Permit 30358) is subject to Term 91 curtailments.

Term 91 curtailments were first imposed in 1984. Since that time, they have been imposed in all but four years. It is anticipated that most years will have some number of Term 91 curtailments applied in the future. When and for how long the Term 91 curtailments will be applied are determined by SWRCB. The SWRCB performs daily accounting of Term 91 and may impose curtailments any time during a month.

Historical Term 91 conditions and CVP and SWP operations for various hydrologic conditions were used in determining the average water year reductions. Based on the information available, the median Term 91 curtailment is three months (June through August). The potential effects of Term 91 curtailments on the City's available water supplies during normal, single-fry, and multiple-dry year conditions over the next 20-year planning horizon and beyond are further addressed and illustrated in Chapter 7 of this 2010 UWMP.

6.1.3 Surface Water and Potential Shasta Critical Year Reductions

The Shasta Critical Year Reductions are based on separate factors from Term 91 curtailments. CVP Settlement Contracts specify that a Shasta "Critical Year" shall mean any year in which either of the following exists: 1) the forecasted full natural inflow to Shasta Lake for the current water year, as such forecast is made by the United States on or before February 15 and reviewed as frequently thereafter as conditions and information warrant, is equal to or less than 3.2 million ac-ft; or 2) the total accumulated actual deficiencies below 4 million ac-ft in the immediately prior water year or series of successive prior water years each of which had inflows of less than 4 million ac-ft, together with the forecasted deficiency for the current water year exceed 800,000 ac-ft. The WDCWA's CPG water right is a Settlement Contract and subject to the Shasta Critical Year Reductions.

During Shasta "Critical Year" events, the CPG water right for WDCWA will be reduced by 25 percent. This 25 percent reduction is also applied to the diversion limit from July through September. The potential effects of Shasta Critical Year Reductions on the City's available water supplies during normal, single-dry, multiple-dry year conditions over the next 20-year planning horizon and beyond are further addressed and illustrated in Chapter 7 of this 2010 UWMP.

6.1.4 Reliability of Groundwater Supply

As fully set forth in Chapter 5 of this 2010 UWMP, the City will rely 100 percent on groundwater supplies until the surface water project is completed (anticipated to occur in 2016). The City has historically been able to meet all system demands with existing groundwater supplies. However, the City is concerned with its ability rely entirely upon groundwater to meet future demands based on the aging infrastructure and potential water quality concerns. Several of the City's wells are over 30 years old and reaching the end of their useful life. While the City is capable of rehabilitating and/or replacing those facilities, their existing condition is a factor used by the City to evaluate their overall reliability. The City routinely monitors its wells and will continue to perform all maintenance, repairs, rehabilitation, or replacement needed to ensure that its wells remain capable of producing a sufficient and reliable water supply for the City's customers. However, once surface water supplies are available, the City intends to manage their wells to be used during summer peak demands and emergency conditions. In the meantime, and based on the information and analyses contained throughout this 2010 UWMP, the groundwater supplies available to the City are considered a reliable supply. It is anticipated that the City will continue to be able to meet required demands with the available groundwater.

6.1.5 Reliability of Recycled Water Supply

Although total wastewater flows might be reduced slightly, recycled water is essentially 100 percent reliable even during drought events. This is because wastewater flows are primarily generated from indoor water uses which are not reduced significantly during drought conditions. Therefore, although the City is not currently utilizing recycled water, it is anticipated that the City would be able to expand its use of recycled water should future feasibility studies indicate it is economically feasible to incorporate.

6.1.6 Overall Water Supply Reliability

Table 6-2 presents a summary of the City's overall water supply reliability under various hydrologic conditions.

Table 6-2. Overall Supply Reliability (DWR Table 28)

Supply Source	Average Water Year, af/yr	Single Dry Water Year, af/yr	Multiple Dry Water Years, af/yr		
			Year 1	Year 2	Year 3
Primary Surface Water[(a)]	100%	20-23%	37-43%	44-50%	20-23%
CPG Surface Water	100%	75%	100%	75%	75%
Groundwater	100%	100%	100%	100%	100%

(a) Primary surface water subject to Term 91 curtailments which vary based on determination by SWRCB.
(b) CPG surface water Settlement Contract subject to the Shasta Critical Year Restrictions which reduce supply by 25 percent.
(c) All groundwater assumed to be available in the future. The amount available for pumping may be limited.

As discussed above, several factors can affect the availability and reliability of a particular source of supply. As noted, the City's surface water supplies are subject to curtailment and reduction based on hydrologic conditions and water right determinations. The City's groundwater supplies, although considered very reliable, have the ongoing potential to be affected by water quality concerns and aging infrastructure. Table 6-3 provides a summary of the potential factors which could result in supply inconsistency.

Table 6-3. Factors Resulting in Inconsistency of Supply (DWR Table 29)

Supply Source	Institutional/ Contractual	Legal	Environmental	Water Quality	Climatic
Primary Surface Water	✓	✓	✓	✓	✓
CPG Surface Water	✓	✓	✓	✓	✓
Groundwater		✓	✓	✓	

6.2 EFFECTS OF WATER QUALITY ON WATER SUPPLY RELIABILITY

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

6.2.1 Surface Water

Federal and state water quality regulations related to surface water quality and treatment are subject to on-going and future review and revision. The WDCWA future SWTPs will be operated to meet all applicable water quality regulations. If required, modifications will be made to treatment operations to ensure compliance with applicable standards and regulations. Therefore, it is not anticipated that future changes in surface water quality or surface water quality regulations will impact the availability or reliability of the City's surface water supplies.

6.2.2 Groundwater

As further discussed in Chapter 5 of this 2010 UWMP, groundwater quality is an ongoing concern for the City from both a drinking water and wastewater discharge perspective.

Federal and state water quality regulations related to groundwater quality are subject to existing and future review and revision. As discussed in Chapter 5, the City's municipal production wells currently have TDS and nitrate concentrations which need to be monitored, and other constituents of concerns exist in the groundwater basin area. In the future, new drinking water standards could be imposed for total chromium. Depending on whether and the extent to which such new enforceable standards were promulgated, that change could require expensive treatment systems and impair the City's ability to fully utilize its groundwater supplies.

Future wastewater discharge requirements are also impacted by groundwater quality. Boron and selenium levels in the groundwater are not a concern by drinking water standards in the City's system. However, high levels of these constituents in the groundwater results in elevated levels being present in the City's treated wastewater, which creates on ongoing potential for the City to exceed the limits of its wastewater discharge permits. As the City introduces surface water supplies into its system, groundwater usage will be limited to help avoid exceeding permit requirements. In addition to boron and selenium, the groundwater has high EC levels which makes the treated wastewater undesirable for use in a recycled water system.

6.2.3 Recycled Water

Federal and state water quality regulations related to recycled water are subject to on-going and future review and revision. The City's existing and future wastewater treatment facilities (RWRF, North Fresno WRF and other future facilities) are and will continue to be operated to meet all applicable water quality regulations. If required, modifications will be made to treatment operations to ensure compliance with applicable regulations. Therefore, it is not anticipated that future changes in recycled water quality or recycled water quality regulations will impact the availability or reliability of recycled water supplies in the future.

6.3 WATER SHORTAGE CONTINGENCY PLAN

10632 The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

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

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

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

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

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

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

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

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

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

In 1991, the City established a Water Conservation Regulations Ordinance to define the City's official response in the event of a water shortage. A copy of this ordinance is included in Appendix H.

6.3.1 Stages of Action

The stages of action in the City's Water Conservation Regulations Ordinance specify reduction objectives ranging from 15 to 50 percent of normal demand, depending on the water shortage stage declared. After public notice and a hearing, the City Council may, by resolution, determine that drought conditions exist within the City. The City Council would then determine which state in the four-state plan to declare. All four stages prohibit certain water uses at specific times, with prohibitions becoming stricter as supplies continue to decrease. Table 6-4 summarizes the four stages and their corresponding reduction objectives.

Table 6-4. Rationing Stages to Address Water Supply Shortages (DWR Table 35)

Stage Number	Water Supply Condition	% Shortage	Type of Rationing Program
I	Water Awareness	0-15 percent	Voluntary
II	Water Alert	15 percent	Voluntary
III	Water Emergency	25 percent	Mandatory
IV	Water Crisis	50 percent	Mandatory

Currently the stages of action are determined by the City Council based on hydrologic conditions. In the future, with the addition of surface water as the primary water supply, the City is reviewing the triggers for declaring the various stages based on Term 91 and Shasta Critical Year Reduction information. The City plans to have updated triggers for the declaration of a Stage of Action for the 2015 UWMP.

6.3.1.1 Stage I, Water Awareness

In Stage I, all water consumers are encouraged to be aware of water consumption and use water wisely. Water consumption should be limited to a reasonable level necessary to maintain the public health, business operations, and landscaping. Additional information is provided in Table 6-6 below.

6.3.1.2 Stage II, Water Alert

In Stage II, all water consumers are encouraged to voluntarily reduce normal water use by 15 percent. Additional information is provided in Table 6-6 below.

6.3.1.3 Stage III, Water Emergency

In Stage III, all water consumers are required to comply with specified conservation measures to achieve a 25 percent reduction in normal water use. Additional information is provided in Table 6-6 below.

6.3.1.4 Stage IV, Water Crisis

In Stage IV, all water consumers are required to comply with additional conservation measures to achieve a 50 percent of normal water use. Additional information is provided in Table 6-6 below.

6.3.2 Catastrophic Supply Interruption Plan

The City currently maintains eleven of its nineteen groundwater wells with backup power. The pumping capacity of the wells with standby power is approximately 14,000 gallons per minute (gpm) which is adequate to supply an average day demand. In addition to the wells with backup power, the City maintains a 400,000 gallon elevated tank that can provide some emergency water. Since the City is not located in earthquake zones 1 or 2, the likelihood of a catastrophic earthquake is small in comparison to other areas of the state. However, in the unlikely event of a serious earthquake, the City's wells are spread throughout the City and provide a de-centralized water supply system that is very unlikely to be completely interrupted. The City intends to maintain wells in the future once surface water is available to ensure a reliable water supply for emergency situations. Table 6-5 lists the actions the City will implement during a catastrophic event.

The City plans to continue to maintain groundwater wells in the future once surface water becomes available. The City will have enough capacity in their groundwater wells pumping capacity to meet demands for an average day during any emergency conditions.

Table 6-5. Preparation Actions for a Catastrophe	
Possible Catastrophe	Preparation Actions
Regional Power Outage	Establish Emergency Operations Center to: • Coordinate with Yolo county Emergency Services • Direct actions to maintain an emergency water supply. • Announce water reduction order.
Earthquake or Flood	
Other	

6.3.3 Prohibitions, Consumption Reduction Methods and Penalties

Once the City Council declares a particular water shortage stage, a series of requested consumer actions is announced to the community. Many of these requested actions are voluntary, but the majority are required by the City. Table 6-6 summarizes the City's consumer actions listed by water shortage stage. Stage IV (the most restrictive stage) includes the requested consumer actions that have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

Table 6-6. Requested and Mandatory Water Use Prohibitions and Consumption Reduction Methods (DWR Tables 36 and 37)

Stage	Requested and Mandatory Consumer Actions	Water Use Reduction (%)
I	• Watering of landscapes in a manner or to an extent which allows substantial amounts of water to run off the area being watered. • The escape of water through breaks or leaks within the users system for any substantial period of time (18 hours after detection).	0% - 15%
II	• All of Stage I actions. • Limited landscape irrigation to a maximum of three days per week. Equip all hoses or filling apparatus for non-irrigation purposes with an automatic shut-off nozzle. • Limit hosing of hardscape surfaces except for health and safety purposes. • Serve water only upon request to restaurant customers	0% - 15%
III	• All of Stage I and II actions remain in full effect. • Landscape watering shall be allowed on two days per week. • The use of running water from a hose, pipe or faucet for the purpose of cleaning buildings and paved, tile, wood, plastic, or other surfaces is prohibited. • All restaurants that provide table service shall post a notice of drought conditions and shall not serve water except upon specific request by the customer. • Boats and vehicles shall be washed only at commercial washing facilities equipped with water recycling equipment or by use of a bucket and hose equipped with a self-closing valve that requires operating positive pressure to activate the flow of water. • Operators of hotels, motels and other commercial establishments offering lodging shall post in each room and site a notice of drought conditions. • The operation of and introduction of water into ornamental fountains is prohibited. • Such other and further regulations as the City Council may determine, after a public hearing.	15% - 25%
IV	• All of Stage I, II, and III actions remain in full effect. • Irrigation of any yard, or other landscaped area containing lawn or turfgrass areas is prohibited, except by handheld bucket. • The introduction of water into swimming pools and spas is prohibited except to maintain the structural integrity of such facilities. • Such other and further regulations as the City Council may determine after public hearing. • All pools and spas shall be covered when not in use to reduce evaporative losses unless exemption is granted.	25% - 50%

During a declared water shortage stage, penalties for excess water use exist in the form of administrative fees or fines. These fines are assessed based on the number of violations a particular customer accumulates during a particular stage. The penalty for the first violation consists of a fine not less than $25. Any subsequent fines shall be assessed at $50. Table 6-7 summarizes the administrative fines for excessive water use.

Table 6-7. Penalties and Charges for Excessive Water Use (DWR Table 38)

Stage	Penalties and Charges
III	$25 Fee assessed upon first violation of mandatory water restrictions. $50 Fee assessed upon second and subsequent violation. $100 Fee assessed upon fourth violation.
IV	$25 Fee assessed upon first violation of mandatory water restrictions. $50 Fee assessed upon second and subsequent violation. $100 Fee assessed upon fourth violation.

6.3.4 Analysis of Revenue Impacts of Reduced Sales During Shortages

The City does not currently have a set aside fund to cover short-term expenses and/or revenue losses that may be incurred during declared water rationing stages but does have reserve fund available in case of emergency.

The City currently is based on a flat-rate system which is not impacted by actual customer usage. However, the City is in the process of updating water usage rates based on actual meter consumption usage. The proposed water usage rates include a flat fee portion and a consumptive use portion. This rate approach is being planned to help minimize potential revenue loss due to increased water conservation. Impacts to the projected revenue based on customer usage are being reviewed and, if needed, funding for water shortages will come through a temporary rate increase and/or fund reserves. Other potential funding sources and/or shortage management options include close monitoring, managing the short-term water reduction plan, initiating a water contingency fund and/or temporary deferral of capital improvement projects. There may be additional outside funding sources made available to water agencies under a water emergency situation (Stage IV).

Expenditure impacts resulting from implementation of the Water Shortage Contingency Plan, if any, will be addressed through implementation of the same measures identified to address revenue impacts: rate adjustments, water shortage contingency fund, temporary deferral of CIP projects, and additional outside funding sources. Proposed measures for overcoming revenue and expenditure impacts are summarized in Table 6-8.

Table 6-8. Proposed Measures to Overcome Revenue and Expenditure Impacts	
Measure	Check if Discussed
Rate Adjustment	✓
Water Shortage Contingency Fund	✓
Temporary Deferral of CIP Projects	✓
Additional Outside Funding Sources	✓

6.3.5 Water Use Monitoring

The City's current water system is supplied from groundwater wells that are monitored daily for total flow entering the City's system. These wells will be connected to the City's SCADA System, allowing past and real-time flow trends to be analyzed and actual water use reductions to be determined. Further, the City is in the process of converting all customers to meters. Once the conversion to meters is complete, the City will be able to determine reductions in demand based on metered usage. Table 6-10 summarizes the City's water use monitoring mechanisms. In the future, the SWTP will be connected to the City's SCADA System to allow monitoring of actual supply entering the distribution system.

Table 6-9. Water Use Monitoring Mechanisms	
Mechanism for Determining Actual Reductions	Type of Data Expected
Groundwater Pumping	Production Volume
Water Meters	Demand

7.1 WATER SUPPLY RELIABILITY

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

(c)-(d) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service. Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

7.1.1 Average Year Supply and Demand Comparison

7.1.1.1 Average Year Supply

As discussed in Chapter 5, until 2016, the City will continue to use groundwater to meet all system demands. In 2016, the WDCWA surface water supply project is expected to be complete and able to supply surface water. Therefore, the City will meet near-future demands with groundwater supplies prior to the surface water availability. Once surface water is available, the City will rely on surface water as the primary supply and groundwater as supplemental for summer peak demands and emergency conditions. As described in Chapter 6, an average year water supply assumes three months of Term 91 restrictions will be imposed on the Primary Surface Water Right.

As shown in Table 7-1, the City's average year surface water availability is projected to grow to a buildout average year water supply of approximately 18,950 af/yr. This represents a 36 percent growth in supply as compared to 2010.

Table 7-1. City of Woodland Average Year Water Supply[(a)], af/yr

Supply	2015	2020	2025	2030	2035
Primary Surface Supply	—	11,470	12,160	12,680	13,200
CPG Surface Supply	—	5,750	5,750	5,750	5,750
Groundwater Pumping[(b)]	16,400	180	540	890	1,250
Total	16,400	17,400	18,450	19,320	20,200
% of 2010	118%	125%	1339%	139%	145%

[(a)] Average water year is based on three months of Term 91 restrictions imposed on the Primary Surface Water Right.
[(b)] Groundwater pumping was calculated based on groundwater needed to meet demand during Term 91 restrictions imposed on the Primary Surface Water Right in June through August.

7.1.1.2 Average Year Demand

As shown in Table 7-2, the City's buildout water demand is projected to reach approximately 18,500 af/yr in the year 2035. As described in Chapter 4, this water demand projection is based on the City's compliance with its SBx7-7 per capita water use targets (interim target of 260 gpcd in 2015 and final target of 231 gpcd in 2020 and in subsequent years). This represents a demand increase of approximately 33 percent as compared to 2010 demands.

Table 7-2. City of Woodland Average Year Water Demands, af/yr

Supply	2015	2020	2025	2030	2035
Demand[(a)]	16,400	15,650	16,600	17,550	18,500
% of 2010	118%	112%	119%	126%	133%

[(a)] Water demand projection is based on the City's compliance with its SBx7-7 per capita water use targets (interim target of 260 gpcd in 2015 and final target of 231 gpcd in 2020 and in subsequent years) (see Chapter 4).

7.1.1.3 Average Year Comparison

As shown in Table 7-3, the City is projected to successfully meet demands through 2035.

Table 7-3. City of Woodland Supply and Demand Comparison—Average Year, af/yr (DWR Table 32)

Supply	2015	2020	2025	2030	2035
Supply Totals (from Table 7-1)	16,400	17,220	17,910	18,430	18,950
Demand Totals (from Table 7-2)	16,400	15,650	16,600	17,550	18,500
Difference	0	1,570	1,310	880	450
Difference as % of Supply	0.0%	9.1%	7.3%	4.8%	2.4%
Difference as % of Demand	0.0%	10.0%	7.9%	5.0%	2.4%

7.1.2 Single Dry Year Supply and Demand Comparison

7.1.2.1 Single Dry Year Supply

As described in Chapter 6, a single dry year water supply is based on 1977 hydrologic conditions. The single dry year conditions include Shasta Critical Year Reductions on the CPG surface water and seven months of Term 91 restrictions on the Primary Surface Water Rights.

As shown in Table 7-4, the City's projected supply in a single dry year is expected to increase to approximately 14,579 af/yr in 2035. For the single dry year, the primary surface water supply is subject to seven months of Term 91 restrictions and CPG surface supply is subject to Shasta Critical Year Reduction of 25 percent. Groundwater supplies are used to meet demands not met by surface water supplies, where groundwater does not exceed 30 percent of the total supply. The resultant deficit between average year demands and single dry year available supply will be met by various methods including demand conservation. The City is in the process of obtaining supplemental surface water supply to also assist in meeting demands during surface water restrictions. At this time, the supplemental water supply options have not been made confirmed and are not being included in the analysis.

Table 7-4. City of Woodland Single Dry Year Water Supply[(a)], af/yr

	2015	2020	2025	2030	2035
Primary Surface Supply	—	5,104	5,362	5,620	5,892
CPG Surface Supply	—	4,313	4,313	4,313	4,313
Groundwater Pumping[(b)]	16,400	4,036	4,146	4,257	4,374
Total	16,400	13,453	13,821	14,190	14,579
% of Average	100%	78%	77%	77%	77%

(a) Reduction in surface water supply as compared to an average year is based on seven months of Term 91 restrictions on the Primary Surface Water Rights and Shasta Critical Year Restriction cutback of the CPG surface water supply.
(b) Groundwater is assumed to be limited to no more than 30 percent of the total supply to address water quality issues.

7.1.2.2 Single Dry Year Comparison

As shown in Table 7-5, projected single dry year results in a deficit of supply available to meet average year demands. The City will meet the shortfall in supply by a variety of options which include increased demand conservation, purchase of additional short-term or long-term surface water, and use of ASR wells. The City is currently updating their Water Conservation Regulations to include triggers based on Term 91 and Shasta Critical Year restrictions for declaring various Stages of Drought for conservation. As shown in Table 7-6, without any additional supplies, 14 to 21 percent water conservation would be required.

The groundwater supply use is being limited to only 30 percent of the total supply based on preliminary evaluations geared towards minimizing adverse impacts to system water quality. In the future, the City may be able to pump more groundwater depending on results from planned groundwater monitoring.

Table 7-5. City of Woodland Supply and Demand Comparison—Single Dry Year, af/yr (DWR Table 33)

	2015	2020	2025	2030	2035
Supply Totals	16,400	13,453	13,821	14,190	14,579
Average Year Demand Totals	16,400	15,650	16,600	17,550	18,500
Difference	0	-2,197	-2,779	-3,360	-3,921
Difference as % of Supply	0.0%	16%	20%	24%	27%
Difference as % of Demand	0%	14%	17%	19%	21%

7.1.3 Multiple Dry Year Supply and Demand Comparison

7.1.3.1 Multiple Dry Year Supply

As described in Chapter 6, the multiple dry years water supply is based on 1990 to 1992 hydrologic conditions. Year 1 of the multiple dry year assumes four years of Term 91 restrictions imposed on the Primary Surface Water Right. Year 2 of the multiple dry year assumes a Shasta Critical Year Reduction on the CBG water supply plus three months of Term 91 restrictions imposed on the Primary Surface Water Right. Year 3 of the multiple dry year assumes a Shasta Critical Year Reduction on the CBG water supply plus seven months of Term 91 restrictions imposed on the Primary Sruface Water Right.

As shown in Table 7-6, the City's projected supply in a multiple dry year is expected to vary each year of the multiple dry year due to different surface water restrictions. The primary surface water supply is subject to various Term 91 restrictions and CPG surface supply subject to Shasta Critical Year Reduction of 25 percent in a the second and third dry years. Groundwater supplies are used to meet demands not met by surface water supplies, where groundwater does not exceed 30 percent of the total supply. The resultant deficit between average year demands and single dry year available supply will be met by various methods including demand conservation. The City is in the process of obtaining supplemental surface water supply to also assist in meeting demands during surface water restrictions. At this time, the supplemental water supply options have not been made confirmed and are not being included in the analysis.

Table 7-6. City of Woodland Multiple Dry Year Water Supply, af/yr

		3-Year Dry Period Beginning				
		2015	2020	2025	2030	2035
Multiple-dry year first year supply	Primary Surface Supply[a]	—	9,640	10,110	10,570	11,020
	CPG Surface Supply	—	5,750	5,750	5,750	5,750
	Groundwater Pumpage[d]	16,400	260	740	1,230	1,730
	Total Supply	**16,400**	**15,650**	**16,600**	**17,550**	**18,500**
Multiple-dry year second year supply	Primary Surface Supply[b]	—	11,470	12,020	12,550	13,060
	CPG Surface Supply	—	4,313	4,313	4,313	4,313
	Groundwater Pumpage[d]	16,400	0	267	687	1,127
	Total Supply	**16,400**	**15,783**	**16,600**	**17,550**	**18,500**
Multiple-dry year third year supply	Primary Surface Supply[c]	—	5,104	5,362	5,620	5,892
	CPG Surface Supply	—	4,313	4,313	4,313	4,313
	Groundwater Pumpage[d]	16,400	4,036	4,146	4,257	4,374
	Total Supply	**16,400**	**13,453**	**13,821**	**14,190**	**14,579**

[a] The first year Term 91 conditions are assumed to occur for 4 months.
[b] The second year Term 91 conditions are assumed to occur for 3 months plus the Shasta Critical Year Reduction is anticipated to occur.
[c] The third year Term 91 conditions are assumed to occur for 7 months plus the Shasta Critical Year Reduction is anticipated to occur.
[d] Groundwater is assumed to be limited to no more than 30 percent of the total supply to address water quality issues.

7.1.3.2 Multiple Dry Year Comparison

As shown in Table 7-7, projected multiple dry year supply demand is projected to be met through a combination of surface water and groundwater for the first and second years and demand reductions or other supplemental sources currently being developed in the third year Demands are projected to require 14 to 21 percent reduction based on the available supply. However, the groundwater supply use is being limited to only 30 percent of the total supply based on preliminary evaluations geared towards minimizing adverse impacts to system water quality. In the future, the City may be able to pump more groundwater depending on results from planned groundwater monitoring.

Table 7-7. City of Woodland Supply and Demand Comparison – Multiple Dry Year, af/yr (DWR Table 34)

		3-Year Dry Period Beginning				
		2015	2020	2025	2030	2035
Multiple-dry year first year supply	Supply Totals	16,400	15,650	16,600	17,550	18,500
	Average Year Demand Totals	16,400	15,650	16,600	17,550	18,500
	Difference	0	0	0	0	0
	Difference as % of Supply	0%	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%	0%
Multiple-dry year second year supply	Supply Totals	16,400	15,783	16,600	17,550	18,500
	Average Year Demand Totals	16,400	15,650	16,600	17,550	18,500
	Difference	0	133	0	0	0
	Difference as % of Supply	0%	1%	0%	0%	0%
	Difference as % of Demand	0%	1%	0%	0%	0%
Multiple-dry year third year supply	Supply Totals	16,400	13,453	13,821	14,190	14,579
	Average Year Demand Totals	16,400	15,650	16,600	17,550	18,500
	Difference	0	-2,197	-2,779	-3,360	-3,921
	Difference as % of Supply	0%	16%	20%	24%	27%
	Difference as % of Demand	0%	14%	17%	19%	21%

This chapter describes the available information on each of the City's water conservation programs as they relate to the 14 Demand Management Measures (DMMs) included in the Urban Water Management Planning Act. As shown in other chapters of this UWMP, the DWR Guidebook to Assist Urban Water Suppliers to prepare a 2010 Urban Water Management Plan has several recommended tables for presenting the UWMP water supply and demand information. Likewise, DWR has several recommended tables for presenting the DMM information. However, the City has historically not tracked or reported its conservation program efforts in such detail. Therefore, there is currently insufficient data available to complete many of the DWR recommended DMM tables.

This chapter describes the following:

- The Urban Water Management Planning Act DMMs and relationship to the California Urban Water Conservation Council (CUWCC) Best Management Practices (BMPs).
- The City's past and on-going water conservation programs and measures.
- A description of the City's current and planned activities and budget allocations for each BMP/DMM.
- Determination of DMM implementation.
- Evaluation of any DMMs not being implemented.
- Discussion of potential future DMMs being considered by the City.

8.1 DEMAND MANAGEMENT MEASURES

The City is committed to implementing economically feasible programs that promote efficient water use and continues to implement demand management measures wherever practical. To meet the 20 percent by 2020 reductions in gallons per capita day (gpcd) water use required by SBx7-7, the City is opting to use Method 1 as discussed in Chapter 4. To meet the requirements of AB 1420, the City has chosen to use the gpcd compliance options available through the CUWCC. This gpcd target is an 18 percent reduction by 2018. The City is on track to meet or exceed the goals of both SBx7-7 and the CUWCC gpcd reduction.

The UWMP Act includes 14 DMMs for urban water conservation. These 14 measures include the following:

1. Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers
2. Residential Plumbing Retrofit
3. System Water Audits, Leak Detection and Repair
4. Metering With Commodity Rates for All New Connections and Retrofit of Existing Connections
5. Large Landscape Conservation Programs and Incentives
6. High-Efficiency Washing Machine Rebate Programs

7. Public Information Programs
8. School Education Programs
9. Conservation Programs for Commercial, Industrial and Institutional Accounts
10. Wholesale Agency Programs
11. Conservation Pricing
12. Water Conservation Coordinator
13. Water Waste Prohibition
14. Residential Ultra-Low-Flush Toilet Replacement Program

These fourteen DMMs are the same as the fourteen Best Management Practices (BMPs) listed in the CUWCC Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California. The 1991 MOU originally listed 16 BMPs for water conservation. In 1999, the MOU was revised to include 14 BMPs, as listed above.

Woodland is located in the Central Valley and experiences long, hot summers. An estimated 65 percent of water use in this area is for irrigation purposes. For this reason, the City will be focusing efforts on implementation measures that will lead to water conservation savings outdoors. The City provides financial incentives such as rebates for weather-based irrigation controllers and rain sensors. The City hosts an annual Landscaping for Water Conservation workshop and distributes hose nozzles and moisture meters. The City also distributes literature on water-wise gardening and watering with the weather at local events. The City maintains water conservation resources on its website at www.cityofwoodland.org/waterconservation.

Over the next five years, the City will be revising the municipal code to integrate new state law requirements regarding water conservation, including but not limited to the Water Efficient Landscape Ordinance and SBx7-7. The City has accelerated its meter installation program and all properties should be metered by 2011. A three-tier conservation rate structure has been established. A system wide water audit is planned for the oldest section of town in the summer of 2011, with additional areas being surveyed in future years.

8.2 DESCRIPTION OF DMM IMPLEMENTATION

10631(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

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

(B) Residential plumbing retrofit.

(C) System water audits, leak detection, and repair.

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

(E) Large landscape conservation programs and incentives.

(F) High-efficiency washing machine rebate programs.

(G) Public information programs.

(H) School education programs.

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

(J) Wholesale agency programs.

(K) Conservation pricing.

(L) Water conservation coordinator.

(M) Water waste prohibition.

(N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

8.3 DMM 1: WATER SURVEY PROGRAMS FOR SINGLE FAMILY AND MULTI-FAMILY RESIDENTIAL CUSTOMERS

Corresponding CUWCC BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers.

8.3.1 Description

The City provides leak detection assistance by request to residents and to the top 20 residential water users each month as identified through water meter readings. As the Phase II (older area) of town is metered, water conservation staff will work with the top water users each month to lower their water usage and to identify leaks. Using an automated meter reading (AMR) system and database, graphs of water usage are compiled by staff for each of the top twenty users. A table is also provided showing their hourly usage during a representative week. Staff then contacts the top 20 users and provides them the graphs, a leak detection brochure, and assistance when needed. In addition to working directly with the top 20 monthly water users, a high water use letter is sent out to sample bill accounts using more than three times the average water use for that month.

The City does not currently provide landscape water surveys due to limited staffing and funding. The City does provide information to residents on water-wise landscaping, proper irrigation scheduling, and outdoor water saving tools. Residents can request hose nozzles and moisture meters from the City or obtain them at the Environmental Services booth at many local events. The City also currently offers rebates for weather-based irrigation controllers and rain sensors. After the water meter installation is complete and there is more staff time available, the City will reconsider offering a residential landscape survey program.

8.3.2 Implementation Schedule

- Program Status:
  - On-going.
  - Leak detection assistance for top 20 residential water users each month. Current focus is on outdoor water use.
  - The program is marketed through billing inserts, promotional materials, public outreach events, and the City's web site.
- Rebates for weather-based irrigation controllers and rain sensors.

8.3.3 Annual Budget/Expenditures

FY2005/2006: Actual Budget: $6,000

FY2006/2007: Proposed Budget: $4,000

FY2007/2008: Proposed Budget: $4,000

FY2008/2009: Proposed Budget: $4,000

FY2009/2010: Proposed Budget: $4,000

8.4 DMM 2: RESIDENTIAL PLUMBING RETROFIT

Corresponding CUWCC BMP 02: Residential Plumbing Retrofit.

8.4.1 Description

In place of distributing showerheads, as the City has done in the past, the City is distributing replacement toilet flappers and automatic shut-off hose nozzles. The City also distributes moisture meters to check the soil moisture at plant root depth and toilet dye tablets to determine if a toilet has a leak.

8.4.2 Implementation Schedule

The City plans to distribute 100 each of the hose nozzles, moisture meters, toilet flappers, and toilet dye tablets each year. These conservation devices may be replaced over the five year period with equivalent water conservation devices.

8.4.3 Annual Budget/Expenditures

FY2005/2006: Actual Budget: $6,000

FY2006/2007: Actual Budget: $4,000

FY2007/2008: Actual Budget: $4,000

FY2008/2009: Actual Budget: $4,000

FY2009/2010: Actual Budget: $4,000

8.5 DMM 3: SYSTEM WATER AUDITS, LEAK DETECTION AND REPAIR

Corresponding CUWCC BMP 03: System Water Audits, Leak Detection and Repair.

8.5.1 Description

Because the City is not entirely metered, a complete system water audit is not possible at this time. The City is preparing to have a water audit completed by a consultant in the summer of 2011 on the oldest 97 miles of pipe in town (Phase 1). City staff will make repairs to water infrastructure based on the magnitude of the leak and priority. Other areas of town will be surveyed in the future as funding allows.

The City's leak detection program will be enhanced with the completion of the meter installation program, which will be finished in 2011 (see DMM No. 4).

8.5.2 Implementation Schedule

- Phase 1 of system audit: To be conducted in summer of 2011 on oldest pipeline in town.
- Additional phases of system audit: To be conducted in future as funding allows.
- Leak detection program: To become a priority once meter installation completes in 2011 (see DMM No. 4).

8.5.3 Annual Budget/Expenditures

Funding for this DMM is not included in the City's Water Conservation budget. The budget for this DMM is included in the City's Water Operations budget; however, the specific budget for the leak detection program is not available.

8.6 DMM 4: METERING WITH COMMODITY RATES FOR ALL NEW CONNECTIONS AND RETROFIT OF EXISTING CONNECTIONS

Corresponding CUWCC BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing.

8.6.1 Description

Based on State Regulations, the City adopted a new rate structure for metered properties that became effective on January 1, 2010. The metered rate includes a water service base rate and charges for actual water use. The metered rate includes three consumption tiers to encourage water conservation. The City began reading and billing existing customers with meters in 2010 and will install, read, and bill all customers based on water usage by 2012. The City utilizes an AMR system.

Table 8-1 provides a summary of the City's residential metered monthly rates for residential.

Table 8-1. Residential Metered Monthly Rates

Water Bill Component	Customer Class / Water Usage	Monthly Rates ($/month/account)[a]		
		Effective July 1, 2010, dollars	Effective July 1, 2011, dollars	Effective July 1, 2012, dollars
Meter Fixed Charge	¾ "to 2" meter fixed charge	$15.75	$20.00	$24.00
Water Consumption[b]	$ per CCF for 0 to 12 CCF	$1.19	$1.25	$1.50
	$ per CCF for 13 to 20 CCF	$1.37	$1.50	$1.95
	$ per CCF for more than 20 CCF	$1.37	$1.90	$2.55

[a] Total water bill will be the total of the meter fixed charge and water consumption.
[b] CCF equals one hundred cubic feet of water or 748 gallons of water.

8.6.2 Implementation Schedule

- Metering and Billing at Commodity Rates: On-going for single family residential customers already metered.
- Single-Family Residential Metering Program: Scheduled to be completed by 2012.

8.6.3 Annual Budget/Expenditures

Funding for this DMM is not included in the City's Water Conservation budget. The budget for this DMM is included in the City's Water Operations budget and will come from the Capital Improvement Program and bonds; however, the specific budget for the metering with commodity rates program is not available.

8.7 DMM 5: LARGE LANDSCAPE CONSERVATION PROGRAMS AND INCENTIVES

Corresponding CUWCC BMP 05: Large Landscape Conservation Programs and Incentives.

8.7.1 Description

The City is currently upgrading the parks irrigation systems and converting all park and recreation facilities to centralized irrigation control. The Parks Irrigation Grant estimates a reduction in water use by the parks of approximately 200 acre-feet annually. Seven parks are still irrigated with manual sprinkler systems. These older parks will be completely renovated with new, automated irrigation hardware that will be tied into the centralized irrigation control system. The remaining 20 City parks and recreation facilities are automated and will be tied into the centralized irrigation control system. The project will include replacing inefficient piping, valves, and sprinkler heads with new, efficient hardware (including ET controllers).

Non-residential customers are eligible for the irrigation rebates currently offered by the City. The City is considering separate incentives for large landscapes in the future. The City is also considering offering water budgets for large landscapes in the future.

8.7.2 Implementation Schedule

- Parks Irrigation Grant: On-going to improve efficiency of City park irrigation.
- Water budgets for large landscapes: Future incentive.
- Rebates for weather-based irrigation controllers and rain sensors.
- Water Conserving Landscape Requirements: Updating the City Municipal Code to include Water Efficient Landscape Standards.

8.7.3 Annual Budget/Expenditures

Funding for this DMM is not included in the City's Water Conservation budget. The budget for this DMM is included in the City's Water Operations budget and will come from, in part, the Parks Irrigation Grant; however, the specific budget for the large landscape conservation program is not available.

8.8 DMM 6: HIGH-EFFICIENCY WASHING MACHINE REBATE PROGRAMS

Corresponding CUWCC BMP 06: High-Efficiency Washing Machine Rebate Programs.

8.8.1 Description

The City began a rebate program for high-efficiency washing machines in 2005. A total of 380 high-efficiency washing machine rebates were given from July 1, 2005 to the discontinuation of the program on June 30, 2009. The estimated monthly water savings from the washer rebates is 228,000 gallons.

The City has chosen to provide assistance to newly metered residents to identify and repair leaks in place of the high efficiency washing machine rebate program. Figure 8-1 illustrates the water savings that the City has seen by working with the top twenty residences each month identified through meter readings. The water savings from the repair of major residential leaks quickly surpassed the estimated water savings from the toilet and washer rebates combined.

While the City no longer offers a High-Efficiency Washing Machine Rebate Program, Pacific Gas & Electric (PG&E) offers a $50 rebate for the purchase of qualifying high efficiency washing machine models.

8.8.2 Implementation Schedule

- PG&E Rebate Program: On-going
- City Rebate Program: Discontinued June 30, 2009

8.8.3 Annual Budget/Expenditures

Funding for this DMM was discontinued in June 30, 2009. Instead, the City is using the limited funding available to concentrate on outdoor water use.

8.9 DMM 7: PUBLIC INFORMATION PROGRAMS

Corresponding CUWCC BMP 07: Public Information Programs.

8.9.1 Description

To get the water conservation message out to the public, the City utilizes its website www.cityofwoodland.org/waterconservation, utility bill inserts, information on customer's bills, a water conservation list-serve, radio spots, and press releases and ads in the local paper. Recent utility bill inserts include a leak detection brochure and a brochure on the cost of water waste. Radio spots on KUIC's Hometown Green have covered water conservation as well as other pertinent conservation topics. The City's water conservation pages on the website are updated regularly to reflect upcoming events and seasonal messages. Press releases and/or ads are in the local papers at least six times per year.

The City has information available at public events a minimum of eight times per year including the Yolo County Fair, Downtown Sidewalk Sale, Arbor Day, and Fall and Spring Master Gardeners landscaping and composting workshops. The City also holds an annual "Landscaping for Water Conservation" workshop each spring. In 2011, the City is piloting a fix-a-leak workshop for residents. Depending upon the success of this event it may become an annual workshop. The City hosts school tours of the Water Pollution Control Facility with one of the topics covered being water conservation.

The City distributes moisture meters, hose nozzles, toilet leak detection dye tablets, and replacement toilet flappers at events and by request from residents. Materials include guides on water-wise gardening, leak detection, landscaping, rain barrels, watering with the weather, and household water conservation. For kids, the City distributes water conservation stickers, "Save Our Water" slap bracelets, and Project WET guides titled "Conserve Water" and "Discover Stormwater".

The City provides a link to qualified landscape professionals that are program partners with WaterSense including the Irrigation Association (IA), California Landscape Contractors Association (CLCA), and the Qualified Water-Efficient Landscaper program (QWEL). The City partners with the Yolo County Master Gardeners, Yolo Resource Conservation District, Woodland Community College, and other cities to promote water conservation.

8.9.2 Implementation Schedule

- Paid Advertising: On-going
- Public Service Announcements: On-going
- Water Bill Inserts, Newsletters and Brochures: On-going
- Special Events, Media Events: On-going
- Speaker's Bureau: On-going

8.9.3 Annual Budget/Expenditures

FY2005/2006: Actual Budget: $10,700

FY2006/2007: Actual Budget: $9,700

FY2007/2008: Actual Budget: $10,145

FY2008/2009: Actual Budget: $10,025

FY2009/2010: Actual Budget: $8,400

8.10 DMM 8: SCHOOL EDUCATION PROGRAMS

Corresponding CUWCC BMP 08: School Education Programs.

8.10.1 Description

The City began sponsoring Earth Capades assemblies in schools for K-6 graders in 2003. For the past 8 years, Earth Capades has performed an average of 20 shows per year reaching an average of 7,000 students each year. In 2011, the City is sponsoring 18 ZunZun Musical Planet assemblies in the local elementary schools. ZunZun is an engaging musical assembly program about recycling, stormwater, and water conservation. Water conservation topics include irrigation, drought, and water savings both indoors and outdoors.

The City sponsors 15-20 school assemblies each year reaching approximately 6,000 students per year.

8.10.2 Implementation Schedule

- School Outreach Program: On-going

8.10.3 Annual Budget/Expenditures

FY2005/2006: Actual Budget: $12,000 ($6,000 from the water conservation fund)

FY2006/2007: Actual Budget: $12,000 ($6,000 from the water conservation fund)

FY2007/2008: Actual Budget: $12,000 ($6,000 from the water conservation fund)

FY2008/2009: Actual Budget: $12,000 ($6,000 from the water conservation fund)

FY2009/2010: Actual Budget: $12,000 ($6,000 from the water conservation fund)

8.11 DMM 9: CONSERVATION PROGRAMS FOR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL ACCOUNTS

Corresponding CUWCC BMP 09: Conservation Programs for Commercial, Industrial and Institutional Accounts.

8.11.1 Description

The City does not currently implement this program due to cost and lack of staffing. The City rarely receives a request regarding interior water conservation surveys for CII accounts. The City does conduct exterior surveys for CII accounts upon request, or as a result of routine monitoring.

8.11.2 Implementation Schedule

Exterior Surveys conducted: On-going

8.11.3 Annual Budget/Expenditures

Funding for this DMM is not included in the City's Water Conservation budget.

8.12 DMM 10: WHOLESALE AGENCY PROGRAMS

Corresponding CUWCC BMP 10: Wholesale Agency Programs.

8.12.1 Description

The City functions primarily as a retail water purveyor for the City of Woodland water service area. Wholesale agency programs are not considered applicable to the City.

8.12.2 Implementation Schedule

Not applicable to City.

8.12.3 Annual Budget/Expenditures

Not applicable to City.

8.13 DMM 11: CONSERVATION PRICING

Corresponding CUWCC BMP 11: Conservation Pricing.

8.13.1 Description

As described for DMM 4, the City is implementing a three tier pricing for water with the completion of the water meter program. The City plans to be fully metered by 2011. The metered monthly rates include three water consumption tiers to encourage water conservation. An AMR system is utilized by the City for collecting water consumption, diagnostic, and status data from water meters. That data is transferred to a database for billing, troubleshooting, and analyzing. The data management system allows water conservation staff to aid residents in detecting leaks and in lowering their water use and bills.

8.13.2 Implementation Schedule

- Single-Family Residential Accounts: In accordance with the City's metering program (see DMM No. 4), all single-family residential accounts will be metered by 2011, and will be billed based on actual water consumption.

- All Other Accounts: Currently billed based on actual water consumption based on uniform rate structure.

8.13.3 Annual Budget/Expenditures

None.

8.14 DMM 12: WATER CONSERVATION COORDINATOR

Corresponding CUWCC BMP 12: Water Conservation Coordinator.

8.14.1 Description

The City employs a full time Water Conservation Coordinator. Duties of the Water Conservation Coordinator are listed below:

- With the Environmental Analyst, represents the City and serves as spokesperson on water conservation programs and issues.
- Serves as the liaison to local and regional conservation groups and agencies, regulatory bodies, and other government agencies.
- Provides project management for various water conservation programs from conception through implementation.
- Evaluates and makes recommendations for the City's Urban Water Management Plan and Municipal Code.
- Oversees compliance with state (CUWCC) Best Management Practices and works with the Utilities staff to implement the BMPs.
- With the Environmental Analyst, prepares the annual water conservation budget and prepares cost estimates for programs.
- Conducts water conservation public information presentations to special interest groups, city staff, businesses and other interested parties.
- Performs a variety of functions related to educating community members about the City of Woodland's Water Conservation Initiative and ways to conserve water.
- Works with the Code Compliance Officer to respond to resident and staff notifications about suspected water waste and maintains records of complaints, investigations, and outreach performed.
- Develops outreach information on landscape water savings for residential and CII (commercial, industrial, institutional) customers. Oversees the development of water-wise demonstration gardens and interpretive exhibits.
- Oversees and collaborates with the Water Conservation Team and creates a strategy to grow the team to meet the City's needs.
- Monitors legislative and regulatory actions related to water conservation and provides updates to other City staff and the City Council.

- Prepares City Council reports.
  - Creates press releases, newsletters, flyers and other information resources on water conservation.

8.14.2 Implementation Schedule

- Water Conservation Coordinator and Support Staff: On-going

8.14.3 Annual Budget/Expenditures

- FY2009/2010: Actual Budget: $155,511

8.15 DMM 13: WATER WASTE PROHIBITIONS

Corresponding CUWCC BMP 13: Water Waste Prohibition.

8.15.1 Description

The City established a "No-Waste" ordinance in 1991, as shown in Appendix G. Over the next five years, the City will be revising the municipal code to integrate new state laws regarding water conservation including the Water Efficient Landscape Ordinance and SBx7-7.

8.15.2 Implementation Schedule

- Water waste prohibitions: On-going per City Municipal Code (Article XI. Water Conservation Regulations).
- Additional drought restrictions: Would be enacted by the City if water supply conditions required additional conservation measures (see Chapter 6).

8.15.3 Annual Budget/Expenditures

Funding for this DMM is not included in the City's Water Conservation budget.

8.16 DMM 14: RESIDENTIAL ULTRA-LOW FLUSH TOILET REPLACEMENT PROGRAMS

Corresponding CUWCC BMP 14: Residential Ultra-Low-Flush Toilet Replacement Program.

8.16.1 Description

The City began a rebate program for ultra-low-flush toilets in 2003. 629 ultra-low-flush toilets rebates were given from July 1, 2003 to the discontinuation of the program on October 31, 2009. This resulted in an estimated monthly water savings of 777,444 gallons. In addition, 92 high-efficiency toilet rebates were given out in 2009 with a water savings of 117,024 gallons/month. The total estimated monthly water savings from this program is 894,468 gallons.

The City has chosen to provide assistance to newly metered residents to identify and repair leaks in place of the toilet replacement program. The graph below illustrates the water savings that the City has seen by working with the top twenty residences each month identified through meter readings. The water savings from the repair of major residential leaks quickly surpassed the estimated water savings from the toilet and washer rebates combined.

8.16.2 Implementation Schedule

- City Rebate Program: Discontinued October 31, 2009

8.16.3 Annual Budget/Expenditures

Funding for this DMM was discontinued in October 31, 2009. Instead, the City is using the limited funding available to concentrate on outdoor water use.

8.16.4 Determination of DMM Implementation

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

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

As discussed above, the City has been actively implementing the DMMs to the extent permissible as staffing and financial resources allow. In FY 2009/2010, the total budget for water conservation programs was $244,450. This budget is projected to increase over the next few years as the City expands its water conservation programs.

Because the City's single-family residential water customers are not metered, individual water savings by single-family residential customers are not possible to determine. However, based on the City's annual water production, the City calculates its water conservation savings each month, by comparing current per capita water use to the previous year's per capita water use and 1985 per capita water use (a pre-drought year).

8.17 EVALUATION OF DMMS NOT CURRENTLY IMPLEMENTED

10631(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation.

As shown above in Table 8-1, the City currently has programs in place for most of the DMMs. The only DMMs which are not currently fully implemented are DMM 3 (System Water Audits, Leak Detection and Repair), DMM 4 (Metering With Commodity Rates for All New Connections and Retrofit of Existing Connections), DMM 9 (Conservation Programs for Commercial, Industrial, and Institutional Accounts), and DMM 11 (Conservation Pricing). However, as described in this chapter and as summarized below, each of these DMMs is scheduled for future implementation.

The only DMM's not being implemented by the City are DMM 6 (High-Efficiency Washing Machine Rebate Programs), DMM 10 (Wholesale Agency Programs), and DMM 14 (Residential Ultra Low Flush Toilet Replacement Programs). The City did offer rebate programs for DMM 6 and DMM 14 up until 2009. The City determined the limited funds available were better used to focus on outside water use conservation programs and has discontinued both DMMs. For DMM 10 the City is not considered to be a wholesale water provider; as such, this DMM does not apply to the City.

8.17.1 DMM 3 (System Water Audits, Leak Detection and Repair)

Because the City is not currently fully metered, full implementation of DMM 3 is not possible at this time. The City's distribution system operations staff, including permanent shift employees (weekends and after hours), respond to and repair any reported leaks as quickly as possible. The City is beginning a Phase 1 system audit in the oldest areas of the City. A full water system audit and a more extensive leak detection program will be implemented once the City is fully metered.

8.17.2 DMM 4 (Metering With Commodity Rates for All New Connections and Retrofit of Existing Connections) and DMM 11 (Conservation Pricing)

Full implementation of DMMs 4 and DMM 11 will be in effect once the entire City is metered which is expected to be complete by 2012.

8.17.3 DMM 9 (Conservation Programs for Commercial, Industrial, and Institutional Accounts)

The City does not currently implement this program due to cost and qualified staffing. This position would most likely occupy 1.5 full-time staff persons per year at a cost of $100,000, including benefits and training.

The City believes the greatest potential for water conservation at this time is with the newly metered residential customers. Therefore, the City has chosen to concentrate on implementing the DMM's that focus on the residential customers for the next few years. However, the City does intend to revisit options for CII programs for the 2015 UWMP.

As Table 8-2 indicates, three DMMs are planned for non-implementation.

Table 8-2. Non-Implemented Demand Management Measures

Non-Implemented Demand Management Measures	Reason
DMM 6: High-Efficiency Washing Machine Rebate Programs	The City discontinued this program in June 2009. The City will achieve better conservation savings by focusing limited funds on landscape and irrigation programs. PG&E currently offers a rebate for high-efficiency washing machines.
DMM 10: Wholesale Agency Programs	Not applicable to City as it is not considered to be a wholesale water provider.
DMM 14: Residential Ultra Low Flush Toilet Replacement Programs	The City discontinued this program in October 2009. The City will achieve better conservation savings by focusing limited funds on landscape and irrigation programs.

8.18 POTENTIAL FUTURE DEMAND MANAGEMENT MEASURES

As part of its efforts to increase water conservation, the City is considering several other potential future water conservation measures. These potential future measures are summarized in Table 8-3. In addition to the demand management measures listed in Table 8-3, the City will consider the feasibility of rainwater capture and the possible water savings from such a program.

It is unclear how much additional water could be saved as a result of these potential future water conservation methods, as it is unclear at this time how much funding will be available to implement the future programs and how many customers may participate. However, the City will strive to continue and improve its water conservation programs as the budget allows.

Table 8-3. Potential Future Water Conservation Measures

BMP/DMM Number	Measure Name	Proposed Implementation Date
BMP/DMM 1: Water Survey Programs for Single- and Multi-Family Residential	Programmable Irrigation Controller Rebate	2011
BMP/DMM 3: System Water Audit, Leak Detection and Repair	Prioritized Leak Detection Program	2011
	Complete Water System Audit	2013
BMP/DMM 4: Metering with Commodity Rates	Residential Water Metering Program (see discussion above under Current and Planned Water Conservation Measures)	Completed by 2012
	Billing with Commodity Rates (see discussion above under Current and Planned Water Conservation Measures)	Full implementation after 2012
BMP/DMM 5: Large Landscape Conservation Programs and Incentives	Turf Replacement Rebate	TBD
BMP/DMM 11: Conservation Pricing	Implementation of Tiered (Increasing Block) Water Rate Structure	Full Implementation after 2012

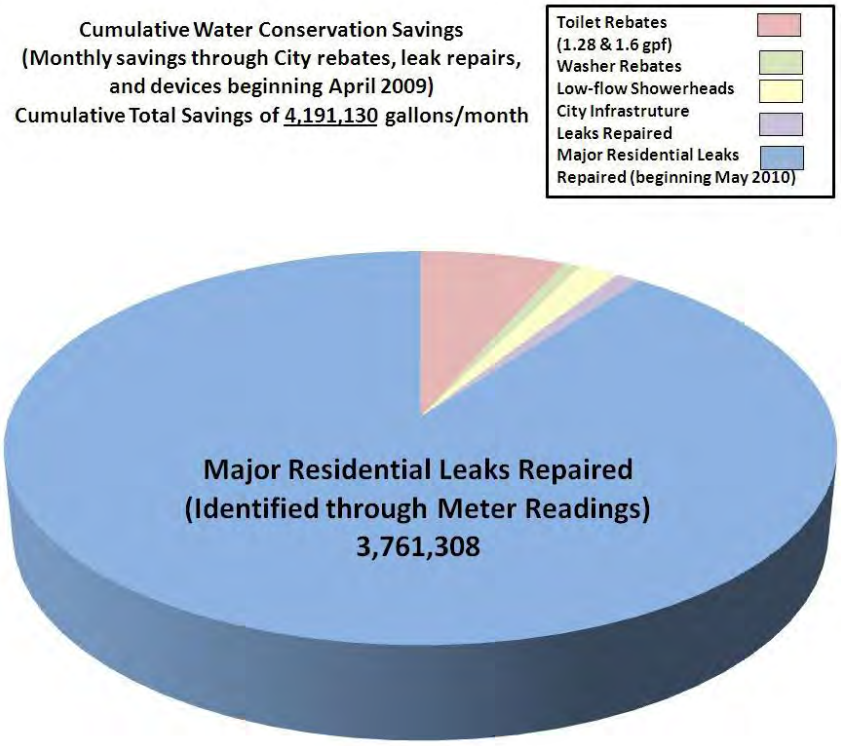


Figure 8-1. City of Woodland Water Saving Categories

9.1 POTENTIAL EFFECTS OF GLOBAL CLIMATE CHANGE ON WATER SUPPLY RELIABILITY

Although the DWR Guidebook notes that a climate change discussion is optional for an UWMP and not required by the UWMP Act, the following information and analysis is provided to ensure a comprehensive and conservative presentation of information for purposes of the City's 2010 UWMP. National and international research for the past several decades has indicated a growing concern that global climate is changing, to a large extent due to human activities related to the generation of greenhouse gasses such as carbon dioxide. In the past there has been substantial uncertainty, and some doubt in public discourse and debates. Over the last few years there have been landmark advancements in scientific studies, ultimately leading to major conclusions in the Fourth Assessment of the Intergovernmental Panel on Climate Change (IPCC).

The IPCC was established to provide the decision-makers and others interested in climate change with an objective source of information about climate change. It was set up by the World Meteorological Organization and the United Nations Environment Programme, and has served since 1988 as a clearinghouse for research and policy discussions related to climate change. The role of the IPCC "…is to assess on a comprehensive, objective, open and transparent basis the latest scientific, technical and socio-economic literature produced worldwide relevant to the understanding of the risk of human-induced climate change, its observed and projected impacts and options for adaptation and mitigation ….". Agencies of the United States government have provided major input to both research and discussion, particularly through the U.S. Geological Survey. Science organizations worldwide have been following climate change research, and in 2009 the Academies of Sciences from 13 nations issued a letter calling for urgent and coordinated action to combat climate change (National Academies, 2009).

The IPCC has issued four major "assessments" of the status of climate change research, current levels of understanding, and potential policy implications. The Fourth Assessment Report was released throughout 2007, indicating for the first time clear links between human activities and global warming. The Fifth Assessment Report is scheduled for finalization in 2014. The historical and projected continued warming of the earth has and will continue to cause changes to our climate. While such induced "climate change" has implications to a number of environmental factors, relevant to this discussion are potential effects on water supply reliability.

The State of California has provided major focus and funding on climate change research and impacts, with particular focus on developing both "adaptation" and "mitigation" strategies. In the context of climate change and its impacts to water resources, "adaptation" is simply the identification and development of strategies to cope with the expected impacts to water supply reliability. "Mitigation" is the identification and development of actions that will reduce the drivers for climate change; for the most part this translates into programs to reduce greenhouse gas emissions and lower the "carbon footprint" of activities associated with water supply and use.

The State's research and continuing recommendations are readily available. The State's Climate Action Team has noted a clear connection between water use and energy consumption, and consequently also with greenhouse gas production (see California Climate Change Portal for the most recent technical and policy information: www.climatechange.ca.gov). The 2005 California

Water Plan Update addressed climate change and water in a general way, noting the many potential interconnections as well as the potentially serious effects of ongoing climate change on water supply reliability. The 2009 Update to the California Water Plan addresses this topic in a more substantive way (www.waterplan.water.ca.gov/climate/index.cfm), and includes recommendations and advice on how to incorporate climate change considerations into long-term water resources planning. It also recommends specific actions in the areas of adaptation and mitigation as discussed above.

DWR maintains an updated web site on climate change and California's water resources (www.water.ca.gov/climatechange). That web site notes, in part: "Climate change is already impacting California's water resources. In the future, warmer temperatures, different patterns of precipitation and runoff, and rising sea levels will profoundly affect the ability to manage water supplies and other natural resources. Adapting California's water management systems to climate change presents one of the most significant challenges for the 21st century". In 2006, DWR published a major report on climate change and California's water resources, "Progress on Incorporating Climate Change Into Management of California's Water Resources". This was summarized and updated in a paper published in a special issue of the Journal of Climate Change in 2008 (http://wwwdwr.water.ca.gov/climatechange/docs/CCprogress_mar08.pdf). In 2010, DWR provided another update entitled Climate Change Characterization and Analysis in California Water Resources Planning Studies. This report provides a summary of the climate change characterization approaches and methodologies that have been used in recent planning studies conducted by DWR and its partner agencies. The report is intended for use by DWR to consider how to include climate change analyses in planning studies, with emphasis on the State Water Project (SWP) planning studies.

Collectively this State information provides the most updated information related to the potential effects of climate change on water supply reliability in California.

DWR and others have done studies to model potential future changes at the regional level on both streamflow and temperature. The focus has been on the Sacramento River system since it is a major source of water for much of California.

The different models are split on whether future annual average runoff will be wetter or drier. Other studies make it clear, however, that we are likely to see more extreme hydrology: more floods and droughts, regardless of the "average" hydrology. However, these same regional models agree that the future will likely be warmer than it is today.

Other potential changes include less snowpack, earlier runoff from snowmelt, more precipitation as rain than snow, changes in the amount and timing of stream flows, changes in water resources system operations, and rising sea levels. In turn, these changes could have serious implications for water supply reliability, including water quality. DWR has confirmed that some changes have been underway for many years. For example, the historical Sacramento River snowmelt runoff has been decreasing as a percentage of total annual flows for much of the 20th century. This is an indication of a long-term decrease in snowpack, and perhaps an increase in wintertime flows and floods.

The potential impacts to surface water resources within California have been discussed and included in several documents. Concerns noted in connection with the SWP and CVP include the following:

1. Pumping less water south of the Delta.
2. Having less surplus in reservoirs that can be used during shortages.
3. Pumping more groundwater to augment reductions in surface water supplies.
4. Increased risk that insufficient water availability could interrupt SWP and CVP operations.

There are few published examples of water supply adaptation and mitigation strategies. In December 2007 the water user organization, California Urban Water Agencies (CUWA), published a summary report of a survey of its 11 large urban water agencies on this topic (CUWA agencies are major urban water utilities throughout the state, and include such agencies as the Metropolitan Water District of Southern California, East Bay Municipal Utility District, and the San Francisco Public Utilities District). This report, "Climate Change and Urban Water Resources, Investing for Reliability", identifies a number of adaptation and mitigation strategies currently being employed to address climate change. Table 9-1 lists some of these strategies. The CUWA report is available on their web site: www.cuwa.org/library/ClimateChangeReport12_2007.pdf.

Table 9-1. CUWA Adaptation and Mitigation Examples

Adaptation Examples	Mitigation Examples
Develop groundwater storage	Renewable energy generation
More aggressive conservation	Conserve energy in water facilities
Water transfers	Decrease energy use in fleet, equipment
Optimize local storage	Increase employee incentives for action
Develop regional water projects, partnerships	Develop methane offsets (biogas at wastewater facilities used in place of natural gas or other fuels)
Take leadership role on this issue	Take leadership role on this issue

Despite the high level of attention both in California and internationally, there is very little information developed on the potential impacts of climate change on groundwater. The principal concern is rising sea level and potential salinity intrusion into coastal groundwater aquifers. While this is a concern for coastal areas of California, it is not a concern in the portion of Yolo groundwater subbasin near the City.

While not addressed specifically in IPCC reports, there are potential impacts to groundwater resources that have been discussed over the past few years. These include the following concerns:

1. Decreased reliability of surface water supplies could lead to increased reliance on groundwater, further stressing such supplies.

2. Changes to surface water hydrology – increased winter flood flows, reduced spring and summer snowmelt runoff – could decrease groundwater recharge.
3. Increased landscape and irrigation water demands due to increased temperatures could further increase pressures on groundwater supplies.

The City will continue to review scientific and policy updates related to climate change as they become available through the IPCC, State, CUWA, and other climate change authrities. The City will continue to implement the components of its Ground Water Management Plan and this 2010 UWMP. The City will also continue to include adaptive management principals in water supply and infrastructure planning. As part of the mitigation and adaptive measures, the City will consider the amount of energy and greenhouse gases required in moving water throughout the system. The effects from increased water conservation on the amount of energy required on new facilities will be reviewed to minimize energy use impacts.

10.1 PLAN ADOPTION

10642 After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

This City of Woodland 2010 UWMP was adopted by the Woodland City Council on _____, 2011. Resolution for adoption by the Woodland City Council is included in Appendix C.

10.2 PLAN SUBMITTAL TO DWR AND CALIFORNIA STATE LIBRARY

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

Within 30 days of adoption of the 2010 UWMP, the adopted 2010 UWMP will be provided to the Department of Water Resources and the California State Library.

In addition, the City will submit the adopted 2010 UWMP to DWR using the DWR Online Submittal Tool (DOST) when the DOST system becomes available.

10.3 PROVISION OF ADOPTED PLAN TO CITIES, COUNTIES AND OTHER STAKEHOLDERS

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

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

Within 30 days of adoption of the 2010 UWMP, the adopted 2010 UWMP, including the Water Supply Reliability section, will be provided to the following agencies:

- Yolo County Flood Control and Water Conservation District
- Reclamation District 2035
- Farm Bureau
- Woodland Chamber of Commerce, Water Task Force
- Water Resources Association of Yolo County
- Yolo County

- City of Davis
- Woodland-Davis Clean Water Agency

10.4 PLAN AMENDMENTS AND CHANGES

Should this 2010 UWMP be amended or changed, copies of amendments or changes to the plan shall be submitted to DWR, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

10.5 PLAN AVAILABILITY

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

Within 30 days of submitting the adopted 2010 UWMP to DWR, copies of the adopted 2010 UWMP will be made available during normal business hours at the following location:

- City of Woodland, Public Utilities Department Engineering Division, 655 North Pioneer Avenue

Copies of the adopted 2010 UWMP will also be available on the City's website:

- City of Woodland website: www.cityofwoodland.org

10.6 PLAN IMPLEMENTATION

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

The City is committed to the implementation of the programs discussed in this 2010 UWMP. In particular, the City will implement the conservation programs outlined in Chapter 8 to reduce per capita water use and meet the City's SBx7-7 per capita water use targets for 2015 and 2020. Also, the City will continue to pursue potential future water supplies, such as ASR, to enhance the reliability of the City's water supply portfolio to meet the future needs of the City's water service area.

DWR Checklist

The completed UWMP checklist table provided by DWR is included as Table 11-1 to confirm that the required elements have been addressed. The checklist will also assist DWR in the review of the submitted UWMP.

Table 11-1. Urban Water Management Plan Checklist, Organized by Subject

No.	UWMP Requirement[a]	Calif. Water Code Reference	Additional Clarification	UWMP Location
PLAN PREPARATION				
4	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620[d](2)		Chapter 2 Section 2.1.2 Table 2-1
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621[b]		Chapter 2 Section 2.1.2 Appendix B
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621[c]		Appendix C in final document
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635[b]		Appendix B in final document
55	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642		Chapter 2 Section 2.1.1 Appendix B in final document
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		Chapter 2 Section 2.1.1 Appendix B in final document
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		Chapter 10 Appendix C in final document

Table 11-1. Urban Water Management Plan Checklist, Organized by Subject

No.	UWMP Requirement[a]	Calif. Water Code Reference	Additional Clarification	UWMP Location
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		Chapter 10 Section 11.6
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644[a]		Chapter 10 Section 11.2
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours.	10645		Chapter 10 Section 11.5
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631[a]		Chapter 3 Section 3.1
9	Describe the climate and other demographic factors of the service area of the supplier.	10631[a]		Chapter 3 Section 3.1 and Section 3.3
10	Indicate the current population of the service area.	10631[a]	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	Chapter 3 Section 3.2 Table 3-2
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional or local service area population projections.	10631[a]	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Chapter 3 Section 3.2 Table 3-3
12	Describe other demographic factors affecting the supplier's water management planning.	10631[a]		Chapter 3 Section 3.3

Table 11-1. Urban Water Management Plan Checklist, Organized by Subject

No.	UWMP Requirement[a]	Calif. Water Code Reference	Additional Clarification	UWMP Location
SYSTEM DEMANDS				
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20[e]		Chapter 4 Section 4.6 Appendix E
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26[a]	Retailers and wholesalers have slightly different requirements.	Chapter 2 Section 2.1
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		Will be addressed in 2015 and 2020 UWMPs
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631[e](1)	Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Chapter 4 Section 4.2
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types.	10631[k]	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	N/A
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1[a]		Chapter 4 Section 4.3
SYSTEM SUPPLIES				

Table 11-1. Urban Water Management Plan Checklist, Organized by Subject

No.	UWMP Requirement[a]	Calif. Water Code Reference	Additional Clarification	UWMP Location
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631[b]	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	Chapter 5 Section 5.1 and Section 5.2
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631[b]	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Chapter 5 Section 5.2
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631[b](1)		Chapter 5 Section 5.2.1.2
16	Describe the groundwater basin.	10631[b](2)		Chapter 5 Section 5.2.1.3
17	Indicate whether the groundwater basin is adjudicated. Include a copy of the court order or decree.	10631[b](2)		N/A
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate "not applicable" in the UWMP location column.	10631[b](2)		N/A
19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate "not applicable" in the UWMP location column.	10631[b](2)		Chapter 5 Section 5.2.1.6

Table 11-1. Urban Water Management Plan Checklist, Organized by Subject

No.	UWMP Requirement[a]	Calif. Water Code Reference	Additional Clarification	UWMP Location
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years.	10631[b](3)		Chapter 5 Section 5.2.3 Table 5-2
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631[b](4)	Provide projections for 2015, 2020, 2025, and 2030.	Chapter 5 Section 5.2.4 Table 5-3
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631[d]		Chapter 5 Section 5.3
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in[f](1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631[h]		Chapter 5 Section 5.7
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631[i]		Chapter 5 Section 5.4
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		Chapter 5 Section 5.5
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633[a]		Chapter 5 Section 5.5.1 Table 5-4
46	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633[b]		Chapter 5 Section 5.5.1
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633[c]		Chapter 5 Section 5.5.3

Table 11-1. Urban Water Management Plan Checklist, Organized by Subject

No.	UWMP Requirement[a]	Calif. Water Code Reference	Additional Clarification	UWMP Location
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633[d]		Chapter 5 Section 5.5.4
49	The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	10633[e]		Chapter 5 Section 5.5.4
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633[f]		Chapter 5 Section 5.5.5
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633[g]		Chapter 5 Section 5.5.6
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b]				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620[f]		Chapter 2 Section 2.1.6
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631[c](1)		Chapter 6 Section 6.1
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631[c](2)		Chapter 6 Section 6.1.2 and Section 6.1.3
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage.	10632[a]		Chapter 6 Section 6.3

Table 11-1. Urban Water Management Plan Checklist, Organized by Subject

No.	UWMP Requirement[a]	Calif. Water Code Reference	Additional Clarification	UWMP Location
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632[b]		Chapter 7 Section 7.1.3
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632[c]		Chapter 6 Section 6.3.2
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632[d]		Chapter 6 Section 6.3.3
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632[e]		Chapter 6 Section 6.3.3 Table 6-6
40	Indicated penalties or charges for excessive use, where applicable.	10632[f]		Chapter 6 Table 6-7
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions [a] to [f], inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632[g]		Chapter 6 Section 6.3.4
42	Provide a draft water shortage contingency resolution or ordinance.	10632[h]		Appendix H
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632[i]		Chapter 6 Section 6.3.5
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	For years 2010, 2015, 2020, 2025, and 2030.	Chapter 5 Section 5.2.2

Table 11-1. Urban Water Management Plan Checklist, Organized by Subject

No.	UWMP Requirement[a]	Calif. Water Code Reference	Additional Clarification	UWMP Location
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635[a]		Chapter 7 Section 7.1
	DEMAND MANAGEMENT MEASURES			
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631[f](1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	Chapter 8 Section 8.1 through Section 8-16
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631[f](3)		Chapter 8 Section 8.17
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631[f](4)		Chapter 8 Section 8.17
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631[g]	See 10631[g] for additional wording.	Chapter 8 Section 8.18
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631[j]	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	N/A

[a] The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.
[b] The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.

APPENDIX A

UWMP Act

Established: AB 797, Klehs, 1983
Amended: AB 2661, Klehs, 1990
AB 11X, Filante, 1991
AB 1869, Speier, 1991
AB 892, Frazee, 1993
SB 1017, McCorquodale, 1994
AB 2853, Cortese, 1994
AB 1845, Cortese, 1995
SB 1011, Polanco, 1995
AB 2552, Bates, 2000
SB 553, Kelley, 2000
SB 610, Costa, 2001
AB 901, Daucher, 2001
SB 672, Machado, 2001
SB 1348, Brulte, 2002
SB 1384, Costa, 2002
SB 1518, Torlakson, 2002
AB 105, Wiggins, 2004
SB 318, Alpert, 2004
SB 1087, Florez, 2005
SBX7 7, Steinberg, 2009

CALIFORNIA WATER CODE DIVISION 6
PART 2.6. URBAN WATER MANAGEMENT PLANNING

CHAPTER 1. GENERAL DECLARATION AND POLICY

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2. (a) The Legislature finds and declares all of the following:

(1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.

(2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.

(4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.

(5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

CHAPTER 2. DEFINITIONS

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.5. "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

CHAPTER 3. URBAN WATER MANAGEMENT PLANS
Article 1. General Provisions

10620.

(a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d)

(1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

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

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

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

10621.

(a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

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

Article 2. Contents of Plans

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

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

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.

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

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the

past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

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

(c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(1) An average water year.
(2) A single dry water year.
(3) Multiple dry water years.

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

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

(e)

(1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:

(A) Single-family residential.
(B) Multifamily.
(C) Commercial.
(D) Industrial.
(E) Institutional and governmental.
(F) Landscape.
(G) Sales to other agencies.
(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
(I) Agricultural.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

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

(B) Residential plumbing retrofit.

(C) System water audits, leak detection, and repair.

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

(E) Large landscape conservation programs and incentives.

(F) High-efficiency washing machine rebate programs.

(G) Public information programs.

(H) School education programs.

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

(J) Wholesale agency programs.

(K) Conservation pricing.

(L) Water conservation coordinator.

(M) Water waste prohibition.

(N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

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

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

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

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

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

(j) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the ‘‘Memorandum of Understanding Regarding Urban Water Conservation in California,’’ dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

(k) Urban water suppliers that rely upon a wholesale agency for a source of water, shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier’s plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c), including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

10631.5. The department shall take into consideration whether the urban water supplier is implementing or scheduled for implementation, the water demand management activities that the urban water supplier identified in its urban water management plan, pursuant to Section 10631, in evaluating applications for grants and loans made available pursuant to Section 79163. The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities.

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

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

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

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

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

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

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

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

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

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

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

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

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

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

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

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

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

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

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

Article 2.5 Water Service Reliability

10635.

(a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled

pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

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

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

Articl 3. Adoption and Implementation of Plans

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630).

The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

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

10644.

(a) An urban water supplier shall file with the department and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be filed with the department and any city or county within which the supplier provides water supplies within 30 days after adoption.

(b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the outstanding elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has filed its plan with the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

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

CHAPTER 4. MISCELLANEOUS PROVISIONS

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.

(b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water

supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

10657.

(a) The department shall take into consideration whether the urban water supplier has submitted an updated urban water management plan that is consistent with Section 10631, as amended by the act that adds this section, in determining whether the urban water supplier is eligible for funds made available pursuant to any program administered by the department.

(b) This section shall remain in effect only until January 1, 2006, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2006, deletes or extends that date.

Senate Bill No. 7

CHAPTER 4

An act to amend and repeal Section 10631.5 of, to add Part 2.55 (commencing with Section 10608) to Division 6 of, and to repeal and add Part 2.8 (commencing with Section 10800) of Division 6 of, the Water Code, relating to water.

[Approved by Governor November 10, 2009. Filed with Secretary of State November 10, 2009.]

LEGISLATIVE COUNSEL'S DIGEST

SB 7, Steinberg. Water conservation.

(1) Existing law requires the Department of Water Resources to convene an independent technical panel to provide information to the department and the Legislature on new demand management measures, technologies, and approaches. "Demand management measures" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

This bill would require the state to achieve a 20% reduction in urban per capita water use in California by December 31, 2020. The state would be required to make incremental progress towards this goal by reducing per capita water use by at least 10% on or before December 31, 2015. The bill would require each urban retail water supplier to develop urban water use targets and an interim urban water use target, in accordance with specified requirements. The bill would require agricultural water suppliers to implement efficient water management practices. The bill would require the department, in consultation with other state agencies, to develop a single standardized water use reporting form. The bill, with certain exceptions, would provide that urban retail water suppliers, on and after July 1, 2016, and agricultural water suppliers, on and after July 1, 2013, are not eligible for state water grants or loans unless they comply with the water conservation requirements established by the bill. The bill would repeal, on July 1, 2016, an existing requirement that conditions eligibility for certain water management grants or loans to an urban water supplier on the implementation of certain water demand management measures.

(2) Existing law, until January 1, 1993, and thereafter only as specified, requires certain agricultural water suppliers to prepare and adopt water management plans.

This bill would revise existing law relating to agricultural water management planning to require agricultural water suppliers to prepare and adopt agricultural water management plans with specified components on or before December 31, 2012, and update those plans on or before December

31, 2015, and on or before December 31 every 5 years thereafter. An agricultural water supplier that becomes an agricultural water supplier after December 31, 2012, would be required to prepare and adopt an agricultural water management plan within one year after becoming an agricultural water supplier. The agricultural water supplier would be required to notify each city or county within which the supplier provides water supplies with regard to the preparation or review of the plan. The bill would require the agricultural water supplier to submit copies of the plan to the department and other specified entities. The bill would provide that an agricultural water supplier is not eligible for state water grants or loans unless the supplier complies with the water management planning requirements established by the bill.

(3) The bill would take effect only if SB 1 and SB 6 of the 2009–10 7th Extraordinary Session of the Legislature are enacted and become effective.

The people of the State of California do enact as follows:

SECTION 1. Part 2.55 (commencing with Section 10608) is added to Division 6 of the Water Code, to read:

PART 2.55. SUSTAINABLE WATER USE AND DEMAND REDUCTION

Chapter 1. General Declarations and Policy

10608. The Legislature finds and declares all of the following:

(a) Water is a public resource that the California Constitution protects against waste and unreasonable use.

(b) Growing population, climate change, and the need to protect and grow California's economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.

(c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.

(d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve streamflows, and reduce greenhouse gas emissions.

(e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.

(f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.

(g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.

(h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.

(i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

10608.4. It is the intent of the Legislature, by the enactment of this part, to do all of the following:

(a) Require all water suppliers to increase the efficiency of use of this essential resource.

(b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.

(c) Measure increased efficiency of urban water use on a per capita basis.

(d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.

(e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.

(f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.

(g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.

(h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.

(i) Require implementation of specified efficient water management practices for agricultural water suppliers.

(j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.

(k) Advance regional water resources management.

10608.8. (a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.

(2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an

administrative proceeding. This paragraph shall become inoperative on January 1, 2021.

(3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.

(b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.

(c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population growth may have greater effects on water use. This part does not limit the economic productivity of California's agricultural, commercial, or industrial sectors.

(d) The requirements of this part do not apply to an agricultural water supplier that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect. After the expiration of the Quantification Settlement Agreement, to the extent conservation water projects implemented as part of the Quantification Settlement Agreement remain in effect, the conserved water created as part of those projects shall be credited against the obligations of the agricultural water supplier pursuant to this part.

Chapter 2. Definitions

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.

(b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of

a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "Commercial water user" means a water user that provides or distributes a product or service.

(e) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(f) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(g) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(h) "Industrial water user" means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(i) "Institutional water user" means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

(j) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(k) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(*l*) "Process water" means water used for producing a product or product content or water used for research and development, including, but not limited to, continuous manufacturing processes, water used for testing and maintaining equipment used in producing a product or product content, and

water used in combined heat and power facilities used in producing a product or product content. Process water does not mean incidental water uses not related to the production of a product or product content, including, but not limited to, water used for restrooms, landscaping, air conditioning, heating, kitchens, and laundry.

(m) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050, that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse, that meets the following requirements, where applicable:

(1) For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following:

(A) Metered.

(B) Developed through planned investment by the urban water supplier or a wastewater treatment agency.

(C) Treated to a minimum tertiary level.

(D) Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.

(2) For reservoir augmentation, water supplies that meet the criteria of paragraph (1) and are conveyed through a distribution system constructed specifically for recycled water.

(n) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(o) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(p) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

(q) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

(r) "Urban wholesale water supplier," means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

Chapter 3. Urban Retail Water Suppliers

10608.16. (a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.

(b) The state shall make incremental progress towards the state target specified in subdivision (a) by reducing urban per capita water use by at least 10 percent on or before December 31, 2015.

10608.20. (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in subdivision (a) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

(e) An urban retail water supplier shall include in its urban water management plan required pursuant to Part 2.6 (commencing with Section 10610) due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

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

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its Internet Web site, and make written copies

available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with subdivision (*l*) of Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) An urban retail water supplier shall be granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

10608.22. Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

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

(b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

(c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.

(d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.

(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

(e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area, may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.

(f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.

(2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26. (a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

(b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.

(c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's implementation plan for complying with this part shall consider the United States Department of Defense military installation's requirements under federal Executive Order 13423.

(d) (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

(2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28. (a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

10608.32. All costs incurred pursuant to this part by a water utility regulated by the Public Utilities Commission may be recoverable in rates subject to review and approval by the Public Utilities Commission, and may be recorded in a memorandum account and reviewed for reasonableness by the Public Utilities Commission.

10608.36. Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

10608.40. Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

10608.42. The department shall review the 2015 urban water management plans and report to the Legislature by December 31, 2016, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets in order to achieve

the 20-percent reduction and to reflect updated efficiency information and technology changes.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

(a) Appropriate metrics for evaluating commercial, industrial, and institutional water use.

(b) Evaluation of water demands for manufacturing processes, goods, and cooling.

(c) Evaluation of public infrastructure necessary for delivery of recycled water to the commercial, industrial, and institutional sectors.

(d) Evaluation of institutional and economic barriers to increased recycled water use within the commercial, industrial, and institutional sectors.

(e) Identification of technical feasibility and cost of the best management practices to achieve more efficient water use statewide in the commercial, industrial, and institutional sectors that is consistent with the public interest and reflects past investments in water use efficiency.

10608.44. Each state agency shall reduce water use on facilities it operates to support urban retail water suppliers in meeting the target identified in Section 10608.16.

Chapter 4. Agricultural Water Suppliers

10608.48. (a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

(b) Agricultural water suppliers shall implement all of the following critical efficient management practices:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

(c) Agricultural water suppliers shall implement additional efficient management practices, including, but not limited to, practices to accomplish all of the following, if the measures are locally cost effective and technically feasible:

(1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.

(2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.

(3) Facilitate the financing of capital improvements for on-farm irrigation systems.

(4) Implement an incentive pricing structure that promotes one or more of the following goals:

(A) More efficient water use at the farm level.

(B) Conjunctive use of groundwater.

(C) Appropriate increase of groundwater recharge.

(D) Reduction in problem drainage.

(E) Improved management of environmental resources.

(F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.

(5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.

(6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.

(7) Construct and operate supplier spill and tailwater recovery systems.

(8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.

(9) Automate canal control structures.

(10) Facilitate or promote customer pump testing and evaluation.

(11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.

(12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:

(A) On-farm irrigation and drainage system evaluations.

(B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.

(C) Surface water, groundwater, and drainage water quantity and quality data.

(D) Agricultural water management educational programs and materials for farmers, staff, and the public.

(13) Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.

(14) Evaluate and improve the efficiencies of the supplier's pumps.

(d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.

(e) The data shall be reported using a standardized form developed pursuant to Section 10608.52.

(f) An agricultural water supplier may meet the requirements of subdivisions (d) and (e) by submitting to the department a water conservation plan submitted to the United States Bureau of Reclamation that meets the requirements described in Section 10828.

(g) On or before December 31, 2013, December 31, 2016, and December 31, 2021, the department, in consultation with the board, shall submit to the Legislature a report on the agricultural efficient water management practices that have been implemented and are planned to be implemented and an assessment of the manner in which the implementation of those efficient water management practices has affected and will affect agricultural operations, including estimated water use efficiency improvements, if any.

(h) The department may update the efficient water management practices required pursuant to subdivision (c), in consultation with the Agricultural Water Management Council, the United States Bureau of Reclamation, and the board. All efficient water management practices for agricultural water use pursuant to this chapter shall be adopted or revised by the department only after the department conducts public hearings to allow participation of the diverse geographical areas and interests of the state.

(i) (1) The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

Chapter 5. Sustainable Water Management

10608.50. (a) The department, in consultation with the board, shall promote implementation of regional water resources management practices through increased incentives and removal of barriers consistent with state and federal law. Potential changes may include, but are not limited to, all of the following:

(1) Revisions to the requirements for urban and agricultural water management plans.

(2) Revisions to the requirements for integrated regional water management plans.

(3) Revisions to the eligibility for state water management grants and loans.

(4) Revisions to state or local permitting requirements that increase water supply opportunities, but do not weaken water quality protection under state and federal law.

(5) Increased funding for research, feasibility studies, and project construction.

(6) Expanding technical and educational support for local land use and water management agencies.

(b) No later than January 1, 2011, and updated as part of the California Water Plan, the department, in consultation with the board, and with public input, shall propose new statewide targets, or review and update existing statewide targets, for regional water resources management practices, including, but not limited to, recycled water, brackish groundwater desalination, and infiltration and direct use of urban stormwater runoff.

Chapter 6. Standardized Data Collection

10608.52. (a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision (a) of Section 10608.28.

(b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24 and an agricultural water supplier's compliance with implementation of efficient water management practices pursuant to subdivision (a) of Section 10608.48. The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

Chapter 7. Funding Provisions

10608.56. (a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(b) On and after July 1, 2013, an agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(d) Notwithstanding subdivision (b), the department shall determine that an agricultural water supplier is eligible for a water grant or loan even though the supplier is not implementing all of the efficient water management practices described in Section 10608.48, if the agricultural water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the efficient water management practices. The supplier may request grant or loan funds to implement the efficient water management practices to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

10608.60. (a) It is the intent of the Legislature that funds made available by Section 75026 of the Public Resources Code should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for grants to implement this part. In the allocation of funding, it is the intent of the

Legislature that the department give consideration to disadvantaged communities to assist in implementing the requirements of this part.

(b) It is the intent of the Legislature that funds made available by Section 75041 of the Public Resources Code, should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for direct expenditures to implement this part.

Chapter 8. Quantifying Agricultural Water Use Efficiency

10608.64. The department, in consultation with the Agricultural Water Management Council, academic experts, and other stakeholders, shall develop a methodology for quantifying the efficiency of agricultural water use. Alternatives to be assessed shall include, but not be limited to, determination of efficiency levels based on crop type or irrigation system distribution uniformity. On or before December 31, 2011, the department shall report to the Legislature on a proposed methodology and a plan for implementation. The plan shall include the estimated implementation costs and the types of data needed to support the methodology. Nothing in this section authorizes the department to implement a methodology established pursuant to this section.

SEC. 2. Section 10631.5 of the Water Code is amended to read:

10631.5. (a) (1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures described in Section 10631, as determined by the department pursuant to subdivision (b).

(2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation. This section does not apply to water management projects funded by the federal American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

(3) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if the urban water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the water demand management measures. The supplier may request grant or loan funds to implement the water demand management measures to the extent the request is consistent with the eligibility requirements applicable to the water management funds.

(4) (A) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination.

(B) For purposes of this paragraph, "not locally cost effective" means that the present value of the local benefits of implementing a water demand management measure is less than the present value of the local costs of implementing that measure.

(b) (1) The department, in consultation with the state board and the California Bay-Delta Authority or its successor agency, and after soliciting public comment regarding eligibility requirements, shall develop eligibility requirements to implement the requirement of paragraph (1) of subdivision (a). In establishing these eligibility requirements, the department shall do both of the following:

(A) Consider the conservation measures described in the Memorandum of Understanding Regarding Urban Water Conservation in California, and alternative conservation approaches that provide equal or greater water savings.

(B) Recognize the different legal, technical, fiscal, and practical roles and responsibilities of wholesale water suppliers and retail water suppliers.

(2) (A) For the purposes of this section, the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following:

(i) Compliance on an individual basis.

(ii) Compliance on a regional basis. Regional compliance shall require participation in a regional conservation program consisting of two or more urban water suppliers that achieves the level of conservation or water efficiency savings equivalent to the amount of conservation or savings achieved if each of the participating urban water suppliers implemented the water demand management measures. The urban water supplier administering the regional program shall provide participating urban water suppliers and the department with data to demonstrate that the regional program is consistent with this clause. The department shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements.

(B) The department may require additional information for any determination pursuant to this section.

(3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

(c) In establishing guidelines pursuant to the specific funding authorization for any water management grant or loan program subject to this section, the agency administering the grant or loan program shall include in the guidelines the eligibility requirements developed by the department pursuant to subdivision (b).

(d) Upon receipt of a water management grant or loan application by an agency administering a grant and loan program subject to this section, the agency shall request an eligibility determination from the department with respect to the requirements of this section. The department shall respond to the request within 60 days of the request.

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

(f) This section shall remain in effect only until July 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before July 1, 2016, deletes or extends that date.

SEC. 3. Part 2.8 (commencing with Section 10800) of Division 6 of the Water Code is repealed.

SEC. 4. Part 2.8 (commencing with Section 10800) is added to Division 6 of the Water Code, to read:

PART 2.8. AGRICULTURAL WATER MANAGEMENT PLANNING

Chapter 1. General Declarations and Policy

10800. This part shall be known and may be cited as the Agricultural Water Management Planning Act.

10801. The Legislature finds and declares all of the following:

(a) The waters of the state are a limited and renewable resource.

(b) The California Constitution requires that water in the state be used in a reasonable and beneficial manner.

(c) Urban water districts are required to adopt water management plans.

(d) The conservation of agricultural water supplies is of great statewide concern.

(e) There is a great amount of reuse of delivered water, both inside and outside the water service areas.

(f) Significant noncrop beneficial uses are associated with agricultural water use, including streamflows and wildlife habitat.

(g) Significant opportunities exist in some areas, through improved irrigation water management, to conserve water or to reduce the quantity of highly saline or toxic drainage water.

(h) Changes in water management practices should be carefully planned and implemented to minimize adverse effects on other beneficial uses currently being served.

(i) Agricultural water suppliers that receive water from the federal Central Valley Project are required by federal law to prepare and implement water conservation plans.

(j) Agricultural water users applying for a permit to appropriate water from the board are required to prepare and implement water conservation plans.

10802. The Legislature finds and declares that all of the following are the policies of the state:

(a) The conservation of water shall be pursued actively to protect both the people of the state and the state's water resources.

(b) The conservation of agricultural water supplies shall be an important criterion in public decisions with regard to water.

(c) Agricultural water suppliers shall be required to prepare water management plans to achieve conservation of water.

Chapter 2. Definitions

10810. Unless the context otherwise requires, the definitions set forth in this chapter govern the construction of this part.

10811. "Agricultural water management plan" or "plan" means an agricultural water management plan prepared pursuant to this part.

10812. "Agricultural water supplier" has the same meaning as defined in Section 10608.12.

10813. "Customer" means a purchaser of water from a water supplier who uses water for agricultural purposes.

10814. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of that entity.

10815. "Public agency" means any city, county, city and county, special district, or other public entity.

10816. "Urban water supplier" has the same meaning as set forth in Section 10617.

10817. "Water conservation" means the efficient management of water resources for beneficial uses, preventing waste, or accomplishing additional benefits with the same amount of water.

Chapter 3. Agricultural Water Management Plans

Article 1. General Provisions

10820. (a) An agricultural water supplier shall prepare and adopt an agricultural water management plan in the manner set forth in this chapter on or before December 31, 2012, and shall update that plan on December 31, 2015, and on or before December 31 every five years thereafter.

(b) Every supplier that becomes an agricultural water supplier after December 31, 2012, shall prepare and adopt an agricultural water management plan within one year after the date it has become an agricultural water supplier.

(c) A water supplier that indirectly provides water to customers for agricultural purposes shall not prepare a plan pursuant to this part without the consent of each agricultural water supplier that directly provides that water to its customers.

10821. (a) An agricultural water supplier required to prepare a plan pursuant to this part shall notify each city or county within which the supplier provides water supplies that the agricultural water supplier will be preparing the plan or reviewing the plan and considering amendments or changes to the plan. The agricultural water supplier may consult with, and obtain comments from, each city or county that receives notice pursuant to this subdivision.

(b) The amendments to, or changes in, the plan shall be adopted and submitted in the manner set forth in Article 3 (commencing with Section 10840).

Article 2. Contents of Plans

10825. (a) It is the intent of the Legislature in enacting this part to allow levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

(b) This part does not require the implementation of water conservation programs or practices that are not locally cost effective.

10826. An agricultural water management plan shall be adopted in accordance with this chapter. The plan shall do all of the following:

(a) Describe the agricultural water supplier and the service area, including all of the following:

(1) Size of the service area.

(2) Location of the service area and its water management facilities.

(3) Terrain and soils.

(4) Climate.

(5) Operating rules and regulations.
(6) Water delivery measurements or calculations.
(7) Water rate schedules and billing.
(8) Water shortage allocation policies.
(b) Describe the quantity and quality of water resources of the agricultural water supplier, including all of the following:
(1) Surface water supply.
(2) Groundwater supply.
(3) Other water supplies.
(4) Source water quality monitoring practices.
(5) Water uses within the agricultural water supplier's service area, including all of the following:
(A) Agricultural.
(B) Environmental.
(C) Recreational.
(D) Municipal and industrial.
(E) Groundwater recharge.
(F) Transfers and exchanges.
(G) Other water uses.
(6) Drainage from the water supplier's service area.
(7) Water accounting, including all of the following:
(A) Quantifying the water supplier's water supplies.
(B) Tabulating water uses.
(C) Overall water budget.
(8) Water supply reliability.
(c) Include an analysis, based on available information, of the effect of climate change on future water supplies.
(d) Describe previous water management activities.
(e) Include in the plan the water use efficiency information required pursuant to Section 10608.48.

10827. Agricultural water suppliers that are members of the Agricultural Water Management Council, and that submit water management plans to that council in accordance with the "Memorandum of Understanding Regarding Efficient Water Management Practices By Agricultural Water Suppliers In California," dated January 1, 1999, may submit the water management plans identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of Section 10826.

10828. (a) Agricultural water suppliers that are required to submit water conservation plans to the United States Bureau of Reclamation pursuant to either the Central Valley Project Improvement Act (Public Law 102-575) or the Reclamation Reform Act of 1982, or both, may submit those water conservation plans to satisfy the requirements of Section 10826, if both of the following apply:
(1) The agricultural water supplier has adopted and submitted the water conservation plan to the United States Bureau of Reclamation within the previous four years.

(2) The United States Bureau of Reclamation has accepted the water conservation plan as adequate.

(b) This part does not require agricultural water suppliers that are required to submit water conservation plans to the United States Bureau of Reclamation pursuant to either the Central Valley Project Improvement Act (Public Law 102-575) or the Reclamation Reform Act of 1982, or both, to prepare and adopt water conservation plans according to a schedule that is different from that required by the United States Bureau of Reclamation.

10829. An agricultural water supplier may satisfy the requirements of this part by adopting an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) or by participation in areawide, regional, watershed, or basinwide water management planning if those plans meet or exceed the requirements of this part.

Article 3. Adoption and Implementation of Plans

10840. Every agricultural water supplier shall prepare its plan pursuant to Article 2 (commencing with Section 10825).

10841. Prior to adopting a plan, the agricultural water supplier shall make the proposed plan available for public inspection, and shall hold a public hearing on the plan. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned agricultural water supplier pursuant to Section 6066 of the Government Code. A privately owned agricultural water supplier shall provide an equivalent notice within its service area and shall provide a reasonably equivalent opportunity that would otherwise be afforded through a public hearing process for interested parties to provide input on the plan. After the hearing, the plan shall be adopted as prepared or as modified during or after the hearing.

10842. An agricultural water supplier shall implement the plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan, as determined by the governing body of the agricultural water supplier.

10843. (a) An agricultural water supplier shall submit to the entities identified in subdivision (b) a copy of its plan no later than 30 days after the adoption of the plan. Copies of amendments or changes to the plans shall be submitted to the entities identified in subdivision (b) within 30 days after the adoption of the amendments or changes.

(b) An agricultural water supplier shall submit a copy of its plan and amendments or changes to the plan to each of the following entities:

(1) The department.

(2) Any city, county, or city and county within which the agricultural water supplier provides water supplies.

(3) Any groundwater management entity within which jurisdiction the agricultural water supplier extracts or provides water supplies.

(4) Any urban water supplier within which jurisdiction the agricultural water supplier provides water supplies.

(5) Any city or county library within which jurisdiction the agricultural water supplier provides water supplies.

(6) The California State Library.

(7) Any local agency formation commission serving a county within which the agricultural water supplier provides water supplies.

10844. (a) Not later than 30 days after the date of adopting its plan, the agricultural water supplier shall make the plan available for public review on the agricultural water supplier's Internet Web site.

(b) An agricultural water supplier that does not have an Internet Web site shall submit to the department, not later than 30 days after the date of adopting its plan, a copy of the adopted plan in an electronic format. The department shall make the plan available for public review on the department's Internet Web site.

10845. (a) The department shall prepare and submit to the Legislature, on or before December 31, 2013, and thereafter in the years ending in six and years ending in one, a report summarizing the status of the plans adopted pursuant to this part.

(b) The report prepared by the department shall identify the outstanding elements of any plan adopted pursuant to this part. The report shall include an evaluation of the effectiveness of this part in promoting efficient agricultural water management practices and recommendations relating to proposed changes to this part, as appropriate.

(c) The department shall provide a copy of the report to each agricultural water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearing designed to consider the effectiveness of plans submitted pursuant to this part.

(d) This section does not authorize the department, in preparing the report, to approve, disapprove, or critique individual plans submitted pursuant to this part.

Chapter 4. Miscellaneous Provisions

10850. (a) Any action or proceeding to attack, review, set aside, void, or annul the acts or decisions of an agricultural water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(1) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.

(2) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 120 days after submitting the plan or amendments to the plan to entities in accordance with Section 10844 or the taking of that action.

(b) In an action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an agricultural water supplier, on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse

of discretion is established if the agricultural water supplier has not proceeded in a manner required by law, or if the action by the agricultural water supplier is not supported by substantial evidence.

10851. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part. This part does not exempt projects for implementation of the plan or for expanded or additional water supplies from the California Environmental Quality Act.

10852. An agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

10853. No agricultural water supplier that provides water to less than 25,000 irrigated acres, excluding recycled water, shall be required to implement the requirements of this part or Part 2.55 (commencing with Section 10608) unless sufficient funding has specifically been provided to that water supplier for these purposes.

SEC. 5. This act shall take effect only if Senate Bill 1 and Senate Bill 6 of the 2009–10 Seventh Extraordinary Session of the Legislature are enacted and become effective.

O

APPENDIX B

Agency and Public Notices Regarding UWMP Preparation and Adoption

Woodland Daily Democrat

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WOODLAND, CITY OF - LEGALS
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Account Number: 2130710

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STATE OF CALIFORNIA
County of Yolo

FILE NO. 11-26

The Daily Democrat

A newspaper of general circulation, printed and published daily in the City of Woodland, County of Yolo, and which newspaper has been adjudged a newspaper of general circulation as defined by the Superior Court of the County of Yolo, State of California, under the date of June 30, 1952, and in accordance with the provisions of Title 1, Division 7, of the government Code of the State of California; that the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

6/20/2011, 6/27/2011

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at Woodland, California,
this 27th day of June 2011

Signature

This space is for the County Clerk's Filing Stamp

Legal No. **0004049725**

City of Woodland 2010 Urban Water Management Plan-Public Notice

Notice is hereby given that the City Council of the City of Woodland will hold a Public Hearing and consider adopting a 2010 Urban Water Management Plan Update for the City of Woodland pursuant to California Water Code Section 10610 et. seq. The plan is required to be updated every 5 years.

The City of Woodland recognizes the importance of maintaining a sustainable, reliable, high quality water supply for the long-term benefit of its citizens. Adoption of the 2010 Urban Water Management Plan Update will further this goal. The City Council will hold a Public Hearing to provide interested members of the public with an opportunity to express their opinions and hear the City Council's deliberation of whether or not to adopt the 2010 Urban Water Management Plan Update. The City Council will consider adopting, and may adopt, the 2010 Urban Water Management Plan immediately following the Public Hearing.

All interested persons may attend the Public Meeting and be heard.

Hearing Date: July 5, 2011
Hearing Time: 6:00 p.m.
Place: Council Chambers, Woodland City Hall, 300 First Street, Woodland, California

Additional information and a copy of the proposed 2010 Urban Water Management Plan Update may be viewed at the City of Woodland's website: www.cityofwoodland.org

Original copies can be viewed at the following locations: Municipal Service

Center, 655 N. Pioneer Avenue, Woodland, CA 95776; City Manager's Office, 300 First Street, Woodland, CA 95695; Woodland Public Library, 250 First Street, Woodland, CA 95695.

If you have any question please contact Akin Okupe at 530-661-5885 or by mail at Akin.Okupe@CityofWoodland.org

APPENDIX C

Resolution to adopt this updated UWMP

RESOLUTION NO. 6012

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WOODLAND TO ADOPT THE 2010 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Urban Water Management Planning Act, Water Code section 10610 et seq. (the Act) mandates that every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare and adopt an updated Urban Water Management Plan (UWMP) at least once every five years on or before December 31, in years ending five and zero; and

WHEREAS, the City of Woodland (City) is an urban water supplier for purposes of the Act, and approved and adopted its most recent UWMP in 2005 and submitted that UWMP to the California Department of Water Resources (DWR); and

WHEREAS, the Water Conservation Act of 2009, Water Code section 10608 et seq. (SBX7-7), extended the time by which urban retail water suppliers must adopt their 2010 UWMPs to July 1, 2011 and, among other things, established requirements for urban retail water suppliers to prepare urban water use targets in accordance with the goals of SBX7-7 to reduce statewide daily per capita water use by 15 percent by the year 2015 and 20 percent by the year 2020; and

WHEREAS, the City is an "urban retail water supplier" for purposes of SBX7-7 because it directly provides potable municipal water to more than 3,000 end users; and

WHEREAS, in accordance with applicable law, including the requirements of the Act and SBX7-7, the City has prepared its 2010 UWMP and has undertaken certain agency notification and coordination, public involvement and outreach, public comment, public notice, and other procedures in relation to its 2010 UWMP; and

WHEREAS, as authorized by Section 10620(e) of the Act, the City has prepared its 2010 UWMP with its own staff, with the assistance of consulting professionals, and in cooperation with other governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in preparing its 2010 UWMP, and has also in part utilized and relied upon the DWR Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan (March 2011) and the DWR Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (For the Consistent Implementation of the Water Conservation Act of 2009) (February 2011) in preparing its 2010 UWMP; and

WHEREAS, in accordance with applicable law, including Water Code sections 10608.26 and 10642, and Government Code section 6066, the City made its Draft 2010 UWMP available for public inspection, and caused to be published within the jurisdiction of the City at least two notices of the public hearing regarding the City's 2010 UWMP to be held on July 5, 2011; and

WHEREAS, in accordance with applicable law, the City Council conducted a public hearing on July 5, 2011 to, among other things, provide members of the public and other interested entities with the opportunity to be heard in connection with the City's 2010 UWMP and the proposed adoption thereof; and

WHEREAS, pursuant to said July 5, 2011 public hearing on the 2010 UWMP, the City encouraged the active involvement of diverse social, cultural, and economic elements of the population within the City's service area with regard to the preparation of the 2010 UWMP, allowed input by members of the public and any other interested entities regarding all aspects of the 2010 UWMP, allowed community input regarding the City's implementation plan for complying with SBX7-7, considered the economic impacts of the City's implementation plan for complying with SBX7-7, and proposed the adoption of Method 1 under Water Code section 10608.20(b) for determining the City's urban water use targets as set forth in the 2010 UWMP; and

WHEREAS, the City Council has reviewed and considered the purposes and requirements and of the Urban Water Management Planning Act and SBX7-7, the contents of the 2010 UWMP, the documentation contained in the administrative record in support of the 2010 UWMP, information provided by City staff and the City's professional consultant, and all public and agency input received with regard to the 2010 UWMP, and has determined that the factual analyses and conclusions set forth in the 2010 UWMP are supported by substantial evidence.

BE IT THEREFORE, RESOLVED by the City Council of the City of Woodland, Yolo County, California, as follows:

1. The City hereby adopts Method 1 under Water Code section 10608.20(b) for determining the City's urban water use targets as set forth in the 2010 Urban Water Management Plan, and the City's 2010 Urban Water Management Plan is hereby approved and adopted and ordered filed with the City Clerk.

2. The City Manager is hereby authorized and directed to include a copy of this Resolution in the City's 2010 Urban Water Management Plan and, in accordance with Water Code section 10644(a), to submit copies of the 2010 Urban Water Management Plan with the California Department of Water Resources, the California State Library, and any city or county within which the City provides water supplies within thirty (30) days of this adoption date.

3. The City Manager is hereby authorized and directed, in accordance with Water Code section 10645, to make the 2010 Urban Water Management Plan available for public review during normal business hours not later than thirty (30) days after filing a copy thereof with the California Department of Water Resources.

4. The City Manager is hereby authorized and directed, in accordance with Water Code section 10635(b), to provide that portion of the 2010 Urban Water Management Plan prepared pursuant to Water Code section 10635(a) to any city or

county within which the City provides water supplies not later than sixty (60) days after filing a copy thereof with the California Department of Water Resources.

5. The City Manager is hereby authorized and directed to implement the components of the 2010 Urban Water Management Plan in accordance with the Urban Water Management Planning Act and SBX7-7, including, but not limited to, the City's Demand Management Measures and its Water Shortage Contingency Plan.

6. The City Manager is hereby authorized and directed to recommend to the City Council additional steps necessary or appropriate to effectively carry out the implementation of the 2010 Urban Water Management Plan, the Urban Water Management Planning Act and SBX7-7.

PASSED AND ADOPTED by the City Council this 19th day of July, 2011, by the following vote:

AYES: Council Members Davies, Dote, Marble, Stallard and Pimentel
NOES: None
ABSENT: None
ABSTAIN: None

Artemio Pimentel, Mayor

ATTEST:

Ana B. Gonzalez, City Clerk

APPROVED AS TO FORM:

Andrew J. Morris, City Attorney

APPENDIX D

Woodland Housing Element Update

City of Woodland

2008 Housing Element Update

(Policy Document and Background Report)

Adopted March 24, 2009

Willdan

STATE OF CALIFORNIA -BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF HOUSING POLICY DEVELOPMENT
1800 Third Street, Suite 430
P. O. Box 952053
Sacramento, CA 94252-2053
(916) 445-4728
FAX (916) 327-2643
www.hcd.ca.gov

June 3, 2009

Mr. Mark Deven, City Manager
City of Woodland
300 First Street
Woodland, CA 95695

Dear Mr. Deven:

RE: Review of the City of Woodland's Adopted Housing Element

Thank you for submitting the City of Woodland's housing element adopted on March 24, 2009 and received for review on March 25, 2009. The Department is required to review adopted housing elements and report the findings to the locality pursuant to Government Code Section 65585(h).

As you know, the Department's March 19, 2009 review found the City of Woodland's revised draft housing element addressed the statutory requirements of housing element law. As the adopted element is substantially the same as the revised draft, the Department is pleased to find the element in full compliance with State housing element law (Article 10.6 of the Government Code).

Programs 2.7, 2.8 and 2.10, including seeking and providing financial assistance, to assist in the development of new rental construction for lower-income households, including extremely low-income and farmworkers, are critical to compliance with housing element law. The City should monitor and report on the results of these programs through the annual progress report, required pursuant to Government Code Section 65400, and should amend programs as necessary, if existing programs or strategies are not effective in providing needed housing opportunities.

Woodland now meets specific requirements for several State funding programs designed to reward local governments for compliance with State housing element law. For example, the Infill Infrastructure Grant Program, authorized by Proposition 1C, Local Housing Trust Fund and the Building Equity and Growth in Neighborhoods (BEGIN), and Housing Related Parks Programs include housing element compliance either as a threshold or a competitive factor in rating and ranking applications. More specific information about these and other programs is available on the Department's website at http://www.hcd.ca.gov/hpd/hrc/plan/he/loan_grant_hecompl011609.pdf.

RECEIVED
JUN - 4 2009
CITY MANAGER'S OFFICE

The Department wishes the City of Woodland success in implementing its housing element and looks forward to following its progress through the General Plan annual progress reports pursuant to Government Code Section 65400. If the Department can provide assistance in implementing the housing and land-use strategies, please contact Paul McDougall, of our staff, at (916) 322-7995.

Sincerely,

Cathy E. Creswell

Cathy E. Creswell
Deputy Director

CITY OF WOODLAND
HOUSING ELEMENT UPDATE
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CITY OF WOODLAND
HOUSING ELEMENT UPDATE
POLICY DOCUMENT
2008 - 2013

INTRODUCTION

The City of Woodland recognizes the vital role local governments play in the supply and affordability of housing. Each local government in California is required to adopt a comprehensive, long-term general plan for the physical development of the city or county. The housing element is one of the seven mandated elements of the local general plan. State law requires that local governments address the existing and projected housing needs of all economic segments of the community through their housing elements. The law acknowledges that, in order for the private market to adequately address housing needs and demand, local governments must adopt land use plans and regulatory systems that provide opportunities for, and do not unduly constrain, housing development. As a result, housing policy in the state rests largely upon the effective implementation of local general plans and, in particular, local housing elements

The purposes of the housing element are to identify the community's housing needs; to state the community's goals and objectives with regard to housing production, rehabilitation, and conservation to meet those needs; and to define the policies and programs that the community will implement to achieve the stated goals and objectives.

State law requires cities and counties to address the needs of all income groups in their housing elements. The official definition of these needs is provided by the Sacramento Area Council of Governments (SACOG) for each city and county within its geographic jurisdiction. Beyond these income-based housing needs, the housing element must also address special needs groups such as persons with disabilities, farmworkers, and homeless persons.

The City of Woodland Housing Element consists of two documents: Background Report and Policy Document. The Background Report is designed to meet housing element requirements and to provide the background information and analysis to support the goals, policies, programs and quantified objectives in the City of Woodland Housing Element Policy Document.

The Policy Document is divided into the following sections:

I. Goals, Policies, and Implementation Programs

This Housing Element Policy Document includes 4 goal statements regarding the following:

A. Development of Housing
B. Maintenance of Housing
C. Equal Opportunity in Housing

D. Energy Conservation

Under each goal statement, the Element sets out policies that amplify the goal statement. Implementation programs are listed at the end of each sub-section and describe briefly the proposed action, the City agencies or departments with primary responsibility for carrying out the program, and the timeframe for accomplishing the program. Several of the implementation programs also have quantified objectives listed.

The following definitions describe the nature of the statements of goals, policies, implementation programs, and quantified objectives as they are used in the Housing Element Policy Document:

- Goal: Ultimate purpose of an effort stated in a way that is general in nature and immeasurable.

- Policy: Specific statement guiding action and implying clear commitment.

- Implementation Program: An action, procedure, program, or technique that carries out policy. Implementation programs also specify primary responsibility for carrying out the action and an estimated timeframe for its accomplishment. The timeframe indicates the calendar year in which the activity is scheduled to be completed. These timeframes are general guidelines and may be adjusted based on City staffing and budgetary considerations.

- Quantified Objective: The number of housing units that the City expects to be constructed, conserved, or rehabilitated; or the number of households the City expects will be assisted through Housing Element programs and based on general market conditions during the remaining 5½-year/6-year timeframe of the Housing Element (July 1, 2007 to June 30, 2013).

In this document, the term "affordable housing" means housing affordable to extremely low-, very low-, low-, and moderate-income households.

II. Adequate Sites

This section describes the available site capacity in Woodland to meet housing needs and is broken down as follows:

A. Description of Criteria for Identifying Housing Sites
B. Inventory of Vacant and Underdeveloped sites
C. Inventory of Approved On-Line Sites
D. Total Residential Holding Capacity vs. Projected Needs by Housing Type and Home Group
E. Possible Sites for Redesignation

III. Public Participation

This section describes the opportunities the City provided for public participation during the preparation of the updated Housing Element.

IV. Consistency with the General Plan

This section describes the internal coordination between the new Housing Element and the other elements of the existing General Plan.

I. GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS

A. Development of Housing

Goal 2.A

To promote the provision of adequate housing for all persons in the City including those with special housing needs and to emphasize the basic human need for housing as shelter.

Policies

2.A.1. The City shall encourage and assist the construction of a variety of housing types with varying densities and prices, for both sales and rental that are affordable to all income groups, particularly very low income and special needs groups.

2.A.2. The City shall continue to approve developments that provide housing for all income groups where consistent with the Housing Element and Zoning Ordinance.

2.A.3. The City shall assure that new housing efficiently uses land and causes minimum environmental impact.

2.A.4. The City of Woodland shall formulate an overall "scattered site" housing policy for all assisted housing, including publicly and privately financed housing projects.

2.A.5. The City shall continue to use the Planned Development Overlay Zone (P-D) to encourage creative solutions to housing design and orientation, consolidation of open spaces and both sensitive and reasonable increases in residential densities.

2.A.6. The City shall encourage private builders and developers to participate in federal, state or other programs that assist in providing and maintaining housing affordable to very low income and special needs groups.

2.A.7. The City shall participate, whenever eligible, in federal, state or other programs that assist in providing and maintaining housing affordable to very low income and special needs groups.

2.A.8. The City shall assist and cooperate with non-profit housing development corporations and self-help housing sponsors.

2.A.9. The City shall continue to work cooperatively with neighboring cities, Yolo County and the Sacramento Area Council of Governments (SACOG) to ensure that Woodland plans for its "fair share" of housing needs.

2.A.10. The City shall cooperate with and seek the advice of developers, builders, financial institutions, community groups, nonprofit agencies, and interested citizens on housing needs and the solutions to housing problems.

2.A.11. The City shall ensure that there is sufficient land zoned for a variety of housing types, residential densities and housing prices that will meet the needs for projected growth while providing flexibility on the identification of housing sites.

2.A.12. The City shall allow residential uses over commercial uses in the Central Commercial area.

2.A.13. The City shall review homeless needs with Yolo County and other cities in the county and participate in coordinated programs to meet identified needs.

2.A.14. The City shall provide emergency housing for the health and safety of Woodland residents.

2.A.15. The City shall require, through specific plans, neighborhood design standards and development review, a mix of housing types, densities, designs and prices/rents in each planning area where land is available.

2.A.16. The City shall disperse lower, moderate and higher cost housing throughout the City, each planning area and each subdivision where feasible due to the availability of land and adequate service facilities.

2.A.17. The City shall assure that residential land use designations are consistent with SACOG household projections by income group.

2.A.18. The City shall coordinate Redevelopment Agency infill housing programs with community wide housing needs.

Implementation Programs

TABLE 1
SUMMARY OF QUANTIFIED OBJECTIVES

Program	ELI	VLI	LI	M	AM	Total
New Construction	8	184	218	99	-	**509**
Rehabilitation	12	12	20	-	-	**44**
Conservation / Preservation	144	145	-	-	-	**289** [1]

1 – total of Section 8 units at-risk of conversion to market rate units to be preserved

2.1. The City shall continue to cooperate with and advise developers in the use of the P-D Planned Development Overlay Zone to reduce housing costs by utilizing various techniques such as: zero lot lines, cluster development, private streets, higher densities, mixed uses, parking and setback variations and other innovative approaches. The City shall establish guidelines to promote alternative land use development.

Responsibility:	Community Development Department City Manager Planning Commission City Council
Time Frame:	ongoing

2.2. The City shall continue to cooperate with and advise developers in the use of the City's Density Bonus Incentive Program as contained in §25-21-25 of the Zoning Ordinance. Bonus incentives are available to developers for including lower income units in their projects. Housing projects with 5 or more units are eligible by reserving 10 percent of the total number of proposed units for lower-income households; 5 percent of the total number of proposed units for very low-income households; a senior citizen housing development, as defined in Sections 51.3 and 51.12 of the Civil Code; or at least 10 percent of the total dwelling units in a condominium project as defined in subdivision (f) of the Civil Code Section 1351 or in a planned development as defined in subdivision (k) of Civil Code Section 1351, for persons and families of moderate, ad defined in Health and Safety Code Section 50093.

Responsibility:	Community Development Department City Manager Planning Commission City Council
Time Frame:	ongoing

2.3. The City shall continue to cooperate with Yolo County, other cities in the County, developers and builders and with financial institutions to secure tax-exempt mortgage revenue bonds.

Responsibility:	Community Development Department City Council Planning Commission
Time Frame:	ongoing

2.4. The City shall annually review its eligibility for various federal and state programs that will provide rehabilitation and maintenance assistance for 258 low-income units and special needs groups. The City shall submit applications for programs for which the City is eligible, as appropriate.

Responsibility:	Community Development Department
Time Frame:	annually

2.5. The Planning Commission shall hold a meeting each year to review the Housing Monitoring Report and make a report to the City Council.

Responsibility:	Community Development Department Planning Commission City Council
Time Frame:	annually

2.6. The City shall accommodate development of at least an additional 34 units at densities that will facilitate production of housing affordable to moderate-income households by redesignating sufficient vacant land as Medium Density Residential (MDR: 8-16 units/gross acre). If, at any time, the supply of sites zoned for multi-family housing falls below the quantity of land required to accommodate the City's remaining need for sites to accommodate higher density multi-family housing during the Housing Element planning period, the City shall initiate redesignations and rezonings to provide additional land. The City shall ensure that future sites designated for higher-density housing are large enough to provide for economies of scale in construction and are located near transit stops or arterial streets by maintaining an inventory of potential sites that meet those criteria. Procedures to increase residential densities in the Spring Lake Specific Plan shall be reviewed for possible city-wide application. The Redevelopment Agency will also consider rezones from commercial districts to mixed-use districts to allow for residential densities. Where feasible and appropriate, the City shall also consider the redesignation of vacant land as High Density Residential (HDR: 16-25 units/gross acre).

Responsibility:	Community Development Department Redevelopment Agency Planning Commission City Council
Time Frame:	ongoing monitoring of availability of sites

2.7. The City shall seek financial assistance from and cooperation with the City of Woodland Redevelopment Agency to provide financing to assist housing construction of very low-income units, low-income units, and moderate-income units that serve families and special needs groups using its 20 percent housing set-aside funds, HOME, CalHome, and other Federal and State funding sources.

Responsibility:	Community Development Department City Manager City Council Redevelopment Agency Board of Directors
Time Frame:	annually
Quantified Objective:	21 very low-income units, 27 low-income units, and 5 moderate-income units

2.8. The City shall allocate CDBG funds for the provision of extremely low-income, very low-income units, low-income units, and moderate-income housing units. The City shall support the Redevelopment Agency in the identification of sites, the establishment of partnerships, and the pursuit of CDBG funds.

Responsibility:	Community Development Department Redevelopment Agency City Manager City Council
Time Frame:	annually
Quantified Objective:	8 extremely low-units, 8 very low-income units, 7 low-income units, and 3 moderate-income units

2.9. The City shall allocate funds for transitional housing and other special-needs housing.

Responsibility:	Community Development Department City Council
Time Frame:	ongoing
Quantified Objective:	7 low-income units

2.10. The City shall continue to implement §6A-3-30 (Affordable Housing - Incentives) of its Municipal Code that states that the City Council may, after review by the Planning Commission, grant incentives to developers of affordable housing that it deems appropriate, including but not limited to the following: 1) waiver and/or deferral of all or a portion of City development fees; 2) waiver or modification of City development standards; or 3) assistance in obtaining such federal, state, or local financing and/or subsidies.

Responsibility:	Community Development Department City Council Planning Commission
Time Frame:	ongoing on a case-by-case basis

2.11. The City shall continue to facilitate the provision of emergency shelter beds through its participation in the countywide Homeless Coordination Project that provides services to the homeless in Yolo County. The Project includes Homeless Coordination and the Cold Weather Shelter.

Responsibility:	Community Development Department
Time Frame:	ongoing

2.12. The City shall review the HUD Section 8 voucher program administered by the Yolo County Housing Authority and encourage the Housing Authority to raise its payment standard to 110 percent of HUD Fair Market Rent (FMR)

Responsibility:	Community Development Department
Time Frame:	ongoing

2.13. The City shall continue to contract for the services of Yolo County's Homeless Coordinator. Program to be funded through the General Fund and Housing Monitoring Funds.

Responsibility:	Homeless Coordinator Redevelopment Agency City Council
Time Frame:	ongoing

2.14. The City shall require relocation assistance in compliance with State law to tenants relocated as a result of removal of housing by the City or the RDA.

Responsibility:	Community Development Director Redevelopment Agency
Time Frame:	ongoing as needed

2.15. The City shall continue to enforce the provisions of its Affordable Housing Ordinance (Chapter 6A of the Municipal Code) that require that 10 percent of all new for-sale units in any residential project consisting of eight or more units shall be affordable to low-income households. For multifamily rental projects with ten or more units, 10 percent of all new units shall be affordable to low-income households, and an additional 20 percent shall be affordable to very low-income households. In the alternative, a developer may elect to make 25 percent of the multifamily rental units affordable to very low-income households.

The City shall continue to enforce the provisions of the Southeast Area Specific Plan that require corner lots to provide split-lot duplex housing with an overall goal of providing 10 percent of the for-sale units affordable to moderate-income households. 25 percent of multi-family units shall be affordable to low-income households with 10 percent reserved for very low-income households. To the extent the affordable housing requirements in the Southeast Area Specific Plan differ from the requirements of Chapter 6A, the provisions of the specific plan shall govern.

The City shall enforce the provisions of the Spring Lake Specific Plan that require that 10 percent of the units in a for-sale residential project shall be affordable to low-income households. For multifamily rental projects, 20 percent of the units shall be affordable to very-low income households, and 10 percent of the units shall be affordable to low-income households. In the alternative, a developer may make 25 percent of the units affordable to very-low income households. To the extent the affordable housing

requirements in the Spring Lake Specific Plan differ from the requirements of Chapter 6A, the provisions of the specific plan shall govern.

Responsibility:	Community Development Department
Time Frame:	ongoing
Quantified Objective:	155 very low-income units, 177 low-income units, and 91 moderate-income units

The following table presents an estimation of projects subject to the City's inclusionary housing requirements that are expected to be approved and constructed in Woodland during the current housing element period.

TABLE 2
ESTIMATED MULTI-FAMILY INCLUSIONARY HOUSING UNITS

Project Name	For-Sale/ Rental	Total Units	Very Low-Income Units	Low-Income Units
Eaglewood Apartments*	rental	156	4	36
Acacia Glen Senior Apartments*	rental	41	8	0
505 Community Lane Apartments*	rental	29	3	4
Stonehaven Subdivision	for-sale	86	0	9
Spring Lake Single-Family Housing	for-sale	640 (est.)	0	64 (est.)
Spring Lake Multifamily Housing	rental	180 (est.)	85	95 (est.)
Hutchinson Valley Subdivision	for-sale	22	0	2

*Pipeline projects subject to Pre 2004 Chapter 6A updates.
Note: Hutchinson Valley is a single-family project.

TABLE 3
MULTI-FAMILY PROJECTS COMPLETED SINCE THE ADOPTION OF CHAPTER 6A

Project Name	Year Completed	Total Units	Very Low-Income	Low-Income	Mod-Income
Acacia Glen	2003-2005	8	8	0	0
Eaglewood Apartments	2003-2005	40	4	36	0
New Dimensions Multifamily Housing	2004-2005	15	15	0	0
505 Community Lane	2004-2005	7	3	4	0
Heritage Oaks	2005-2006	120	12	108	0
Heritage Village (Monley Cronin)	2005-2006	9	0	9	0
Spring Lake Inclusionary	2006-2007	53	0	53	0
Terracina Apartments	2007-2008	156	85	71	0
	Total	**408**	**127**	**281**	**0**

Notes: Heritage Oaks was a preservation project and single-family units were constructed at Heritage Village.

2.16. The City shall amend Chapter 25 of the Municipal Code to permit transitional and supportive housing as a residential use and only subject to those requirements that apply to other residential uses of the same type in the same zone as required by Senate Bill 2, which took effect in 2008.

Responsibility:	Community Development Director Planning Commission City Council
Time Frame:	within one-year of Housing Element certification

2.17. The City shall amend East Street Specific Plan to allow emergency shelters as a permitted use in the Mixed Use Residential/Commercial (Area C) and the General Commercial (Area E) Areas of the East Street Corridor Specific Plan (ESCSP). Emergency shelters will be subject to the same development and management standards as other permitted uses in the Areas C and E of the ESCSP. Sufficient land is available for at least 1 emergency shelter and objective standards to regulate emergency shelters shall be developed as provided for under SB 2.

Responsibility:	Community Development Director Planning Commission City Council
Time Frame:	within one-year of Housing Element certification

2.18. The City shall contact non-profit builders and agricultural stakeholders to identify suitable and available sites for the development of migrant and seasonal farm worker housing in the Multiple-Family Residential Zone (R-M), the Duplex Residential Zone (R-2), and the Agricultural Zone (A-1). In addition, the City shall amend zoning consistent with Health and Safety Code Section 17021.5 and 17021.6 to further facilitate housing for farmworkers. Other programs to facilitate the development of affordable housing may include fee waivers and reduced development standards. Financial and technical assistance will be sought from HCD's Office of Migrant Services, the Joe Serna Jr. Farmworker Housing Grant Program, the California Tax Credit-Allocation Committee's Farmworker Housing Assistance Program, and the USDA Rural Development Program.

Responsibility:	Redevelopment Agency
Time Frame:	annually

2.19. The City shall consider options to allow Residential Care Homes with more than six mentally disordered or otherwise handicapped persons or dependent and neglected children as a permitted use in the Multiple-Family Residential Zone (R-M).

Responsibility:	Community Development Director Planning Commission City Council
Time Frame:	within one-year of Housing Element certification

2.20. The City shall amend Chapter 25 of the Municipal Code to allow single-room occupancy (SRO) in the A2, A3, and E2 Districts of Downtown Specific Plan (DSP). Development standards will be established that will allow and encourage the construction of new SROs.

Responsibility:	Community Development Director Planning Commission City Council
Time Frame:	within one-year of Housing Element certification

2.21. The City shall provide flexibility on the identification of sites for accommodating its Regional Housing Needs Plan (RHNP) Allocation. A rezone request of a site counted towards meeting the City's RHNP Allocation shall include findings that justify the rezone and identify an adequate replacement site(s) that will provide the minimum number of units by income level for accommodating the City's RHNP Allocation and is developable during the term of the Housing Element planning period.

Responsibility:	Community Development Director Planning Commission City Council
Time Frame:	ongoing as needed

B. Maintenance of Housing

Goal 2.B

To encourage the preservation, maintenance and improvement of existing housing and the replacement of unsafe or dilapidated housing.

Policies

2.B.1. The City shall continue rehabilitation of substandard residential units using federal and state subsidies for low and moderate-income households.

2.B.2. The City shall continue code compliance by the Building Inspection Division and other appropriate agencies of the Building, Electrical and Fire Codes; and Health and Safety Regulations.

2.B.3. The City shall continue to require the replacement of unsafe or dilapidated housing units.

2.B.4. The City shall periodically survey housing conditions to identify substandard residential units.

2.B.5. The City shall continue to support a mixture of residential and commercial uses in the downtown area that will allow housing to be retained or re-established.

Implementation Programs

2.22. The City shall continue rehabilitation and replacement (where required) of substandard residential units using the CDBG program and other available government programs, continue to provide information to all residents regarding available home rehabilitation programs, and increase public awareness of self-help and rehabilitation programs through outreach programs.

Responsibility:	Redevelopment Agency
Time Frame:	ongoing
Quantified Objective:	12 extremely low, 12 very low, and 20 low-income units

2.23. The City shall continue to include funds in its operating budget for building code and blight enforcement programs.

Responsibility:	Community Development Department City Council
Time Frame:	ongoing

2.24. The City shall review its eligibility for Federal and State home repair, renovation, and replacement programs annually and apply for programs, as appropriate.

Responsibility:	Community Development Department
Time Frame:	ongoing

2.25. The City shall continue to periodically update the status of housing conditions to determine the need for housing rehabilitation and the removal of unsafe units.

Responsibility:	Community Development Department Code Enforcement Building Inspection
Time Frame:	ongoing

2.26. The City will commit assistance to the renovation and rehabilitation of existing mobile home parks in the East Street Corridor through a rezone to eliminate their non-conforming status, for the purposes of preservation and maintenance of affordable housing for very low-, low-, and moderate-income households.

Responsibility:	Community Development Department
Time Frame:	ongoing

2.27. The City will contact property owners of units at-risk of converting to market rate housing within one year of affordability expiration to discuss the City's desire to preserve complexes as affordable housing. Participation from agencies interested in purchasing and/or managing units at-risk will be sought. Funding assistance, which can be leveraged with outside sources by the non-profit or for-profit developer to either transfer ownership, or provide rent subsidies to maintain affordability, shall utilize all available federal, state, and local financing sources. Property owners are required to give a nine-month notice of their intent to opt out of low-income use restrictions. The City will work with tenants to provide education regarding tenant rights and conversion procedures pursuant to California law.

Responsibility:	Community Development Department Redevelopment Agency
Time Frame:	ongoing
Quantified Objective:	144 extremely low, 145 very low-income units

2.28. The City shall continue to strive for greater energy conservation in residential development. Through the Redevelopment Agency, CDBG monies are available for energy efficiency work through their housing rehabilitation program for lower-income households. Additionally, the City will continue to provide information to all residents regarding available home rehabilitation programs, and increase public awareness of self-help and rehabilitation programs through outreach programs.

Responsibility:	Redevelopment Agency
Time Frame:	ongoing

C. Equal Opportunity in Housing

Goal 2.C

To assure that housing opportunities are open to all without regard to income, source of income, marital status, familial status, age, sex, sexual orientation, religion, creed, color, race, national origin, ancestry, or disability.

Policies

2.C.1. The City shall ensure that all laws and regulations prohibiting discrimination in lending, the sale of homes, and rental practices are enforced.

2.C.2. The City shall promote housing programs that maximize equal opportunity and avoid economic segregation.

2.C.3. The City shall continue to fund and support the City's Fair Housing Hotline Program.

2.C.4. The City shall support housing discrimination case processing and enforcement of Fair Housing laws through the State Department of Fair Employment and Housing.

2.C.5. The City shall assess housing programs to assure equal opportunity in housing.

Implementation Programs

2.29. The City shall continue to distribute Fair Housing brochures and booklets indicating what the Fair Housing laws are and where advice, assistance and enforcement activities can be obtained. The City will provide this information to any person who feels they have been discriminated against in acquiring housing within the City and to any housing provider who requests such information. Information will be made available at the City's website and at the City's Homebuyer Education Seminars.

Responsibility:	Fair Housing Specialist
Time Frame:	ongoing

2.30. The City shall affirmatively further fair housing by contracting with the Fair Housing Hotline Project provided through Legal Services of Northern California.

Responsibility:	Community Development Department City Council
Time Frame:	ongoing

2.31. The City shall facilitate an Annual Fair Housing Open House for rental property owners and various social services organization and agencies to discuss mechanisms to evaluate tenant applications according to fair housing law.

Responsibility:	Community Development Department
Time Frame:	ongoing

2.32. The Community Development Department shall refer fair housing complaints to the Fair Housing Hotline Project provided through Legal Services of Northern California and State Department of Fair Employment and Housing for resolution.

Responsibility:	Community Development Department
Time Frame:	ongoing

2.33. The City shall initiate a change to the General Plan and Zoning Ordinance to allow for additional mobile home units to be located in a mobile home park.

Responsibility:	Community Development Department Planning Commission City Council
Time Frame:	ongoing

2.34. The City shall affirmatively further fair housing by contracting with the Fair Housing Hotline Project provided through Legal Services of Northern California.

Responsibility:	Community Development Director City Council
Time Frame:	ongoing

2.35. The City shall review and amend its Municipal Code as necessary to provide individuals with disabilities reasonable accommodation in rules, policies, practices and procedures that may be necessary to ensure equal access to housing. The purpose of this is to provide a process for individuals with disabilities to make requests for reasonable accommodation in regard to relief from the various land use, zoning, or building laws, rules, policies, practices and/or procedures of the City.

Responsibility:	Community Development Department City Council
Time Frame:	ongoing

2.36. The City shall develop measures to encourage developers to use barrier-free design in new housing developments. Such measures could include density bonuses, fee reductions or other incentives. The City shall develop and make available information showing recommended barrier-free design features for residential projects.

Responsibility:	Community Development Department City Council
Time Frame:	FY 2009

2.37. The City shall increase its educational outreach efforts by assuring that all flyers are available in both English and Spanish regarding fair housing issues as related to migrant and seasonal farmworkers. Financial and technical assistance may be sought from California Rural Legal Assistance, the Farm worker Justice Fund, the USDA Rural Development Program, and HCD's Office of Migrant Services.

Responsibility:	Community Development Department
Time Frame:	ongoing

D. Energy Conservation

Goal 2.D

To establish development and construction standards which encourage energy conservation in residential uses.

Policies

2.D.1. The City shall require energy-conserving construction, as required by state law.

2.D.2. The City shall encourage innovative site designs and orientation techniques, which incorporate passive and active solar designs and natural cooling techniques.

2.D.3. The City shall promote a weatherization and retrofit program for existing housing units that fall below current state performance standards for energy efficiency.

2.D.4. The City shall promote opportunities for use of solar energy by assuring solar access.

2.D.5. The City shall promote energy efficient land use planning by incorporating energy conservation as a major criterion for future decision making.

2.D.6. The City shall promote energy conservation through education and outreach programs.

Implementation Programs

2.38. The City shall enforce Title 24 provisions of the California Administrative Code for residential energy conservation measures.

Responsibility:	Community Development Department
Time Frame:	ongoing

2.39. The City shall encourage the continued affordability of both rental and ownership housing by encouraging energy conservation in all existing development. The City will make available an informational fact sheet for distribution that will describe the measures that can be instituted in homes for little cost and will save energy and utility expenses.

Responsibility:	Community Development Director Building Division
Time Frame:	ongoing

2.40. The City shall apply its energy conservation policies in the Spring Lake Specific Plan citywide. These policies include but are not limited to the use of energy efficient air conditioners, light-colored roofing materials, photovoltaic energy systems, and Energy Star appliances.

Responsibility:	Community Development Director Public Works Director Building Division
Time Frame:	FY 2009

II. ADEQUATE SITES

The following section provides an analysis of adequate sites available for affordable housing development in Woodland.

A. Description of Criteria for Identifying Housing Sites

The City identified all vacant and potentially redevelopable (as of December 2007) residentially designated and commercially designated parcels within the City of Woodland limits and outside of Specific Plan areas. The City provided Willdan with the locations of these parcels along with a citywide parcel database. Willdan also conducted a parcel-by-parcel housing conditions survey (December 2007) and inventoried vacant parcels in the residentially zoned area of the City. The identified vacant/underdeveloped parcels were delineated on top of parcel basemap information in an ArcView GIS (geographic information system). Parcel acreages by land use designation were calculated in the GIS.

Parcels in the inventory fall into five categories:

1) Parcels that are vacant and available for development.

2) Parcels that are underutilized and are suitable for residential redevelopment. Underutilized parcels are defined as those where a portion of the site is vacant and there is development potential, or where there are older or low-value uses with the potential to be redeveloped within the Housing Element timeframe (i.e., by June 30, 2013).

3) Vacant/underutilized parcels that already have a planned project.

4) Parcels that are vacant, but are not suitable for residential development.

5) Parcels that are underutilized but are not suitable for residential redevelopment.

Parcels in the first two categories are classified as developable. All identified developable land designated for residential use (all residential land use designations in the General Plan) is considered available for residential development. Additionally, land within the Central Commercial (CC) designation is also considered available for residential development. The Land Use Element of the General Plan permits residential uses above the ground floor at densities of 5.0 to 12.0 units per gross acre in the CC designation. The Zoning Ordinance permits single-family dwellings, duplexes, and multifamily units in the C-2 Zone (General Commercial Zone) – which implements the General Commercial (GC) designation – by use permit.

B. Inventory of Vacant and Underdeveloped Sites

Table 4 provides a summary of estimated developable land within Woodland's City limits for all residential and commercial General Plan land use designations as of January 2008. Also shown are the residential density ranges for each designation and the holding capacity for residential

units based on 80% of maximum density for each designation. The table breaks down the developable land into two categories: 1) vacant parcels and 2) underutilized parcels available for residential development. All land that is summarized in Table 4 is within the city limits and served by a backbone infrastructure for water, sewer, roads, and drainage. Basic municipal services such as police and fire are also available in all of these areas. As shown in the table, there is a total holding capacity of 860 residential units on vacant and redevelopable parcels based on current land use designations and development occurring at 80% of maximum densities.

Table A.1 in Appendix A shows the full parcel list from which the data in Table II.4 is derived.

TABLE 4
SUMMARY OF VACANT AND REDEVELOPABLE LAND INVENTORY BY GENERAL PLAN DESIGNATION

GP DESIGNATION	L.U.	ZONE	MAXIMUM DENSITY (UNITS/ ACRE)	VACANT ACREAGE	REDEVELOPABLE ACREAGE	TOTAL ACREAGE	RESIDENTIAL HOLDING CAPACITY (UNITS)
CENTRAL COMMERCIAL	CC	CBD	12	N/A	0.18	0.18	2
EAST STREET CORRIDOR SPECIFIC PLAN ESCSP	ESD	ESD	25	2.72	18.33	21.05	421
GENERAL COMMERCIAL	GC	C-2	N/A	1.91	9.1	11.01	N/A
HIGH DENSITY RESIDENTIAL	HDR	R-M	25	7.59	1.82	9.41	188
MEDIUM DENSITY RESIDENTIAL	MDR	R-2	16	2.17	N/A	2.17	28
MEDIUM-LOW DENSITY RESIDENTIAL	MLDR	R-1	12	0.68	0.59	1.27	12
NEIGHBORHOOD COMMERCIAL	NC	C-1	N/A	0.46	N/A	0.46	N/A
NEIGHBORHOOD PRESERVATION	NP	N-P	8	0.33	0.59	0.92	6
SERVICE COMMERCIAL	SC	C-3	N/A	0.46	N/A	0.46	N/A
SPRING LAKE SPECIFIC PLAN	SLSP	R-25	25	5.14	N/A	5.14	103
SPRING LAKE SPECIFIC PLAN	SLSP	R-20	20	6.25	N/A	6.25	100
TOTAL	-	-	-	27.89	30.43	58.32	860

Notes: 1) Vacant/redevelopable parcels in all residential and commercial land use designations are included in this inventory.
2) Numbers for the Residential Holding Capacity have been rounded.
3) Residential units are allowed within the C-1, C-2 and C-3 Zones with a conditional use permit. Since there are certain criteria and restrictions that must be met to obtain a use permit, the projected unit count was not included with this survey.

C. Inventory of Approved/On-Line Units

Table 5 inventories parcels that have approved or planned residential units (as of July 2008) in the Southeast Area Specific Plan area, the Spring Lake Specific Plan area, the Downtown Specific Plan area, and other areas. The table lists projected residential units by income group. There is a total capacity of 1,645 approved/on-line units in Woodland, including 398 classified as either very low or low-income.

The largest project, the Reynen & Bardis Subdivision, will add 663 housing units in the Spring Lake Specific Plan area. When the project is completed, 43 very low income (through the Rochdale Grange multifamily project) and 68 low-income units will be available. In the Southeast Area Specific Plan area, 9 low-income units have been approved as part of the 90-unit Gibson-Ogden Subdivision. There are several projects also listed in the Other areas category. The largest contributor of very low- to low-income units (133) in this section of Woodland is the Casa Del Sol Mobile Home Park.

TABLE 5
APPROVED/ON-LINE UNITS AS OF JULY 2008

	Extremely Low Income	Very Low	Low	Moderate and Above	Combined Extremely, Very Low, Low, Moderate, and Above Moderate	Notes
Southeast Area Specific Plan (1)						
Gibson/Ogden	0	0	9	81	90	Approved
Hanson Ranch	0	0	0	24	24	Construction completed for 12 units, 12 units unconstructed.
Spring Lake Specific Plan (6)						
Arbors (Centex Homes: AKA-Beeghly Ranch)	0	0	19	63	82	Design Review pending.
Reynen & Bardis	0	43	68	552	663	Tentative Subdivision Map approved. Final Map pending.
DR Horton (AKA-Solara Ranch)	0	0	10	84	94	Site Plan and Design Review approved.
Rochdale Grange (Neighborhood Partners)	0	See Note	0	See Note	See Note	Site Plan and Design Review approved. (Units – 43 very low and 1 above moderate – included in Reynen & Bardis entry.)
Parkside	0	0	17	145	162	Site grading in progress.
Heidrick Ranch Phase I	0	0	6	33	39	Construction completed for 10 units
Downtown Specific Plan (3)						
Capitol Hotel/Saloon	0	0	0	5	5	Under Construction (residential and commercial uses).
City Center Lofts	0	0	17	153	170	Planning Commission approved project at its June 19, 2008 meeting.
Other						
Maxwell School	0	0	0	8	8	Tentative maps approved. Final Map pending.
3 College Street	0	0	0	2	2	Conditional Use Permit approved. Design Review approval pending.
Castro Apartments	0	0	0	5	5	Approved by Zoning Administrator. Building plans also approved. Property is being marketed.
Hutchinson Valley Lane	0	0	2	20	22	Construction completed for 10 units, 12 units unconstructed.
Arjmand Duplexes	0	0	0	4	4	Building permits pending.
Country Oaks	0	0	4	34	38	Approved Tentative Subdivision Map and Conditional Use Permit. Final Map pending.
Ordonez	0	0	0	1	1	Tentative Map approval. Final Map pending.
Tovar Mixed Use (417 West)*	0	0	0	2	2	Tentative Map approved. Two-year Map Extension of time approved.
Tovar Mixed Use (304 Main)*	0	2	1	7	10	Site Plan and Design Review approved. Applicant to file CUP or meet new downtown parking standards.
Fair Plaza East (35 West Clover Street)	0	14	53	1	68	Senior complex to be rehabilitated.
Casa Del Sol	0	94	39	23	156	Mobile home park proceeding with rehabilitation project financing. Construction on Phase I of the project began in June 2008.
Total	0	153	245	1,247	**1,645**	

Source: City of Woodland Community Development, 2008.
Note: * Located within the Redevelopment Agency project area.

TABLE 6
RESIDENTIAL DEVELOPMENT PROJECTS AS OF JULY 23, 2008

Project Name	Description	Status	Notes
Mall Expansion Site, NE corner of East Street and Road 24A	Construction of senior, gated community with 247 single-family units. Project will include 25 units for low-income households.	Project applicant submitted a revised tentative subdivision map on August 12, 2008.	Property owner has replaced K. Hovnanian Homes as the project applicant.
Heritage R-15 Site, SW corner of Marston Drive and Meikle Avenue	Rezone of 35,000 square feet from R-3 to R-15 and tentative subdivision map for 98 attached and detached alley-loaded small lot single-family units. Project will include 10 units for lower-income households.	August 8, 2008 project resubmittal was found incomplete.	Project located in the Spring Lake Specific Plan Area.

Source: City of Woodland Community Development, 2008.

D. Total Residential Holding Capacity vs. Projected Needs by Housing Type and Income Group

Table 7 provides a summary of residential holding capacity in Woodland compared to the City's assigned housing need. The figures for total RHNP allocation, units built, units under construction, and net allocation to be met are from Table 7. The figures for approved/on-line units and holding capacity on vacant and redevelopable land are from Tables 4 and 5, respectively.

TABLE 7
WOODLAND RESIDENTIAL HOLDING CAPACITY ANALYSIS 2006-2013

	Very Low	Low	Moderate	Combined Very Low, Low, and Moderate	Above Moderate	Total
Total RHNP Allocation (2006-2013) (see Table I.25)	**425**	**266**	**238**	**929**	**942**	**1,871**
Units Built/Under Construction: July 2007- March 2008	85	71	0	156	44	200
Approved/On-Line Units (see Table II.5)	153	245	23	421	1,224	1,475
Holding Capacity - Vacant and Redevelopable Land (see Table II.4) (1)	-	-	-	-	-	860
Remaining Need (2)	**-187**	**+33**	**-215**	**-369**	**+173**	**+664 (3)**

(1) Vacant/redevelopable parcels in all residential and commercial land use designations are included in this inventory. Of the commercial designations, only the CC designation permits residential development.

(2) The deficit of 187 units for the very low income category can be addressed with the R-25 (5.14 acres in size) and R-20 (6.25 acres in size) sites located in the Spring Lake Specific Plan Area (Table 4 of Policy Document and Appendix A of Background Report).

(3) The net surplus of 664 units is calculated as follows: 860 – 187 (deficit of very low income units) + 33 (surplus of low income units) – 215 (deficit of moderate income units) + 173 (surplus of above moderate income units).

TABLE 8
WOODLAND RESIDENTIAL HOLDING CAPACITY ANALYSIS 2002-2007

	Very Low	Low	Moderate	Combined Very Low, Low, and Moderate	Above Moderate	Total
Total RHNP Allocation (2002-2007)	**643**	**389**	**580**	**1,612**	**1,229**	**2,841**
Units Built: January 2002-June 2007	53	161	24	238	1,007	1,245
Net Allocation to be Met: January 2002-June 2007	**590**	**228**	**556**	**1,374**	**222**	**1,596**

Note: Numbers pertain to the 2002-2007 SACOG Regional Housing Need Plan allocation.

As shown in Table 7, the holding capacity of 839 is figured into the total amount of available units. Accordingly, the City can apply its affordable housing ordinance to distribute these units toward the appropriate housing needed. Woodland has a projected remaining capacity need for 187 very low-income houses. The City also has a deficit in the moderate-income housing group. The same idea above could be applied to reduce the shortage.

The Neighborhood Preservation (NP), Medium-Low Density Residential (MLDR), Medium Density Residential (MDR), High Density Residential (HDR), Planned Neighborhood (PN), and Central Commercial (CC) land use designations categories allow multifamily residential development. The MLDR (maximum density of 12 units/acre), MDR (maximum density of 16 units/acre), HDR (maximum density of 25 units/acre), and CC (maximum density of 12 units/acre) designations permit densities that are supportive of affordable multifamily housing.

In compliance with the requirements of Government Code Section 65583(c)(1), the General Plan land use element should provide a sufficient portion of land in the MLDR, MDR, HDR, and CC designations that permit residential development to meet its obligation to provide sites suitable for the production of needed housing affordable to very low-, low-, and moderate-income households.

E. Possible Sites for Redesignation

Implementation Program 2.6 calls for the City to "accommodate development of at least an additional 34 units at densities that will facilitate production of housing affordable to moderate-income households by redesignating sufficient vacant land Medium Density Residential (MDR)." The measure also requires the City to "ensure that future sites designated for higher-density housing are large enough to provide for economies of scale in construction and are located near transit stops or arterial streets."

This section identifies the potential sites that the City will consider for redesignation to meet the Implementation Program 2.6 goal and Woodland's remaining RHND for the Housing Element planning period. The City of Woodland has identified 90 sites that may be suitable for redesignation or rezoning under Implementation Program 2.6. These sites are listed in Table 9 below and the City will use this list as the pool from which to select sites for redesignation. Full

analysis of development potential and environmental constraints for individual sites will be conducted by the City before redesignation/rezoning.

The Casa Del Sol Mobile Home Park project will result in the rehabilitation of 126 existing units and the installation of 30 additional units. The total cost of the project which also includes infrastructure improvements and the construction of a community center are estimated at $16,000,000. A 55-year affordability restriction will be place on all of the units. Of the total number of units (156), 94 will be restricted to very low-income households, 39 restricted to low-income households, and 23 restricted to moderate-income households. When the project is complete, the 126 rehabilitated units can be counted as "preserved units" toward meeting the City of Woodland's regional housing fair share numbers based on the meeting the conditions of Government Code Section 65583.1(c)(2)(c). Approximately 76 very low, 31 low, and 19 moderate income units will be rehabilitated. In each instance, the number of rehabilitated units for each household income category represents less than 25 percent of the City's Regional Housing Needs Allocation for the specific household income category.

TABLE 9
POTENTIAL SITES FOR REDESIGNATION/REZONING

APN#	Address	GP	Zoning	Status	Total Acres	Vacant/ redevelop-able acres	Notes
006-025-041	412-420 MAIN ST	GC	C-2	redevelopable	0.16	0.16	Woodland shopping center; owner is interested in exploring housing options.
006-025-051	402-440 MAIN ST	GC	C-2	redevelopable	4.36	4.36	Woodland shopping center; owner is interested in exploring housing options.
064-140-041	139 W COURT ST	GC	C-2	redevelopable	0.47	0.47	underutilized; parking lot
064-140-081	110 W MAIN ST	GC	C-2	redevelopable	0.58	0.58	underutilized center
064-140-091	112-120 W MAIN	GC	C-2	redevelopable	1.62	1.62	underutilized center
064-140-101	140 W MAIN ST	GC	C-2	redevelopable	0.50	0.50	underutilized
064-140-111	154 MAIN ST	GC	C-2	redevelopable	2.70	2.70	
064-170-051	315 CR 98	GC	C-2	redevelopable	1.05	1.05	Brown's corner; underutilized Future Extension Court (Possibly) determined by Traffic Engineer - if traffic flow increases to warrant extension
064-170-061	362-372 W MAIN & 384-392 W MAIN	GC	C-2	redevelopable	4.60	4.60	Brown's corner; underutilized
064-170-301	no address listed	GC	C-2	redevelopable	0.50	0.50	Brown's corner; underutilized
064-170-481	275 CR 98	GC	C-2	redevelopable	4.92	4.92	underutilized; E 1/2 of site vacant, entire site redevelopable; infill MDR CUP
065-010-141	no address listed - corner of Main & Cottonwood	GC	C-2	redevelopable	1.49	1.49	CalTrans
065-010-201	317 W MAIN ST	GC	C-2	redevelopable	2.22	2.22	old Chevy site; infill MDR CUP
027-560-361	255 W KENTUCKY	LDR	R-1	redevelopable	3.84	3.84	floodplain
066-050-031	616-630 BOURN D	LDR	R-1	redevelopable	1.38	1.38	building on south end
005-720-081	135 WOODLAND AV	MDR	R-M	redevelopable	13.65	4.51	northern 1/3 of site is vacant
063-060-051	no address listed	MDR	ESD	redevelopable	4.51	3.02	east 2/3 of site (around 3 ac.); MDR infill ESD area E (CUP) RFP; Yolo County Housing Authority; Part of Armfield Study Area
063-060-061	C & ARMFIELD	MDR	ESD	redevelopable	2.85	2.85	MDR infill ESD area E (CUP) RFP; Part of Armfield Study Area
066-021-041	534 JOHNSTON ST	NP	ESD	redevelopable	2.17	2.17	LDR infill ESD area A
--	no address listed	SC	ESD	redevelopable	2.75	2.75	(long, narrow railroad parcel north of E Main)
--	no address listed	SC	ESD	redevelopable	2.17	2.17	(long, narrow railroad parcel north of E Main)
005-705-031	470 KENTUCKY AV	SC	C-3	redevelopable	2.64	1.77	2/3 of site; MDR infill; ZAP; proposed duplex project; P.Hanson has talked to proposed applicant
063-060-011	119-123 EAST ST	SC	ESD	redevelopable	1.33	1.33	SC infill MDR (CUP) ESD zone; Possible site for the community center
063-060-081	EAST ST	SC	ESD	redevelopable	1.22	1.22	SC infill MDR (CUP) ESD zone(Community Center); Part of Armfield Study Area
063-060-091	145 EAST ST	SC	ESD	redevelopable	2.15	2.15	SC infill MDR (CUP) ESD zone (Community Center); Part of Armfield Study Area
063-071-041	301 EAST ST	SC	ESD	redevelopable	0.13	0.13	RFP; Part of Armfield Study Area
063-071-051	303 EAST ST	SC	ESD	redevelopable	0.13	0.13	RFP; Part of Armfield Study Area
063-071-061	308 A ST	SC	ESD	redevelopable	0.13	0.13	RFP; Part of Armfield Study Area
063-071-071	306 A ST	SC	ESD	redevelopable	0.12	0.12	RFP; Part of Armfield Study Area
063-071-081	309 A ST	SC	ESD	redevelopable	0.26	0.26	RFP; Part of Armfield Study Area
063-071-091	306 B ST	SC	ESD	redevelopable	0.12	0.12	RFP; Part of Armfield Study Area
063-071-101	308 B ST	SC	ESD	redevelopable	0.14	0.14	RFP; Part of Armfield Study Area
063-071-111	309 B ST	SC	ESD	redevelopable	0.14	0.14	RFP; Part of Armfield Study Area
063-071-121	307 B ST	SC	ESD	redevelopable	0.12	0.12	RFP; Part of Armfield Study Area
063-071-131	306 C ST	SC	ESD	redevelopable	0.12	0.12	RFP; Part of Armfield Study Area
063-071-141	308 C ST	SC	ESD	redevelopable	0.14	0.14	RFP; Part of Armfield Study Area
063-072-011	301 C ST	SC	ESD	redevelopable	0.10	0.10	RFP; Part of Armfield Study Area
063-072-041	309 C ST	SC	ESD	redevelopable	0.13	0.13	RFP; Part of Armfield Study Area
063-072-051	311 C ST	SC	ESD	redevelopable	0.13	0.13	RFP; Part of Armfield Study Area
063-072-061	318 D ST	SC	ESD	redevelopable	0.08	0.08	RFP; Part of Armfield Study Area

APN#	Address	GP	Zoning	Status	Total Acres	Vacant/ redevelop-able acres	Notes
063-072-081	310 D ST	SC	ESD	redevelopable	0.54	0.54	RFP; Part of Armfield Study Area
063-072-121	305 C ST	SC	ESD	redevelopable	0.14	0.14	RFP; Part of Armfield Study Area
063-072-131	313 C ST	SC	ESD	redevelopable	0.13	0.13	RFP; Part of Armfield Study Area
063-073-011	309 D ST	SC	ESD	redevelopable	0.33	0.33	RFP; Part of Armfield Study Area
063-073-021	311 D ST	SC	ESD	redevelopable	0.22	0.22	RFP; Part of Armfield Study Area
063-073-031	313 D ST	SC	ESD	redevelopable	0.20	0.20	RFP; Part of Armfield Study Area
063-073-041	315.5 D ST	SC	ESD	redevelopable	0.11	0.11	RFP; Part of Armfield Study Area
063-073-051	315 D ST	SC	ESD	redevelopable	0.11	0.11	RFP; Part of Armfield Study Area
063-074-011	317 D ST/1243 A	SC	ESD	redevelopable	0.13	0.13	RFP; Part of Armfield Study Area
063-074-021	1245 ARMFIELD A	SC	ESD	redevelopable	0.12	0.12	RFP; Part of Armfield Study Area
063-074-031	1247-49 ARMFIEL	SC	ESD	redevelopable	0.23	0.23	RFP; Part of Armfield Study Area
063-075-011	1233-35 ARMFIEL	SC	ESD	redevelopable	0.27	0.27	RFP; Part of Armfield Study Area
063-075-021	1237 ARMFIELD A	SC	ESD	redevelopable	0.14	0.14	RFP; Part of Armfield Study Area
063-075-031	1239 ARMFIELD A	SC	ESD	redevelopable	0.14	0.14	RFP; Part of Armfield Study Area
063-075-041	1241 ARMFIELD A	SC	ESD	redevelopable	0.13	0.13	RFP; Part of Armfield Study Area
063-076-011	1223-29 ARMFIEL	SC	ESD	redevelopable	0.54	0.54	RFP; Part of Armfield Study Area
063-076-021	312 C ST	SC	ESD	redevelopable	0.14	0.14	RFP; Part of Armfield Study Area
063-077-011	1211 ARMFIELD A	SC	ESD	redevelopable	0.26	0.26	RFP; Part of Armfield Study Area
063-077-021	1213 ARMFIELD A	SC	ESD	redevelopable	0.13	0.13	RFP; Part of Armfield Study Area
063-077-031	1215 ARMFIELD A	SC	ESD	redevelopable	0.14	0.14	RFP; Part of Armfield Study Area
063-077-041	1219 ARMFIELD A	SC	ESD	redevelopable	0.13	0.13	RFP; Part of Armfield Study Area
063-078-011	315 EAST ST	SC	ESD	redevelopable	0.13	0.13	RFP; Part of Armfield Study Area
063-078-021	1207 ARMFIELD A	SC	ESD	redevelopable	0.42	0.42	RFP; Part of Armfield Study Area
063-078-031	310 A ST	SC	ESD	redevelopable	0.14	0.14	RFP; Part of Armfield Study Area
063-079-011	1229 E MAIN ST/	SC	ESD	redevelopable	0.69	0.69	RFP; Part of Armfield Study Area
065-250-571	W LINCOLN AVE	GC	C-2	vacant	1.15	1.15	
065-280-231	no address listed	GC	C-2	vacant	0.58	0.58	
065-280-401	448 CALIFORNIA	GC	C-2	vacant	0.48	0.48	
027-560-351	W KENTUCKY AVE	LDR	R-1	vacant	2.60	2.60	floodplain
065-370-061	882 W SOUTHWOOD	LDR	R-1	vacant	0.32	0.32	vacant
065-370-071	886 W SOUTHWOOD	LDR	R-1	vacant	0.37	0.37	vacant
066-280-481	1559-63 HUTCHIS	LDR	R-1	vacant	2.90	2.90	
065-221-051	ELIZABETH WAY	MDR	R-M	vacant	0.27	0.27	
065-221-061	ELIZABETH WAY	MDR	R-M	vacant	0.14	0.14	
065-221-071	ELIZABETH WAY	MDR	R-M	vacant	0.14	0.14	
065-221-081	ELIZABETH WAY	MDR	R-M	vacant	0.14	0.14	
065-221-091	ELIZABETH WAY	MDR	R-M	vacant	0.14	0.14	
065-221-101	ELIZABETH WAY	MDR	R-M	vacant	0.14	0.14	
065-221-111	ELIZABETH WAY	MDR	R-M	vacant	0.29	0.29	
065-221-121	CALIFORNIA ST	MDR	R-M	vacant	0.21	0.21	
065-221-131	CALIFORNIA ST	MDR	R-M	vacant	0.25	0.25	
066-021-261	615 EAST ST	MDR	ESD	vacant	0.26	0.26	
005-604-061	317 BEAMER ST	MLDR	R-2	vacant	0.49	0.49	SC MDR-mixed use
005-715-071	224 N FREEMAN S	MLDR	R-2	vacant	0.25	0.25	
006-533-151	PACIFIC ST	NP	N-P	vacant	0.13	0.13	NP LDR infill NP zone
005-703-041	N WALNUT ST	SC	C-3	vacant	0.48	0.48	
063-090-191	1216 E BEAMER S	SC	ESD	vacant	0.22	0.22	
063-090-291	25 EAST ST	SC	ESD	vacant	0.97	0.97	
066-030-211	MATMOR RD	SC	C-3	vacant	3.22	3.22	SC vacant MDR infill (CUP)
066-030-331	MATMOR RD	SC	C-3	vacant	1.03	1.03	SC vacant MDR infill (CUP)

Note: This table includes all sites classified as vacant or redevelopable in Table A.1 in the Housing Element Background Report, including sites already designated MDR.

III. PUBLIC PARTICIPATION

State law requires cities and counties to make a "diligent effort" to achieve participation by all segments of the community in preparing a housing element (Section 65583 (c) (6) of the California Government Code). This diligent effort translates into local jurisdictions doing more than issue the customary public notices and conduct standard public hearings prior to adopting a housing element. State law requires cities and counties to take active steps to inform, involve, and solicit input from the public, particularly low-income and minority households that might otherwise not participate in the process. The City continued to solicit public input throughout the update process, beginning with City Council awarding the contract for preparation of the Housing Element, during the development of the Draft Element, during public review of the Draft Element, and during the adoption process.

During preparation of the Woodland Housing Element, the City decided to solicit input early in the process, prior to actually beginning preparation of the Draft Element. This was done in order to identify issues upfront and then include solutions, policies, and programs in the Draft Element that would address the citizens and stakeholders concerns. The Housing Element contract was awarded by the City Council at their November 6, 2007 hearing, in which a City Councilmember took the item off the consent calendar at this well attended and televised meeting, to clarify a number of concerns for the public, identify the process, and explain the City's desires to continue to meet its fair share of the provision of affordable housing.

Following the City Council hearing a meeting was held on November 8, 2007 with key City staff who administers housing programs, work with stakeholders, and will be directing the preparation of the Housing Element update. On December 19, 2007 City staff met with HCD staff to review the existing Housing Element, new legislation, and how best to approach addressing the housing needs of Woodland's citizens. Site visits were conducted to evaluate housing conditions, vacant/underutilized sites, and new housing projects within the City and Redevelopment Agency.

The public workshop was held on February 26, 2008 at the Woodland Library (which is accessible to individuals with mobility impairments). Because of the large Hispanic population working and residing in the City, the City wanted to make access to the public workshop as convenient and welcoming as possible. Therefore, notices were prepared in both English and Spanish. Additionally, a Spanish language interpreter attended the workshop to assist residents in understanding the purposes of the workshop and to relay their input. Because future public hearings before the Planning Commission and City Council will be held at night, the City intentionally scheduled this public workshop for late afternoon. This late afternoon workshop allowed for workers to come by the library on their way home from work, community members to attend after school was out and prior to sports/music activities, and it allowed for the stakeholders to come as part of their respective work days, rather than come back at night after working all day.

The businesses and organizations invited by the City included public service providers, churches, developers, apartment managers, and non-profit housing advocates. More than 100 notices were provided to interested groups and individuals. These notices were sent out via direct mail two weeks in advance of the workshop, provided via an email notice one week in advance of the

workshop, and noticed in the local newspaper. The public workshop notice was also posted at City Hall one week prior to the workshop.

The public workshop was attended by Woodland residents, Planning Commission representatives, Planning Commission Housing Subcommittee members, representatives from St. John's Retirement Village/Stollwood Convalescent Hospital, Yolo Community Care Continuum, Yolo Association of Realtors, Sacramento Valley Organizing Committee, and a City Councilmember. This workshop was conducted early in the housing Element update process to obtain input from the community and housing advocates on their concerns, share ideas on housing types, and discuss preliminary findings.

Brochures identifying the City's Housing Rehabilitation Assistance Program and other Affordable Housing Programs were made available at the workshop. Also available and handed out to workshop participants were a Service Provider Survey and a Workshop Comments Survey. Following the workshop, the City received completed surveys from the following: Yolo County Housing Authority, Housing Now (seeks affordable and accessible housing for people who are developmentally disabled), Community Housing Opportunities Corporation (affordable housing in multifamily, senior apartments, and a mobile home park), St. John's Retirement Village/Stollwood Convalescent Hospital (senior assisted living and convalescent skilled nursing services), Yolo Community Care Continuum (mental health services for low income adults), and United Christian Centers of the Greater Sacramento Area (services to the homeless and chronically poor of Yolo County).

Summary comments from these surveys and the public workshop included:

- There are long wait lists for affordable rental properties.
- The number of services being accessed has increased.
- Demand for affordable housing has increased 25% over the past 5 years.
- Demand for housing services has increased 25% over the past 5 years.
- The cost to provide affordable housing continues to increase.
- The cost to provide housing services is high.
- The demand for housing for seniors, both affordable and market rate is high.
- The City should adopt an Inclusionary Housing Ordinance.
- The City should establish a trust fund financed by a fee on commercial development.
- The City should conduct an annual analysis of the existing housing stock to keep an updated database for rehabilitation and preservation programs.

Following receipt of the surveys and the public workshop, the Planning Commission, at its April 3, 2008 meeting, received a report on the Housing Element from City staff. Staff presented an update on the input received from the public workshop and the status of the update. The City Council at its May 15, 2008 meeting also received a report on the Housing Element from staff. All Planning Commission and City Council meetings are noticed, published on the City's website, and televised; allowing the public additional access to the Housing Element process.

On July 17, 2008 City staff met with representatives from Legal Services of Northern California. Comments and concerns were discussed along with how to incorporate changes into the Housing Element programs and policies that will address Legal Services comments.

The Planning Commission Housing Committee also met with City staff on July 17, 2008. At this meeting City staff reviewed the status of the Housing Element, public comments received thus far, and comments from Legal Services of Northern California. Committee members provided comments to City staff on the Housing Element and reviewed different housing program opportunities available to the City and Redevelopment Agency for consideration as part of this update process. The City Council Affordable Housing Subcommittee met with staff on August 27, 2008. At the meeting, subcommittee members discussed the parcel inventory and asked staff to provide a copy of the Draft Housing Element to a representative of the California Building Industry Association. The Planning Commission at its November 6, 2008 meeting received a report on the Housing Element from staff.

The information received throughout the public participation process has been incorporated into different sections of the 2008-2013 Housing Element.

Upon completion of the draft Housing Element, the draft Housing Element was placed on the City's website prior to being submitted to HCD. The draft was also submitted to HCD for review and comment.

Public hearings are held on the housing element before both the Planning Commission and City Council. Notification is published in the local newspaper in advance of each hearing, and direct notices are mailed to interested groups and individuals. Public hearings are televised, allowing greater access to individuals unable to attend in person. A copy of the Housing Element was placed on the City's website and a copy was made available at the Community Development Department.

IV. CONSISTENCY WITH THE GENERAL PLAN

State Law requires that the Housing Element be consistent with other elements of the City of Woodland's General Plan. Policies and programs were developed subject to the constraints of the policies and programs contained in the other General Plan elements. Of all the other General Plan elements, the Housing Element is most closely related to the Land Use and Community Design Element in the General Plan because the Land Use and Community Design Element specifies the lands within the City that may be utilized for housing development.

Areas available for residential development along with the range of allowable densities and direction on appropriate housing types are designated through the Land Use Diagram and the land use definitions in the Land Use and Community Design Element, thereby laying the foundation for all other goals, policies, and programs related to the provision of housing. The Land Use and Community Design Element also provides further detail in the implementation of many Housing Element policies. The policies and implementation programs contained under the "Residential Development" and "New Residential Neighborhoods" sections of the Land Use and Community Design Element discuss providing a variety of housing types and encouraging infill development, while preserving the quality and character of existing neighborhoods.

The Housing Element proposes one modification to the Land Use and Community Design Element. Implementation Program 2.6 in the Housing Element calls for the City to "accommodate development of at least an additional 34 units at densities that will facilitate production of housing affordable to moderate-income households by redesignating sufficient vacant land as Medium Density Residential (MDR)." The City of Woodland has identified 90 sites that may be suitable for redesignation under Implementation Program 2.6. These potential sites are shown in Table 9.

Other elements in the General Plan also discuss policy directions for residential development. For example, the Economic Development Element states "it is crucial that economic development be balanced with adequate housing for city resident workers and that it contributes to the character and quality of life in Woodland." Policy 9.C.4 in the Economic Development Element calls for the City to "actively pursue the creation of significant new housing opportunities within the Downtown Central Business District."

The expression of the community's goals and objectives regarding housing production are embodied in this document. This Housing Element provides an effective framework to address the housing needs and demands for future housing development, rehabilitation, and conservation through its policies and programs.

APPENDIX E

SBx7-7 Technical Memorandum

TECHNICAL MEMORANDUM

DATE: August 9, 2010 Project No.: 204-00-09-28

TO: Akin Okupe, City of Woodland

CC: Doug Baxter, City of Woodland

FROM: Brenda Estrada, R.C.E. #67062

REVIEWED BY: Polly Boissevain, R.C.E. #36164

SUBJECT: Evaluation of Preliminary Urban Water Use Targets for Compliance with Senate Bill No. 7

This technical memorandum (TM) presents West Yost Associates' (West Yost's) analysis to develop the City of Woodland's (City) preliminary estimates of base daily per capita water use and urban water use targets to comply with the requirements of Senate Bill 7 (SBx7-7).

1.0 OVERVIEW AND SUMMARY

SBx7-7 was enacted in November 2009 and requires urban water agencies throughout California to increase conservation to achieve a statewide goal of a 20 percent reduction in urban per capita water use by 2020. The legislation requires that water utilities calculate their reduction targets using one of four methods. Three of the methods are contained in the legislation and the fourth method is to be developed by the Department of Water Resources (DWR) no later than December 31, 2010. The legislation also establishes 2015 interim urban water use targets that require a 10 percent reduction over baseline use.

The City contracted with West Yost to prepare the 2010 Urban Water Management Plan (UWMP) which includes addressing the SBx7-7 requirements. Specifically:

- Determining City's interim and final per capita water use targets;
- Identifying the most appropriate base year, and
- Evaluating and recommending the most appropriate method for developing the City's urban water use targets, based on the three methodologies currently identified.

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This TM provides a summary of the work performed, recommended urban water use targets, and detailed information on the methodologies used. This TM reviews Methods 1 through 3 from SBx7-7. The requirements and methodologies for Method 4 are not expected to be released until December 31, 2010. Once this information is released by DWR, the City will need to evaluate the urban water use targets for this method.

Table 1 summarizes the three methods for calculating base daily water use and the interim and final target daily water use in gallons per capita per day (gpcd) for each method.

Table 1. Summary of SB7 Methodologies for Determining Urban Water Use Targets

Method	Key Elements	Base Daily Per Capita Water Use, gpcd	Interim Urban Water Use Target (2015), gpcd	Urban Water Use Target (2020), gpcd
1	• Uses historical gross water use and service area population to determine a base daily per capita water use. The Urban Water Use Target is 80 percent of this value. • Based on 10-year running average per capita water use using historical data from 1995 to 2010. • Gross water use is that total water supplied to the system less recycled, wholesale or agricultural deliveries • Population estimates are based on California Department of Finance (DOF) and Sacramento Area Council of Governments (SACOG) projections.	289	260	231
2 [a,b]	• Uses performance standards for indoor water use, landscape irrigation use and commercial, institutional and industrial (CII) uses. • Residential indoor water use = 55 gpcd • For landscape irrigation, uses Model Water Efficient Landscape Ordinance for definitions and calculations. Uses total landscaped area (estimated from GIS and site visits) and applies a Maximum Applied Water Allowance, calculated from the ordinance. • CII use based on historical CII per capita use less 10 percent	289	221	154
3	• Uses 95 percent of the applicable state hydrologic region target as defined in the state's draft 20x2020 Water Conservation Plan issued by DWR in April 2009 • Woodland is located in state hydrologic region number 5, Sacramento River Region,	253	204	167
4	• Not yet defined. To be defined by DWR by December 31, 2010.			

(a) The baseline for this method is the same from Method 1 and used to establish the interim target.
(b) This method requires a data-intensive analysis using GIS, coupled with site visits to estimate appropriate irrigation areas. For preliminary screening purposes to evaluate use of the method, irrigation area was estimated by West Yost from a small data sample (see additional discussion under Section 4.0).

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All of the three methods evaluated result in a large variance in water use targets. The method resulting in the highest water use target is the method that is most advantageous to the City. Based on the results of the preliminary analysis, West Yost recommends that the City adopt the results from Method 1 at this time.

It should be noted that while the general methods are established in the legislation, DWR is charged with developing specific, more detailed methodologies for calculations relating to baseline water use by October 1, 2010. Calculation methods used by West Yost for the analysis are based on definitions in the legislation and the public draft baseline methodologies from DWR available at the time of the analysis (July 2010). Significant changes are not anticipated to the methodologies.

The City will need to review West Yost's recommendation once the Method 4 methodology becomes available December 31, 2010, and DWR detailed methodologies are published to determine if 1) the Method 4 urban water use targets are preferable to Method 1, or 2) if any finalized baseline methodologies would result in a lower calculated base per capita water use for Method. The latter is not anticipated.

2.0 SUPPORTING DATA FOR CALCULATIONS

Calculations for SBx7-7 require historical system information. The City provided West Yost its groundwater well production records which includes information from 1960 to present. The City also provided information on the number of accounts per customer class for the years 2005-2009.

The City is not fully metered and therefore, does not have records of actual water use by customer class. The City does expect to be fully metered by the end of 2011 and will be able to track actual water use per customer class in the future. Below is a summary of the data.

2.1 Service Connections

The data provide a break down the number of active connections per customer class. Table 2 shows the active service connections for the City from 2005 through 2009 including metered and flat rate connections. Approximately 9 percent of the total service connections were metered in 2009. The majority of the metered accounts are commercial, industrial, institutional, and landscape customers with approximately 93 percent of these customer types currently metered. The City's meter implementation program is on track to install meters on all service connections by the end of 2011.

The single family customers make up a majority of the service connections. From 2005 through 2009, single family connections made up an average of 87 percent of active connections. Each single family connection represents a single household or dwelling unit. The multi-family connections are the second largest customer class. However, the multi family connections do not reflect actual number of dwelling units being served. One multi-family connection may represent multiple dwelling units being served, such as an apartment complex. No statistics are available indicating the number of units per multi-family residential service connection.

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Table 2. Woodland Service Connections 2005 to 2009

Service Connection Type	2005	2006	2007	2008	2009
Single Family					
Metered	3	3	3	3	3
Unmetered	11,587	11,780	12,059	12,347	12,579
Multi-Family					
Metered	229	229	229	231	232
Unmetered	515	515	515	515	515
Commercial					
Metered	640	661	680	697	738
Unmetered	62	62	62	62	62
Institutional					
Metered	75	77	81	82	85
Unmetered	17	17	17	17	17
Industrial					
Metered	21	21	21	21	21
Unmetered	0	0	0	0	0
Landscape					
Metered	215	215	216	217	217
Unmetered	6	6	6	6	6
Total	13,370	13,586	13,889	14,198	14,475

2.2 Supplies

The City's potable water supplies come exclusively from groundwater wells within the service area. The City currently operates 20 groundwater wells. One of the wells is out of service due to groundwater quality and other issues. This well will be destroyed in the near future. The City also has an emergency connection to a Yolo County owned well located at the Detention Center. This well serves the daily water demands for the Detention Center and has capacity to provide water to the City during emergency conditions.

2.3 Demands

The City's system is not entirely metered at this time. For the accounts that are metered, the City provided annual consumption data which includes the metered water deliveries broken down by customer class. Table 3 shows the metered water deliveries made for the years 2005 through 2009.

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Table 3. Woodland Annual Metered Water Deliveries[(a)] in Million Gallons (MG) 2005 to 2009

Calendar Year	Single-Family Residential	Multi-Family Residential	Commercial	Institutional	Industrial	Landscape	Total Metered Water Demand	Total Groundwater Production
2005	0.86	245.49	310.04	126.38	28.21	1,224.79	1,935.75	4,969.56
2006	0.88	237.26	320.48	111.64	19.73	950.19	1,640.17	5,174.24
2007	1.06	245.71	334.09	91.26	18.05	355.91	1,046.08	5,396.22
2008	0.99	246.86	322.17	84.17	13.57	350.49	1,018.24	5,436.90
2009	0.68	217.84	335.31	93.10	13.98	176.12	837.04	4,993.33

[(a)] The City is not fully metered. Therefore, the demands shown in Table 3 represent only a portion of the overall City demands.

The landscaped customers have seen a consistent decrease in metered water use. This trend is a result of the City's continued work on park irrigation systems to meet the provisions in the Model Water Efficient Landscape Ordinances.

3.0 METHOD 1

SBx7-7 legislation, section 10608.20 (b) (1) defines Method 1 as:

10608.20 (b) (1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

Urban water use targets calculated using Method 1 rely on the historic gross water use and service area population to determine a base daily per capita water use. The definitions and methodologies used for Method 1, as defined in the legislation, are detailed below. As noted previously, DWR is developing more detailed methodologies for the baseline water use calculations.

3.1 Gross Water Use

Gross water use is the annual water supplied to the distribution system adjusted for recycled, wholesale, and agricultural deliveries.

Definition

10608.12 (g) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

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(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

Calculation Method Used

The annual amount of water supplied within the City's service area is provided in the historical production records provided by the City. The City does not supply wholesale or agricultural water to any customers. Therefore, no adjustments were needed to the water production data to determine the gross water use.

3.2 Service Area Population

Service area population is used to determine per capita water use.

Definition

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

Calculation Method Used

California Department of Finance (DOF) provides historical population statistics by year for cities and counties in the state. City population statistics are based on the incorporated city limit. The DOF population estimates are based on the Census information collected in 2000 and adjusted yearly to account for various factors. The estimates from the DOF tables E-5 and E-8 for the City were used for the historical evaluation. The City's service area includes the incorporated city limits of Woodland. The historic population estimates available through DOF were used.

3.3 Method 1 Base Daily Per Capita Water Use

The base daily per capita water use is the historic gross water use divided by the service area population. Figure 2 shows the historical service area population and gross water use.

Definition

10608.12 (b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

Calculation Method Used

Using the gross water use and estimated service area population, a base daily per capita water use was calculated in gallons per capita per day (gpcd). Figure 3 shows the historic per capita water use.

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Per the definition, a continuous 10-year period is needed to calculate the base daily per capita water use. The years 1995 through 2009 were used in determining the base daily per capita water use of 289 gpcd (see Table 4.)

3.4 Method 1 Urban Water Use Targets

The urban water use targets are calculated based on the daily per capita water use of 289 gpcd.

Definition

10608.12 (j) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

10608.12 (q) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

Calculation Method Used

The 2020 water use target is simply calculated as 80 percent of the base daily per capita water use and equals 231 gpcd (80% of 289 gpcd = 231 gpcd). Figure 4 shows the historical per capita use, base daily per capita water use, and 2020 urban water use target.

The 2015 interim is determined as the midpoint between the base daily per capita water use and the 2020 urban water use target and equals 260 gpcd.

4.0 METHOD 2

SBx7-7 legislation, section 10608.20 (b) (2) defines Method 2 as:

10608.20 (b) (2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, institutional water use by 2020.

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Table 4. Method 1: 80% of Baseline Per Capita Daily Water Use

		Historical Water Demand (from Use and Production Statistics 2008)				Per Capita Water Use					Check Compliance with Section 10608.22 [a, b]	
Year	Estimated Woodland Total Service Area Population	Gross Water Use, afa	Recycled Water Demand, afa	Total Demand, afa	Percent of Total Demand Met With Recycled Water	Calculated Per Capita Potable Water Use, gpcd	Calculated Per Capita Total Water Use, gpcd	10-Year Average Gross Water Use ending between 2004 and 2010 (does not include Recycled Water) (per Section 10608.12 (b) (1))	2020 Target = 80% of Baseline Per Capita Water Use	2015 Target = 90% of Baseline Per Capita Water Use	5-Year Average Gross Water Use ending between 2007 and 2010 (per Section 10608.12 (b) (3))	Minimum Per Capita Water Use Reduction (5% of 5-Year Average gpcd), gpcd
1990	40,230	13,181	-	13,181	0.0%	292	292		231	260		
1991	40,835	12,456	-	12,456	0.0%	272	272		231	260		
1992	41,895	12,697	-	12,697	0.0%	271	271		231	260		
1993	42,251	11,978	-	11,978	0.0%	253	253		231	260		
1994	42,831	12,627	-	12,627	0.0%	263	263		231	260		
1995	43,788	13,094	-	13,094	0.0%	267	267		231	260		
1996	45,028	13,807	-	13,807	0.0%	274	274		231	260		
1997	46,108	15,351	-	15,351	0.0%	297	297		231	260		
1998	46,975	13,886	-	13,886	0.0%	264	264		231	260		
1999	48,075	17,171	-	17,171	0.0%	319	319		231	260		
2000	49,155	16,837	-	16,837	0.0%	306	306		231	260		
2001	50,897	17,018	-	17,018	0.0%	298	298		231	260		
2002	51,483	16,890	-	16,890	0.0%	293	293		231	260		
2003	51,790	15,913	-	15,913	0.0%	274	274		231	260		
2004	52,755	17,464	-	17,464	0.0%	296	296	289	231	260		
2005	53,535	15,257	-	15,257	0.0%	254	254	287	231	260		
2006	53,193	15,885	-	15,885	0.0%	267	267	287	231	260		
2007	54,318	16,566	-	16,566	0.0%	272	272	284	231	260	273	14
2008	55,664	16,691	-	16,691	0.0%	268	268	285	231	260	271	14
2009	56,464	15,330	-	15,330	0.0%	242	242	277	231	260	261	13
2010												

Baseline gpcd = Maximum 10-Year Average Gross Water Use ending between 2006 and 2010	289
2015 Interim Target = 90% of Baseline gpcd	260
2020 Target = 80% of Baseline gpcd	231

[a] *10608.22 Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.*

[b] *10608.12 (b) (3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.*

Method 2 calculations use three separate base daily per capita water use categories; residential, landscaped area, and CII water use, to determine the urban water use target. The evaluation of Method 2 in this TM is a preliminary investigation to determine whether this urban water use target will be the potential recommended method for the City to adopt. Additional data intensive calculations would be required to confirm the urban water use target for this method if it appears to be favorable.

4.1 Residential Indoor Water Use

The residential indoor urban water use performance standard is set at 55 gpcd. The legislation requires that DWR assess whether this is a reasonable assumption in a report due in 2016. Depending on the findings, the residential indoor urban water use target may be adjusted after 2016.

4.2 Landscaped Area Water Use

The landscaped area urban water use performance standard relies on the state-adopted Model Water Efficient Landscape Ordinance for definitions and calculations. The landscaped area for the service area must be computed and then the Maximum Applied Water Allowance (MAWA) calculated from the Model Water Efficient Landscape Ordinance.

Definition

10608.20 (b)(2)(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

Calculation Method Used

The Model Water Efficient Landscape Ordinance requires a determination of the total landscaped area served by residential and dedicated landscape meters to determine the MAWA. The computation of estimated landscaped area requires the following criterion be satisfied:

- The landscaped area must be measured or estimated for each parcel served by a residential or dedicated landscape water meter or connections within the water supplier's service area. Landscape served by CII connections and non-irrigated landscape shall be excluded.

To determine the estimated total for the landscaped area of the City the following steps were performed:

1. Using the City's land use GIS, an average parcel size was determined for low and medium density residential lots in the service area.

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2. A small sampling (30 parcels) from each residential land use category (single family, duplex, and neighborhood preservation) was selected for parcels that were approximately the average size calculated in step 1 and located throughout the service area.
3. A rough estimate of landscaped area for residential parcels was determined using an aerial image from ArcGIS online and tracing areas that appeared to be irrigated landscape.
4. The average for the residential landscaped area was applied to the number of residential parcels located within the service area to determine the overall landscaped area. (average landscaped area per parcel equals approximately 3,250 sf which is approximately 38 percent of the average parcel size).
5. For dedicated landscape meters, a rough estimate of landscaped area for the landscape irrigation customers was calculated based on 2008 deliveries. The total deliveries, in acre-feet (af), for the landscape irrigation customers was divided by an assumed average applied water factor for landscaped areas of 3.5 af/ac. The resulting area was converted to square feet (sf) and added to the residential landscaped area total calculated in step 4.

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

Maximum Applied Water Allowance (MAWA) = (ETo) (0.62)(0.8 x LA)

Where,

MAWA is in gallons per year

ETo = 53.3 inches/year. Reference evapotranspiration (inches per year), which is "a standard measurement of environmental parameters which affect the water use of plants". The City is located in Zone 14 as referenced on page 38.10 of the Model Water Efficient Landscape Ordinance

0.62 = Conservation Factor (from inches/year to gallons/sf/year)

0.8 = ET Adjustment Factor (ETAF). When applied to reference evapotranspiration, the ETAF "adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape.

LA = Landscaped Area(sf), which includes "all the planting areas, turf areas, and water features in a landscape design plan subject to the MAWA calculation." (For SBx7-7 compliance, only irrigated landscape area should be included).

A second equation to determine the MAWA on landscaped areas constructed after January 1, 2010 is:

Maximum Applied Water Allowance (MAWA) = (ETo) (0.62) [(0.7 x LA)+ (0.3 x SLA)]

Where definitions for factors not provided above are,

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0.7 = ET Adjustment Factor (ETAF). When applied to reference evapotranspiration, the ETAF "adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape.

0.3 = Additional Water Allowance for Special Landscape Area (SLA), resulting in an effective ETAF for SLA of 1.0.

SLA = Special Landscaped Area (sf), which is defined as "an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface."

For this TM, the 2020 landscaped area was not evaluated. This second equation allows for special landscaped areas to be included, however, it should result in a lower unit use factors, making this method less desirable. Additional planning information would be needed to include the results for the future landscaped areas in the determination of the target water use for this method.

Once the MAWA was determined for the City's service area, the water use was converted to a per capita water use target by dividing the total by the service area population and converting it to daily use. The estimated for landscaped water use performance standard was calculated as 74 gpcd.

The analysis performed for the landscaped area is very preliminary and uses a small sampling to determine a rough estimate on the existing service area. Additional analysis would be required using more precise aerial imagery and a larger sample size to fine tune the landscaped area if this were the preferred method. In addition, more analysis would be required to estimate landscaped areas for the year 2020 to include in the determination of the landscaped water use performance standard. However, this evaluation is suitable and appropriate for comparison of the three DWR published methodologies, and suggest that this methodology would not be selected by the City.

4.3 Commercial, Industrial, and Institutional Water Use

The CII water use performance standard for the City was calculated using historical information for the average CII water use in the service area. Approximately 91 percent of the City's CII customers are metered with consumption data from 2005 through 2009 provided.

Definition

10608.20 (b)(2)(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, institutional water use by 2020.

Calculation Method Used

The average percentage of CII deliveries for the City was determined from the information on the metered CII customers provided by the City. An average water use per CII connection was calculated for the metered accounts. It is assumed the unmetered connections have a similar water use as the metered connections. The average water use per connection was applied to all accounts to determine an estimated CII water use for the years 2005 to 2009.

CII use has made up approximately 9.4 percent of total deliveries within the service area. The annual CII deliveries from 2005 through 2009 were divided by the total service area population and converted into daily use to determine a per capita value of 27 gpcd. Per SBx7-7, the average CII per capita use was reduced by 10 percent to determine the CII water use performance standard of 24 gpcd.

4.4 Method 2 Base Daily Per Capita Water Use

The base daily per capita water use determined in Method 1 of 289 gpcd is used as the base daily per capita water use for Method 2. This base daily per capita water use is included to calculate the 2015 interim urban water use target.

4.5 Method 2 Urban Water Use Targets

The urban water use target for Method 2 is the sum of the water use performance standards determined for residential, landscaped area, and CII water use. The urban water use target for Method 2 is 154 gpcd.

The 2015 interim urban water use target is calculated as the midpoint between the base daily per capita water use and the 2020 urban water use targets, 221 gpcd.

Table 5 shows the Method 2 calculations used and Figure 5 shows the urban water use target compared to the historic per capita water use.

5.0 METHOD 3

SBx7-7 legislation, section 10608.20 (b) (3) defines Method 3 as:

10608.20 (b) (2) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

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

5.1 Hydrologic Region

Due to the variety of climates and topography throughout California, DWR divides the state into 10 hydrologic regions. The hydrologic regions correspond to the state's major water drainage basins. The City is located in the state hydrologic region number 5, Sacramento River.

5.2 Base Daily Per Capita Water Use

As part of the 20x2020 Water Conservation Plan, statewide baseline water use values were established for the different hydrologic regions based on the best available data. For the Sacramento River region, the baseline value was calculated to be 253 gpcd.

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Table 5. Method 2: Indoor and Outdoor Water Uses

Part A: Indoor Residential Water Use

Indoor Residential Water Use (provisional standard per Section 10608 **55 gpcd**

Part B: Irrigated Landscapes

Customer Type	Landscaped Area, sf	Eto (Zone 14), inches/yr	Maximum Applied Water Allowance (MAWA), gal/yr	2008 Population	Landscape Water Use, gpcd
Residential	40,137,500	57	**1,134,767,400**		
Landscape	13,372,920	57	**378,079,194**		
Total	53,510,420		**1,512,846,594**	**55,664**	**74**

Number of Single Family Accounts in 2008 (City Provided Data)			12,350	accounts
Est. average landscaped area per single family account (based on a small sample of lots)			3,250	sf
Total estimated residential landscaped area			40,137,500	sf
Potable Water Use Irrigation Accounts (2008 Data) (1076 af/3.5 af/ac)	307	acres	13,372,920	sf
Recycled water use areas		acres	-	sf

Part C: Commercial, Industrial and Institutional (CII) Water Use

9.4% of total

Year	Population	Total CII Water Use,	Per Capita CII Water Use, gpcd	10-Year Rolling Average gpcd
1990	40,230	1,239	27	
1991	40,835	1,171	26	
1992	41,895	1,193	25	
1993	42,251	1,126	24	
1994	42,831	1,187	25	
1995	43,788	1,231	25	
1996	45,028	1,298	26	
1997	46,108	1,443	28	
1998	46,975	1,305	25	
1999	48,075	1,614	30	
2000	49,155	1,583	29	
2001	50,897	1,600	28	
2002	51,483	1,588	28	
2003	51,790	1,496	26	
2004	52,755	1,642	28	
2005	53,535	1,434	24	
2006	53,193	1,493	25	27
2007	54,318	1,557	26	27
2008	55,664	1,569	25	27
2009	56,464	1,441	23	26

Baseline = Max 10-Year Rolling Average	27	gpcd
10% Reduction in CII Baseline	(3)	gpcd
CII 2020 Water Use Performance Standard	24	gpcd

Summary

Part A: Indoor Residential Water Use	**55**	**gpcd**
Part B: Irrigated Landscapes	**74**	**gpcd**
Part C: Commercial, Industrial and Institutional (CII) Water	**24**	**gpcd**
Per Capita Daily Water Use Target	**154**	**gpcd**

5.3 Urban Water Use Targets

Several regional factors were considered in the development of the urban water use targets for each region in the draft 20x2020 Plan. A "balancing" process was performed to assign each region with an appropriate regional target. This was done to ensure that the state as a whole can meet the 20 percent reduction.

SBx7-7 establishes the 2020 Urban Water Use Target as 95 percent of the regional baseline value in the 20x2020 Water Conservation Plan. See Table 6 for an overview of the hydrologic region targets. Figure 6 shows the urban water use target compared to the City's historic per capita water use.

The 2015 interim urban water use target is calculated as the midpoint between the regional baseline water use and the 2020 urban water use target, and is calculated as 204 gpcd.

6.0 METHOD 4

SBx7-7 legislation, section 10608.16 (j) requires Method 4 be reviewed once the methodology has been developed by DWR…

10608.16 (j) An urban retail water supplier shall be granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

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Table 6. Method 3: 95% of State Hydrologic Region Target

(based on Draft 20 x 2020 Water Conservation Plan dated April 30, 2009)

City of Woodland is located within DWR Hydrologic Region No. 5 (Sacramento River)

DWR Hydrologic Region Number	1	2	3	4	5	6	7	8	9	10
DWR Hydrologic Region Name	North Coast	San Francisco Bay	Central Coast	South Coast	Sacramento River	San Joaquin	Tulare Lake	North Lahonton	South Lahontan	Colorado River
Baseline (1995-2005), gpcd	165	157	154	180	253	248	285	243	237	346
Interim Targets (2015), gpcd	151	144	139	165	215	211	237	208	204	278
Targets (2020), gpcd	137	131	123	149	176	174	188	173	170	211
95% of Interim Targets (2015), gpcd	**143**	**137**	**132**	**157**	**204**	**200**	**225**	**198**	**194**	**264**
95% of Targets (2020), gpcd	**130**	**124**	**117**	**142**	**167**	**165**	**179**	**164**	**162**	**200**

7.0 CONCLUSION

The three currently defined DWR SBx7-7 methodologies for establishing an agency's interim and final urban water use targets were determined for the City to establish which methodology to recommend for the City to adopt. Each of the three methodologies developed an urban water use target differently, and depend on various information sources: Method 1 relies on historic system data; Method 2 relies on performance standards for multiple water use types; and Method 3 relies on hydrologic region information set by DWR. Comparing the base daily water use and urban water use targets demonstrates that the urban water use targets developed using Method 1 are the most favorable for the City. Table 7 displays and summarizes the results for each method.

Table 7. Comparison of Urban Water Use Targets

	Method 1	Method 2	Method 3
Base Daily per Capita Water Use, gpcd	289	289	253
2015 Interim Urban Water Use Target, gpcd	260	221	204
2020 Urban Water Use Target, gpcd	231	154	167

It is recommended that the City adopt the Method 1 at this time. This recommendation will need to be reviewed after Method 4 is established to determine if the Method 4 urban water use targets are preferable to Method 1 targets.

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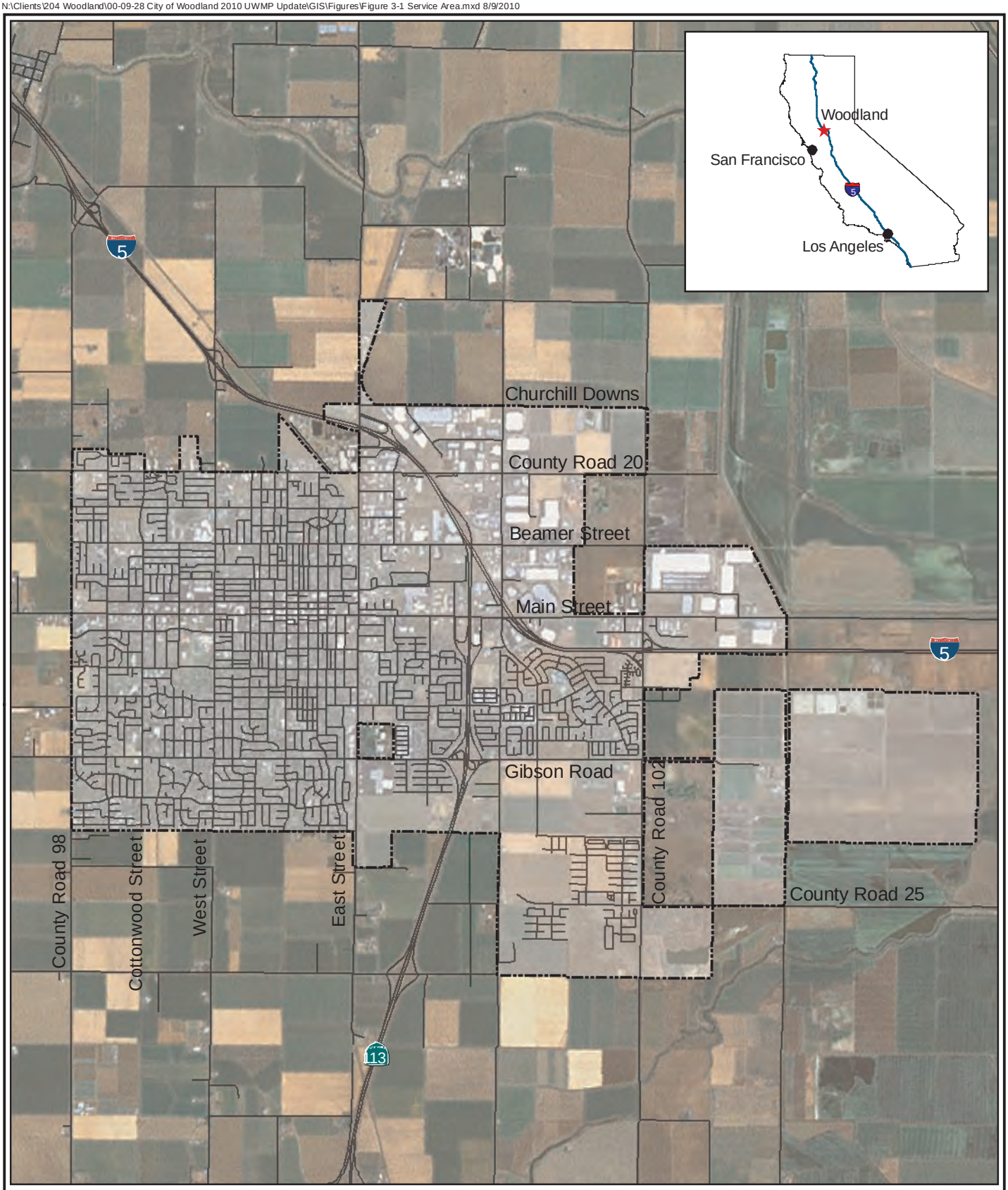
N:\Clients\204 Woodland\00-09-28 City of Woodland 2010 UWMP Update\GIS\Figures\Figure 3-1 Service Area.mxd 8/9/2010



LEGEND

Major Roads

City of Woodland

N

0 2,500 5,000

Scale in Feet

FIGURE 1

City of Woodland
Urban Water Management Plan 2010

SERVICE AREA

WEST YOST ASSOCIATES
Consulting Engineers

Figure 2. City of Woodland Historical Population and Gross Water Use

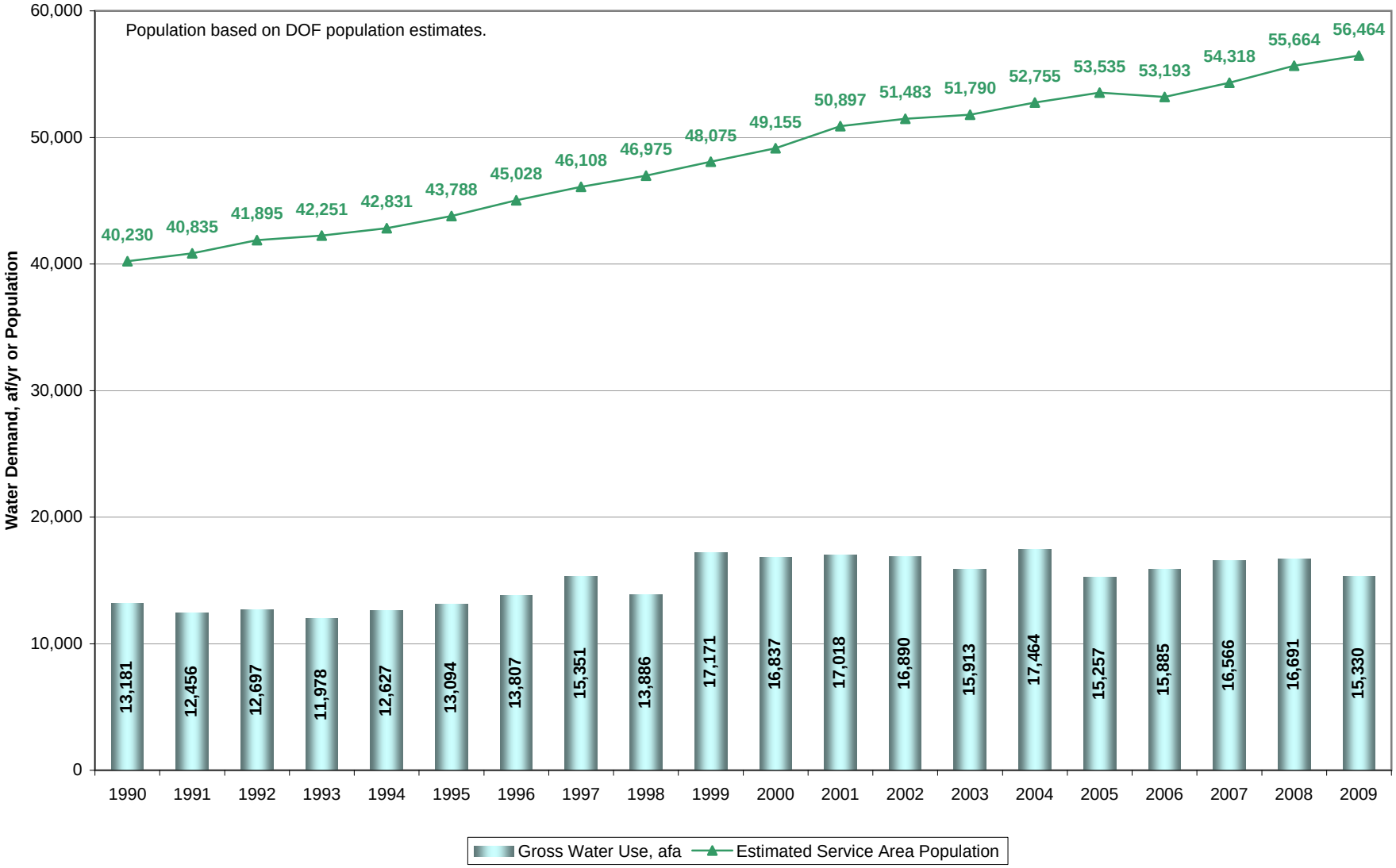


Figure 3. City of Woodland Historical Per Capita Water Demand

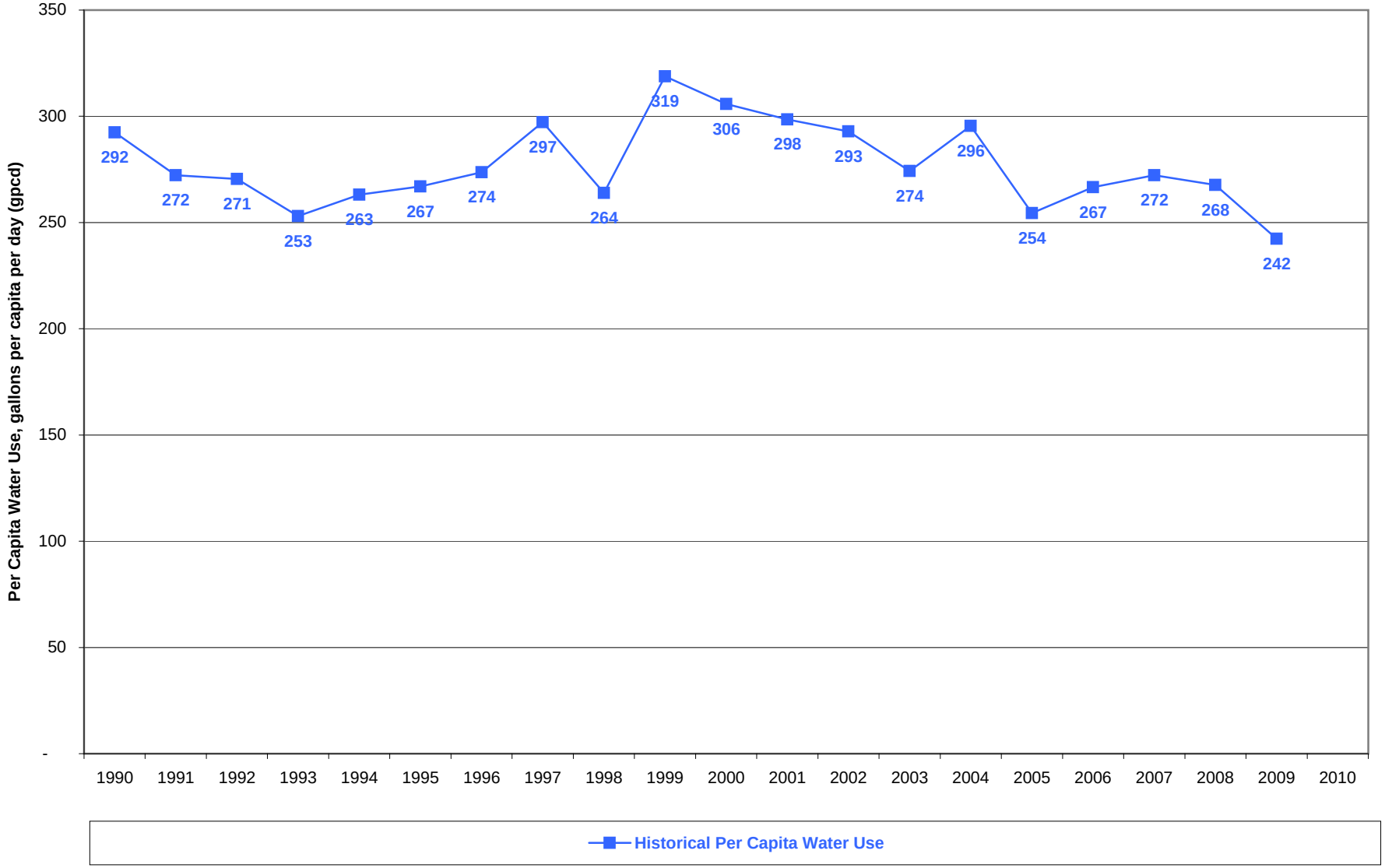


Figure 4. City of Woodland Method 1 (10-year Rolling Average gpcd)

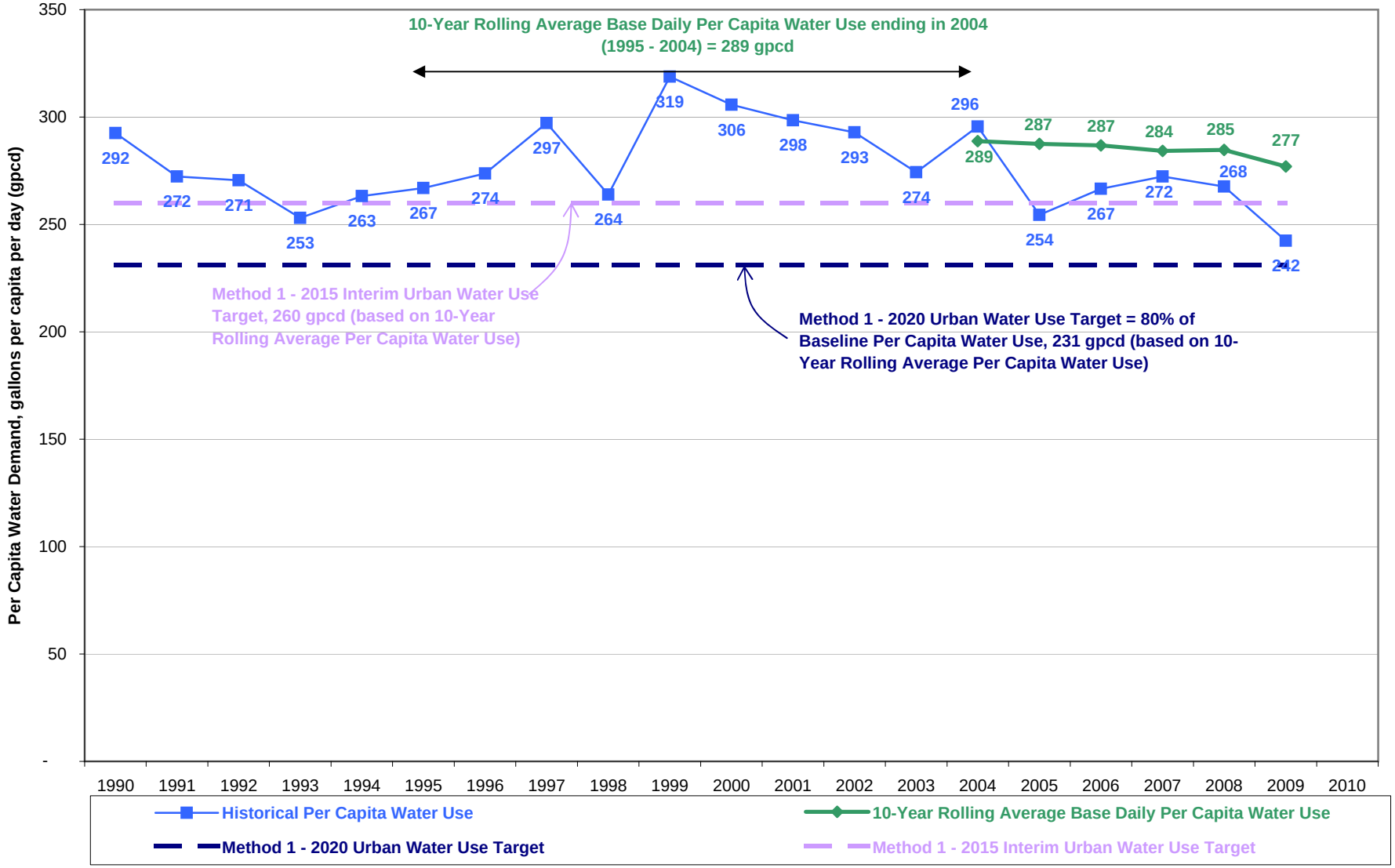


Figure 5. City of Woodland Method 2 (Indoor and Outdoor Water Use)

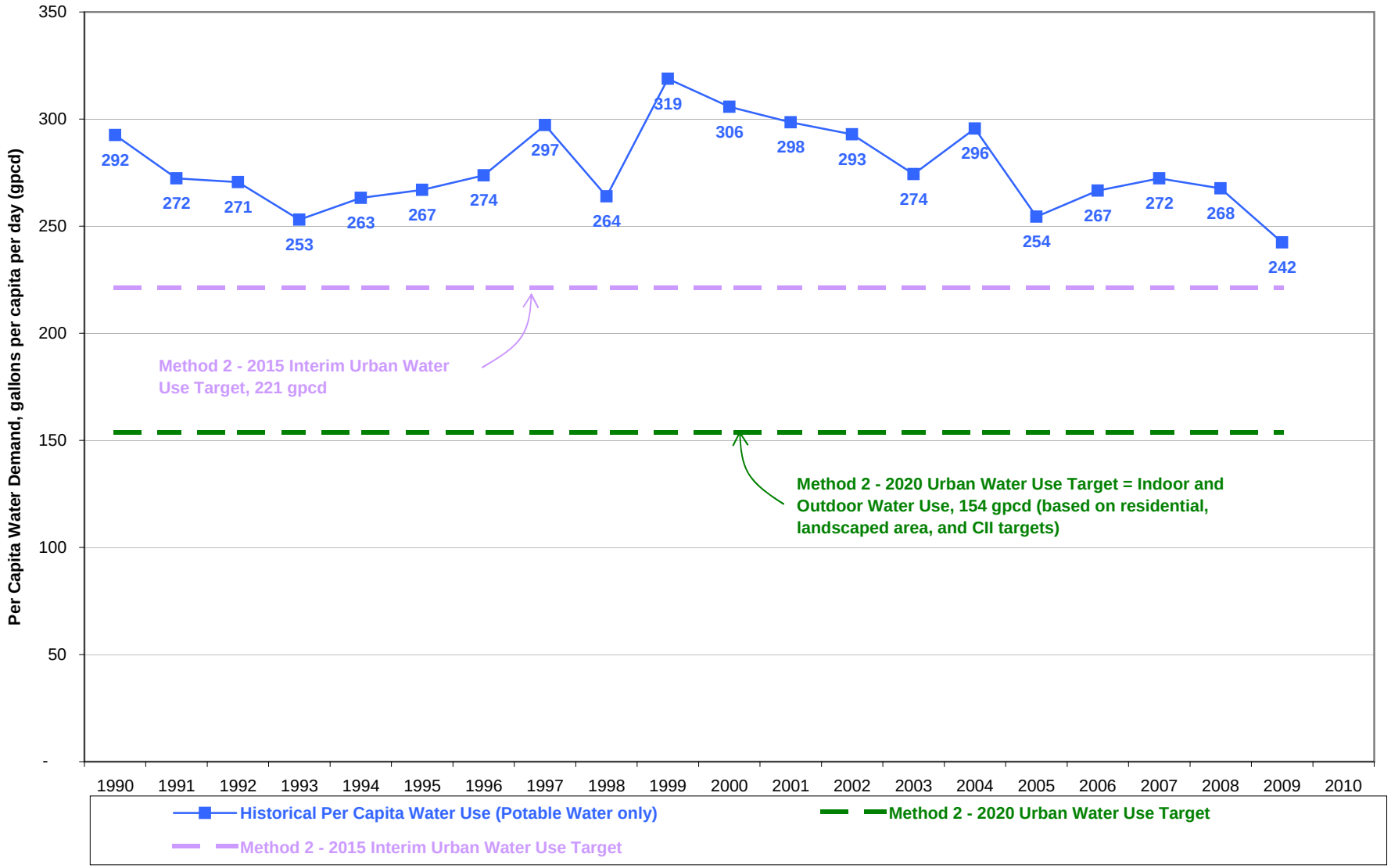
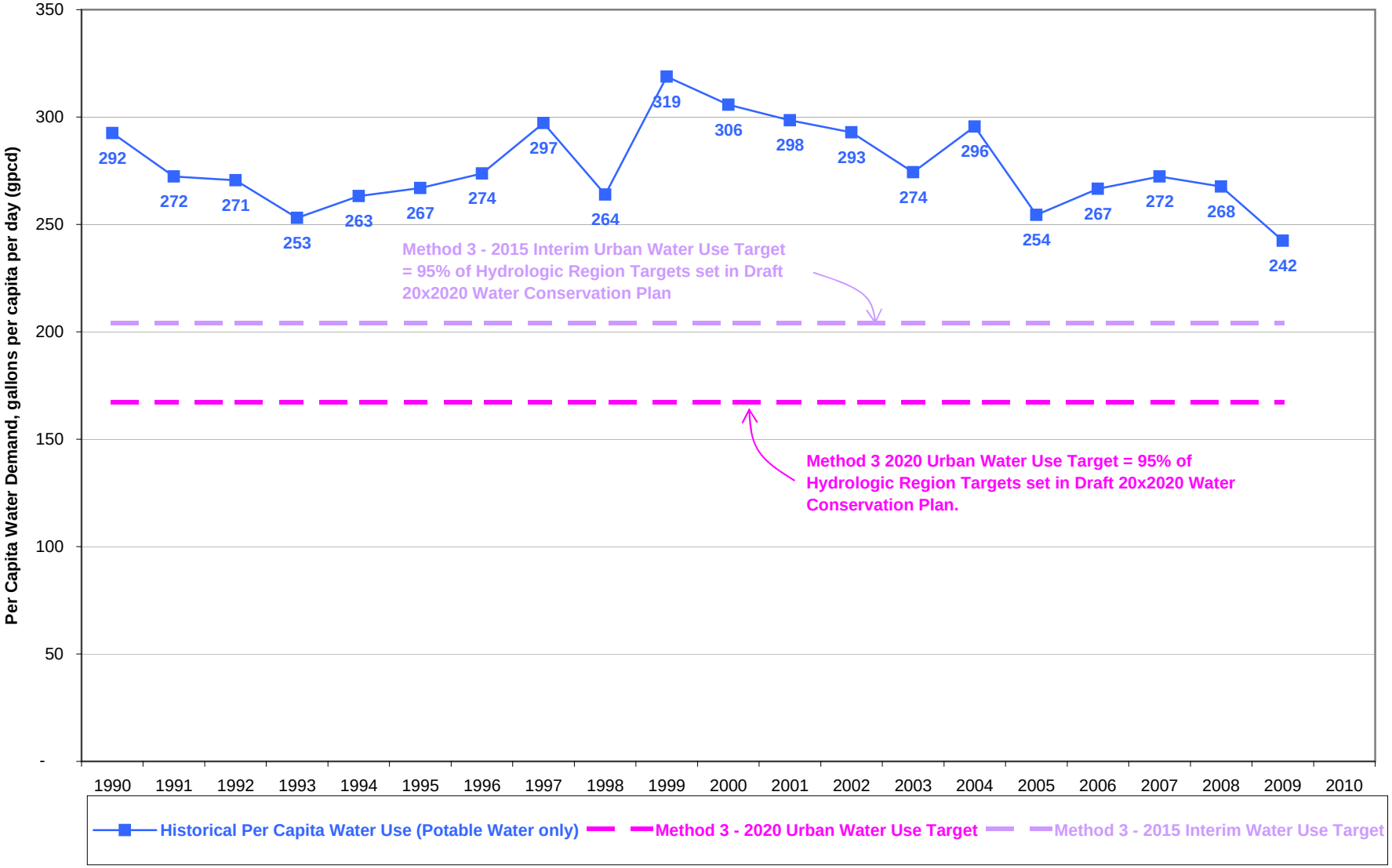


Figure 6. City of Woodland Method 3 (Hydrologic Region)



APPENDIX F

City of Woodland Groundwater Management Plan, CD

APPENDIX G

Appendix G: Public Comments Addressed from GWMP

APPENDIX G

Response to Comments on the City of Woodland Draft Groundwater Management Plan from the Water Rate Advisory Committee

Comment 1 – Conservation. The City does not seem to have a strong conservation plan. We recognize that metering is helping.

a. We would like to see a single, comprehensive source of information on the City web site; demonstration water-wise gardens on City property; programs like in Roseville where residents who agreed to conserve received special lawn signs, etc. There are WRAC members who are willing to help with this.

b. A permanent time of day/day of week landscape irrigation plan should be a law and should be enforced.

c. Further irrigation and water use restrictions should have clear triggers, e.g. well water level.

d. Why is water recycling not even being considered? Can some of our wastewater be made available to agricultural producers?

e. Water rates should include incentives for conservation.

GWMP Response 1. The City's groundwater management plan is one of several planning documents that the City is preparing. The groundwater management plan has a limited purpose and scope, and is intended to address specific management issues identified in the California Water Code, and California Department of Water Resources guidance documents.

Other water planning initiatives undertaken by the City provide a broader platform for evaluating and planning water conservation measures and recycling. The City's urban water management plan is scheduled to be completed by June 2011 and must be submitted to California Department of Water Resources by July 1, 2011. The adopted groundwater management plan needs to be attached to the urban water management plan, per California Water Code Section 10631. Recycled water will also be addressed in the City's urban water management plan. The water focus study is a water planning document with a broader scope than the groundwater management plan. Recommendations from the water rate advisory committee will be considered during preparation of these documents.

UWMP Response 1. The City understands the importance of water conservation and is working towards clarifying the efforts being undertaken to increase conservation throughout the City. The 2010 Urban Water Management Plan details the Demand Management Measures (DMMs) the City are implementing and anticipated DMMs to be implemented in the future (**Chapter 8**).

The City's current Water Conservation Regulations Ordinance is in the process of being updated to take the future surface water supply and potential cutbacks in this supply as part of a triggering process for future rationing stage triggers. (**Chapter 6**)

The City has considered recycled water as a potential source. However, due to the high economic costs and high electrical conductivity (EC) in the effluent it is considered not feasible at this time. The high EC levels are in part a result of the current groundwater quality, once the City is receiving surface water the City plans to revisit the use of recycled water as an option. (**Chapter 5**)

APPENDIX H

Appendix H: Water Conservation Regulations Ordinance

Article XI. Water Conservation Regulations.

Sec. 23C-11-1. Purpose.

This article is enacted to establish the city response to drought conditions. This article establishes a four-stage plan to accomplish water conservation. Stage one, water awareness, is an ongoing program. Stage two, water alert, is intended to achieve a fifteen percent reduction in normal water consumption. Stage three, water emergency, and Stage four, water crisis, are intended to achieve subsequent reductions in normal water consumption by twenty-five percent and fifty percent, respectively.

(Ord. No. 1202, § 1: Ord. No. 1186, § 1 (part).)

Sec. 23C-11-2. Declaration of drought condition and establishment of water conservation requirements.

(a) The city council may, by resolution and after a noticed public hearing, determine that drought conditions exist within the city. Based on this determination, the city council may determine that stages two, three, or four regulations included in this article shall become operative and shall remain in full force and effect until the council, by resolution, determines that a different stage is appropriate.

(b) Notice of the public hearing shall be given by publication at least seven days prior to the date of the public hearing.

(Ord. No. 1186, § 1 (part).)

Sec. 23C-11-3. Stage one, water awareness.

All water consumers are encouraged to be aware of water consumption and use water wisely. Water consumption should be limited to a reasonable level necessary to maintain the public health, business operations, and landscaping. All water consumers shall not waste water. Wasting water includes the following:

(a) The watering of landscapes in a manner or to an extent which allows substantial amounts of water to run off the area being watered.

(b) The escape of water through breaks or leaks within the users system for any substantial period of time (eighteen hours after detection).

(Ord. No. 1202, § 2: Ord. No. 1186, § 1 (part).)

Sec. 23C-11-4. Stage two, water alert.

All water consumers are encouraged to voluntarily comply with the following conservation measures to achieve a fifteen percent reduction in normal water use:

(a) Limit landscape irrigation to a maximum of three days per week. The director of public works shall establish a landscape irrigation schedule to be set forth in the resolution adopted by the city council to assist water consumers in their voluntary compliance.

(b) Equip all hoses or filling apparatus for nonirrigation purposes with an automatic shut-off nozzle.

(c) Limit hosing of hardscape surfaces except for health and safety purposes.

(d) Serve water only upon request to restaurant customers.

(Ord. No. 1186, § 1 (part); Ord. No. 1192, § 1.)

Sec. 23C-11-5. Stage three, water emergency.

Water consumers shall comply with the following conservation measures to achieve a twenty-five percent reduction in normal water use. Each of the stage two water use regulations shall remain in full force and effect and be mandatory except as modified by this section:

(a) Landscape watering shall be allowed on two days per week. The director of public works shall implement this provision through the establishment of an equitable landscape watering schedule to be set forth in the resolution adopted by the city council.

(b) The use of running water from a hose, pipe, or faucet for the purpose of cleaning buildings and paved, tile, wood, plastic or other surfaces is prohibited, except in the event the director of public works, or his designee, determines that such use is the only feasible means of correcting a potential threat to health and safety.

(c) All restaurants that provide table service shall post, in a conspicuous place, a notice of drought conditions, approved by the director of public works, and shall not serve water except upon specific request by the customer.

(d) Boats and vehicles shall be washed only at commercial washing facilities equipped with water recycling equipment or by use of a bucket and hose equipped with a self-closing valve that requires operating positive pressure to activate the flow of water.

(e) Operators of hotels, motels and other commercial establishments offering lodging shall post in each room and site a notice of drought condition, approved by the director of public works.

(f) The operation of and introduction of water into ornamental fountains is prohibited.

(g) Such other and further regulations as the city council may determine, after a public hearing.

(Ord. No. 1202, § 3: Ord. No. 1186, § 1 (part).)

Sec. 23C-11-6. Stage four, water crisis.

Water consumers shall comply with the following conservation measures to achieve a fifty percent reduction in normal water use. Each of the stage one, two and three water use regulations shall remain in full force and effect and be mandatory except as modified by this section:

(a) Irrigation of any yard, or other landscaped area containing lawn or turfgrass areas is prohibited, except by handheld bucket.

(b) The introduction of water into swimming pools and spas is prohibited except to maintain the structural integrity of such facilities.

(c) Such other and further regulations as the city council may determine after public hearing.

(d) All pools and spas shall be covered when not in use to reduce evaporative losses

unless exemption is granted by the director of public works.

(Ord. No. 1202, § 4: Ord. No. 1186, § 1 (part).)

Sec. 23C-11-7. Fire and other emergencies.

Nothing in this article shall be construed to apply to use of water for purposes of extinguishing fires or addressing any other identified emergency.

(Ord. No. 1186, § 1 (part).)

Sec. 23C-11-8. Unlawful to violate sections.

Upon adoption of a resolution by the city council declaring that a drought exists and that certain regulations set forth in this article shall be operative, it shall be unlawful for any person to fail to comply or otherwise violate any section or provision of said operative section or sections.

(Ord. No. 1186, § 1 (part).)

Sec. 23C-11-9. Enforcement measures.

For each violation of any of the mandatory water restrictions as set forth in this chapter, there shall be assessed against the party responsible for the property on which the violation occurs, i.e., the owner, lessee, person in possession of said property, or the person reflected in the Woodland utility records as the party to whom the water bill is sent, the penalties contained in Chapter 23C, Article VII of this code, by the procedures set forth therein.

(Ord. No. 1186, § 1 (part).)

Sec. 23C-11-10. Other penalties.

(a) In addition to other penalties and remedies set forth in this chapter, the director of public works may, and is authorized to:

(1) Give written notice to water consumer of the city's intent to prevent further violations;

(2) Impose a fine of one hundred dollars upon conviction of the fourth violation of this article and each subsequent violation;

(3) Impose other measures designed to prevent the waste of water and to promote compliance with this article.

(b) Nothing in this article shall limit or be construed to limit the right of a consumer to seek reimbursement of charges imposed pursuant to this section from a tenant or other consumer.

(Ord. No. 1186, § 1 (part).)

Sec. 23C-11-11. Remedies cumulative.

The remedies provided in this article are cumulative and are in addition to all other remedies provided by law. The enumeration of remedies stated in this article shall not preclude the application of any other remedies not specifically enumerated.

(Ord. No. 1186, § 1 (part).)

APPENDIX I

Appendix I: Response to Public Comments

WEST YOST ASSOCIATES
Consulting Engineers

July 12, 2011 Project No.: 204-00-09-28

Mr. Akin Okupe
Senior Civil Engineer
City of Woodland
655 N. Pioneer Avenue
Woodland CA 95776

SUBJECT: Response to a Public Comment on the City of Woodland Draft 2010 Urban Water Management Plan

Dear Mr. Okupe:

This letter summarizes the response to a comment received from a member of the public on the City of Woodland's draft 2010 Urban Water Management Plan during the public review period. On July 5, 2011, Ms. Christine Shewmaker, a Woodland resident, addressed City Council during the Public Hearing for the draft 2010 Urban Water Management Plan and submitted comments to members of the Woodland City Council. The full text of Ms. Shewmaker's comment is provided in Attachment A.

The first comment included a request to include climate change in the Executive Summary of the document. This comment was addressed as follows:

- Chapter ES.3.6 Climate Change was added to the Executive Summary:

  "Although the DWR Guidebook notes that a climate change discussion is optional for an UWMP and not required by the UWMP Act, information and analysis is provided to ensure a comprehensive and conservative presentation of information for purposes of the City's 2010 UWMP."

The second comment included a recommendation to include an action item in the document for continued adaption and mitigation related to climate change. While the UWMP legislation does not require adaption and mitigation measures be included, a paragraph was added for a future action item in addressing climate change. This comment was addressed as follows:

- Chapter 9.1 Potential Effects of Global Climate Change on Water Supply Reliability last paragraph, the following was added:

  "The City will continue to review scientific and policy updates related to climate change as they become available through the IPCC, State, CUWA, and other climate change authorities. The City will continue to implement the components of its Groundwater Management Plan and this 2010 UWMP. The City will also continue to include adaptive management principals in water supply and infrastructure planning."

The third comment included a suggestion to make a focus of the energy embodied in water relating to the pumping, cleaning, moving, etc. of water within the system.

- Chapter 9.1 Potential Effects of Global Climate Change on Water Supply Reliability last paragraph, the following was added:

  "As part of the mitigation and adaptive measures, the City will consider the amount of energy required in moving water throughout the system. The effects from increased water conservation on the amount of energy required on new facilities will be reviewed to minimize energy use impacts."

The fourth comment included a recommendation for the City to encourage rainwater capture. At this time, no research has been conducted on the potential water savings that may be attributed by a rainwater capture program.

- Chapter 8.19 Potential Future Demand Management Measures first paragraph, the following was added:

  "In addition to the demand management measures listed in Table 8-3, the City will consider the feasibility of rainwater capture and the possible water savings from such a program."

We appreciate Ms. Shewmaker's interest in reviewing the draft 2010 Urban Water Management Plan and her insight on the need to address climate change in the document and as a City in future planning documents as well as other comments. We hope that the revisions made to the document fully address her concerns and that the revised document provides the City of Woodland with the planning tools needed to address the range of supply and demand management issues, including climate change.

Sincerely,

WEST YOST ASSOCIATES

Brenda J. Estrada

Brenda J Estrada, P.E.
Senior Engineer
R.C.E. #C67062

REGISTERED PROFESSIONAL ENGINEER
BRENDA J. ESTRADA
No. C 67062
Exp. 9/30/12
CIVIL
STATE OF CALIFORNIA

BJE:nmp

attachment

Attachment A

On July 5, 2011, Ms. Christine Shewmaker, a Woodland resident, submitted the following comment to members of the Woodland City Council.

Comments to City Council on 7-5-11 on Urban Water Management Plan Draft

My name is Christine Kimball Shewmaker, PhD ., Resident of Woodland, Plant Biologist and Climate Change Activist.

As most of you know, in December 2010 and early 2011, I responded to requests for comments on the city of Woodlands GWMP. My main concern was that climate change was not included in the first draft of the GWMP. Very pleased that you listened to comments and that climate change was included in the approved GWMP.

So when I saw the announcement on the website about the UWMP – wanted to see if climate change was included – and yes it was. And I am not sure, but perhaps now it is required to be included by the state. In looking at what is in the UWMP, the description relating to climate change is the same as the one in the GWMP with the addition on one paragraph about potential impacts – that is fine.

However there were two places it was discussed in the GWMP where it is not included in the UWMP and I would like to make two suggestions relating that that – as well as a two other suggestions

First –Include Climate Change in Executive Summary

In the UWMP it is not included in the executive summary – it is in the GWMP. Not everyone reads the whole document – so it would be good to have it in the ES. It could just be a mention that now it has been included – in the first section of the ES they do mention additions and could just include climate change there or somewhere else in the ES.

Second – Adaptation and Mitigation – Include as an Action Item

In the GWMP – there was a whole section on adaptation and mitigation – that is not included specifically in this UWMP – although conservation, etc is mentioned in general. Not sure if a whole section on adaptation and mitigation is needed but the best thing (below in italics) in the GWMP was an action item that says basically will continue to monitor, etc. and include in management.....

***Action**: Continue to review scientific and policy updates related to climate change as they become available through the IPCC, State, CUWA and other climate change authorities. Continue to implement the components of this GWMP. Continue to include adaptive management principals in water supply and infrastructure planning.*

Third – Energy Embodied in Water –Make it a focus

In both GWMP and UWMP – is a table that talks about examples of actions. It has one called – take a leadership role. Now Woodland can't take a leadership role in all areas of mitigation and adaption, but there is one area I would like to suggest that Woodland focus on in the UW, GW, SW, etc and that is the energy embodied in water. I have heard (and it is on the city's website) that 19% of electricity used in CA relates to water – pumping, cleaning, moving, etc. So my suggestion is that Woodland make considering the energy embodied in all it does with water a focus. This could be GW, the new surface water project, etc. Include this consideration of energy and GHG in all planning relating to water . Whether that could or should be in the UWMP or needs to just be a directive to the public works, I think that would serve Woodland well in the long term – and also other communities involved with us in water projects – to start now considering energy and GHG in everything we do with water. This would extend what I see on the Woodland city website about water conservation and energy.

Fourth – Encourage Rainwater Capture

There is mention of using recycled water in the UWMP. I would also like to see rainwater capture encouraged.

Thank-you

CK Shewmaker

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