Final

Olivehurst Public Utilities District

2010 Urban Water Management Plan

Adopted November 17, 2011

Prepared by:

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2010 Urban Water Management Plan
Contract Information and Report Preparation

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The Water supplier is a: Public Utilities District

The Water supplier is a: Retail Water and Sewer Provider

Is This Agency a Bureau of Reclamation Contractor? No

Is This Agency a State Water Project Contractor? No

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SECTION 1: PLAN PREPARATION - OVERVIEW OF AN URBAN WATER MANAGEMENT PLAN

This Urban Water Management Plan includes the information necessary to meet the requirements of California Water Code Division 6 Part 2.6, the Urban Water Management Planning Act. Chapter 3, Article 3. **(Appendix A – Urban Water Management Planning Act as amended including the Water Conservation Act of 2009)**. The organization of this Urban Water Management Plan (UWMP or Plan) follows the California Department of Water Resources Guidelines for the development of an UWMP. When applicable, each section or subsection will include the excerpt from the California Water Code at the beginning to provide the basis of the information contained within that section. In instances where specific information is not available to respond to the code excerpt, the Water Code Section provides a reference to why the data is needed; additionally, this sets up a starting point for data collection for future UWMP updates. The UWMP will cite references that are critical supporting documents when describing the quantity, availability, and reliability of the various water supplies. As required, this Plan includes the projection of water demands and the various programs underway for improved water conservation and water shortage contingency plans.

This UWMP has been prepared in general accordance with the format suggested in DWR's *Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan*, dated March 2011. The text of specific sub-sections of the UWMP Act has been included in justified, courier font at the beginning of specific sections of this UWMP. The information presented in that section of the UWMP and associated figures, tables, attachments, and references are collectively intended to comply with the requirements of that sub-section of the UWMP Act. To the extent practicable, supporting documentation has been provided in the Appendices. Other sources for the information contained herein are provided in the references section of the document. In addition, as described below, this UWMP has been prepared to reflect the recent changes to the UWMP Act and the regional coordination efforts between Olivehurst Public Utilities District (OPUD or District), Yuba County Integrated Regional Water Management Plan Water Management Group, Yuba County Water Agency (YCWA) and the County of Yuba.

Water Code Section 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 area wide, regional, watershed, or basin wide 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.

Water Code Section 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.

Water Code Section 10621

(a) Each urban water supplier shall update its plan at least once every five years on or before December31, in years ending in five and zero.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.(amended 2009)

(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).

REQUIREMENT FOR AN UWMP

In 1983, the California Legislature enacted the Urban Water Management Planning Act ("UWMP Act") (Water Code Sections 10610 - 10657). The UWMP Act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, should make every effort to ensure the appropriate level of water service reliability to meet the needs of its customers during normal, dry, and multiple dry years. All urban water suppliers in the State of California are required to prepare an UWMP and complete updates at least once every five years on or before December 31, in years ending in five and zero. However, legislation in November 2009 resulted in DWR extending the 2010 UWMP deadline. The next update of the UWMP is to be adopted on or before July 1, 2011.

As defined by the California Water Code (Section 10617) an "urban water supplier" is a supplier, either publicly or privately owned, that provides water to more than 3,000 customers or supplies more than 3,000 acre-feet of water annually (AFY) on a wholesale or retail basis or both.

In accordance with Water Code Section §10610 et seq., this 2011 UWMP has been prepared at the request of OPUD. OPUD operates two separate water pumping and distribution systems; one for Olivehurst and the other for Plumas Lake. The Olivehurst and Plumas Lakes' systems consist of 14 active groundwater wells, storage tanks, hydropneumatic pressure vessels, wellhead treatment facilities, and distribution pipes that served 6,087 connections in 2010 (4,481 metered and 1,606 un-metered); therefore, per the provisions of Water Code Section 10617 OPUD is required to prepare an UWMP.

The UWMP will assist the District in future water planning activities, provide a systematic approach to service area capital projects, such as, meter retrofits, conservation planning, capacity improvements and system reliability projects.

Changes to the UWMP Act

OPUD's 2010 UWMP describes how the District intends to manage its current and future water resources and demands to continue to provide customers with an adequate and reliable water supply. Additionally, OPUD's 2010 UWMP reflects the following significant revisions that have been

made to the UWMP Act since 2000. The most recent version of the UWMP Act is included as **Appendix A**.

- Pursuant to Assembly Bill ("AB" 1420, Laird, 2007, eligibility for water management grants and loans from DWR, the State Water Resources Control Board, and the California Bay-Delta Authority will be conditioned on the implementation of all locally cost-effective Demand Management Measures ("DMMs") described in the UWMP Act.
- Pursuant to Senate Bill ("SB") 1087, Florez, 2005, water use projections reported in a UWMP now must identify the projected water use for lower income single family and multi-family residential households. The intent of this legislation is to assist water suppliers in complying with Government Code 65589.7, which grants priority for providing service to housing units that are affordable for lower income households.
- Pursuant to SB 7, Steinberg, 2009, the State of California must reduce urban per capita water use by 20 percent no later than 31 December 2020, and by at least 10 percent no later than 31 December 2015. The legislation recognizes that it may be possible to achieve the per capita water use reductions while maintaining or even increasing overall water use, depending on changes in climate and population within each supplier's service area. SB 7 identifies the UWMP as the primary mechanism for reporting water use estimates and water use targets required by SB 7. UWMPs must also include the following:
    - A water efficiency component that includes programs for implementing best management practices, climate-appropriate landscaping, and accelerated water metering;
    - A local water resources component that considers water quality and alternative local supply sources;
    - A water efficiency planning component that estimates the conservation savings to be achieved through the development of local supplies, residential water efficiency, and commercial, industrial, and institutional water efficiency; and interim milestones for assessing progress toward meeting these conservation targets.

PURPOSE OF THE UWMP

This 2011 UWMP has been developed by OPUD to meet its responsibilities as a retail water supplier in Yuba County. An UWMP contains information about an urban water supplier's water supplies, water supply reliability, water conservation, water shortage contingencies, and recycled water usage. Because OPUD has limited relationships with adjacent water agencies and water wholesalers, this UWMP will discuss only those issues that relate to the YCWA, Linda County Water District and County of Yuba. The UWMP is a valuable long-range water supply and demand planning document and is the foundation document for Water Supply Assessments (Senate Bill 610) Water Code §10613 et seq. (Added by Stats. 2001, c. 643), Written Verifications of Water Supply (SB 221) Water Code §66473.7 (Added by Stats. 2001, c. 642).

WATER MANAGEMENT TOOLS AND RESOURCE MAXIMIZATION

OPUD intends to maximize its own groundwater resources. However additional information and sources should be investigated to maximize water use through its service area. Some of these may include:

- Separate metering systems for fire and landscape uses;
- Metered connections at residences constructed after 1992;
- Implementation of a recycled water program;

- Installing facilities to utilize surface water under specific hydrologic conditions;
- Installing new groundwater wells and treatment equipment; and
- If necessary, increasing pumping at high yield wells.

Water demands are fairly predictable both daily and over the year. Predictability is based on the climatologic conditions within the Sutter–Yuba County region and knowing the seasonal demands observed during lower demand periods of winter and spring versus higher demands associated with summer and fall. Understanding these trends, OPUD should be able to still use groundwater to meet most of the demands.

REGIONAL AND AGENCY COORDINATION

Water Code Section 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.

OPUD participates in area and regional planning with the YCWA. Participation in these planning efforts helps ensure that OPUD will have access to an adequate amount of water to provide for its residents and businesses. It also provides for drought-condition planning and coordination within the region so that not one particular water provider is unduly impacted by a lack of water, during a regional or local shortage.

Also, in accordance with the Act, the District notified the land use jurisdiction namely, the County of Yuba, Community Development and Planning Department that it was preparing its 2010 UWMP. Prior to adoption, the District has made available its Draft 2010 UWMP to other water suppliers and water planning agencies including the YCWA and Linda County Water District. Specifically, a notice and instructions for downloading the Draft 2010 UWMP from the District's website was mailed to each of the agencies listed above. The 2010 UWMP was first presented at the Water and Sewer Committee Meeting of the District's Board of Directors. A Public Hearing regarding the 2010 UWMP was held on October 20, 2011. Notices of the meeting were published in the local newspaper the week of October 10, 2011. These coordination efforts are summarized in Table 1 and copies of the public notices are included in **Appendix B (Adoption and Related Documentation).**

Table 1: Coordination with Appropriate Agencies

Coordinating Agencies	Participated in UWMP development	Commented on the draft	Attended public meetings	Contacted for assistance	Received notice of availability of draft UWMP	Sent notice of intention to adopt
Yuba County Water Agency					X	X
County of Yuba					X	X
Linda County Water District					X	X
Olivehurst PUD Customers			X		X	

NOTIFICATION OF UWMP PREPARATION

Water Code Section 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.

Water Code Section 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 (10635(b)).

In accordance with the Act, the District provided a 60-day notice to the Yuba County Water Agency, Linda County Water Agency, and County of Yuba that it was reviewing and considering amendments or changes to the UWMP and that it would be holding a public hearing prior to the adoption of the UWMP. A copy of the 60-day notice is included in **Appendix B**.

ADOPTION AND IMPLEMENTATION OF UWMP

Water Code Section 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.

PUBLIC PARTICIPATION

Water Code Section 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.

OPUD encourages public participation in the development of this UWMP. In the development of its UWMP, OPUD solicited comments on the Draft UWMP from the adjacent water providers and local governments. Copies of this Draft UWMP were available for review beginning October 18, 2011 at the District office at 1970 9th Avenue, Olivehurst, California. The UWMP was available for public review for 30 days. Beginning on October 17, 2011 and ending on November 17, 2011.

The public was encouraged to attend a public meeting held on October 20, 2011. **(Appendix B)**

Water Code Section 10643.

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

Water Code Section 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.

Water Code Section 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.

OLIVEHURST PUBLIC UTILITIES DISTRICT ADOPTION PUBLIC NOTIFICATION

OPUD encouraged the involvement of social, cultural and economic community groups during the preparation of the UWMP. Public notification was published in the local newspaper informing all community groups, including public and private water suppliers about the availability of the Draft UWMP. OPUD solicited comments and suggestions from those responsible parties.

The public notification contains the following language:

- Public Meeting and Plan Adoption Information
- Availability of the Urban Water Management Plan

As required by Water Code Section 10642, 10644, 10645 commencing on October 18, 2011 and continuing through November 17, 2011 a copy of this Draft UWMP was available for public review at the Olivehurst Public Utilities District office located at 1970 9th Street, Olivehurst, CA. Any questions or comments regarding this UWMP should be directed to:

Tim Shaw, General Manager
1970 9th Street
Olivehurst, CA 95961
Office: (530) 743-0317
Email: opudmgr@opud.org

Plan Adoption

The public was encouraged to attend a regular meeting of the District's Board of Directors held on Thursday, November 17, 2011 at 7 pm. It is anticipated that prior to close of the agenda item to discuss the UWMP, a motion will be made to adopt the UWMP; seconded and as appropriate the OPUD Board of Directors will formally adopted this UWMP on November 17, 2011. On December 1, 2011 the Board of Directors approved the minutes from the November 17, 2011 meeting thereby memorializing the adoption of the District's 2010 UWMP. The Final UWMP will be submitted to DWR within 30 days of adoption. **[Appendix B].**

SECTION 2: UWMP CONTENTS

Water Code Section 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.

SERVICE AREA INFORMATION

OPUD was formed in 1949 to provide water and sewer services for the Olivehurst area, and recreational services were added to its responsibilities in 1956. Today OPUD provides water for potable use, wastewater and drainage services, parks, lighting maintenance and fire protection. OPUD service boundaries extend south from Hickory Lane (south of Erle Road) on the west side of Highway 70 to the Union Pacific Railroad and widen to include the Yuba County Airport on the west and land west of Highway 65 south to McGowan Parkway. OPUD also provides water, wastewater, and drainage services within portions of the Plumas Lake Specific Plan area to the south. The service boundary is approximately nine square miles and includes a total of 6,048 service connections, 4,481 are metered and 1,606 are currently un-metered. OPUD is currently undertaking conversion of all un-metered services to metered services.

Figure 1 shows the OPUD's service area boundaries and sphere of influence.

Currently, OPUD receives all of its water from groundwater supplies. The total maximum well pumping capacity is 24,070 gallons per minute (gpm), which equates to approximately 34.7 million gallons per day (mgd). In addition, OPUD has a contract with YCWA for the potential future use of up to 2,447 AFY in surface water supplies, but the District does not yet have the infrastructure that would be necessary to put the contracted YCWA surface water to use.

OPUD operates two separate water pumping and distribution systems; one for Olivehurst and the other for Plumas Lake. The Olivehurst system is made up of 10 active groundwater wells, three storage tanks, six storage pressure vessels, three wellhead treatment facility, and steel distribution pipes that served 5,472 connections in 2007. Maximum pumping capacity is 16,370 gpm. The Olivehurst system was constructed in 1951 and is in need of improvements to increase efficiency.

The Plumas Lake water system was constructed between 2003 and 2007, so the system is new and more efficient than the Olivehurst system. The Plumas Lake system includes two active wells, one standby well, one storage tank, a treatment plant, and C-900 pipes. The maximum pumping capacity for the Plumas Lake wells is 7,700 gpm. In 2007, there were 1,374 water service connections in Plumas Lake.

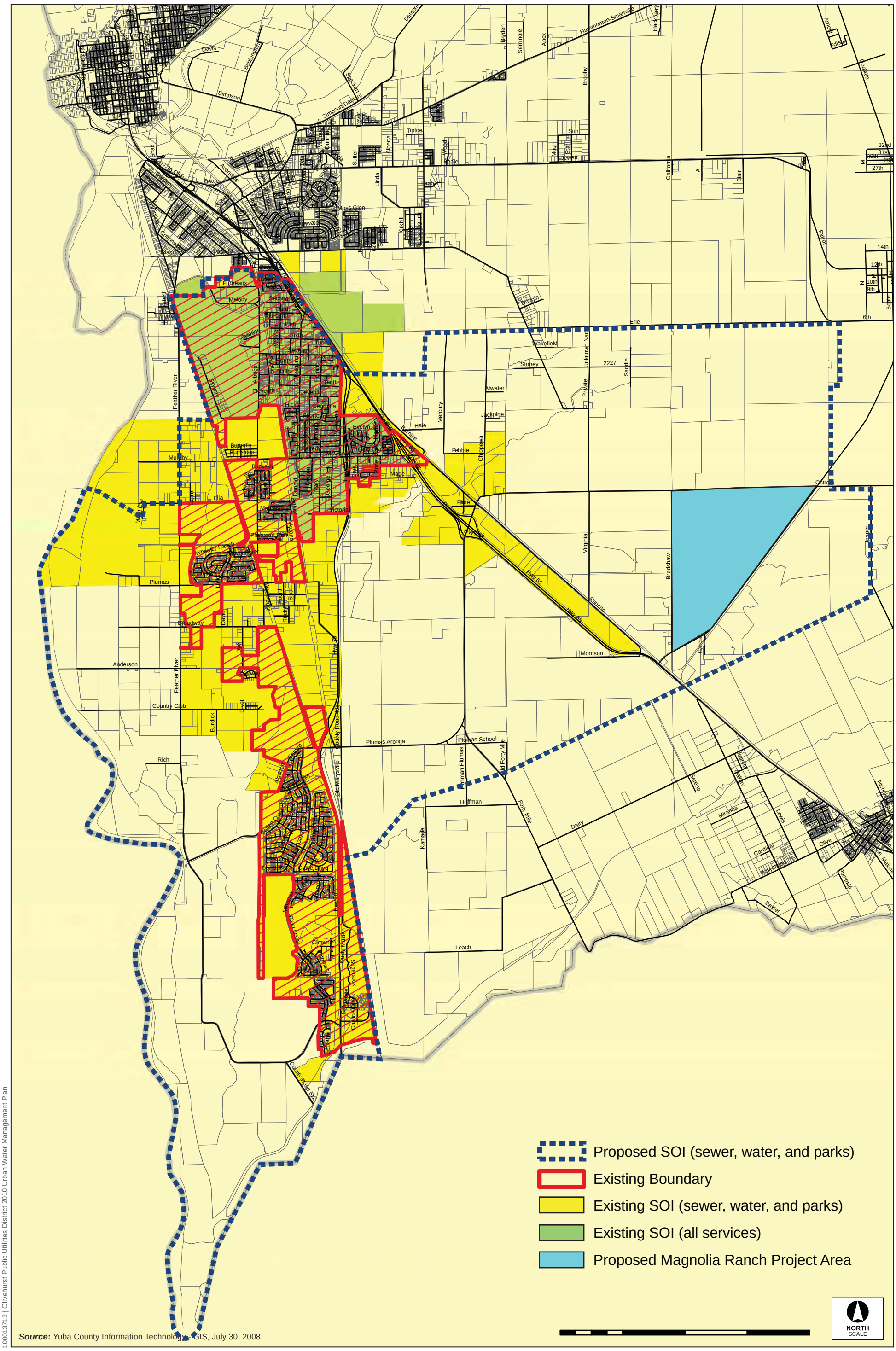

Figure 1

Olivehurst Public Utility District Boundary and Sphere of Influence

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Existing Demand and Growth

Water demand averages 3.8 mgd (2.6 mgd in the Olivehurst system and 1.2 mgd in Plumas Lake system). Total peak day demand is 9 mgd total, with 6 mgd occurring in the Olivehurst system and 3 mgd generated in the Plumas Lake system. Actual annual water demand throughout the District averages 997 million gallons (mg) 466 mg used in Plumas Lake (Yuba LAFCO 2008) and the balance 531 mg used in Olivehurst system. As stated earlier, OPUD serves the community of Plumas Lake, which was a rapidly developing area; in fact, population within the District increased from 10,271 in 2000 to 12,259 in 2007. As of 2010, the U.S. Census Bureau estimated population to be approximately 19,509 people residing within much of OPUD's service area. The District, anticipates the development of more than 16,000 planned and proposed dwelling units within its service area (Yuba LAFCO 2008).

OPUD has guidance documents and policies to ensure that water service is available to residential development in the service areas for the districts. New developments are required to install new wells and treatment facilities as necessary, with maintenance and ownership transferring to the districts. Development must be located within district boundaries in order to be provided with water service. There is ample groundwater available in this area to support the continued growth of residential uses in planned growth areas of the County. Existing infrastructure cannot support future development, but since water delivery infrastructure will be developed and funded by developers as development occurs, it is assumed that current procedures for providing water service are sufficient to ensure that adequate water service will be available for planned residential uses in the County. However, due to the need for improvements to the OPUD water delivery infrastructure in the developed area of Olivehurst, development there could result in a constraint.

Regional Climate, Hydrology and Water Quality

Climate

Southern Yuba County has an arid Mediterranean climate; the weather consists of long, dry summers and cool, rainy winters. Summer weather trends extend from May to October. Average daily maximums for July are 96°F with lows in the low 60s. Winter daytime temperatures are generally in the mid-60s to mid-50s, with average lows in the upper 30s and occasional freezing temperatures. The rainy season is from late November to mid-April, and average precipitation is 21.6 inches annually; snow is a rare occurrence. A summary of annual rainfall and irrigation demands is included in Table 2.

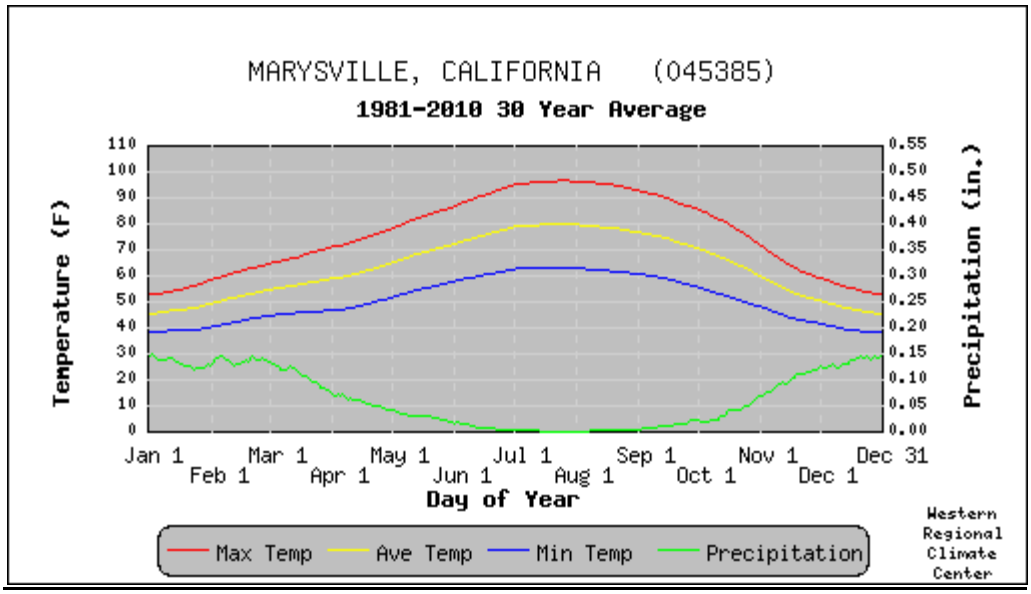
Evapotranspiration data were obtained from the California Irrigation Management Information System (CIMIS). The evapotranspiration data are based on historical data since 1999 and the long-term averages provided by CIMIS. Climate and evapotranspiration data are summarized in Table 2.

The typical annual distribution for temperature and precipitation are shown in Figure 2.

Table 2: Project Climate Summary

	ETo (in) [a]	Average Total Precipitation (in) [b]	Irrigation Demand (in) [c]
Jan	0.87	4.01	0.0
Feb	1.57	3.73	0.0
Mar	3.22	2.88	0.2
Apr	4.86	1.53	3.4
May	6.28	0.75	5.5
Jun	7.51	0.22	6.8
Jul	7.98	0.03	7.6
Aug	6.92	0.06	7.1
Sep	5.16	0.34	5.0
Oct	3.39	1.21	2.6
Nov	1.51	2.44	0.0
Dec	0.89	3.76	0.0
Annual	**50.16**	20.96	38.2

Notes:
a. Normal ETo from CIMIS station 30, Nicolaus.
b. Western Regional Climate Center for Marysville, CA 045385 1897-2007.
c. Irrigation demand = (ETo – Precipitation)/DU x (1+LF), where: Distribution Uniformity (DU) = 90%, Leaching Fraction (LF)=0.2%



Source: Western Regional Climate Center, Marysville, CA 045385

Figure 2: Marysville Typical Annual Distribution for Temperature and Precipitation

The Central Valley has experienced two declared droughts in the last three decades: the calendar year of 1976 received only 7.4 inches of rain, and the drought of 1987–1992 is considered the most severe drought in California's modern history.[1] Conversely, in the years following these drought periods the Central Valley was drenched with record rainfall that caused flooding. This extreme climatic variability is common throughout California.

Yuba County Population

The County has experienced population growth in the recent past (mainly due to the housing boom between 2003 and 2006). Yuba County's projected growth rate through 2050 was the second-highest in the state after neighboring Sutter County. Growth is forecast to continue after the current recession subsides and real estate market conditions stabilize so the housing market re-emerges and grows at a sustainable rate.

The population of Yuba County in 2000 was 60,219, with a population of 45,679 (76 percent) in unincorporated areas and 14,540 (24 percent) in incorporated areas. The number of households in Yuba County was 20,535, with an average household size of 2.87 persons (the same as California as a whole). The California Department of Finance has determined that in 2010, Yuba County's total population increased to 72,155 with 22 percent in incorporated areas and 78 percent in unincorporated areas. The California Department of Finance forecasts that there will be 201,327 residents of Yuba County in 2050, representing an increase of 179 percent over the 2010 estimated population

Specific Plan Areas, Community Plan Areas, and Other Special Areas

Yuba County has a variety of specific plan areas. Under State law, specific plans are required to be consistent with the relevant community's General Plan. Specific plans come in many varieties from the general or conceptual, to those with specific lotting patterns. A specific plan can have policies and conceptual development proposals, or can provide every detail related to the proposed land use change. Specific plans can address large areas of land or small, focused areas in existing developed areas. Generally, specific plans describe future land use, provide for major infrastructure and public facilities, present standards for development and conservation, and outline implementation measures to carry out the plan.

The 2030 General Plan assumes development consistent with adopted Specific Plans, including:

- East Linda Specific Plan,
- Olivehurst Avenue Specific Plan,
- Plumas Lake Specific Plan, and
- Spring Valley Specific Plan.

OPUD Service Area Population and Forecasts

The Olivehurst portion of OPUD's service area is a well-established community mostly urbanized and little growth in the area is anticipated. The unincorporated Community of Olivehurst had a population of 9,738 in 1990 and 11,061 in 2000 (U.S. Census Bureau). As of 2010, the U.S. Census Bureau estimated population to be approximately 19,509 people residing within much of OPUD's service area. According to the 2010 US Census Bureau estimates, population in the Olivehurst and Plumas Lakes Census Designated Places (CDP) are 13,656 and 5,853 persons, respectively. Developments in the OPUD's Plumas Lakes system have spawned significant growth over the last 5 years. In fact, according to OPUD's connection records up to 1,900 homes were constructed over the 2004-2006 period. However, the current economic downturn has slowed new development

1 Priest, D.F. et al. 1993, *California's 1987-92 Drought: A summary of six years of drought.* State of California Department of Water Resources.

substantially, it is envisioned that new development will rebound and the District's population will begin to grow, only at a slower pace.

According to Yuba County General Plan Update, the District, anticipates the development of more than 16,000 planned and proposed dwelling units within its service area. The majority of this develop could occur in specific plan areas of Olivehurst Avenue Specific Plan, Plumas Lakes Specific Plan and the recently added but not adopted Magnolia Ranch Specific Plan. OPUD has planned for both the improvements to the Olivehurst water delivery system, and the expansion of the Plumas Lake system to accommodate projected growth in that area. Service within Magnolia Ranch would be implemented by the developer and then transferred to OPUD to operation and maintenance purposes. Expansion of the systems can be financed using developers fees, which will be collected and development as growth occurs.

It is assumed that complete build-out of the future OPUD service area would occur by 2030. The projected number of dwelling units at build-out multiplied by an average number of people per connection was used to estimate the population of the expanded OPUD service area. Based on an average of 2.87 people per connection (Yuba County General Plan data), this would result in an estimated total population of up to 63,300 in the future OPUD service area by 2030. It is important to note that this progression of population is contingent upon market conditions that could influence new development. OPUD's current population and future population growth projections are shown in Table 3.

Table 3: Population (Historical, Current and Projected)

Population Area	Year						
	2007	2010	2015	2020	2025	2030	2035
	12,259	19,509[a]	20,645[b]	26,221[c]	48,206[d]	63,300	63,300

Notes:
a. assumes connections 3.30 persons per account (U.S Census Bureau)
b. assumes growth of 284 persons per year (based on growth from 2000 – 2007)
c. assumes growth of 1,115 persons per year (based on growth from spread of population of 16,000 connections and 63,300 persons in 2030)
d. assumes growth of 4,396 persons per year through 2027 at 2.87 persons per household (Yuba County General Plan data) – population growth reduces to 1,905 persons in 2028 and culminates in 2030 at 63,300
Source: Atkins adapted from Yuba County General Plan Update and U.S Census Bureau data

SECTION 3: SYSTEM AREA DEMAND

WATER USE BY TYPE FOR PAST, CURRENT AND FUTURE DELIVERIES

Water Code Section 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.

(2) Agricultural.

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

WATER USE BY CUSTOMER TYPE − PAST, CURRENT AND FUTURE

OPUD categorizes its water accounts customer categories based on sector type: Single-family, multiple family, commercial, industrial and landscape.

Historical OPUD Pumpage

Available OPUD pumpage data from 1995 to 2005 is summarized in Table 4. During this period, the total pumpage ranged from a low of 2,717 AFY in 2001 to a high of 3,977 AFY in 2004. The pumpage data from 1995 to 2001 were based on California Department of Public Health (CDPH) Annual Inspection Reports (the 1999 data are not available), and the 2002 to 2005 pumpage was based on the Water Supply Verification for the Ross Ranch Project (EIP 2006a).

Current Water Demand

There are approximately 6,087 connections. 4,481 are metered and 1,606 are unmetered, flat-rate services. Annual water production in 2010 was approximately 2,888 AFY of demand throughout OPUD's service area. Water use varies through the years depending on several natural factors such as weather, extension of seasons, etc. For example, rainier-than-usual winters in Fiscal Years 2004/05 and 2005/2006 reduced the need for landscape irrigation and decreased water usage when compared to normal or dry years. Water use is also dependent on other factors such as business climate and economy. Long-term general trends in water requirements are valuable in projecting future supply needs.

Table 4: OPUD Historical Annual Pumpage

Year	Total Annual Pumpage[a] (acre-feet)
1995	2,882
1996	2,882
1997	3,050
1998	3,121
1999	-
2000	2,752
2001	2,717
2002	2,749
2003	2,933
2004	3,977
2005	3,884

Notes:
a. Source of total annual pumpage:
- 1995 to 2001 from CDPH Annual Inspection Reports.
- 2002 to 2005 from OPUD Final WSV for the Proposed Ross Ranch (EIP, 2006a).

Source: Olivehurst Public Utilities District

Available OPUD groundwater production data from 2004 to 2010 is summarized in Table 5. During this period, total production ranged from as high as 4,037 AFY in 2004 to as low as 2,885 AFY in 2009. The production records show a steady decline in water production, this likely the result of OPUD's installation of volumetric meters and public water usage response and residential vacancies within the District's service area as result of the economic downturn. Data discrepancies between Table 4 (above) and Table 5 in 2004 are caused by slightly different reporting periods or pumping data versus consumption/sales data.

Table 5: Historical Groundwater Production 2004 – 2010

	2004	2006(a)	2007	2008	2009	2010	Annual Avg
MGY	1,316	983	1,028	1,039	940	941	1,041.29
AFY	4,037.33	3,018.05	3,155.18	3,189.67	2,885.38	2,888.06	3,195.61

Notes:
a. Combined with 2005 data reports?
b. Annual average pumping calculated for years 2004-2010.
Source: Olivehurst Public Utilities District, Groundwater Production reports, March 2011.

Residential Sector

In OPUD's service area, single-family residential customers average 3.5 persons per connection. Total system per capita water use averages about 210 gpcd. According to the Yuba County General growth is expected in the residential sector over the next 15 to 20 years; as stated in Section 2, new accounts could add up to 16,000 new connections, primarily in the large scale specific plan areas.

According to law, all new homes as of January 1, 1992 are metered and those customers pay a uniform metered rate. The increasing efficiencies in residential landscaping, ultra-low flow toilets, and conservation education programs can significantly help to minimize the water demand of new customers. Section 6 describes the Districts conservation programs.

Commercial Sector

OPUD has a mix of commercial customers, ranging from specialty stores, insurance offices, beauty shops, gas stations, shopping centers, restaurants, and other facilities serving the community of

Olivehurst and the surrounding areas. This sector is well stabilized and no significant increases in water demand are expected in the near future. However, with the potential rise in the residential sector of up to 16,000 new connections, the commercial sector could grow as well. Implementation Program H-1.1.2 of the Yuba County General Plan furthers the County's investment in the Community of Olivehurst.

Industrial Sector

OPUD has a small industrial sector of approximately 30 accounts, primarily centered on light manufacturing. The industrial sector has grown slightly in the last five years but is expected to remain constant in the near future and over the planning horizon. Implementation Programs H-1.1.2 and H-2.1.2 of the Yuba County General Plan furthers the County's investment in the Community of Olivehurst.

Institutional/Governmental Sector

Currently, OPUD has a stable institutional/governmental sector, primarily schools, churches and local government. However, with the potential rise in the residential sector of up to 16,000 new connections, the institutional sector could grow as well. Implementation Programs H-1.1.2 and H-2.1.2 of the Yuba County General Plan furthers the County's investment in the Community of Olivehurst.

Landscape/Recreational Sector

Landscape and recreational demands at the parks are expected to remain constant in the near future. However, with the potential rise in the residential sector of up to 16,000 new connections, the landscape sector could grow as parks and other recreational facilities are added within OPUD's services area. Implementation Programs H-1.1.2 and H-2.1.2 of the Yuba County General Plan furthers the County's investment in the Community of Olivehurst.

Agricultural Sector

OPUD does not have an agricultural sector.

Historical Water Demand per User Type

Historic water use data from 2007 by user type is summarized in Table 6. OPUD changed its billing system in 2006; as such, pre-2007 billing records per customer class were not available for this 2010 UWMP. Going forward to 2015 and 2020, OPUD anticipates based on its current billing system that records for each customer class can be updated and used in subsequent reports.

Table 6: 2007 Water Deliveries — Actual

Water Use Sectors	2005 Metered and Flat Rate	
	# of accounts	Volume (AF)
Single-family residential (metered and flat rate)	4,883[a,b]	2,994.67
Multi-family residential (Apartments)	4	2.88
Commercial / Industrial (Business-Industrial)	116 [c]	61.50
Institutional (Church-Schools)	17	79.64
Irrigation (Landscape)	28	16.49
Other (Temporary)	1	61.40
Unaccounted for losses	n/a	n/a
Total		3,155.18

Notes:
a. 2007 Average number of metered accounts based on range of 2,037 accts in April 2007 to 2,647 accts in December 2007.
b. 2007 Average number of flat rate accounts based on range of 2,743 accts in January 2007 to 2,395 accts in December 2007.
c. 2007 metered accounts based on average of 42 metered accts and 54 flat rate accts
Source: Olivehurst Public Utilities District Water Sales Records, March 2011

The breakdown of consumption between customer types in 2010 is summarized in Table 7 this information was obtained from the District's billing department. Table 7 also includes values for "Unaccounted-for" water, which amounts to a relatively small percentage of the total system demand. Unaccounted-for is the total difference between the total pumped and produced compared to the total amount billed by the District. Generally unaccounted-for water is associated with leaks or system losses, pipeline breaks, illegal connections, meter inaccuracy and unmetered fires. Unaccounted-for water has averaged 5 to 10 percent, due to the District's work to minimize unauthorized connections and system losses.

Table 7: 2010 Water Deliveries — Actual

Water Use Sectors	2010 Metered and Flat Rate	
	# of accounts	Volume (AF)
Single-family residential (metered and flat rate)	5,532 [a,b]	2,785.3
Multi-family residential (Apartments)	4	2.0
Commercial / Industrial (Business-Industrial)	121	60.9
Institutional (Church-Schools)	20	10.1
Irrigation (Landscape)	46	23.2
Other (Temporary)	n/a	0.0
Total	5,732	2,886.0
Unaccounted-for losses [c]	n/a	~144.00[c]

Notes:
a. 2010 Average number of metered accounts 3,871 accts.
b. 2010 Average number of flat rate accounts 1,322 accts.
Source: Olivehurst Public Utilities District Water Sales Records, March 2011.

Figure 3 illustrates the deliveries of potable water to each customer category based on deliveries in late 2010.

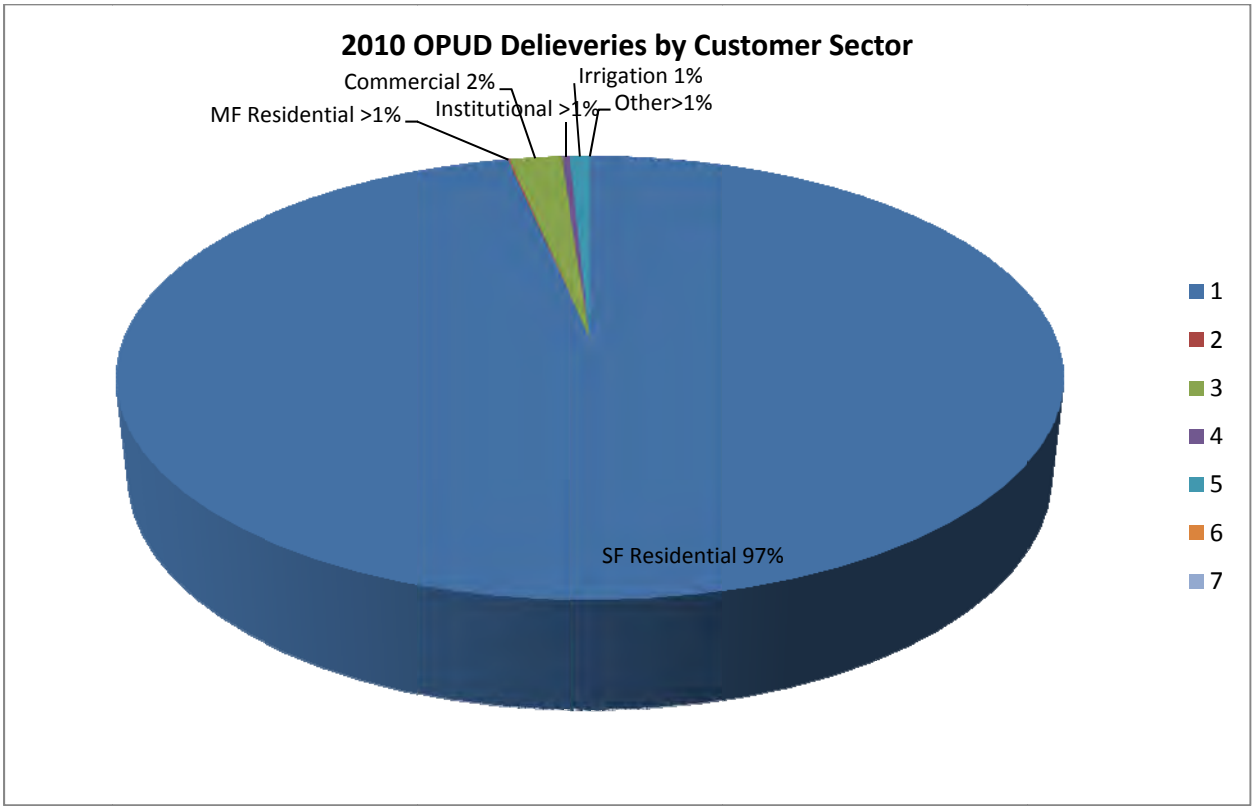


Figure 3: OPUD Deliveries by Customer Sector

The District's estimated growth in number of customers is shown in Table 8. Customer growth is assumed at the same rate as population growth from the Yuba County General Plan as best estimated by applying the same historical growth patterns observed throughout OPUD's service area in last decade. Customer growth will primarily come from the residential sector with small percentages of growth in commercial (retail) and industrial sectors support of the housing market.

Table 8: Customer Growth — Projected 2015, 2020, 2025, 2030, and 2035

Water Use Sectors	2015[a]	2020[b]	2025[c]	2030[c]	2035[c]
Single-family residential	6,080	6,503	13,896	21,286	21,286
Multi-family residential	4	5	10	15	15
Commercial / Industrial	133	142	304	466	466
Institutional	22	24	50	77	77
Irrigation	51	54	116	177	177
Other	n/a	n/a	n/a	n/a	n/a
Total	**6,290**	**6,727**	**14,376**	**22,021**	**22,021**

Notes:
a. assumes growth of 284 persons per year (based on growth from 2000 – 2007)
b. assumes growth of 1,115 persons per year (based on growth from spread of population of 16,000 connections and 63,300 persons in 2030)
c. assumes growth of 4,396 persons per year through 2027 at 2.87 persons per household (Yuba County General Plan data) – population growth reduces to 1,905 persons in 2028 and culminates in 2030 at 63,300
Source: Atkins adapted from Yuba County General Plan Update and U.S Census Bureau data

OPUD prepared a demand estimate for the based on population projections within the District's service area and identified annexations (specific plans areas that would be provided water service by OPUD). The District's projected potable water consumption is shown in Table 9.

Table 9: Potable Water Deliveries — Projected 2015, 2020, 2025, 2030, and 2035 (AF)

Water Use Sectors	2015	2020	2025	2030	2035
Single-family residential[a]	3,736.4	4,218.4	7,755.2	10,183.5	10,183.5
Multi-family residential[a]	2.7	3.1	5.6	7.4	7.4
Commercial / Industrial[a]	81.7	92.3	169.6	222.7	222.7
Institutional[a]	13.5	15.3	28.0	36.8	36.8
Irrigation[a]	31.1	35.1	64.5	84.7	84.7
Other	n/a	n/a	n/a	n/a	n/a
Total[a]	3,865.5	4,364.0	8,023.0	10,535.1	10,535.1
Unaccounted-for Losses[c]	~386	~436	~802	~1,053	~1,053

Notes:
a. Demand estimates based on similar proportions of deliveries as currently served within OPUD customers –See Figure 3 above.
b. Due to rounding and percentage proportions total may not equal supply and demand projections in previous tables.
c. Estimated at up to10% of total deliveries based on AWWA industry standards.
Source: Atkins adapted from Yuba County General Plan Update and U.S Census Bureau data

Water Code Section 10631

(a) The water use projections required shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

LOW-INCOME WATER DEMAND PROJECTIONS

The requirements for the 2010 UWMP call for projections of water demands for low-income customers. The District reviewed the 2009 Housing element provided by Yuba County, which forecast projections out to 2030. Demands for the projected low-income housing projects were estimated using the District's planning demand data at 450 gallons per day per dwelling unit. Projected water demands were then distributed equally throughout 2015 and 2030 (Table 10). These demands have been assumed as part of the general growth within the District and have been included in the District's potable water demand projections shown in Table 7 above.

Table 10: Low-income Projected Water Demands (AF)

Low Income Water Demands	2015	2020	2025	2030
Multi-family residential	64	64	64	64

Note: 508 total units over 20 years established in various redevelopment areas of OPUD's service many of which would occur in the Olivehurst Avenue Specific Plan area. Usage rate of 450 gallons per dwelling unit.

SYSTEM LOSSES AND UNACCOUNTED-FOR WATER

Water loss within the OPUD's distribution system can occur from various causes such as leaks, breaks, malfunctioning valves and the difference between the actual and measured quantities stemming from water meter inaccuracies. Other losses are associated with water main and hydrant flushing, tests of fire suppression systems and system maintenance or repairs.

Ninety-five percent of public water distribution systems experience losses between 7 and 15 percent.[2] The routine losses experienced by OPUD's water distribution system (excluding the periodic loss of wells) are not known. System losses and Unaccounted-for water presented in this UWMP are based on water losses up to ten percent due to OPUD's implementation of meters throughout its service area. This assumes that system losses occur between the wellhead pump and OPUD's end-users; therefore, system losses are a function of demand. Accordingly, as demands increase, so do Unaccounted-for losses.

SALES TO OTHER WATER AGENCIES

The District does not sell any water to other agencies as shown in Table 11.

Table 11: Sales to other water agencies (AF)

Water Distributed	2005	2010	2015	2020	2025	2030
None	0	0	0	0	0	0

Water Code Section 10608.2

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

BASELINES AND TARGETS

The System Demand section of the 2010 UWMP also includes the detailed description of how an urban water supplier calculates its baseline and targets, following the technical methods and methodologies described in DWR's Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use for the Consistent Implementation of the Water Conservation Bill of 2009. Background information and the approach used to develop baselines and targets are also to be included. A description of each of these elements follows:

- Baseline daily per capita water use — how much water is used within an urban water supplier's distribution system area on a per capita basis. It is determined using water use and population estimates from a defined range of years.
- Urban water use target — how much water is planned to be delivered in 2020 to each resident within an urban water supplier's distribution system area, taking into account water conservation practices that currently are and plan to be implemented.
- Interim urban water use target — the planned daily per capita water use in 2015, a value halfway between the baseline daily per capita water use and the urban water use target.

2 American Water Works Association, Water Resource Planning; Manual of Water Supply Practices M50, 2001, page 33.

Following requirements provided in the DWR Methodologies for Calculating Baseline and Compliance Urban Water Per Capita Use document, the District has calculated baseline per capita water use, an urban use target for 2020, and an interim water use target for 2015. Reporting daily per capita water use compliance is not required until the 2015 UWMP cycle; at that point, actual water use will be compared to the interim 2015 target water use. Calculations and technical bases for the calculations are presented in **Appendix C (Calculations for Baselines and Targets)**.

Two baseline periods are to be determined during the calculation of the base daily per capita water use. The legislation provides some flexibility in what actual periods of time are used to establish these baselines. This accounts for short-term water demand variations resulting from weather influences, as well as acknowledging the advances of water suppliers that have already begun using recycled water to reduce potable demands. The two baseline periods are:

- 10- to 15-year base period. This is a 10-year or 15-year continuous period used to calculate baseline per capita water use. The ending year must be between December 31, 2004 and December 31, 2010.
- 5-year base period. This is a continuous 5-year period used to determine whether the 2020 per capita water use target meets the legislation's minimum water use reduction requirements of at least a 5 percent reduction per capita water use. The ending year of the 5-year period must be between December 31, 2007 and December 31, 2010.

Methods 1, 2, 3, and 4 have been evaluated for District. The analysis of the four methods is described below:

- The Method 1 target for 2020 is 149 gpcd, with an interim 2015 target of 167 gpcd. A 10-year baseline period can be used that ends no earlier than December 31, 2004. A 10-year period from 2001 to 2010 provides a baseline of 185 gpcd and a 2020 target of 149 gpcd as shown in Table 12. No adjustment is required since the 10-year baseline target is less than 95 percent of the 5-year baseline.
- The District does not have the detailed data on irrigated landscaped area at this time in order to calculate the Method 2 target for 2020. The District can choose to investigate Method 2 prior to preparing their 2015 UWMP, if they begin preparing estimates of landscaped area as defined by DWR. The DWR methodology restricts the landscaped area to include only landscape irrigated through dedicated or residential meters. The methodology also requires that the target be based on the water supplier's estimate of 2020 landscaped areas.
- Method 3 sets its target as 95 percent of the state hydrologic region target. The District is within the Sacramento River Hydrologic Unit, whose 2020 target is 176 gpcd and interim 2015 target is 215 gpcd. Ninety-five percent of the region's 2020 target is 167 gpcd, with an interim 2015 target of 204 gpcd. DWR's Guidebook allows each water supply to choose its preferred target method. Method 3 sets a target of 176 gpcd. This target would meet the legislature goal of at least a five percent reduction as calculated from the 5-year average of 197 gpcd. Method Target 3 does not satisfy the 20 percent reduction. Therefore, as stated previously, the District must choose method that best fits its service area and also achieves the 20 percent per capita reduction goal required in SBX 7-7.
- SBX 7-7 Provisional Method 4 Target Calculator Method 4 Calculates total savings subtracted from baseline water use. For this target method, savings are assumed between the baseline period and 2020 due to metering of unmetered water connections and achieving water conservation measures in three water use sectors. These savings include metering savings in the following sectors: residential savings, commercial, industrial, institutional savings, landscape and water loss savings. Water Code Section 10608.20(d) provides that DWR will update Target Method 4 by December 31, 2014. It is

anticipated that improvements will be made to the target method based on new data and analytical techniques in the update. Provisional Target Method 4 described here will be in effect until the update by 2014. Using this method and the default indoor residential savings, the District's Method 4 target for 2020 is 139 gpcd, with an interim 2015 target of 162.4 gpcd. Method 4 sets a 2020 target of 139 gpcd this could hinder the District's ability to actually achieve this goal, because, the reduction in per capita demand is significantly increased above 20 percent. Therefore, as stated previously, the District can choose method that fits its service area and also achieves the 20 percent per capita reduction goal required in SBX 7-7.

The District's recent per capita water use has been declining in recent years and is currently below OPUD's 2020 target water use of 149 gpcd, and is significantly less than its 2015 interim target of 167 gpcd. In 2010, water use within the District was 132 gpcd. This recent decline in per capita water use is could be largely contributed due to housing vacancies as a result of poor economic conditions in OPUD's service area. In fact, in 2009 foreclosures outnumbered new home sales. In Yuba County, according to the GPU, there were 540 foreclosures in March 2009, many of which were located in areas that had experienced a boom in new home construction prior to the crash of the housing market, such as Linda, Olivehurst, and Plumas Lake [within OPUD's service area].[3]

Table 12, Table 13, and Table 14 present the results of the baseline and target methodology calculations, in accordance with the Act.

Pursuant to SBX 7-7, baseline per capita water use is 186 gpcd using a 10-year average beginning in 2001 and ending in 2010 and 197 gpcd using a 5-year average beginning in 2003 and ending in 2007.

The District has adopted Method 1 to set its 2015 interim and 2020 water use targets. Method 1 requires setting the 2020 water use target to 80 percent of baseline per capita water use target as provided in the State's Draft 20x2020 Water Conservation Plan. Using the methodology in the Guidebook, Table 15 shows the interim 2015 gpcd target and the 2020 gpcd target. The District's 2015 target is 167 gpcd and the 2020 gpcd target at 80 percent of baseline is 149 gpcd.

Table 12: Base Period Ranges

Base	Parameter	Value	Units
10- to 15-year base period	2008 total water deliveries	3,190	AF/yr
	2008 total volume of delivered recycled water	n/a	AF/yr
	2008 recycled water as a percent of total deliveries	0	percent
	Number of years in base period[1]	10	years
	Year beginning base period range	2001	
	Year ending base period range[2]	2010	
5-year base period	Number of years in base period	5	years
	Year beginning base period range	2003	
	Year ending base period range[3]	2007	

Notes:
1. If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period.
2. The ending year must be between December 31, 2004 and December 31, 2010.
3. The ending year must be between December 31, 2007 and December 31, 2010.

Source: Olivehurst Public Utilities District Water Historical Water Use Data adapted from DWR 2011 UWMP Guidebook

3 Yuba County Housing Element 2008 – 2013.

Table 13: Base daily per capita water use — 10-year range

Year 1	2001	10,550	2,426,108	230
Year 2	2002	10,839	2,455,641	227
Year 3	2003	11,123	2,406,469	216
Year 4	2004	12,998	3,604,299	277
Year 5	2005	14,874	2,694,342	181
Year 6	2006	16,749	2,694,342	161
Year 7	2007	18,624	2,816,762	151
Year 8	2008	18,919	2,847,552	151
Year 9	2009	19,213	2,575,901	134
Year 10	2010	19,509	2,578,298	132
Base Daily Per Capita Water Use				**186**

Source: Olivehurst Public Utilities District, Water Historical Water Use Data adapted from DWR 2011 UWMP Guidebook

Table 14: Base daily per capita water use — 5-year range

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	**Fiscal Year**			
Year 1	2003	11,123	2,406,469	216
Year 2	2004	12,998	3,604,299	277
Year 3	2005	14,874	2,694,342	181
Year 4	2006	16,749	2,694,342	161
Year 5	2007	18,624	2,816,762	151
Base Daily Per Capita Water Use				**197**

Source: Olivehurst Public Utilities District, Water Historical Water Use Data adapted from DWR 2011 UWMP Guidebook

In order to confirm that the District's 20x2020 urban water use target meets the minimum water savings, it compares the 5-year baseline daily per capita water use value to the 20x2020 daily per capita urban water use target. If necessary, adjustments are made to ensure conformance. To accomplish this comparison, the Guidebook uses the following steps, first, determine if the 5-year base daily per capita water use value is less than or equal to 100 gpcd. If not, a second step is necessary. This step requires, calculating 95 percent of the 5-year average base daily per capita water use and then comparing the results to the 2020 daily per capita target.

Table 15: 20x2020 Baseline and Water Conservation Target Method

20x2020 Requirement	gpcd
Baseline gpcd water use	
10-year average	186
5-year average	197
2020 Daily Water Use Target (Method 1)	
80 percent of baseline demand	149
95 percent of 5-year average	187
2015 Interim Daily Water Use Target	167
2020 Daily Water Use Target	149

Source: Olivehurst Public Utilities District, Water Historical Water Use Data adapted by Atkins, March 2011.

To check conformance, 95 percent of 197 gpcd is 187 gpcd, which is greater than 100 gpcd. Following the second step guidance, the District's 2020 daily water use target of 149 gpcd is less than 185 gpcd. Therefore, the District is not required to make a target daily water use adjustment. As stated above, the District's interim 2015 target is 167 gpcd and the 2020 target is 149 gpcd.

GALLONS PER CAPITA PER DAY DEMAND PROJECTION

Table 16 presents a linear progression of projected demand through the 2035 planning horizon. It should be noted that these projections are assumed to occur at a linear rate; however, based on market conditions changes in the development sector, specifically, new housing and commercial development accounts could alter the growth in demand projections. Table 16 shows water demand projections as a function of utilizing the 149 gpcd beginning in 2020 and population changes over the planning horizon. Notably, these demands would be met by groundwater or a combination of recycled water for irrigation at parks. In the future, some of these demands could be met with surface water delivered by the YCWA.

Table 16: Gallons per Capita per Day Demand Projection - Water Use Target Method 1

	2015	2020	2025	2030	2035
Total Baseline Demand w/ SBX 7-7 gpcd Target[a]	3,872	4,371	8,036	10,552	10,552

Notes:
a. Target Method 1 = 149 gpcd in 2020 and 167 gpcd in 2015

Water Use Reduction (compliance with Water Conservation Bill of 2009)

Pursuant to Water Code Section 10608.26 retail water suppliers are to develop an implementation plan for compliance with the Water Conservation Bill of 2009. The plan should provide a general description of how the supplier intends to reduce per capita water use to meet its urban water use target. In developing the implementation plan, suppliers should avoid placing a disproportionate burden on any customer sector. The plan should also discuss any potential economic impacts that may result from the water use reduction program.

Water conservation and water use efficiencies is conducted on the premise that water conservation increases the water supply by reducing the demand on available supply, which is vital to the optimal operation of the District.

Pursuant to Water Code Section 10608.26, the District continues to implement to the best of abilities its current programs to reduce water demand throughout its service area and ultimately meet its gpcd targets in 2015 and 2020. Section 6.0 lists a number of the District's on-going water conservation programs – these programs in combination with the initiatives and future programs described herein will provide means for the District to comply with the Water Conservation Bill of 2009 and reach its gpcd targets.

Water Use Reduction – the approach to achieving 20x2020

The District fully expects to meet its gpcd water use targets in 2015 and 2020 primarily because of its efforts to reduce unaccounted-for water losses to approximately 5 percent, promote maintain efficient water use and conservation savings at residences, and if feasible, increasing use of recycled water to offset potable demands. Furthermore, the District is currently exploring development of a formal water conservation plan that would formalize the District's water use reduction plan.

It is expected that the District's customers would respond to the increasing cost of water by reducing demand. Rate increases could be required to cover the increasing cost to operate and maintain the

District's water service system including replacement of the District's aging infrastructure (within the Olivehurst system).

The District anticipates that new homes fitted with water efficient fixtures and hardware pursuant to CALGREEN guidelines will lower the indoor per capita consumption for those who purchase new homes within the District. In addition, adherence to the state's Model Water Efficient Landscape Ordinnacne will result in more efficiently designed and irrigated landscapes and further contribute to a lower District-wide gpcd.

Public education is critical to the success of long-term per capita reduction. The District will seek to improve its public outreach to its customers and may choose to offer incentives to reduce demand throughout the service area. Should water use rise dramatically in the future, the District may choose to create programs that specifically target large water use sectors that are likely to cause the District's overall gpcd to increase. If feasible, the District anticipates seeking grant programs that could be used to create financial water conservation incentives and rebate programs to further reduce demand.

Ongoing Water Conservation Programs and Communication Efforts:

As presented in Section 6.0, the District has committed to increase its outreach efforts to educate its customers regarding water conservation and water smart landscapes through its website, specialty bill inserts, and if feasible, its presence at outreach events.

SECTION 4: SYSTEM SUPPLIES WATER SOURCES

Water Code 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 [to 20 years or as far as data is available].

This section contains a brief description of existing and planned water supply, treatment, storage, and conveyance facilities in the current and future OPUD service areas. OPUD is responsible for construction, operation, maintenance, and repair of its water treatment and distribution system.

GROUNDWATER

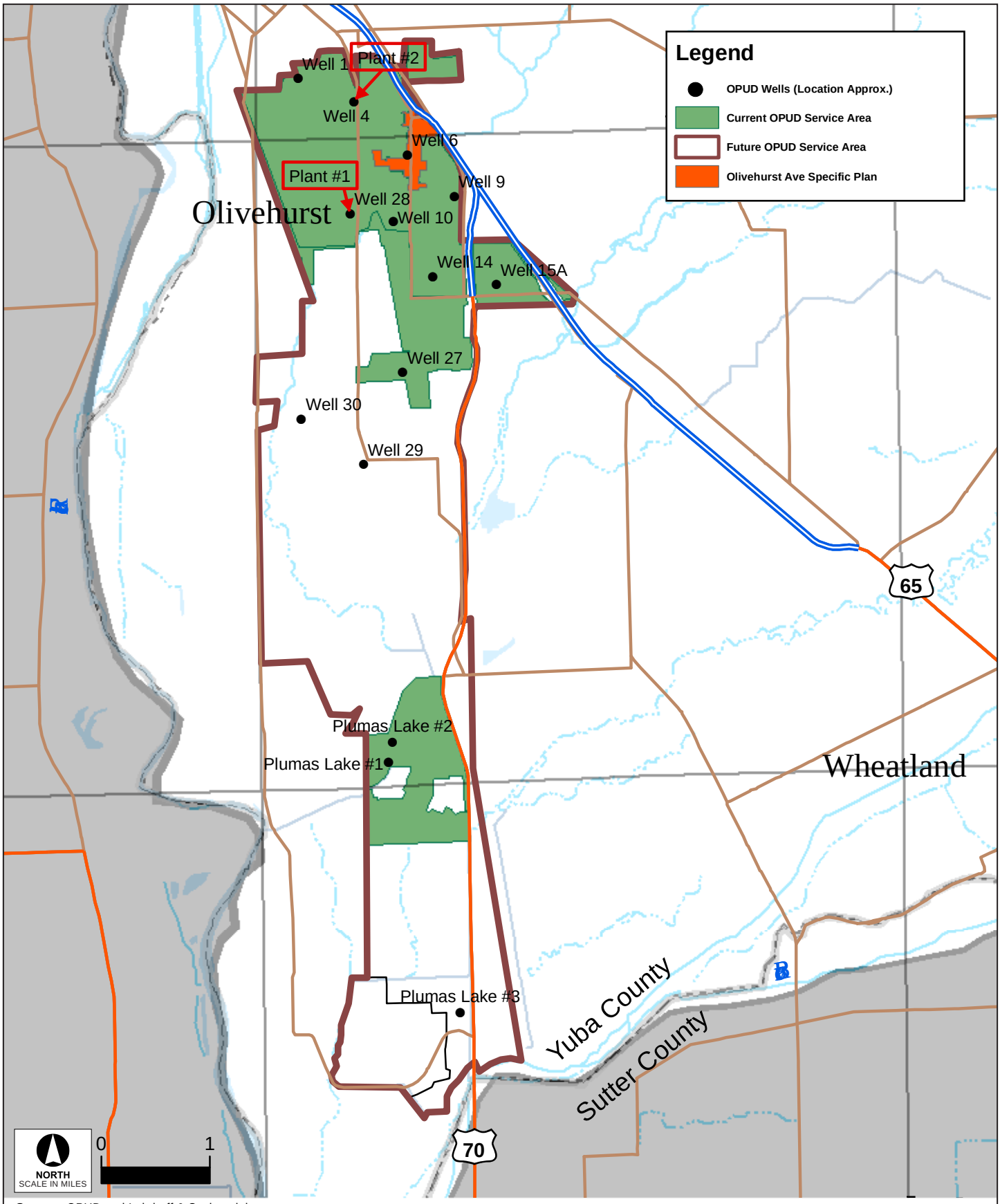
Water Distribution System

Groundwater is currently the only source of supply to the OPUD system, and the existing facilities include wells, pumping facilities, distribution and transmission pipelines, and two above ground tanks totaling four million gallons. OPUD currently operates 14 wells that provide water to two independent distribution systems. The northern system serves the Community of Olivehurst, the North Arboga Study Area (including Tahiti Village), and the Wheeler Ranch portion of the Plumas Lakes Specific Plan (PLSP). It consists of two (2) treatment plants and eight (8) wells located in the downtown Olivehurst area, one well in Tahiti Village, and two wells at Wheeler Ranch. The southern system serves the southern region of the PLSP area and other new development PLSP. It currently consists of a treatment plant and three (3) wells. The locations of the District's wells and treatment plants are shown on **Figure 4**.

OPUD's wells located in the downtown Olivehurst area and Tahiti Village are 22 to 55 years old and relatively shallow. The bottom of the perforated interval ranges from 214 to 406 feet below ground surface (bgs) for these older wells. Plumas Lake wells PL-1 and PL-2 were drilled in 2003 and are perforated to depths of 520 and 594 feet bgs, respectively. The Plumas Lake's emergency well (PL-3) was also drilled in 2003 and is completed to a depth of 224 feet bgs. The newest wells, Wheeler Ranch Wells 29 and 30 were drilled in 2005 and have the deepest perforated intervals (maximum of 720 feet bgs).

Four of OPUD's wells in the downtown Olivehurst area are treated for iron and manganese: Treatment Plant 1 treats water from Wells 10 and 28, and Treatment Plant 2 treats water from Wells 1 and 4. Water from Wells 9, 14, and 15 (located in downtown Olivehurst) and Well 27 (located in Tahiti Village) is untreated and pumped directly to the northern distribution system. Well 6 is used only as an emergency backup well and is also untreated. The total capacity of Plants 1 and 2 is 5,208 gallons per minute (gpm), which is sufficient to meet current peak demand, but not all water conveyed during peak periods meets the secondary Maximum Contaminant Level (MCL) for manganese established by the California Department of Public Health (CDPH) due to distribution problems. Plants 1 and 2 are located on the west side of the OPUD service area, and untreated wells can turn on due to pressure drops before this water reaches the east side of the service area. A new manganese treatment plant located in the Wheeler Ranch development utilizing water from Wells 29 and 30 is planned for completion in December 2006.

Figure 5 shows the recently completed Well 34 with associated facilities.



Source: OPUD and Luhdroff & Scalmanini.

100013712 | Olivehurst Public Utilities District 2010 Urban Water Management Plan

Figure 4

OPUD Public Supply Well and Treament Plant Locations

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Source: OPUD and Affinity Engineering, 2011

Figure 5
Olivehurst PUD Well 34

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Plumas Lake wells PL-1 and PL-2 are treated for iron and manganese at the Plumas Lake Water Treatment Plant. PL-3 is untreated and is designated only for emergency and backup supply.

Description of Future Facilities

The OPUD South Plumas Lake Water Master Plan identifies the facilities proposed for the South Plumas Lake area. At build out, the Master Plan requires five wells plus one stand-by well, seven filter vessels, five booster pumps plus one stand-by pump, and two storage reservoirs with a combined capacity of five million gallons. Two water supply wells and one stand-by well are planned, each with a capacity of at least 1,800 gpm. This is sufficient to supply the estimated maximum day demand of 3,145 gpm. The treatment plant within Bear River will consist of three filter vessels, a booster pump station with two pumps plus a stand-by pump, and 3.5 million gallons of storage.

SURFACE WATER

YCWA diverts surface water from the Yuba River and stores it in New Bullards Bar and Englebright Reservoirs for delivery to agricultural water districts in Yuba County. YCWA currently delivers water to three water districts in the South Yuba Subbasin: Brophy Water District (BWD), South Yuba Water District (SYWD), and the Dry Creek Mutual Water Company. YCWA delivered about 170,100 AFY of surface water to the South Yuba Subbasin in 2004 (NCWA, 2006).

The South Yuba Canal began deliveries to BWD in 1983, to SYWD in 1986, and more recently to Dry Creek Mutual Water Company. Wheatland Water District (WWD), OPUD and Linda County Water District are the only districts in the subbasin that rely exclusively on groundwater. A new canal (the Wheatland Canal) is in the final stages of design to deliver YCWA surface water to WWD (YCWA, 2005). This will allow WWD to convert from groundwater to surface water. The IRWMP predicts that the Wheatland Canal and the transition from groundwater to surface water will be complete by 2016 and the expanded YCWA delivery to WWD will provide for up to 41,000 AFY/yr of surface water from the Yuba River Project (NCWA, 2006). When the project is completed, corresponding reductions in groundwater pumping in this area of the subbasin are expected.

OPUD currently does not use any surface water; however, OPUD has a fully executed and validated water supply contract (YCWA contract) with YCWA for the potential future use of up to 2,700 AFY of surface water from the Yuba River via the Long Bar Canal. **[Appendix D – YCWA and OPUD Water Supply Contract for Municipal and Industrial Purposes]**. The District does not yet have the infrastructure (diversion structure or related facilities) that would be necessary to divert and use surface water under this YCWA contract. In the future, surface water from the Yuba River could be via backup supply source or could be used as part of an in-lieu conjunctive use program within the region's IRWMP program.

Water Code Section 10631

(b) 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.

Water Code Section 10634

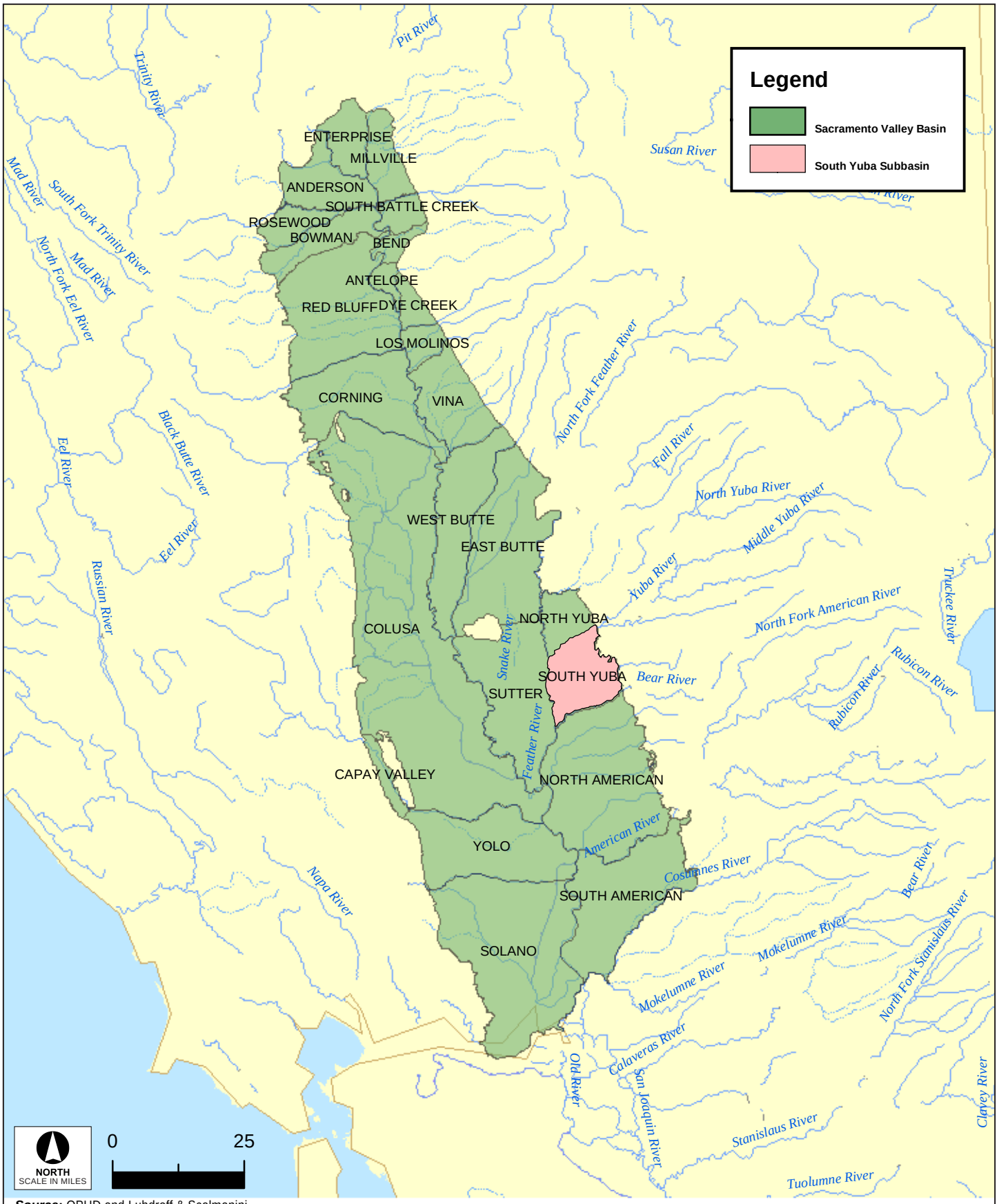
The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631,and the manner in which water quality affects water management strategies and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

GROUNDWATER SUPPLY

Groundwater Basin and Subbasin Descriptions

The current and future OPUD service areas are located in the South Yuba Subbasin of the Sacramento Valley Groundwater Basin (DWR Basin number 5-21). This groundwater basin is the second largest in California, and includes a total of 18 subbasins. The Sacramento Valley consists of a large northwest-trending, elongated, asymmetric structural trough that extends 150 miles north from the Sacramento-San Joaquin Delta to the City of Red Bluff. The valley is dominated by sedimentary water-bearing deposits that are thickest west of the Valley axis. These deposits thin in the eastern portion of the Valley where they overlie the crystalline rocks of the Sierra Nevada basement complex.

The South Yuba Subbasin (Subbasin Number 5-21.61) is located along the eastern edge of the Sacramento River Valley (**Figure 6**) and is described in the online version of DWR's Bulletin 118 update (DWR, 2006 – **Appendix E of this 2010 UWMP**). **Figure 7** shows the South Yuba Subbasin within the Regional Subbasins. The subbasin encompasses about 107,000 acres and is bounded on the east by the Sierra Nevada, on the west by the Feather River, on the north by the Yuba River, and on the south by the Bear River. Prior to development, groundwater flowed to the west and southwest from the Sierra Nevada toward the Feather River. Water bearing alluvial deposits range in thickness from less than 300 feet near the Sierra Nevada in the east to approximately 1,000 feet along the Feather River in the west. Two geologic units provide the majority of water to wells: the Laguna Formation deposits and the overlying and more productive Older Alluvium deposits. Most domestic wells pump from the shallower Older Alluvium (100 to 150 feet bgs), while irrigation and public supply wells tend to be deeper and may pump from both deposits for additional well yield.



Source: OPUD and Luhdroff & Scalmanini.

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Figure 6

Sacramento Valley Groundwater Basin and Subbasins
South Yuba Subbasin (5-21.61)

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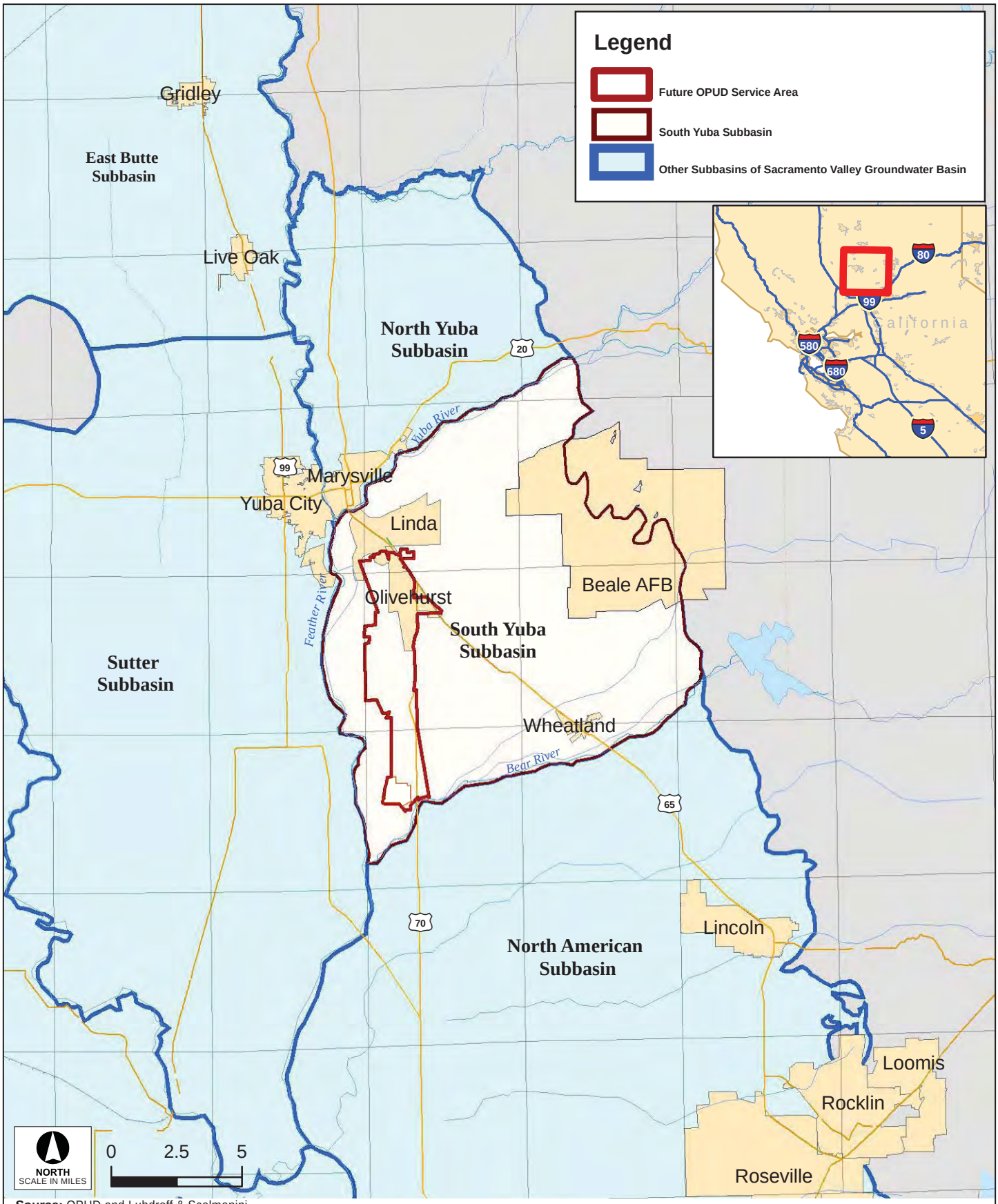

Source: OPUD and Luhdroff & Scalmanini.

100013712 | Olivehurst Public Utilities District 2010 Urban Water Management Plan

Figure 7
South Yuba Subbasin within Regional Subbasins

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Geology of the South Yuba Subbasin

The South Yuba Subbasin is bounded to the east by the relatively impermeable Sierra Nevada complex. These rocks extend beneath the subbasin and are overlain by younger consolidated and unconsolidated rocks at a gradually increasing depth toward the Feather River and beyond to the Sacramento Valley trough. The resulting wedge-shaped body of stratified alluvial deposits dips gently to the west and stores fresh groundwater to depths of up to 1,000 feet in the west and less than 300 feet in the east (BE, 1992). Saline groundwater may exist in consolidated rocks beneath the alluvial deposits.

As indicated above, the Laguna Formation and the overlying Older Alluvium are the principal water-bearing formations in the South Yuba Subbasin. These formations are described below in order from oldest to youngest. Several geologic and hydrogeologic studies have been conducted in the area, including Bryan (1923), Olmstead and Davis (1961), DWR (1978), and BE (1992).

The geologic structure of the South Yuba Subbasin is relatively simple, with no faults or folds. The Sutter Buttes, located just west of Yuba County, consist of an intrusive volcanic plug, which caused the uplift and faulting of older marine sediments in the central portion of the Sacramento Valley. This intrusion may have resulted in slightly uplifted marine-deposited sediments in the vicinity of Marysville, but the magnitude of the deformation is minor. The principal geologic units that underlie the Subbasin are summarized below.

Sierra Nevada Bedrock: Metamorphic and igneous granitic rocks dominate the bedrock that forms the eastern boundary of the groundwater basin. Where exposed in the foothills, this sequence of rocks can supply small quantities of water from weathered and fractured zones. Metamorphic rocks contain volcanics with high manganese and iron content.

Eocene and Cretaceous Rocks: Cretaceous marine deposits that overlie the bedrock in most of the subbasin originally contained saline, connate water. Most of the saline water has been flushed out toward the valley trough (BE, 1992), but water quality is still poorer in the marine deposits. The marine deposits are overlain by Eocene non-marine deposits, including the Ione Formation, which also has poorer water quality than overlying formations.

Mehrten Formation: This Tertiary volcanic rock sequence is dominated by alluvial, andesitic sand and gravel intervals interbedded with clay and silt. These rocks include conglomerate, sandstone, and tuff-breccia of mud flow origin that extend westward from their exposure in the vicinity of Beale Air Force Base. Sand and gravel lenses in the Mehrten are highly permeable and tapped by wells throughout the Sacramento Valley.

Laguna Formation: This Pliocene formation is the thickest and most extensive water-bearing unit in the South Yuba Subbasin. It is exposed along the foothills from Oroville south to Stockton and intermittently in the eastern portion of the Sacramento Valley. Detritus from the weathered Sierras was transported into the Valley by slow-flowing streams and deposited on low sloping broad alluvial fans, concentrating coarser grained materials in river and stream channels and depositing finer-grained materials laterally. This heterogeneous formation contains silt to sandy silt with abundant clay and minor lenticular gravel beds. The sand and gravel layers are thin, discontinuous, compact, and commonly cemented with calcium carbonate, reducing their overall permeability. Considerable amounts of coarse materials occur in the vicinity of the Yuba River at depths of 150 to 600 feet, but decrease north and south of the river. The thickness of the Laguna Formation is highly variable, from 400 feet near the Yuba River to up to 1,000 feet in the southwest portion of Yuba County (BE, 1992).

Older Alluvium and Victor Formation: In the early Pleistocene, uplift of the Sierra Nevada block resulted in increased erosive power and transport capacity of rivers and streams draining to the west. This higher-energy alluvial system increased the proportion of sand and gravel deposited in lenticular beds along with lesser amounts of silt and clay. The Older Alluvium unit is exposed over much of the South Yuba Subbasin with varying thicknesses from less than 100 feet to over 150 feet

atop the highly eroded surface of the Laguna Formation. Gravels are located at shallower depths and are thickest near the foothills and the Yuba River. These deposits provide overall moderate permeability, with increased permeability in sand and gravel lenses and reduced permeability where hardpan soils have developed.

Older Floodplain Deposits: Along the Feather River and its tributaries, gravelly sand, silt, and clay were deposited from flood events during the Pleistocene. The thickness of this unit ranges from 5 to 15 feet. Its moderate permeability allows for infiltration of precipitation and irrigation water to the water table unless prevented by buried hardpan soils at its lower contact with the Older Alluvium.

Recent Stream Channel and Floodplain Deposits: These Holocene age alluvial deposits are found along Honcut Creek and the Yuba, Bear, and Feather Rivers. Dominated by coarse sand and gravels, these highly permeable deposits have a thickness of up to 110 feet. Grain size and thickness decrease as the distance from streams increases. This unit also occurs as abandoned overflow channels two to five miles south of the Yuba River. The greatest volume of these deposits is found along the channel of the Yuba River and is about 3.5 miles wide. The coarse-grained and highly permeable nature of these deposits allows for significant groundwater recharge, and the unit can yield large quantities of water to shallow wells.

Dredge Tailings: Tailings from hydraulic mining completely obscured the original channel of the Yuba River during the 1870s and 1880s. Several thousands of acres of the Yuba River floodplain upstream of Marysville were excavated by gold dredges, and parallel ridges of coarse gravel characterize the resulting topography. Piles of coarse gravel and cobbles up to 125 feet thick can be located in the upper reaches of the Yuba and Bear Rivers.

Well Yields and Aquifer Characteristics

Aquifer characteristics refer to the ability of aquifers to transmit and store groundwater. Calculations based on data from long-term, constant rate pumping tests are the preferred method for estimating aquifer characteristics. However, other methods can be used when aquifer test data are limited, as is the case in the South Yuba Subbasin.

Well Yields

Well yields and aquifer characteristics in Yuba County were summarized by BE (1992). A review of drillers' logs indicated that wells in the South Yuba Subbasin range in depth from a few hundred to over 700 feet. Most of the well yield is derived from the Older Alluvium, which is much more permeable than the underlying Laguna Formation. Well yields in the subbasin typically range from 1,000 to 3,000 gpm, with an average of 1,650 gpm. Wells in the western and northern portions of the subbasin near the Feather and Yuba River had the highest yields (1,500 to 3,000 gpm), and wells in the southern and eastern portions of the subbasin generally had lower yields (1,000 to 1,500 gpm).

Yields of nine OPUD wells are summarized in Table 17; data are not available for the other OPUD wells. With the exception of the two newest wells (Wells 29 and 30), the yields were measured at the time the wells were drilled and may not reflect the current capacities of the wells. The reported yields range from 1,170 to 2,640 gpm, with an average of about 1,900 gpm.

Specific Capacity

Specific capacity is the ratio of well yield to drawdown and provides a measure of productivity for both the aquifer and the well. Specific capacity is calculated as Q/s, where Q is the yield of the well in gpm and s is the drawdown in feet. The BE (1992) report contains a summary of specific capacity in the South Yuba Subbasin based on drillers logs and Pacific Gas & Electric (PG&E) pump efficiency tests. Specific capacities based on pump tests conducted immediately after wells are drilled tend to be lower because permanent pumps have not been installed and the wells may not be fully developed. Based on drillers reports, BE (1992) reported that specific capacities in the South

Yuba subbasin range from 16 to 65 gpm/ft, with an average of 40 gpm/ft. Specific capacities calculated from PG&E tests in the subbasin ranged from 18 to 95 gpm/ft, with an average of 55 gpm/ft.

Table 17: Summary of OPUD Pumping Test Results

Well Name	Obs. Well	Distance (ft)	Test Date	Test Duration (hrs)	Pumping Rate (gpm)	Depth to Water (ft)	Drawdown (ft)	Specific Capacity[1] (gpm/ft)	Transmissivity[2] (gpd/ft)	Storage Coefficient	Method of Analysis
Well #1	-	-	11/9/1972	24	1,500	45	44	34	69,000	-	Specific Capacity
Well #4	-	-	12/12/1956	64	2,150	37	50	43	86,000	-	Specific Capacity
Well #5	-	-	10/31/1964	96	1,270	70	14	91	183,000	-	Specific Capacity
Well #6	-	-	12/3/1964	96	1,170	65	10	117	234,000	-	Specific Capacity
Well #9A	-	-	4/15/1951	58	1,800	24	43	42	84,000	-	Specific Capacity
Well #10	-	-	8/5/1965	96	2,640	66	51	52	104,000	-	Specific Capacity
Well #14	-	-	1/19/1965	96	1,225	61	17	70	141,000	-	Specific Capacity
Well #29	MW-1D	860	3/8/2005	22	2,500	20	158	16	127,000	3.7x10-4	Cooper-Jacob
Well #30	MW-1D	3,410	3/29/2005	24	2,700	18	51	53	239,000	8.6x10-4	Cooper-Jacob

Notes:
1. Specific capacity data except for Wells 29 and 30 originate from driller's logs and are calculated by dividing discharge (gpm) by drawdown (ft).
2. Transmissivity for Wells 29 and 30 estimated from aquifer tests data by KASL Consulting Engineers (2005). Transmissivity for other wells estimated from specific capacity (Q/s x 2,000).

The specific capacities of nine OPUD wells are shown in Table 17. With the exception of Wells 29 and 30, the specific capacities were calculated based on pump tests conducted immediately after the wells were drilled, as summarized on the drillers' logs. The specific capacities of Wells 29 and 30 were calculated based on data from aquifer tests conducted by KASL Consulting Engineers in March 2005. The specific capacities range from 16 to 117 gpm/ft, with an average of 58 gpm/ft.

Transmissivity

The ability of an aquifer to transmit water is measured by the transmissivity, which can be defined as the permeability times the saturated thickness. The U.S. Geological Survey (USGS) estimated transmissivity in the central portion of the South Yuba Subbasin to be about 260,000 gallons per day per foot (gpd/ft) (Bloyd, 1978). Transmissivity estimates were higher (390,000 gpd/ft) along the Feather River due to the presence of over 100 feet of highly permeable stream channel sediments. Transmissivity estimates were lower (65,000 gpd/ft) for the southeastern portion of the subbasin because the primary aquifer in this area is comprised of the less permeable Laguna Formation.

Transmissivity estimates for the newest OPUD wells (Wells 29 and 30) based on aquifer tests conducted by KASL Consulting Engineers (KASL, 2005) are summarized in Table 17. The estimated transmissivities were 127,000 and 239,000 gpd/ft at Wells 29 and 30, respectively. Aquifer test data are not available for the other OPUD wells, but transmissivity was estimated from specific capacity using an empirical equation for a confined aquifer: $T = Q/s * 2000$, where T is the transmissivity in gpd/ft and Q/s is the specific capacity in gpm/ft. Transmissivities estimated from specific capacity range from 69,000 to 234,000 gpd/ft. The average transmissivity for the nine OPUD wells is about 141,000 gpd/ft.

Storage Coefficient

The ability of an aquifer to store groundwater is measured by the storage coefficient, which is defined as the volume of water that is released from or added to storage per unit surface area and per unit change in hydraulic head. For unconfined aquifers, a change in head means a change in the elevation of the water table, and the storage coefficient is called the specific yield. Specific yields of common aquifer materials range from 3 percent for clay to 20 percent for unconsolidated sand or sand and gravel (Olmstead and Davis, 1961). BE (1992) estimated specific yield for the South Yuba Subbasin ranging from 8 percent for the shallowest zone (20-50 feet bgs) to 6.2 percent for the 100-200 foot depth zone, with an average of 6.8 percent (Grinnell, 2005).

In confined aquifers, storage coefficients are much smaller, and accurate estimates are only possible based on aquifer tests in which drawdown is measured in an observation well located at some distance from the pumped well. OPUD monitoring well MW-1D was used as an observation well during the aquifer tests of OPUD Wells 29 and 30 conducted in March 2005. The estimated storage coefficients are 3.7×10^{-4} and 8.6×10^{-4} for Wells 29 and 30, respectively (KASL, 2005). Data were not available to estimate storage coefficients for the other OPUD wells.

Summary

Available data to determine aquifer characteristics in the South Yuba Subbasin are limited, and the subsurface sediments are heterogeneous. Overall, the well yields, specific capacities, transmissivities, and storage coefficients calculated from tests conducted in the OPUD wells are indicative of a semi-confined aquifer containing relatively high-yielding formation materials. Aquifer characteristics estimated based on data from the OPUD wells are generally similar to estimates for the entire subbasin made by Bloyd (1978) and BE (1992).

GROUNDWATER PRODUCTION

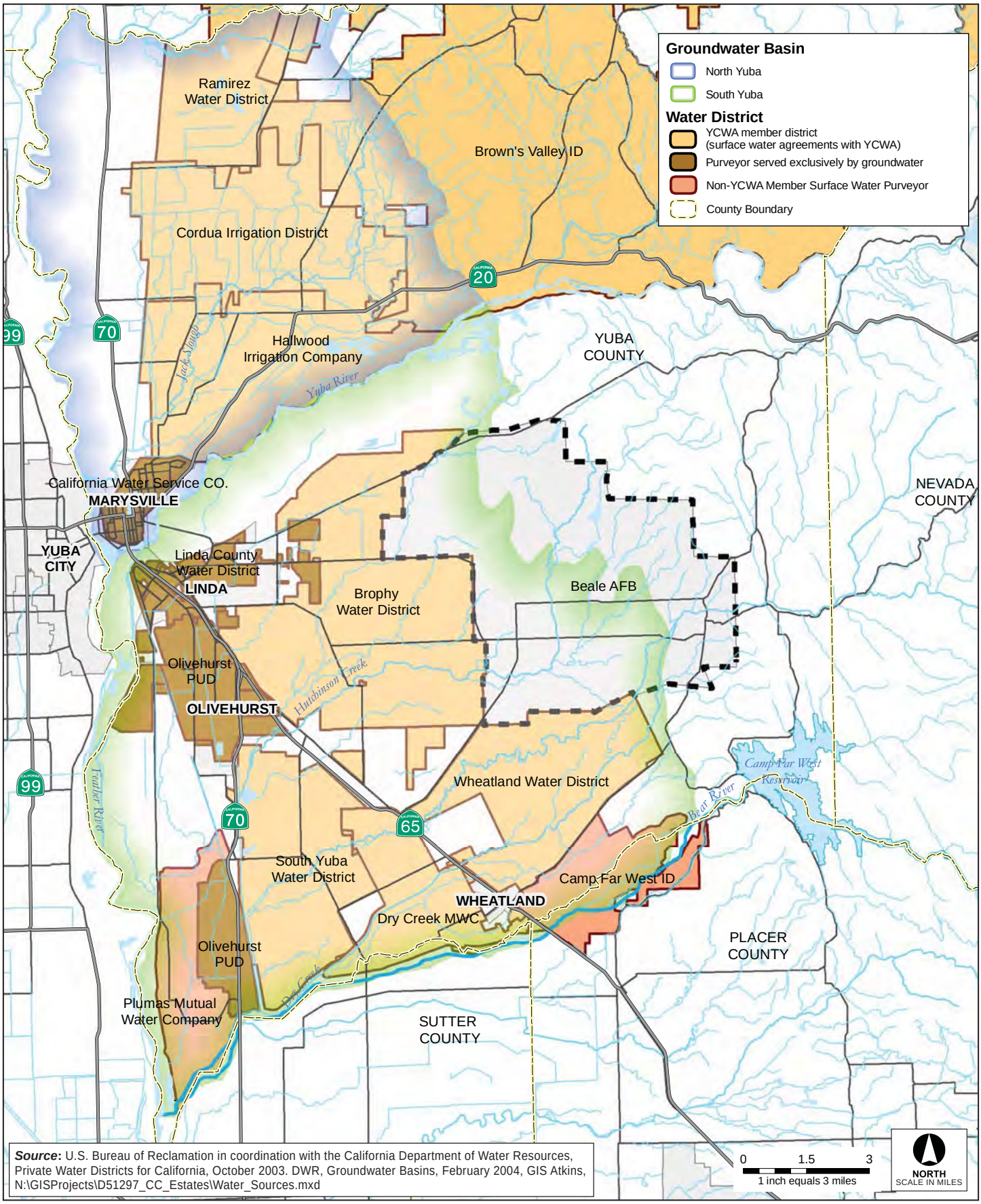
The Groundwater Management Plan prepared by YCWA (2005) and updated in November 2010 (**Appendix F – Groundwater Management Plan [compact disc])** recognizes the importance of groundwater as a source of supply in Yuba County. All urban areas in the South Yuba Subbasin,

including Olivehurst, Linda, Wheatland, and Beale Air Force Base depend on groundwater for their water supply. **Figure 8** shows the water districts in North and South Yuba Subbasins. In addition, WWD depends entirely on groundwater for irrigation at present, as does portions of Reclamation District 784. A new canal (the Wheatland Canal) is in the final design phase and will deliver YCWA surface water to WWD.

Groundwater Production in the South Yuba Subbasin

Prior to construction of the South Yuba Canal, groundwater was the primary source of supply for both agricultural and municipal use in the South Yuba Subbasin. The majority of the historical pumpage was for agricultural use; and, although municipal use has increased in recent years, it still represents a small fraction of the total pumpage. Agricultural pumpage was generally increasing until surface water deliveries began in 1983, but there are no reliable estimates of historical pumpage in the subbasin.

Groundwater pumpage declined after surface water deliveries via the South Yuba Canal began to BWD and SYWD in 1983 (YCWA, 2005). Surface water deliveries to Dry Creek Mutual Water Company began more recently. Surface water deliveries to the South Yuba Subbasin totaled about 170,000 AFY in 2004, which represents about 62 percent of the total estimated water supply (NCWA, 2006).



***Source*:** U.S. Bureau of Reclamation in coordination with the California Department of Water Resources, Private Water Districts for California, October 2003. DWR, Groundwater Basins, February 2004, GIS Atkins, N:\GISProjects\D51297_CC_Estates\Water_Sources.mxd

Figure 8

Water District by Water Source (North and South Subbasins)

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Although historical data are not available, pumpage in the South Yuba Subbasin has declined as surface water deliveries increased since 1983. Table 6.6-3 of the IRWMP divided the estimated pumpage into agricultural and urban uses, with the "urban" category including municipal, domestic, industrial, commercial, and semi-agricultural pumpage. Pumpage in the City of Wheatland area is listed separately from other pumpage in the South Yuba Subbasin. OPUD, the city of Marysville, and Beale Air Force Base are the largest users included in the "other urban" category. Total pumpage in the South Yuba Subbasin in 2004 was estimated to be 110,000 AFY, of which 79 percent (86,800 AFY) was for agricultural use and the remainder (23,200 AFY) was for "urban" use.

GROUNDWATER LEVELS

Evaluation of Groundwater Levels in the South Yuba Subbasin

DWR has not issued a finding of overdraft in the South Yuba Subbasin, but previous reports such as BE (1992) and the GMP prepared by YCWA (2005) have described groundwater level declines that occurred prior to 1983 as indicative of overdraft. The GMP notes that YCWA's surface water deliveries to the subbasin reversed "a potentially serious overdraft situation that existed in the south Yuba basin" (YCWA, 2005).

DWR's description of the South Yuba Subbasin in the online supplement to Bulletin 118 (included in **Appendix E**) was last updated on January 20, 2006. DWR's summary of groundwater levels focuses on the cone of depression that dominated groundwater conditions in the subbasin until recently and caused increased seepage from the three rivers that border the subbasin. DWR notes that groundwater levels have been increasing since 1984, and "[c]urrent DWR records indicated groundwater levels continue to increase" (DWR, 2006). DWR has not identified the South Yuba Subbasin as overdrafted or projected that it would become overdrafted in the future if present management conditions continue.

Groundwater elevation data were entered into a database and water level hydrographs prepared for 160 wells in and near the South Yuba Subbasin in order to evaluate groundwater conditions. Data were obtained from DWR for 119 wells and from the Geotracker program of the State Water Resources Control Board (SWRCB) for 41 monitoring wells at six sites. Information on well depth and completion were not available for most of these wells, but the majority of the Geotracker wells are shallow, while wells monitored by DWR include both shallow domestic wells and deeper agricultural wells. Groundwater was the primary source of water supply in the subbasin until the South Yuba Canal began deliveries in 1983, and pumping for agricultural use has declined considerably since 1983. Hydrographs of most wells in the subbasin show corresponding groundwater level declines prior to 1983 and recovery since 1983.

GROUNDWATER LEVELS IN OPUD SERVICE AREA

Wells monitored by DWR in the OPUD's service area include these wells (14N/4E-5J2, 14N/4E-20H1, and 14N/4E-30F1) that are less than 200 feet deep, and well 14N/4E-30K1 is over 200 feet deep. The southernmost wells (14N/4E-30F1 and 30K1) have the longest period of record and show that water levels experienced declines during the 1950s, were generally stable during the 1960s, and declined to historically low levels during 1976-1977. The total groundwater level decline between 1952 and 1977 was about 20 feet. Groundwater levels increased from 1977 to the mid-1990s, and had recovered to levels of the early1950s by 1996. Since 1996, groundwater levels have remained high in the shallow well (14N/4E-30F1) but have declined by about six feet in the nearby deeper well (14N/4E-30K1).

The other shallow wells in OPUD's service area (14N/4E-20H1 and 14N/4E-5J2) are located to the northeast, adjacent to BWD and SYWD, respectively. Much of the historical water level declines are not shown on these hydrographs due to the shorter period of record (beginning in the mid-1960s), but the magnitude of the water level declines can be estimated based on the amount of recovery shown on the hydrographs. The hydrographs show stable water levels during the 1960s followed by

water level declines in the 1970s. Water level recovery since the late 1970s was about 30 feet at 14N/4E-20H1 and 50 feet at well 14N/4E-5J2. Spring depths to water have been about 10 to 25 feet bgs in recent years.

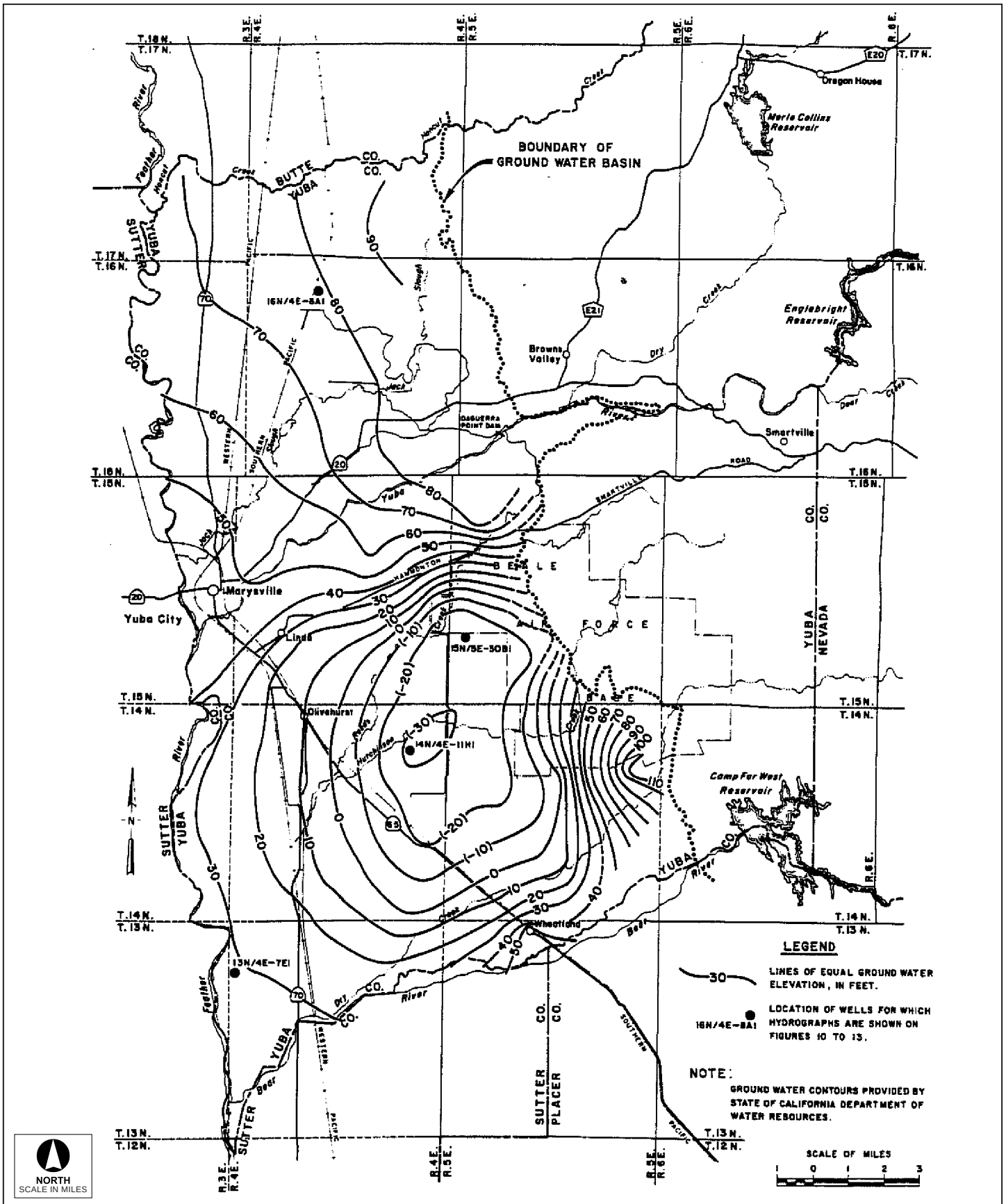
GROUNDWATER LEVELS NEAR FEATHER RIVER

There are three (3) wells located west of OPUD's service area and within a mile of the Feather River (15N/3E-25J1, 14N/3E-12F1, and 13N/4E-7E1). Groundwater level fluctuations have been smaller in these wells, with less than 20 feet of total change in spring water levels. Spring water levels in the southernmost well (13N/4E-7E1), located approximately one mile northwest of the Project, have been the most stable, with only about 10 feet of water level fluctuation. These hydrographs are typical of wells near major rivers or other surface water bodies where groundwater levels, particularly in the shallower portion of the aquifer system, are buffered by seepage from the river.

Groundwater Elevation Contours

Figure 9 shows spring 1984 groundwater elevation contours in the North and South Yuba Subbasins prepared by DWR and included in the BE (1992) report. This contour map shows a large cone of depression centered southeast of Olivehurst in BWD that developed prior to the start of surface water deliveries via the South Yuba Canal. The center of the cone of depression had an elevation of about 30 feet below sea level, and the direction of groundwater flow was toward this depression from all directions.

Figure 10 shows spring 2005 groundwater level contours in the South Yuba Subbasin prepared by Luhdorff and Scalmanini, Consulting Engineers. The cone of depression that dominated the groundwater elevation contour map in 1984 had disappeared by 2005 due to increased use of surface water and a corresponding reduction in groundwater pumping. The direction of groundwater flow was generally to the southwest toward the Feather River. The principal exception is in the southeastern portion of the subbasin where the direction of groundwater flow was to the northwest away from a losing reach of the Bear River. The hydraulic gradient is steepest near the eastern edge of the basin where the aquifer permeability is low and much less steep in the central portion of the basin where the permeability is much higher.

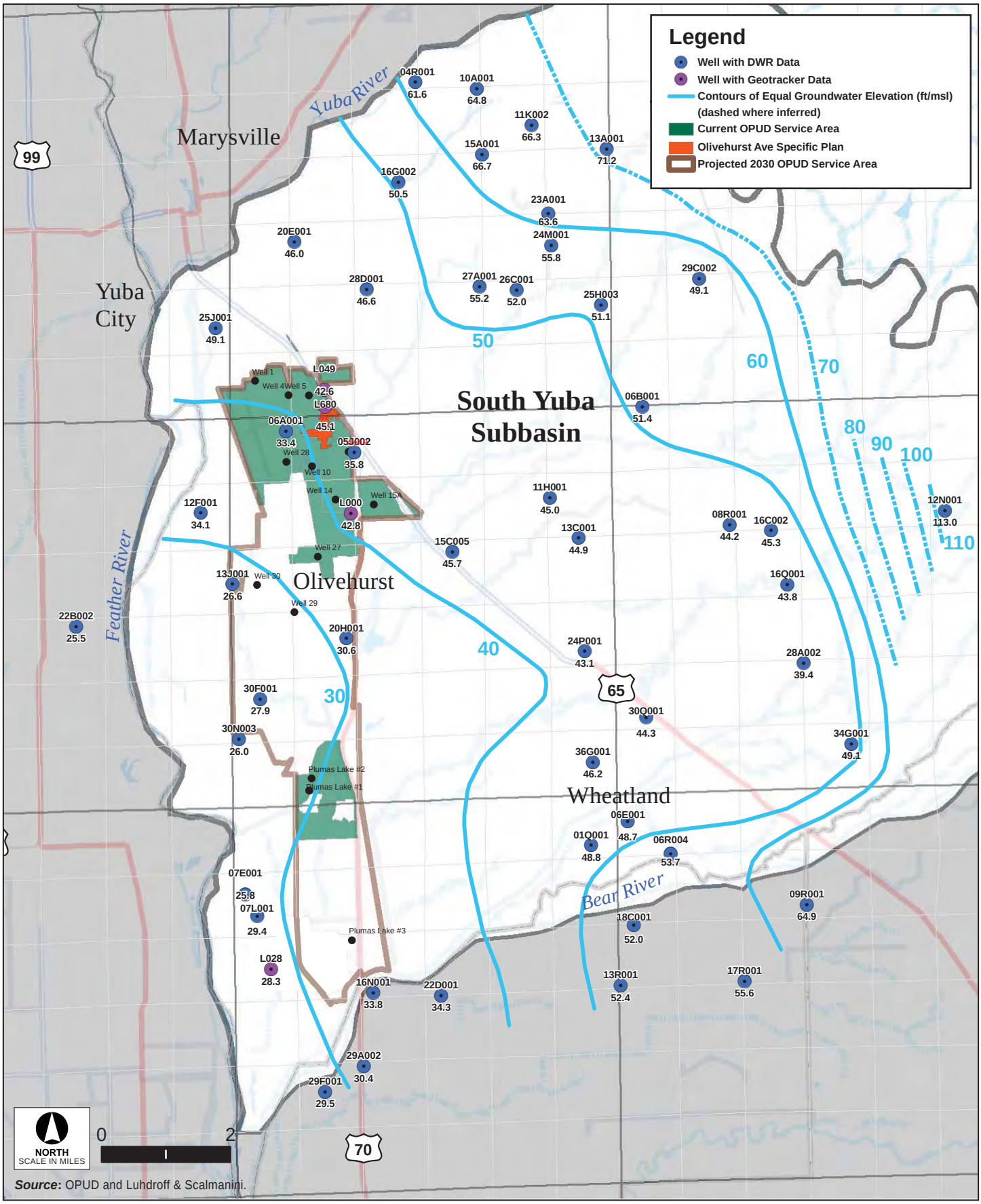


Source: OPUD and Luhdroff & Scalmanini.

Figure 9

Spring 1984 Groundwater Elevation Contours (BE, 1992)

ATKINS



Source: OPUD and Luhdroff & Scalmanini.

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Figure 10

Spring 2005 Groundwater Elevation Contours in South Yuba Subbasin

ATKINS

Summary

DWR has not issued a finding of overdraft in the South Yuba Subbasin, but previous reports such as BE (1992) and the GMP prepared by YCWA (2005) have described groundwater level declines that occurred prior to 1983 as indicative of overdraft. DWR notes that groundwater levels have been increasing since 1984, and "[c]urrent DWR records indicated groundwater levels continue to increase" (DWR, 2006). DWR has not identified the subbasin as overdrafted or projected that it would become overdrafted in the future if present management conditions continue.

The evaluation of groundwater level data in the South Yuba Subbasin conducted for water supply studies in OPUD's service area also show large groundwater level declines prior to 1983 and a similar amount of recovery since 1983. The magnitude of the declines and subsequent recovery ranged from 10 feet or less at the edges of the basin to 85 feet in the center of the cone of depression. By 2005, water levels in most wells had recovered to 1950s levels or higher, and the cone of depression was no longer present. The water level data show no indication of overdraft occurring in the subbasin at present.

The subbasin is also not expected to become overdrafted in the future based on projected levels of groundwater pumpage and surface water deliveries. However, some water level declines are likely to occur in urban areas, including the OPUD service area, due to increased pumping for municipal use. Increased groundwater monitoring through YCWA groundwater management would ensure that groundwater level declines are not progressive and do not cause negative impacts such as land subsidence. Table 18 shows the projected supplies within OPUD's service area. The South Yuba subbasin is expected to be reliable in all years and over the 25 year planning horizon. Subbasin supplies are expected to remain stable – assuming OPUD can access surface water from YWCA, then in most years, use of surface water would reduce the groundwater pumping pressure on the South Yuba Basin. Table 18 describes OPUD's current and planned water supply sources.

Table 18: Current and Planned Water Supplies (AFY)

Water Supply Sources	2010	2015	2020	2025	2030	2035
Groundwater[a]	2,900[b]	3,872	4,371	8,036	10,552	10,552
Surface Water[c]	0	0	TBD	TBD	TBD	TBD
Transfers/Exchanges	0	0	0	0	0	0
Recycled Water[d]	0	0	TBD	TBD	TBD	TBD
Desalination	0	0	0	0	0	0
Total		3,872	4,371	8,036	10,552	10,552

Notes:
a. Groundwater is assumed to be drought resistant and is reliable in under all hydrologic conditions.
b. Estimate based on demand of 2,888 from 2010 production. Years 2015 – 2035 based on supply needed to meet demand from population increases in the OPUD service area as estimated in Table 16.
c. Surface Water TBD – OPUD has an agreement for up to 2,700 acre-feet of surface water from YCWA but lacks the infrastructure to deliver convey it to its service area.
d. Recycled Water TBD – OPUD is currently investigating production and use of recycled water in its service area. At this point, OPUD is exploring the opportunities to produce and distribute up to 3.0 mgd.
Source: Olivehurst Public Utilities District agreement with YWCA Yuba County Groundwater Management IRWMP 2008

Water Code Section 10631

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

Transfer and Exchange Opportunities

OPUD does not at this time have any transfer or exchange opportunities with other local agencies. Staff does not anticipate any future potential water transfers or exchange agreements.

Water Code Section 10631(i)

(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.

Desalination

OPUD does not have access to ocean water and thus cannot participate in seawater desalination as a source of supply. Additionally, the aquifer it overlies does not contain brackish groundwater and thus OPUD cannot participate in brackish groundwater desalination as a source of supply.

RECYCLED WATER PLAN

Water Code Section 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:

Coordination and Recycled Water Uses

OPUD provides not only water but also sewer, and other municipal services for the unincorporated community of Olivehurst. OPUD plans to provide recycled water from its 3 MGD wastewater treatment and recycling plant for non-potable uses. There is currently no recycled water infrastructure in place to utilize the recycled water. Potential uses of recycled water within OPUD may include irrigating parks and large landscaped areas and streetscapes.

Recently, three agencies (Yuba City, Marysville, and LCWD) recognizing their common issues and needs, came together to evaluate alternatives for using recycled water to meet regional non-potable water demands. To support the regional analysis, the agencies submitted grant applications to the State Water Resources Control Board Recycled Water Planning Grant Program. All agencies received grant funding and developed a Memorandum of Understanding (MOU) between the agencies to conduct the regional study and apportion the study costs. A formal Recycled Water Plan was developed as result of this effort. The Recycled Water Plan developed alternative regional recycled water projects that capitalize on this beneficial opportunity and present the best regional recycled water project that serves the needs of all the agencies.[4]

Water Recycling Objectives

The following water recycling objectives have been developed to meet the water recycling goals for the Yuba-Sutter region:

- Identify recycled water projects that reduce the regional potable water demand, thereby improving regional water supply reliability. This is specifically true for areas expecting future growth and increased water demand such as OPUD and Yuba City.
- Identify projects with a high-supply reliability that may help local agencies avoid the costs associated with the development of additional groundwater wells and the costs of

4 Yuba County Integrated Regional Water Management Plan 2008, page 6-32.

additional treatment to reach potable water quality standards as they continue to become more stringent.[5]

In the future, OPUD may choose to participant in this Recycled Water Plan as it may allow the District to expand it recycled water sooner as participants work collaboratively to produce and distribute recycled water throughout the southern Yuba County area.

5 Yuba County Integrated Regional Water Management Plan 2008, page 6-37.

SECTION 5: WATER SUPPLY RELIABILTY

Water Code Section 10631

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

(c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable.

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 replace that source with alternative sources or water demand management measures, to the extent practicable.

(c) Provide data for each of the following:
(1) An average water year.
(2) A single dry water year.
(3) Multiple dry water years.

(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).

Groundwater

Well depths in the Yuba County area range from tens of feet to over 700 feet deep. Drillers installing wells over 400 feet deep have reported a rise in water level after water is first encountered, indicating the presence of a confined aquifer at greater depths.[6] Information is available about the South Yuba groundwater sub-basin aquifers at depths of up to 200 feet, including estimated recharge (natural and artificial) and approximate aquifer capacity. Data are not readily available on the storage of aquifers deeper than 200 feet. Storage of the upper aquifer portions to 200 feet in depth is estimated to be 1,090,000 acre-feet.[7] This shallow aquifer is tapped primarily by agricultural wells, while the newer municipal typically draw from the deeper aquifer layers.

OPUD pumps approximately 2,900 AFY from up to 14 wells. Well depths average 700 feet below ground surface. Typical well yields in the Yuba County area range from 2,000 to 4,000 gpm. Groundwater is assumed to be drought resistant and for water supply planning purposes can be relied upon under all hydrologic conditions. It should be noted that increases in local pumping during drought periods could reduce well capacities; conservation measures to curb demands would likely relieve system-wide demands. OPUD has the ability to add new groundwater supplies through development of new wells.

Summary of Reliability

Generally, reliability of water supply depends greatly on seasonal conditions or changes in climatic patterns for a region. According to *Bulletin 118,* the upper aquifer in the South Yuba Groundwater Sub-basin (water-bearing formations to a depth of 200 feet) has a specific yield estimated at 5 percent. The total volume of water stored in the aquifer is given as 1,090,000 AF. It is assumed that this supply will be used primarily for agriculture and irrigation purposes, which tend to have shallower wells.

6 Yuba County Water Agency. *Groundwater Management Plan.* March 2005. p. 16. Updated 2010.
7 Yuba County Water Agency. *Groundwater Management Plan.* March 2005. p. 17. Updated 2010.

In order to assess available groundwater supply within OPUD's service areas, it is necessary to evaluate the storage of the deeper areas of the groundwater basin. It has been noted that the aquifer at depths greater than 400 feet is likely either confined or semi-confined, and should be treated as a separate aquifer from the shallower water-bearing formations. According to the Yuba County Groundwater Management Plan (**Appendix F**), the water-bearing formation at this depth is generally the Lower Laguna Formation, which is the "thickest and most extensive water-bearing unit."[8] Though the yield of deeper wells may be comparable to that of shallower wells, confined aquifers have different physical properties than unconfined aquifers. For the deeper aquifer, the storage volume may be better estimated using specific storage, generally a lower percentage than the specific yield.

Because the OPUD's wells are drilled to a depth of approximately 700 feet, this estimate of supply will evaluate the water-bearing formation from 400 to 800 feet in depth. Using a conservative specific storage of 1 percent, the storage of the lower aquifer is estimated at 428,000 AF. Aquifer tests and evaluation of the lower aquifer independent from the upper aquifer by a geotechnical team should be performed to accurately determine specific storage. Because little is known about the recharge of the deeper groundwater, head in the deeper wells and ground subsidence should be monitored to provide more information about the properties of the confined aquifer.

OPUD's system-wide supply is anticipated to be greater than the demands generated in its service area as presented in the Section 4 (Supply), but since OPUD operates a de-centralized supply system – each well system serves separate areas of OPUD's service area. This UWMP assumes that OPUD's underlying aquifer supplies are distributed uniformly across the groundwater basin and supplies are readily available. OPUD's pumping records clearly demonstrate the District's ability to deliver reliable supplies under all hydrologic conditions. Groundwater supply is assumed to be drought resistant; therefore, no reduction in supply during dry years is anticipated. Historically, in dry periods, groundwater has been used to supplement surface water supplies to meet demands in other water districts in the region. If groundwater monitoring shows a detrimental cumulative effect on the South Yuba Groundwater sub-basin, OPUD will continue to coordinate with YWCA, DWR, and other local agencies and stakeholders to evaluate groundwater withdrawals in support of continued groundwater management efforts.

Water Year Data

For the purposes of estimating demands, base water years are defined in Table 19.

Table 19: Types of Water Years

Water Year Type	Base Year(s)
Normal Water Year[a]	2001 - 2005
Single Dry Year	1976 - 1977
Multiple Dry Years	1987 - 1992

8 Yuba County Water Agency. *Groundwater Management Plan.* March 2005. p. 14. Updated 2010.

Groundwater is assumed to be drought resistant, therefore, similar water supplies volumes are considered to be available in any given year. Such that in single dry years, OPUD can expect to produce similar yields as those of previous years and this is would be consistent over multiple dry years. Assuming that 2012 is normal water year the District could expect to produce 2,900 AFY to meet demand (without population increases) within its service area now and over the three years. A summary of water supply reliability is provided in Table 20.

Table 20: Water Supply Reliability In Dry Years (AF)

Source			Multiple Dry Years		
	Normal Water Year	Single Dry Year	Year 1	Year 2	Year 3
Total Surface Water[a]	0	0	0	0	0
Total Groundwater[b]	2,900	2,900	2,900	2,900	2,900
Total Supply	2,900	2,900	2,900	2,900	2,900
Percent of Normal (%)		100%	100%	100%	100%

Notes:
a. OPUD has a contract with YCWA for up to 2,700 AFY of surface water. Currently infrastructure conveyance facilities prohibit OPUD from accessing this supply.
b. Groundwater supply is minimally affected by dry years. Thus, this assumes that a maximum annual production is allowed even in dry years. OPUD's system-wide groundwater yield is anticipated to be greater than the amount given here.

Groundwater

OPUD pumps approximately 2,900 AFY from 14 wells. Well depths range from 300 to 800 feet below ground surface. Groundwater is assumed to be drought resistant and for planning purposes can be relied upon under all hydrologic conditions. It should be noted that increases in local pumping during drought periods could reduce well capacities; conservation measures to curb demands would likely relieve system-wide demands. OPUD has the ability to add new groundwater supplies through development of new wells.

Projected Normal Year Supply and Demand

The District's potable water supply is expected to continue to be supplied by groundwater from the South Yuba subbasin. Water demand projections for OPUD were developed using a "gallons per capita per day" forecasting as presented in Section 3. Two main steps are involved in developing the projections: (1) Establishing baseline water demand at the end-use level (such as toilets, showers); and (2) Forecasting future water demand based on future demands of existing and future population growth in the District's service area.

Establishing the base-year water demand at the end-use level was accomplished by breaking down total historical water use over a 10-year period throughout the District's service area based on groundwater production records.

Forecasting future water demand is accomplished by determining the growth in forecasted population and meeting the SBX 7-7 conversation targets. Once these rates of change were determined, they were input into the spreadsheet and applied over the 25-year planning horizon.

Table 33 presents a comparison of projected normal supplies to projected normal water use over the next 25 years in 5-year increments.

As shown in the table, supply is projected to be sufficient to meet demand out to 2035. Anticipated growth is projected to add approximately 16,000 new connections or roughly 10,000 above existing conditions; estimated water supplies will adequately meet these increased demands.

In 2010, the District's demand was 2,888 AF/yr. The projected supply and demand comparison under normal conditions is shown in Table 21.

Table 21: Supply and demand comparison — normal year (AF)

Water supply sources	2015	2020	2025	2030	2035
Surface Water	0	0	0	0	0
Recycled Water	0	0	0	0	0
Groundwater[a]	3,872	4,371	8,036	10,552	10,552
Supply totals	3,872	4,371	8,036	10,552	10,552
District Demands[b]	3,872	4,371	8,036	10,552	10,552
Percent of Normal (%)	**100%**	**100%**	**100%**	**100%**	**100%**
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

Notes:
a. Groundwater is assumed to be drought resistant and is reliable in under all hydrologic conditions.
b. Estimate based on demand of 2,888 from 2010 production. Years 2015 – 2035 based on demand from population increases in the OPUD service area.

Projected Single-Dry-Year Supply and Demand Comparison

Changes in weather can lead to changes in water use. During dry years, water demands can be expected to increase – in future years this may not be the case as conservation measures to reduce demand under dry year conditions may represent a new water demand reality. Notably, the District's groundwater supply was assumed to be "drought-resistant" and not subject to reduction during dry periods. In other words, supply from groundwater is unchanged under dry year conditions.

The projected dry-year supply and demand are compared in Table 22.

Table 22: Supply and demand comparison — single dry year (AF) (1)

	2015	2020	2025	2030	2035
Surface Water	0	0	0	0	0
Recycled Water	0	0	0	0	0
Groundwater[a]	3,872	4,371	8,036	10,552	10,552
Supply totals	3,872	4,371	8,036	10,552	10,552
District Demands[b]	3,872	4,371	8,036	10,552	10,552
Percent of Normal (%)	**100%**	**100%**	**100%**	**100%**	**100%**
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

Notes:
a. Groundwater is assumed to be drought resistant and is reliable in under all hydrologic conditions.
b. Estimate based on demand of 2,888 from 2010 production. Years 2015 – 2035 based on demand from population increases in the OPUD service area.

Projected Multiple-Dry-Year Supply and Demand Comparison

The Act requires water agencies to project demands and supplies during multiple dry years. Projections were prepared for five time frames: five-year periods ending in 2015, 2020, 2025, 2030,

and 2035. During dry years, water demands can be expected to increase – in future years this may not be the case as conservation measures to reduce demand under dry year conditions may represent a new water demand reality. Notably, the District's groundwater supply was assumed to be "drought-resistant" and not subject to reduction during dry periods. In other words, supply from groundwater is unchanged under dry year conditions. Therefore, this UWMP assumes potable supplies will remain unchanged under all hydrologic conditions (except where noted in the following tables) Recycled water will provide additional supply.

The estimated supply and demand for five dry years ending in 2035 are summarized in Table 23.

Table 23: Supply and demand comparison — multiple dry-year events (AF)

		2015	2020	2025	2030	2035
Multiple-dry year first year supply)	Supply totals[a]	3,872	4,371	8,036	10,552	10,552
	Demand totals[b]	3,872	4,371	8,036	10,552	10,552
	Difference	0	0	0	0	0
	Difference as % of Supply	0%	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%	0%
	Percent of Normal	**100%**	**100%**	**100%**	**100%**	**100%**
Multiple-dry year second year supply	Supply totals[a]	3,872	4,371	8,036	10,552	10,552
	Demand totals[b]	3,872	4,371	8,036	10,552	10,552
	Difference	0	0	0	0	0
	Difference as % of Supply	0%	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%	0%
	Percent of Normal	**100%**	**100%**	**100%**	**100%**	**100%**
Multiple-dry year third year supply	Supply totals[a]	3,872	4,371	8,036	10,552	10,552
	Demand totals[b]	3,872	4,371	8,036	10,552	10,552
	Difference	0	0	0	0	0
	Difference as % of Supply	0%	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%	0%
	Percent of Normal	**100%**	**100%**	**100%**	**100%**	**100%**

Notes:
a. Groundwater is assumed to be drought resistant and is reliable in under all hydrologic conditions.
b. Estimate based on demand of 2,888 from 2010 production. Years 2015 – 2035 based on demand from population increases in the OPUD service area.

WATER SHORTAGE CONTINGENCY PLAN

Water Code Section 10632

The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that 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.

(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.

OPUD is currently developing a water shortage contingency ordinance that adheres to the water shortage contingency stages listed in this section. The new ordinance is expected to be in place before December 31, 2011. Table 24 shows the four stages that have been adopted by OPUD in developing a water shortage contingency plan. OPUD's water source is primarily groundwater with no access to surface water at this point in time. Rationing stages may be triggered by a shortage in one source. Because stages overlap, the triggers stated herein could automatically implement the more restrictive Stage, unless the less restrictive Stage provides the appropriate actions. Shortages may trigger a change in stage at any time.

Table 24: Stages of Action in Response to Water Supply Shortages

Stage No.	Water Use Restrictions	Conservation Target	Percent Shortage (of Normal)
1 - Water Supply Warning	Voluntary	Up to 10%	10 Percent
2 - Water Shortage Alert	Mandatory	> 10% - 20%	20 Percent
3 - Water Shortage Crisis	Mandatory	> 20% - 40%	35 Percent
4 - Water Shortage Emergency	Mandatory	Above 40%	50 % or greater

STAGES OF ACTION

Stage 1: Water Supply Warning - Loss of (Up to 10%) of Normal Water Supply

Definition: The OPUD is able to meet all of the water demands of its customers in the near future. Standard conservation measures are in place in an effort to prevent waste, over-watering and runoff. Standard measures include public awareness reminders and adhering to specified prohibitions and requirements:
Water is to be used for beneficial and useful purposes only. All unnecessary and wasteful uses of water are prohibited.

A. Restaurants are asked to serve water to customers only upon specific request.

B. Washing down of sidewalks, driveways, parking lots or other paved surfaces is prohibited except to alleviate immediate fire or sanitation hazards.

C. Free-flowing hoses are prohibited for all uses, including vehicle and equipment washing, ponds, and evaporative coolers.

D. Automatic shut-off devices shall be installed on any hose or other large-volume filling apparatus in use.

E. Leaking consumer pipes or faulty sprinklers shall be repaired within five (5) days or less if warranted by the severity of the problem.

F. All pools, spas, and ornamental fountains/ponds shall be equipped with recirculation pumps and shall be constructed to be leak-proof.

G. Pool draining and refilling shall be allowed only for health, maintenance or structural considerations.

Stage 2: Water Shortage Alert – (10% to 20%) Loss of Normal Water Supply

Definition: There is a possibility that the OPUD supply or distribution system will not be able to meet all the normal water demands of its customer.
Triggering Action – up to 20% Water Loss: Manager's recommendation to the Board of Director's will support an action declaring need for additional conservation steps due to water loss.
In addition, to steps 1 through 4 in Stage 1, the following steps will be taken:

A. Landscape irrigation shall be limited to a maximum of three days per week when necessary based on the following odd-even schedule.

B. Customers with street addresses that end with odd numbers may irrigate only on Tuesdays, Thursdays, and Saturdays.

C. Customers with street addresses that end with even numbers may irrigate only on Wednesdays, Fridays, and Sundays.

D. No irrigation is permitted on Mondays.

E. Automatic sprinkler system timers shall be set to operate only during off-peak hours between 12:01 a.m. and 6:00 a.m.

F. Washing of streets, parking lots, driveways, sidewalks, or buildings is prohibited except as necessary for health, sanitary, or fire protection purposes.

G. Restaurants shall serve water only upon request.

Stage 3: Water Shortage Crisis - (20% to 40%) Loss of Normal Water Supply

Definition: The OPUD's supply or distribution system probably would not be able to meet all normal water demands of its customers.

Triggering Action – up to 40% Water Loss: Manager's recommendation to the Board of Directors to consider implementing Stage 3 water shortage contingency measures.
The following changes are made to the irrigation schedule listed in Stage 2 and adds the following actions.

A. Landscape irrigation shall be limited to a maximum of two days per week only when necessary based on the following odd-even schedule.

B. A. Customers with street addresses that end with odd numbers may irrigate only on Tuesdays and Saturdays.

C. B. Customers with street addresses that end with even numbers may irrigate only on Wednesdays and Sundays.

D. C. No irrigation is permitted on Mondays, Thursdays, and Fridays.

E. No potable water from the utility's system shall be used to fill or refill new swimming pools, artificial lakes, ponds, or streams until the water crisis is over. Water use for ornamental ponds and fountains is prohibited.

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

Stage 4: Water Shortage Emergency - 50 percent (50%) Loss of Normal Water Supply

Definition: OPUD experiences a major water supply shortage or major failure within its supply or distribution system.

Triggering Action – up to 50% Water Loss: Manager's recommendation to the Board of Directors act to implement Stage 4 steps and Stage 5, if necessary.

Changes are made to the irrigation schedule listed in Stage 3. The following actions will be required:

A. Landscape irrigation shall be limited to a maximum of one day per week when necessary based on the following odd-even schedule.

1. Customers with street addresses that end with odd numbers may irrigate only on Saturdays.

2. Customers with street addresses that end with even numbers may irrigate only on Sundays.

3. No irrigation is permitted on Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays.

B. Flushing of fire hydrants is prohibited except in case of emergency or only for essential operations.

C. No potable water shall be sold to customers outside the OPUD's service area.

D. New connection to the OPUD's system will not be allowed.

Water Code Section 10632 (d-f)

(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.

PROHIBITIONS, PENALTIES AND CONSUMPTION REDUCTION METHODS

The OPUD will place prohibitions on various wasteful water uses such as fire hydrant use restrictions; exterior irrigation restrictions; requirements for correction of leaks, breaks or malfunctions within a user's plumbing system; car, boat, building, and mobile home washing restrictions; non-self service commercial car wash restrictions; ornamental fountains restrictions; restrictions on the washing of sidewalks and driveways; restriction on filling of swimming pools; and restrictions on use of potable water for dust control purposes. Table 25 presents the types of mandatory water use prohibitions and the supply reduction stage when the prohibitions go into effect.

Table 25: Mandatory Prohibitions at each Supply Reduction Stages

Prohibition	Stage When Prohibition Becomes Mandatory
Washing down of sidewalks, driveways, parking lots or other paved surfaces is prohibited except to alleviate immediate fire or sanitation hazards.	Stage 2
Free-flowing hoses are prohibited for all uses, including vehicle and equipment washing, ponds, and evaporative coolers.	Stage 2
Leaking consumer pipes or faulty sprinklers shall be repaired within five (5) days or less if warranted by the severity of the problem	Stage 2
Restaurants shall serve water only upon request	Stage 2

Pool draining and refilling shall be allowed only for health, maintenance or structural considerations	Stage 2
Landscape irrigation shall be limited to a maximum of three days per week (odd-even schedule): No irrigation is permitted on Mondays	Stage 2
Washing down of sidewalks, driveways, parking lots or other paved surfaces is prohibited except to alleviate immediate fire or sanitation hazards.	Stage 2
Restaurants shall serve water only upon request	Stage 2
Landscape irrigation shall be limited to a maximum of two days per week. No irrigation is permitted on Mondays, Thursdays, and Fridays.	Stage 3
Using potable water to fill or refill swimming pools, artificial lakes, ponds or streams	Stage 3
Washing of automobiles or equipment shall be done on the lawn or at a commercial establishment that uses recycled or reclaimed water	Stage 3
Landscape irrigation shall be limited to a maximum of one day per week. No irrigation is permitted on Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays.	Stage 4
Flushing of fire hydrants is prohibited except in case of emergency	Stage 4
No potable water shall be sold to customers outside OPUD service area	Stage 4
New connection to OPUD's system will not be allowed	Stage 4

Water Code Section 10632 (b)

(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.

Table 26 shows the water supply available over the next three years based on the single worst dry year period of 1976-1977.

Table 26: Water Supply Over Next Three Years [1976-1977 Single Worst Dry Year] (AFY)

	Base Year 2008 Normal Year	2008	2009	2010
Groundwater[a]	3,190	3,190	3,190	3,190
Total Supply	**3,190**	**3,190**	**3,190**	**3,190**
Percent of Normal (%)		**100%**	**100%**	**100%**

Notes:
a. Groundwater is assumed to be drought resistant and is reliable in under all hydrologic conditions.
Source: Olivehurst Public Utilities District April 2011.

Water Code Section 10632 (c)

(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.

CATASTROPHIC SUPPLY INTERRUPTION PLAN

Contamination to the Water Supply

The water supply can become contaminated in a number of ways: organisms such as *Giardia* and *Cryptosporidium* can contaminate water supplies and cause waterborne diseases; there may be

contamination due to leaking underground storage tanks (LUST); or there may be intentional contamination through terrorism, vandalism or sabotage. A vulnerability assessment would determine that this system is highly vulnerable to the last two types of contamination.

In the event of contamination the following actions shall be initiated:

- Estimate the contaminated area and predict movement of contamination;
- Isolate portions of the system containing suspect water;
- Issue "Boil Water", "Do Not Drink", or "Do Not Use" orders and other press releases as appropriate;
- Initiate appropriate stage of Water Shortage Contingency Plan; and/or finally,
- In the event OPUD cannot meet customer demands the manager would need to authorize a temporary increase of the auxiliary supplies, if available.

Regional Power Outage

A power outage as a significant threat to its system. The devastating effect of major natural disasters on power systems can cause widespread outages over a long period of time. Windstorms, flooding and earthquakes can take down power lines and interrupt service.

OPUD has standby generators at its each of its wells. New generators are planned for all new wells. Repair or replacement of the electrical equipment control panels and wiring could be accomplished within 24 hours.

In the event of a power outage the following steps shall be initiated:

- Obtain the estimated down time from PG&E;
- Initiate backup power;
- Increase disinfectant residual;
- Issue "Boil Water", "Do Not Drink", or "Do Not Use" orders and press releases as appropriate;
- Initiate appropriate stage of Water Shortage Contingency Plan; and/or finally
- In the event OPUD cannot meet customer demands the manager would need to authorize a temporary increase of the auxiliary supplies, if available.

Earthquake

Earthquakes can and have been very destructive to water utility systems in California. Heavy damage results from loss of power to ruptured pumping stations and displacement of soil causing broken lines, cracks in concrete storage tanks and structural damage. Connection pipes can break due to movement; pump and motor housings can be damaged from groundshaking events. In the event of an earthquake the following steps shall be initiated:

- Initiate backup power;
- Increase disinfectant residual;
- Issue "Boil Water", "Do Not Drink", or "Do Not Use" orders and press releases as appropriate;
- Initiate appropriate stage of Water Shortage Contingency Plan; and/or
- In the event the District cannot meet customer demands the manager would need to authorize a temporary increase of the auxiliary supplies, if available.

Water Code Section 10632

(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.

Analysis of Revenue Impacts of Reduced Sales During Shortages

An extended water shortage would reduce the amount of water sold by the District to its customers. The most severe restrictions could reduce consumption up to 50 percent. In the event of a water shortage scenario, District revenues may decrease from the implementation of conservation measures and corresponding reduction in water sales. Conversely, expenses could increase as a result of the implementation and enforcement of water conservation measures.

As stated previously, the District produces groundwater only. Groundwater is assumed to be drought-resistant; consequently, supply shortages would not likely occur as result of single season low-precipitation events or dry years. Supply shortages would be the result of a catastrophic event or water quality issue that would impact large portions of the subbasin. If a supply shortage occurs when demand is highest (June through September) and water sales are subsequently reduced then revenues would also be reduced proportionally. The impacts of such a water sales reduction on the District's revenues are shown in Table 27. Revenue losses are shown at significant thresholds of 25 and 40 percent.

Table 27: Actions or Conditions that Impact Revenues

Action or Condition (Supply Shortage)	Anticipated Revenue Reduction[1]
Water Quality Impact – supply reduction	~ $227,000 or 25% of revenues
Water Quality Impact or Catastrophic Event – supply reduction	~ $363,000 or 40% of revenues
Source: Olivehurst Public Utilities District October 2011 (water sales data from June through September 2011)	

A 50 percent reduction in consumption would further reduce the District's expenditures. The District's costs for producing and delivering the water to its customers would be reduced. Some of the District's costs might be increased, such as additional staff time for monitoring water use or enforcing conservation policies. These changes in operation are not expected to cause a significant increase in the District's total expenditures.

The table above shows a potential shortfall of approximately $227,000 (25 percent loss in revenue) and $363,000 (40 percent loss in revenue) if consumption were reduced by 25 and 40 percent. A 50 percent reduction would reduce revenues proportionally. If the reduction was due to a long-term situation, the District would need to draw upon a low-interest loan to maintain adequate operations and maintenance programs. The loan could be repaid in full in five years by increasing rates up to 3.75 percent. A summary of the District's anticipated response is shown in Table 28.

Table 28: Proposed Measures to Overcome Revenue Impacts

Measure	Summary of Effects
Loan for Operation and Maintenance	Draw upon a short- or long-term loan to cover lost revenues.
Rate adjustment	Up to 3.75% increase in average monthly water bill for 5 years
Source: Olivehurst Public Utilities District Finance Department October 2011	

A permanent 25, 40 or 50 percent reduction in water consumption would impact expenditures in all District departments. A savings in expenditures may occur at the wastewater treatment plant

assuming that inflows would be reduced. The need for additional pumping, storage, and pipeline capacity might be reduced. The District might not require as much equipment or staff to maintain its infrastructure. However, the District might see higher expenditures in other areas, such as water use monitoring or answering questions from customers. Overall, these changes would have a significant impact on District expenditures.

WATER QUALITY IMPACTS ON RELIABILITY

Water Code Section 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.*

GROUNDWATER QUALITY

YUBA BASIN GROUNDWATER QUALITY

Groundwater quality data have been collected in the Yuba Basin since 1965. YCWA coordinates with DWR-North Central Region on conducting annual surveys of water quality in selected wells in the North and South Yuba subbasins. DWR-North Central Region regularly collects water quality samples from 10 wells (5 in the North and 5 in the South Yuba subbasins). A 2008 survey of water quality monitoring wells reported that no sample in wells less than 200 feet deep exceeded either the primary or secondary drinking water maximum contaminant level (MCL) in the North Yuba subbasin. However, water quality in one well in the South Yuba subbasin exceeded the primary MCL for nitrate. Furthermore, water in wells greater than 200 feet deep commonly approach or exceed the secondary MCL for total dissolved solids (TDS) of 500 milligrams per liter (mg/L), and show TDS concentrations elevated above historical concentrations. Based on historical data summarized in the Hydrogeologic Understanding report, most areas in the North and South Yuba subbasins show trends of increasing concentrations of calcium, bicarbonate, chloride, alkalinity, and TDS, as well as electrical conductivity (YCWA, 2008).

Water Quality Impairments

OPUD's Consumer Confidence Report (CCR) as required by State regulations continues its tests for bacteriological contaminants in the distribution system. This testing is done regularly to verify that the water system is free from coliform bacteria. The maximum number of positive coliform samples that is allowed by regulations in any one month is one. In Olivehurst, four samples per week are required by regulations. Coliform bacteria were not detected in any samples in 2010. In Plumas Lake, three samples per month are required by regulations. Coliform bacteria were not detected in any samples in 2010.

OPUD's drinking water meets the current EPA standard for arsenic; it does contain low levels of arsenic. The standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. The California Department of Public Health continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems. According to DWR's Bulletin 118 there are no documented impairments to groundwater quality in the subbasin. This is further supported by referring to OPUD's 2010 CCR that can be found in **Appendix G (OPUD 2010 Consumer Confidence Report).**

Table 29 shows the current and potential water supply changes due to water quality.

Table 29: Current and Projected Water Supply Changes Due to Water Quality (AFY)

Supply Source	2015	2020	2025	2030	2035
Local Groundwater[b]	3,872	4,371	8,036	10,552	10,552
Total	3,872	4,371	8,036	10,552	10,552
Percent of Normal (%)	100%	100%	100%	100%	100%

A source water assessment has been completed for the wells serving Olivehurst and Plumas Lake. The sources (by system) considered most vulnerable to the following activities are shown in Table 30.

Table 30: Source Water Assessment Results

Olivehurst	Plumas Lake
Contaminant plume from lumber manufacturing, railroad yards, and sewer collection systems (Well 1 and 4) Agricultural Drainage and Animal Grazing (Well 10) Existing and Historic Gas Stations (Well 14) Sewer Collection Systems (Wells 9, 10, 29, 30) Septic Systems (Well 14) Auto Body Shops (Wells 9 and 10) Airports and Military Installations (Well 28)	Sewer collection systems Agricultural drainage Grazing Agricultural wells

Source: Olivehurst Public Utilities District 2010 Consumer Confidence Report

SECTION 6 – DEMAND MANAGEMENT MEASURES (DMM)

DETERMINATION OF DMM IMPLEMENTATION

Water Code Section 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.

(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.

(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).

Water conservation plays a significant role in the District's 2010 UWMP and its long-term strategy for meeting the water needs of the District's current customers and future service area expansions. The goals of the District's water conservation program are to:

- promote water use efficiency and beneficial uses of potable water;
- ensure a reliable water supply;
- seek improvements to reduce system losses; and,
- demonstrate commitment to the DMMs.

The District is not a signatory to the Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California, which created the CUWCC in 1991. However, the District has voluntarily agreed to implement the fourteen water conservation DMMs.

In 2009, the CUWCC reorganized the BMPs and grouped them into five categories. Two categories, Operations and Education, are Foundational BMPs because they are considered to be essential water conservation activities by any utility and are ongoing practices with no time limits. The remaining BMPs are Programmatic BMPs and are organized into Residential, Commercial, Industrial, and Institutional (CII), and Landscape categories. Signatory agencies can comply with the Programmatic BMPs through one of three compliance options: 1) traditional approach to BMP compliance; 2) the Flex Track Compliance Option; or, 3) the gallons per capita per day (GPCD) Compliance approach (this approach provides a reporting mechanism)

Water utilities throughout California are implementing water conservation programs and providing services to their customers to promote water use efficiencies and water savings.

Foundational BMPs and DMMs

- Utility Operations Programs - According to the CUWCC, this practice consists of several key actions that utilities shall take to better enable conservation program implementation, to supplement conservation incentives with regulations where appropriate, and to assist one another through the wholesaler-retailer relationship.
- Education Programs - California water agencies have played a major role in stressing the need for their customers to conserve water through both public information and school education programs. The specifics of how these programs are to be implemented are detailed below.
    - Public Information Programs present opportunities to use public information programs as an effective tool to inform customers about the need for water conservation and ways they can conserve, and to influence customer behavior to conserve.
    - School Education Programs have been implemented to reach the youngest water users at an early age and enforce the need to engage in water conservation as a life-long behavior.

Programmatic BMPs and DMMs

According to the CUWCC, as stated above each signatory has the option of implementing and complying with each of the Programmatic BMPs through one of three (3) approaches: 1) the traditional approach to BMP Compliance; 2) the Flex Track alternative included in each Programmatic BMP or the GPCD Compliance Option. Table 31 presents the CUWCC's Foundational and Programmatic BMPs and DMMs.

- Residential - Residential water users throughout California depend on a reliable and safe supply of water for their homes. This BMP defines the best and most proven water conservation methods and measures those residents, working in conjunction with water agencies, can implement. By implementing these methods and measures homeowners, multi-family property owners, and tenants will increase water use efficiency and improve regional or local reliability.
- Commercial, Industrial, and Institutional (CII) - CII water demands make up a large percentage of total demand for California. CII water use varies dramatically between business sectors as well as within a given water agency's territory as is the case with the District. The goal of this BMP is to implement comprehensive yet flexible BMPs, allowing the District to tailor the implementation of each practice to fit local needs, opportunities and businesses in its service area. The end result is a practice that is successful and will produce the greatest amount of cost-effective water savings.
- Landscape - Outdoor irrigation accounts for a large portion of urban water use. Irrigation water use varies dramatically depending on water pricing and availability, plant choice, geographic locations, seasonal conditions, and the level of commitment to sound water efficiency practices. The goal of this BMP is that irrigators, with assistance from MOU signatories, will achieve a higher level of water use efficiency consistent with the actual irrigation needs of the plant materials. Achieving this goal would ultimately reduce overall demands for water, especially during the peak summer months when temperatures are high and irrigation is essential for plant life.

Table 31: Demand Mgt Measures/Best Management Practices for Urban Water Conservation in California

DMMs/CUWCC BMPs by Type, Organization and Compliance Measure						
Type	**Category**	**BMP**	**Description**	**DMM**		**Compliance**
Foundation	Operations Practices	1.1.1	Conservation Coordinator	**L**	Water Conservation Coordinator	**18 to 24 Months**
		1.1.2	Water Waste Prevention	**M**	Water Waste Prevention	**YES**
		1.1.3	Wholesale Agency Assistance Programs	**J**	Wholesale Agency Programs	**Not Applicable**
		1.2	Water Loss Control (System Water Audits, Leak Detection and Repair)	**C**	System Water Audits, Leak Detection and Repair	**YES**
		1.3	Metering with Commodity rates for all New Connections and Retrofit of Existing Connections	**D**	Metering with Commodity rates for all New Connections and Retrofit of Existing Connections	**YES**
		1.4	Retail Conservation Pricing	**K**	Conservation Pricing	**NO**
	Education Programs	2.1	Public Information Programs	**G**	Public Information Programs	**18 to 24 Months**
		2.2	School Education Programs	**H**	School Education Programs	**18 to 24 Months**
Programmatic	Residential	3.1	Residential Assistance Program	**A**	Water Survey Programs for Single-Family and Multi-Family Residential Customers[1]	**TBD**
			(Plumbing Retrofit)	**B**	Residential Plumbing Retrofit	**18 to 24 Months**
		3.2	Landscape Water Survey	**A**	Water Survey Programs for Single-Family and Multi-Family Residential Customers[1]	**TBD**
		3.3	High-Efficiency Washing Machine Rebate - Financial Assistance Programs	**F**	High-Efficiency Washing Machine Rebate Programs	**18 to 24 Months**
		3.4	WaterSense Specification (WSS) Toilets	**N**	Residential ultra-low flush toilet replacement programs	**18 to 24 Months**
	CII	4	Commercial, Industrial, Institutional (CII)	**I**	Conservation Programs for Commercial, Industrial, Institutional (CII)	**18 to 24 Months**
	Landscape	5	Landscape	**E**	Large Landscape conservation programs and incentives	**18 to 24 Months**

Source: Adapted from Department of Water Resources Guidebook to Assist Urban Water Suppliers to Prepare a 2010 UWMP, February 2011.
Notes:
TBD = To Be Determined
1. Components of DMM A (Water survey programs for single-family residential and multifamily residential customers) applies to both BMP 3.1 (Residential assistance program) and BMP 3.2 (Landscape water survey)

Water Conservation Programs and Water Efficiency Practices

The District has limited resources including staffing and currently lacks the necessary funding to exhaustively support each of the DMMs completely. However, similar to many water utilities throughout California, the District, to the best of its abilities is committed to implementing water conservation programs and providing services to its customers to promote water use efficiencies and water savings.

The District promotes water conservation including those involving developers in its service area. The District is currently engaged in a number of conservation and water use efficiency activities Listed below are the current programs that are on-going:

- Outreach Efforts to OPUD Customers
- School Education Programs
- Water efficiency in new construction through Cal Green and the Model Water Efficient Landscape Ordinance
- Continuing investigations into Recycled Water Use throughout the District's service area

The District plans to implement a recycled water system and will endeavor to actively promote water conservation programs to its customers. The District promotes its conservation programs through limited outreach efforts, bill inserts, and in the future direct mailings to District customers. The District is committed to water conservation and expects to spend more effort and resources in the future to promote programs that improve landscape water efficiency.

Determination of DMM Implementation

DMM A – Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers

- **IMPLEMENTATION:** The District's service area is demographically diverse and located in an area with average annual household income of approximately $34,000, which is about 41 percent less than the average annual household income of $58,000. Current water rates cannot support those costs associated with water audits; therefore, water surveys are not part of the approved operating budget. As such, the District's revenues are constrained and OPUD has limited staff personnel and the necessary funding to exhaustively support this DMM. In addition, District management and its Board of Directors are expressly concerned about the personal safety of its staff performing on-site residential audits; therefore, at this time residential audits cannot be conducted.
- **IMPLEMENTATION SCHEDULE:** Not Scheduled at this time
  - **METHODS TO EVALUATE DMM EFFECTIVENESS:** Not Applicable
  - **CONSERVATION SAVINGS:** Unknown at this time. There is no method to accurately quantify unknown water conservation savings from DMM A.

DMM-B: Residential Plumbing Retrofit

- **IMPLEMENTATION:** The District encourages its customers to use water efficient hardware and plumbing fixtures. The District anticipates improving this program as funding becomes available; however, much of the success of this program is contingent upon grant funding to support water conservation programs.
- **IMPLEMENTATION SCHEDULE:** 18 to 24 months

- **METHODS TO EVALUATE DMM EFFECTIVENESS:** Periodic review of customer water use, by comparing current water use with water savings fixtures to with historical household water use data.
- **CONSERVATION SAVINGS:** Unknown at this time. There is no method to accurately quantify unknown water conservation savings from DMM B. The success of this program is contingent upon grant funding to support water conservation programs.

DMM-C: System Water Audits, Leak Detection, and Repair

- **IMPLEMENTATION**: Ongoing analysis of unaccounted for water is one of the most effective means to achieve conservation by reducing leaks from the system. Actual losses are unknown, for water supply planning purposes this UWMP uses an acceptable industry standard of 10 percent. Actual losses may vary between 7 and 15 percent. All system-wide leaks are repaired in a timely manner. Customers are notified to conduct a repair whenever it appears possible that leaks exist on the customer's side of the meter. OPUD staff continually monitors leak repairs to ensure losses are minimized.
- The District strives to repair all leaks in a timely manner and to make sure all District meters are working. The District has not performed any water audits or customer surveys to date; however, it is working on developing a comprehensive water conservation program, which will initiate these two functions over the next two years.
- **IMPLEMENTATION SCHEDULE**: OPUD will continue to implement DMM C.
- **CONSERVATION SAVINGS:** If unaccounted-for system losses are reduced to five percent the District would observe a savings of approximately 159 to 500 AFY.

DMM-D: Metering with Commodity Rates for New Connections and Retrofit (meter installation) of Existing Customers

- **IMPLEMENTATION**: OPUD, as of 2010 has a customer base of 6,087 accounts: flat rate customers account for 1,606 connections and the balance 4,481 is metered connections. OPUD is currently installing water meters at all existing connections pursuant to State law. In addition, water meters are required for all new connections. All of the District's water connections are billed a fixed service charge plus water usage fee.
- **IMPLEMENTATION SCHEDULE**: Ongoing - OPUD will continue to conduct its meter retrofit program. All connections will have meters installed by 2025. In addition, OPUD will continue to require and read meters on new services.
- **METHODS TO EVALUATE EFFECTIVENESS**: Periodic review of customer water use, by comparing current water use with historical household data.
- **CONSERVATION SAVINGS**: Generally, metered accounts use less water compared to non-metered accounts.

DMM-E: Large Landscape Conservation Programs (Hardware Systems and Potable Water Reduction Opportunities)

- **IMPLEMENTATION:** Currently the District does not have a large landscape conservation program; however, as funding and staff resources become available the District anticipates developing a water conservation program that would include large landscape water saving measures. Currently, the new development is required to adhere to California's Model Water Efficient Landscape Ordinance.

- Utilizing weather-based irrigation controllers at parks to irrigate only when weather conditions indicate a need. This effort would include coordination with County for irrigation on County-owned lands served by OPUD.
- Install dedicated landscape meters and plumbing systems to utilize raw groundwater, surface water or reclaimed water for irrigation at OPUD parks.
- **IMPLEMENTATION SCHEDULE:** 18 to 24 months success of programs will be based on funding and staff resources along with involvement of County Public Works.
- **METHODS TO EVALUATE EFFECTIVENESS:** At this time, there is no method to accurately determine the effectiveness of DMM E. Annual review of large landscape water use audits using current and historical data. Annual audits would be based on availability of funding and staff resources.
- **CONSERVATION SAVINGS:** Unknown at this time.

DMM-F: High Efficiency Clothes Washer Rebate

- **IMPLEMENTATION:** Currently the District does not have a high-efficiency washing machine program; however, as grant funding resources become available the District anticipates developing process to that could include a high-efficiency washing machine rebate program. However, the District may choose to incorporate information about high-efficiency washing machines, into its public information programs and also coordinate with Pacific Gas and Electric for energy savings rebate program.
- **IMPLEMENTATION SCHEDULE:** 18 to 24 months
- **METHODS TO EVALUATE DMM EFFECTIVENESS:** At this time, there is no method to accurately determine the effectiveness of DMM F.
- **CONSERVATION SAVINGS:** Unknown at this time.

DMM-G & H: Public Information and School Education Programs

- **IMPLEMENTATION**: **PUBLIC INFORMATION**: Currently the District does not have a established Public Information and School Education program. OPUD has participated in public outreach activities through the YUBA FIRST 5 communication efforts. Over the next 18 months the District anticipates developing a water conservation program that would include various components of a public and school outreach program. OPUD anticipates distributing information to the public about water saving programs and conservation measures through monthly bill messages. In addition, monthly water bills are designed to show water used over the last billing period with a summary of water usage by each billing period for the previous year.
- **IMPLEMENTATION SCHEDULE:** Ongoing
- **METHODS TO EVALUATE DMM EFFECTIVENESS:** Currently, there is no method to accurately evaluate the effectiveness of DMM G.
- **CONSERVATION SAVINGS:** Currently, there is no method to accurately quantify water conservation savings from DMM G. Incremental savings may occur as customers reduce daily demands. The District hopes that more public education will curb water demand in its service area.
- **IMPLEMENTATION SCHOOL EDUCATION PROGRAMS:** Ongoing - OPUD currently supports and participates in school programs and seeks to improve its school outreach

programs through grant funding opportunities. Coordination with other local water providers could also bolster aspects of this program.

- **IMPLEMENTATION SCHEDULE:** Ongoing
- **METHODS TO EVALUATE DMM EFFECTIVENESS:** At this time, there is no method to accurately determine the effectiveness of DMM H.
- **CONSERVATION SAVINGS**: Currently, there is no method to accurately quantify water conservation savings from DMM H. Incremental savings may occur as customers reduce daily demands.

DMM-I: Conservation Programs for Commercial and Industrial (CII) Accounts

- **IMPLEMENTATION:** The District may choose to pass a resolution to require the future construction projects to use water conservation methods for plumbing fixtures, including ULFTs, low-flow showerheads, and waterless urinals.
- **IMPLEMENTATION SCHEDULE:** 18 to 24 months
- **METHODS TO EVALUATE EFFECTIVENESS:** Compare historical water use to current water usage after the resolution is place.
- **CONSERVATION SAVINGS:** Unknown at this time. There is no method to accurately quantify water conservation savings from DMM I.

DMM-J: Wholesale Agency Assistance Program

- **IMPLEMENTATION**: At this time, OPUD does not purchase wholesale water from YCWA; therefore, this DMM does currently apply. In the future, if the District begins receiving surface water from YCWA, then coordination with YCWA for regional water conservation programs may prove to be practical.
- **IMPLEMENTATION SCHEDULE:** Not Applicable
- **METHODS TO EVALUATE EFFECTIVENESS:** Compare historical water use per account to actual water usage after the resolution is place.
- **CONSERVATION SAVINGS:** Unknown at this time. There is no method to accurately quantify water conservation savings from DMM J.

DMM-K: Conservation Pricing

- **IMPLEMENTATION:** The District does not have water rate structure to discourage excessive water use and to encourage water savings.

  Non-metered residential water services are required to pay for water and sewer service in advance. As of July 01, 2011, customers with a flat rate are charged $30.00 for water service per month per single-family dwelling.

  Customers with residential metered water service are charged in arrears for water and sewer service. As of July 1, 2011 metered water service is $17.50 per month for the first 15 hundred cubic feet (CCF) plus an additional $0.99 per CCF over 15 CCF.
- **IMPLEMENTATION SCHEDULE:** Through Proposition 218, the District may choose to undertake a water rate structure to encourage water savings

- **METHODS TO EVALUATE EFFECTIVENESS:** At this time, there is no method to accurately determine the effectiveness of DMM K. Compare historical water use per residential customer to actual water usage under new water rate structure.
- **CONSERVATION SAVINGS:** At this time, there is no method to accurately determine the water conservation savings of DMM K. Water savings could be significant depending on pricing structure and level of response per customer.

DMM-L: Conservation Coordinator (Water Use Efficiency Practitioner)

- **IMPLEMENTATION**: At this time, the District does not have a designated conservation coordinator; however, over the next 18 to 24 months the District expects to develop a comprehensive water conservation program to address to this issue. The District currently has a Water and Sewer Committee that has been established to research and develop its conservation programs. OPUD seeks to have AWWA certified water conservation coordinator in place within the next 18 months. This person will be responsible for the District's water conservation programs. In addition, other OPUD staff support conservation efforts through enforcement and monthly billing mailers.
  - Name: In Progress
  - Title: Water Conservation Coordinator
  - Address: 1970 9th Avenue
  - Phone: (530) 743-0317
- **IMPLEMENTATION SCHEDULE:** 18 to 24 months OPUD will seek to support a role of a Conservation Coordinator.
- **METHODS TO EVALUATE EFFECTIVENESS**: At this time, there is no method to accurately determine the effectiveness of DMM L.
- **CONSERVATION SAVINGS**: Currently, there is no method to accurately quantify water conservation savings from DMM L. Incremental savings would be realized as customers alter their usage and curb daily demands.

DMM-M: Water Waste Prohibition (Appendix H - Ordinance 185)

- **IMPLEMENTATION**: Enacted under Ordinance 185 as stated: No customer shall knowingly permit leaks or waste of water. Where water is wastefully or negligently used on a customer's premises, seriously affecting the general service, the District may discontinue the service if such conditions are not corrected within five (5) days after giving the customer written notice.
- **IMPLEMENTATION SCHEDULE:** Ongoing
- **METHODS TO EVALUATE EFFECTIVENESS**: Annual tracking of enforcement actions and recording violations.
- **CONSERVATION SAVINGS:** DMM M is established as an enforcement action - there is no method to accurately quantify water conservation savings from DMM M.

DMM N – Residential ULFT Replacement Program

- **IMPLEMENTATION**: Currently the District does not have an ultra-low flush toilet replacement/rebate program; however, as grant funding resources become available the

District anticipates developing process to that could include an ultra-low flush toilet replacement/rebate program. However, the District may choose to incorporate information about ultra-low flush toilets into its public information programs.

- **IMPLEMENTATION SCHEDULE:** 18 to 24 months
- **METHODS TO EVALUATE EFFECTIVENESS**: At this time, there is no method to accurately determine the effectiveness of DMM N.
- **CONSERVATION SAVINGS:** Currently, there is no method to accurately quantify water conservation savings from DMM N. Passive or incremental savings would be realized as customers alter replace aging toilets with new fixtures including ultra-low flush toilets.

DMM Conclusion

Currently, OPUD has not completely implemented all of the necessary DMMs. During development of this 2010 UWMP the District has specifically identified the DMMs that are lacking complete implementation and has initiated a process to develop a comprehensive water conservation program over the next 18 months. The following DMMs that are lacking 100 percent compliance; however, all DMMs including those listed below will be encapsulated in the PRWA's in a comprehensive water conservation program.

DMM A – Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers

DMM-B – Residential Plumbing Retrofit

DMM E – Large Landscape Conservation Programs and Incentives

DMM-F – High Efficiency Clothes Washer Rebate

DMM G – Public Information Program

DMM H – School Education Programs

DMM I – Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts

DMM-K – Conservation Pricing

DMM L – Conservation Coordinator [Water Use Efficiency Practitioner]

DMM N – Residential ULFT Replacement Program

SECTION 7: CLIMATE CHANGE

Climate Change

Climate change adds its own new uncertainties to the challenges of planning. Changes in weather significantly affect water supply planning, irrespective of the debate associated with the sources and cause of increasing concentrations of greenhouse gasses. Typically, water supplies that are dependent on natural hydrology are vulnerable to climate change, especially if the water source originates from mountain snow pack. The most vulnerable water sources subject to climate change impacts are the District's imported water supplies from the Water Authority. In addition to water supply impacts, changes in local temperature and precipitation are expected to alter water demand patterns. The District is committed to performing its due diligence with respect to climate change.

Potential Impacts

While uncertainties remain regarding the exact timing, magnitude, and regional impacts of these temperature and precipitation changes, researchers have identified several areas of concern for California water planners. These include:

- Reduction in Sierra Nevada snowpack;
- Increased intensity and frequency of extreme weather events; and
- Rising sea levels resulting in increased risk of damage from storms, high-tide events, and the erosion of levees.

Other important issues of concern due to global climate change include:

- Effects on local supplies such as groundwater;
- Changes in urban and agricultural demand levels and patterns;
- Impacts to human health from waterborne pathogens and water quality degradation;
- Declines in ecosystem health and function; and
- Alterations to power generation and pumping regimes.

Appendix A
Text of Urban Water Management Planning Act

Section K: California Water Code, Division 6, Part 2.6: Urban Water Management Planning

The following sections of California Water Code Division 6, Part 2.6, are available online at http://www.leginfo.ca.gov/calaw.html.

Chapter 1. General Declaration and Policy	§10610-10610.4
Chapter 2. Definitions	§10611-10617
Chapter 3. Urban Water Management Plans	
Article 1. General Provisions	§10620-10621
Article 2. Contents of Plans	§10630-10634
Article 2.5. Water Service Reliability	§10635
Article 3. Adoption And Implementation of Plans	§10640-10645
Chapter 4. Miscellaneous Provisions	§10650-10656

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, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

(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 that 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) (1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(A) An average water year.

(B) A single dry water year.

(C) Multiple dry water years.

(2) 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) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivisions (f) and (g) by complying with all the provisions of the “Memorandum of Understanding Regarding Urban Water Conservation in California,” dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

(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).

10631.1.

(a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code,

as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

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 annual 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.

10631.7. The department, in consultation with the California Urban Water Conservation Council, shall convene an independent technical panel to provide information and recommendations to the department and the Legislature on new demand management measures, technologies, and approaches. The panel shall consist of no more than seven members, who shall be selected by the department to reflect a balanced representation of experts. The panel shall have at least one, but no more than two, representatives from each of the following: retail water suppliers, environmental organizations, the business community, wholesale water suppliers, and academia. The panel shall be convened by January 1, 2009, and shall report to the

Legislature no later than January 1, 2010, and every five years thereafter. The department shall review the panel report and include in the final report to the Legislature the department's recommendations and comments regarding the panel process and the panel's recommendations.

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, indirect potable reuse, 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.

Article 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 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.

(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 exemplary elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to 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.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report those water demand management measures adopted and implemented by specific urban water suppliers, and identified pursuant to Section 10631, that achieve water savings significantly above the levels established by the department to meet the requirements of Section 10631.5.

(2) The department shall distribute to the panel convened pursuant to Section 10631.7 the results achieved by the implementation of those water demand management measures described in paragraph (1).

(3) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

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.

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Section L: California Water Code, Division 6, Part 2.55: Water Conservation

The following sections of California Water Code Division 6, Part 2.55, are available online at http://www.leginfo.ca.gov/calaw.html.

Chapter 1. General Declarations and Policy	§10608-10608.8
Chapter 2. Definitions	§10608.12
Chapter 3. Urban Retail Water Suppliers	§10608.16-10608.44

Legislative Counsel's Digest

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.

Appendix B
Adoption and Related Public Notice Documentation

OLIVEHURST PUBLIC UTILITY DISTRICT

BOARD OF DIRECTOR
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GENERAL MANAGER
Timothy R. Shaw

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the Board of Directors of Olivehurst Public Utilities District will hold a public hearing and begin the 30 day public review on the draft Olivehurst Public Utilities District 2010 Urban Water Management Plan (the "Plan").

NOTICE IS HEREBY FURTHER GIVEN that said public hearing will be held on the 20th day of October 2011, at the hour of 7:00 PM at the District office at 1970 9th Avenue, Olivehurst, California, at which time and place any and all persons interested may appear and be heard thereon. After conclusion of the hearing, the District's Board of Directors will consider adopting the Plan. If you would like to review the Plan, a copy is available at the Olivehurst Public Utilities District office, and also available for review on the District's website www.opud.org.

For information call Tim Shaw at (530) 743-0317.

APPEAL-DEMOCRAT

1530 Ellis Lake Drive, Marysville, CA 95901
(530) 741-2348

This space is for the County Clerk's filing stamp.

Affidavit of Publication

(2015.5 C.C.P)

STATE OF CALIFORNIA,

Counties of Yuba and Sutter

Olivehurst Public Utility District

Hearing Notice

I am not a party to, nor interested in the above entitled matter. I am the principal clerk of the printer and publisher of THE APPEAL-DEMOCRAT, a newspaper of general circulation, printed & published in the City of Marysville, County of Yuba, to which Newspaper has been adjudged a newspaper of general circulation by The Superior Court of the County of Yuba, State of California under the date of November 9, 1951, No. 11481, and County of Sutter to which Newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Sutter, State of California under the date of May 17, 1999, Case No. CV PT99-0819 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:

October 6, 2011

I declare under penalty of perjury that the foregoing is true and correct. Executed at Marysville, California

Date: **October 7, 2011**

Kellie Smith

(Signature)

PROOF OF PUBLICATION

NOTICE OF PUBLIC HEARING

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For information call Tim Shaw at (530) 743-0317.

October 6, 2011

Ad #0012719B

OLIVEHURST PUBLIC UTILITY DISTRICT (OPUD)
BOARD OF DIRECTORS REGULAR MEETING
7:00 p.m., Thursday, November 17, 2011
Business Office, 1970 9th Avenue, Olivehurst

Materials related to an item on this agenda submitted to the Olivehurst Public Utility District Board of Directors after distribution of the agenda packet are available for public inspection in the Olivehurst Public Utility District Office, 1970 9th Avenue in Olivehurst during normal business hours. These proceedings may be recorded by a person or persons other than the District Clerk and as such, are not controlled by Olivehurst Public Utility District.

1. **Call to Order** – President

2. **Pledge of Allegiance**

3. **Roll Call**
   Gary Bradford
   James Carpenter
   Ron Dougherty
   Michael Morrison
   Jeff Phinney

4. **Public Participation** - Members of the public may address the Board on any matter within the Board's jurisdiction that does not appear on posted agenda. NO ACTION MAY BE TAKEN ON ANY MATTER THAT IS NOT ON THE POSTED AGENDA. Comments should be limited to 3 minutes per speaker. Prior to this time, speakers are requested to fill out a "Request to Speak" card and submit it to the Clerk of the Board.

5. **Consent Agenda** – D/A
   5.1. Approve Minutes of November 3, 2011, Special Meeting.
   5.2. Approve October 2011 Overtime Report.
   5.3. Ratify recommended merit raise for Matt Hewitt.
   5.4. Ratify recommended merit raise for Wes Nott.
      5.4.1. Entertain motions and take roll as appropriate

6. **District Business**
   6.1. Consider adoption of 2010 Urban Water Management Plan – D/A
      6.1.1. Staff report/introduction
      6.1.2. Public comment
      6.1.3. Questions/comments from Directors.
      6.1.4. Entertain motions and take roll as appropriate
   6.2. Consider request for electricity at Becker Park – D/A
      6.2.1. Staff report/introduction
      6.2.2. Public comment
      6.2.3. Questions/comments from Directors.
      6.2.4. Entertain motions and take roll as appropriate
   6.3. Consider an agreement with Verdant Holdings Inc. to allow for payment of delinquent CFD 2002-1 taxes – D/A
      6.3.1. Staff report/introduction

6.3.2. Public comment
6.3.3. Questions/comments from Directors.
6.3.4. Entertain motions and take roll as appropriate

6.4. Review proposals from strategic planning consultants – D/A
6.4.1. Staff report/introduction
6.4.2. Public comment
6.4.3. Questions/comments from Directors.
6.4.4. Entertain motions and take roll as appropriate

6.5. Consider action(s) in response to delinquent status for payment of capacity fees at 4213 Dan Avenue – D/A
6.5.1. Staff report/introduction
6.5.2. Public comment
6.5.3. Questions/comments from Directors.
6.5.4. Entertain motions and take roll as appropriate

6.6. Consider customer requests for waiver of fees associated with delinquent accounts, amount not to exceed $25 – D/A
6.6.1. Staff report/introduction
6.6.2. Public comment
6.6.3. Questions/comments from Directors.
6.6.4. Entertain motions and take roll as appropriate

7. **Public Works Report**

7.1. Consider accepting Cobblestone lift station from KB Homes - D/A
7.1.1. Staff report/introduction
7.1.2. Public comment
7.1.3. Questions/comments from Directors.
7.1.4. Entertain motions and take roll as appropriate

7.2. Consider Affinity Engineering Contract Amendment No. 4 - Well No. 34 Transmission Main Construction Support and extension of Contract time – D/A
7.2.1. Staff report/introduction
7.2.2. Public comment
7.2.3. Questions/comments from Directors.
7.2.4. Entertain motions and take roll as appropriate

7.3. Consider proposal(s) for bidding services and assistance associated with SCADA system for drinking water treatment plants – D/A
7.3.1. Staff report/introduction
7.3.2. Public comment
7.3.3. Questions/comments from Directors.
7.3.4. Entertain motions and take roll as appropriate

8. **Fire Department/District Safety**

8.1. Update on Fire Department Intern Program.

8.2. Update on insurance component of request for authorization of non-employee rider in holiday parade - D/A
8.2.1. Staff report/introduction
8.2.2. Public comment
8.2.3. Questions/comments from Directors.
8.2.4. Entertain motions and take roll as appropriate

8.3. Consider request for use of OPUD Fire Department Apparatus in Olivehurst Christmas Parade – D/A
- 8.3.1. Staff report/introduction
- 8.3.2. Public comment
- 8.3.3. Questions/comments from Directors.
- 8.3.4. Entertain motions and take roll as appropriate

8.4. Consider request for use of OPUD Fire Department T-317 for Christmas Tree decorating – D/A
- 8.4.1. Staff report/introduction
- 8.4.2. Public comment
- 8.4.3. Questions/comments from Directors.
- 8.4.4. Entertain motions and take roll as appropriate

9. **Closed Session**
- 9.1. Closed Session, Government Code 54957 - Public Employee Termination. Board will conduct post- termination review.
- 9.2. Closed Session, Government Code 54957, Evaluation of Personnel. Position to be evaluated: General Manager.
- 9.3. Closed Session. Government Code 54957.6. Board to instruct District Labor Negotiator. Utility Unit and Business Office Unit.

10. **Meeting Reconvened**
- 10.1. Authorize any actions directed in Closed Session - D/A

11. **General Manager's (GM) Report**
- 11.1. Reports from Directors.
- 11.2. Report from the General Manager.

12. **Adjourned**

In compliance with the American with Disabilities Act, the meeting room is wheelchair accessible and disabled parking is available. If you have a disability and need disability-related modifications or accommodations to participate in this meeting, please contact the Clerk of the Board at (530) 743-0317 or (530) 743-3023 (fax). Requests must be made one full business day before the start of the meeting.

To place an item on the agenda, contact the contact the Clerk of the Board at (530) 743-0317.

**D/A - Discussion/Action

MINUTES OF THE REGULAR MEETING OF THE BOARD OF DIRECTORS OF THE OLIVEHURST PUBLIC UTILITY DISTRICT

November 17, 2011

President Dougherty called the regular meeting of the Board of Directors of the Olivehurst Public Utility District (OPUD) to order at 7:00 p.m., at 1970 9th Avenue, Olivehurst.

PLEDGE OF ALLEGIANCE

Everyone was asked to stand and give the Pledge of Allegiance to the Flag of the United States of America.

ROLL CALL

Responding to roll call was: Director Phinney, Carpenter, Bradford, Morrison, and Dougherty. Others present were:

Timothy R. Shaw	General Manager
Cindy Van Meter	District Clerk/Resource Coordinator
Rebecca Courtright	Financial Manager
John Tillotson	Director of Public Works
Wade Harrison	Fire Chief
Jeff Meith	Legal Counsel
Dave Beauchamp	Atkins
Denise Burbank	Farmers Insurance/Resident
Bob Casanos	Representing Gerry Kamilos, Verdant Holdings
Mr. & Mrs Guzman	Residents

And other interested people.

RECOGNITION OF AUDIENCE

There was no response to President Dougherty's invitation for comments from the audience.

CONSENT AGENDA

A MOTION WAS MADE BY DIRECTOR PHINNEY, SECONDED BY DIRECTOR DOUGHERTY, AND PASSED UNANIMOUSLY TO APPROVE ITEMS ON THE CONSENT AGENDA, INCLUDING: (a) APPROVE MINUTES OF NOVEMBER 3, 2011, SPECIAL MEETING; (b) OVERTIME REPORT FOR OCTOBER 2011, IN THE AMOUNT OF $6,668.51; (c) APPROVE MERIT

INCREASE FOR MATT HEWITT, WASTEWATER COLLECTION OPERATOR II, STEP 4 TO STEP 5, EFFECTIVE OCTOBER 6, 2011; and (d) APPROVE MERIT INCREASE FOR WES NOTT, WASTEWATER TREATMENT PLANT OPERATOR GRADE II (LIMITED TERM), STEP 1 TO STEP 2, EFFECTIVE NOVEMBER 30, 2011.

DISTRICT BUSINESS

The Board was asked to consider adoption of the 2010 Urban Water Management Plan.

A MOTION WAS MADE BY DIRECTOR PHINNEY, SECONDED BY DIRECTOR BRADFORD, AND PASSED UNANIMOUSLY TO ADOPT THE 2010 URBAN WATER MANAGEMENT PLAN.

A request was made for electricity at Becker Park. Mr. Tillotson reported that he spoke with the District's PG&E representative regarding this matter, She explained that the meter has been pulled for several years, PG& E will require an inspection by Yuba County Building Department, which will generate the need for a County building permit. Additionally, PG&E will most likely require the replacement of the meter box and possible new breakers. Mr. Shaw estimated the total cost would be around $600.

Denise Burbank, Farmers Insurance/resident, commented that she would cover any costs incurred to reinstate the power at Becker Park.

A MOTION WAS MADE BY DIRECTOR CARPENTER, SECONDED BY DIRECTOR PHINNEY, AND PASSED UNANIMOUSLY TO MOVE FORWARD WITH REINSTATING THE POWER TO BECKER PARK, BUT EXPEND NO DISTRICT FUNDS.

Mr. Shaw stated that Verdant Holdings has indicated that they no longer wish to move forward with an agreement for a payment plan for the delinquent CFD 2002-1 taxes, but would like to ask for a delay of foreclosure procedures.

Mr. Shaw clarified that the demand for resources associated with this issue is still ongoing. The District has not received a deposit from Verdant, because the payment plan was never completed. There is still legal costs accruing and processing costs for litigation guarantees.

Director Carpenter asked legal counsel when the deadline for filing the foreclosure paperwork would be. Mr. Meith responded that there is no specific time limit. The indenture states that the District shall do it, but gives no time limit. Legal counsel has ordered the litigation guarantees to confirm who is on title, but have not yet received them.

OLIVEHURST PUBLIC UTILITY DISTRICT (OPUD)
NOTICE AND AGENDA OF SPECIAL MEETING OF
BOARD OF DIRECTORS
7:00 p.m., Thursday, December 1, 2011
Business Office, 1970 9th Avenue, Olivehurst

Materials related to an item on this agenda submitted to the Olivehurst Public Utility District Board of Directors after distribution of the agenda packet are available for public inspection in the Olivehurst Public Utility District Office, 1970 9th Avenue in Olivehurst during normal business hours. These proceedings may be recorded by a person or persons other than the District Clerk and as such, are not controlled by Olivehurst Public Utility District.

1. **Call to Order** – President

2. **Pledge of Allegiance**

3. **Roll Call**
   Gary Bradford
   James Carpenter
   Ron Dougherty
   Michael Morrison
   Jeff Phinney

4. **Public Participation** - Members of the public may address the Board on any matter within the Board's jurisdiction that does not appear on posted agenda. NO ACTION MAY BE TAKEN ON ANY MATTER THAT IS NOT ON THE POSTED AGENDA. Comments should be limited to 3 minutes per speaker. Prior to this time, speakers are requested to fill out a "Request to Speak" card and submit it to the Clerk of the Board.

5. **Consent Agenda** – D/A
   5.1. Approve Minutes of November 17, 2011, Regular Meeting.
   5.2. Approve November 2011 Claims for Payment.
      5.2.1. Entertain motions and take roll as appropriate

6. **District Business**
   6.1. Discuss community water fluoridation; presentation opposing fluoridation by Justin De Vorss (customer from Plumas Lake).
   6.2. Receive requested supporting information from strategic planning consultants.
      6.2.1. Review proposals from strategic planning consultants – D/A
         6.2.1.1. Staff report/introduction
         6.2.1.2. Public comment
         6.2.1.3. Questions/comments from Directors.
         6.2.1.4. Entertain motions and take roll as appropriate
   6.3. Consider a request for a reversal of charges for 1881 Meadow Court (forwarded by Director Bradford) – D/A
      6.3.1. Staff report/introduction
      6.3.2. Public comment
      6.3.3. Questions/comments from Directors.
      6.3.4. Entertain motions and take roll as appropriate

6.4. Consider customer requests for waiver of fees associated with delinquent accounts, amount not to exceed $25 – D/A
- 6.4.1. Staff report/introduction
- 6.4.2. Public comment
- 6.4.3. Questions/comments from Directors.
- 6.4.4. Entertain motions and take roll as appropriate

7. **Public Works Report**
   - 7.1. Status Report
   - 7.2. Revised Asset Depreciation Schedule.
   - 7.3. Discuss modification to Richard "Doug" Donahue park irrigation.

8. **Fire Department/District Safety**
   - 8.1. Fire Department Status Report
   - 8.2. District Safety Status Report
   - 8.3. Status of Hazard Communications Program.

9. **Wastewater Collection and Treatment Facilities (WWTF)**
   - 9.1. Status of WWTF
   - 9.2. Computer/software upgrades at WWTF.

10. **Parks and Public Facilities**
    - 10.1. Status Report of Parks and Public Facilities
    - 10.2. Status report on the construction of Richard "Doug" Donahue Park.
    - 10.3. Status report on the actions taken in support of tree lighting in Becker Park.
    - 10.4. Funding for maintenance of CSA 66 parks.

11. **Operations and Maintenance Department**
    - 11.1. Status Report – Karl Cozad
    - 11.2. Fluoride concentration in Olivehurst and Plumas Lake systems.

12. **Business Office**
    - 12.1. Status Report
    - 12.2. Consider replacing computers in the OPUD Business Office – D/A
      - 12.2.1. Staff report/introduction
      - 12.2.2. Public comment
      - 12.2.3. Questions/comments from Directors.
      - 12.2.4. Entertain motions and take roll as appropriate
    - 12.3. Consider authoring the filling of an Account Clerk II position –D/A
      - 12.3.1. Staff report/introduction
      - 12.3.2. Public comment
      - 12.3.3. Questions/comments from Directors.
      - 12.3.4. Entertain motions and take roll as appropriate

13. **Resource Coordinator Report**
    - 13.1. Status of Wastewater Treatment Plant Operator Grade III (Limited Term) position.
    - 13.2. Discuss the practice of having two meetings per month – D/A
      - 13.2.1. Staff report/introduction
      - 13.2.2. Public comment

13.2.3. Questions/comments from Directors.
13.2.4. Entertain motions and take roll as appropriate
13.3. Status of change to health insurance provider.

14. **Negotiations**
14.1. Consider Memorandum of Understanding with the Business Unit – D/A
14.1.1. Staff report/introduction
14.1.2. Public comment
14.1.3. Questions/comments from Directors.
14.1.4. Entertain motions and take roll as appropriate
14.2. District's designated Negotiator for MPEA – D/A
14.2.1. Staff report/introduction
14.2.2. Public comment
14.2.3. Questions/comments from Directors.
14.2.4. Entertain motions and take roll as appropriate

15. **Reports**
15.1. Reports from Directors.
15.2. Reports from the General Manager and/or staff.

16. **Adjourned**

In compliance with the American with Disabilities Act, the meeting room is wheelchair accessible and disabled parking is available. If you have a disability and need disability-related modifications or accommodations to participate in this meeting, please contact the Clerk of the Board at (530) 743-0317 or (530) 743-3023 (fax). Requests must be made one full business day before the start of the meeting.

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**D/A - Discussion/Action

Appendix C
OPUD Calculations of Baselines and Targets

10 Year Base Period									
Estimated Potable Water Use (AF)-Excluding Recycled Water									
1998-2007	1999-2008		2000-2009		2001-2010				
gpcd	AFY [a]	gpcd	AFY [a]	gpcd	AFY a	gpcd	Service Area Population	Note	Annual (gpcd)
							10,000	b	0.00
							10,000	b	0.00
							10,000	b	0.00
0.00							10,000	b	0.00
0.00		0.00					10,000	b	0.00
0.00		0.00		0.00			10,271	b	0.00
0.00		0.00		0.00	2,718	229.95	10,550	b	229.95
0.00		0.00		0.00	2,751	226.54	10,839	b	226.54
0.00		0.00		0.00	2,696	216.34	11,123	b	216.34
0.00		0.00		0.00	4,037	277.27	12,998	b	277.27
0.00		0.00		0.00	3,018	181.14	14,874	b	181.14
0.00		0.00		0.00	3,018	160.86	16,749	b	160.86
0.00		0.00		0.00	3,155	151.23	18,624	b	151.23
0.00		0.00		0.00	3,190	150.50	18,919	b	150.50
0.00		0.00		0.00	2,885	134.06	19,213	b	134.06
0.00		0.00		0.00	2,888	132.15	19,509	b	132.15
0		**0.00**		0		186			172.79

Notes:

Year	2015	2020	2025	2030	2035
GPCD Goal	167	149	149	149	149
Population Projection	20,645	26,221	48,206	63,300	63,300
Total 20x2020 Demand Target (AFY)	3,872	4,371	8,036	10,552	10,552
OWD Demand Projections (based on previous discussions) - AFY					
	32,000	35,000	39,000	44,000	51,000

13115	63300	
50185	3345.66667	1115.22222
		2230.44444
	2030-2021	32682
		3268.18889
		63300

3011	4397
37079	3708

2030
2011 19

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
19509	19793	20077	20361	20645	21760	22875	23991	25106	26221

at 284 persons per year at 1115 persons per year

2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
30618	35015	39412	43809	48206	52603	57000	61397	63300	63300

at 4396 persons year (+)1905 (+)1905

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Plumas Lakes System				0	1591	3183	4774	6365	6194	6023	5853	
Olivehurst Syster	10271	10555	10839	11123	11407	11691	11975	12259	12725	13190	13656	
Totals	10,271	10,555	10,839	11,123	12,998	14,874	16,749	18,624	18,919	19,213	19,509	

1988 total growth 2000-2007 1397

284 avg pop growth per year 465.666667 2010 population residential connections times 2.87 per HH

Plumas system growth: 2007 pop maximium. Assumes starting service in 2004, connections 633 HH of 3.35 persons per HH maxed at 1900 new homes at 3.35 persons per HH 6365 persons - losing population due to foreclosures/abandonment - startin in 2007 and continuing on through 2010

Population growth estimated by averaging annual growth per year (2000-2007) and applying this figure(284) to the annual population

Population growth estimated by averaging annual growth per year (2007-2010) and applying this figure (122) to the annual population

	pop	yrs		
2010	5853	6	4	

5853/2	2926.5	
2004-2007	731.625	
	6365	1591.25

greater than 15-year base

use 10-yr base period 1999-2008

Target Calculation -- Provisional Method 4 Target

Step 1. Calculation of Landscape Water Use and System Water Loss

Urban Supplier	2001-2010 Baseline GPCD	—	Assumed Indoor Residential per Capita Water Use GPCD	—	CII per Capita Water Use GPCD	=	Estimated Landscape Water Use and System Water Loss GPCD
Olivehurst Public Utilities District	186.0		70.0		8.5		107.5

Step 2. Calculation of Savings Using BMP Calculators

Urban Supplier	Indoor Residential Savings Calculators					+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	Total Savings GPCD
	Single Family Toilets	Multi Family Toilets	Resi-dential Washers	Resi-dential Showers	Total IR Savings								
Olivehurst Public Utilities District			0.0	0.0	0.0		23.1		0.8		23.2		47.1

(Alternate) Step 2. Calculation of Savings Using Default Indoor Residential Savings

(Alternate) STEP 2 NOT BEING USED TO CALCULATE TARGET

Urban Supplier	Default Resi-dential Indoor Savings	+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	(alt) Total Savings GPCD
Olivehurst Public Utilities District	15.0		XXXX		XXXX		XXXX		XXXX

Step 3. Calculation of Urban Water Use Targets

Urban Supplier	2001-2010 Baseline GPCD	—	Total Savings GPCD	=	**Computed 2020 Target GPCD**	→	**Less Than 95% of 5-Year Baseline**	→	**Final 2020 Target**	→	**Final 2015 Target**
Olivehurst Public Utilities District	186.0		47.1		**138.9**		**TRUE**		**138.9**		**162.4**

Appendix D
Contract Between The Yuba County Water Agency and the Olivehurst Public Utility District for a Water Supply for Municipal And Industrial Purposes

CONTRACT BETWEEN THE YUBA COUNTY WATER AGENCY AND THE OLIVEHURST PUBLIC UTILITY DISTRICT FOR A WATER SUPPLY FOR MUNICIPAL AND INDUSTRIAL PURPOSES AND PROVIDING FOR CONDITIONAL PARTIAL REPAYMENT OF CERTAIN LONG BAR CANAL PROJECT OBLIGATIONS

This Agreement is entered into this 13th day of December, 1984, by and between the YUBA COUNTY WATER AGENCY ("AGENCY") and the OLIVEHURST PUBLIC UTILITY DISTRICT ("DISTRICT").

RECITALS

a. AGENCY has constructed the Yuba River Development for the diversion, storage, carriage, distribution, and beneficial use of waters of the Yuba River and its tributaries for flood control, irrigation, municipal, domestic, and industrial water supply, generation of electrical energy, and other purposes.

b. AGENCY asserts that it has certain water rights authorizing AGENCY to store, divert and use water of the Yuba River and its tributaries, in connection with the operation of the Yuba River Development, and that AGENCY'S diversion, storage, and use of water pursuant to its water rights must be consistent with various contracts binding upon Agency with other water diverters within AGENCY, the Stream Flow Release Agreement of September 2, 1965, between the AGENCY and the California Department of Fish and Game, the May 13, 1966, Power Purchase Contract between the AGENCY and the Pacific Gas and Electric Company, and two contracts between the Browns Valley Irrigation District and the Pacific Gas

EXHIBIT A

and Electric Company dated October 17, 1940, and August 18, 1960, which were assigned to the AGENCY by the Pacific Gas and Electric Company pursuant to the Sale Agreement dated September 26, 1968.

c. DISTRICT desires to contract with AGENCY for the option to purchase project water from the Yuba River Development for which DISTRICT will make payment to AGENCY upon the bases, at the rates, and pursuant to the terms and conditions hereinafter set forth for service of municipal and industrial water to residents of DISTRICT. DISTRICT and AGENCY agree that this contract constitutes an option to purchase water and DISTRICT shall have no obligations under this contract unless and until DISTRICT exercises the option.

d. AGENCY intends to reserve for DISTRICT project water from the Yuba River Development and to provide capacity for delivery of that water to DISTRICT through the Long Bar Canal Project. The allocations upon which the intended reservation of project water for DISTRICT is based were developed in the preparation of the Small Reclamation Loan Application Report of the South County Irrigation Project dated July 1980 and amended February 1984, and are an integral part of the planning for the Long Bar Canal Project. AGENCY recognizes, however, that DISTRICT may desire to exercise its option to divert project water at a different diversion point.

e. AGENCY intends to pursue the construction of the Long Bar Canal Project to serve available water to the Wheatland Water District and to Linda County Water District, Olivehurst Public Utility District, Beale Air Force Base, and the City of Wheatland ("MUNICIPAL AGENCIES"). AGENCY believes and asserts it

EXHIBIT A

is essential to reserve the 12,200 acre-feet of municipal and industrial water for the MUNICIPAL AGENCIES and to provide capacity and facilities in the Long Bar Canal Project to permit delivery of 12,200 acre-feet to the MUNICIPAL AGENCIES through the Long Bar Canal Project in the future.

f. The total projected water delivery of the Long Bar Canal Project is 56,200 acre-feet annually. The MUNICIPAL AGENCIES' share shall be 12,200 acre-feet per year for municipal and industrial use. The Wheatland Water District's share shall be 44,000 acre-feet per year for agricultural use. For the planning of the Project, it has been assumed that DISTRICT will ultimately require 2,700 acre-feet per year out of the projected delivery of 12,200 acre-feet per year for municipal and industrial uses.

g. It is anticipated that the MUNICIPAL AGENCIES will not put some or all of the water allocated to them to immediate use.

h. In order to provide capacity and facilities in the Long Bar Canal Project to permit delivery of 12,200 acre-feet of water to the MUNICIPAL AGENCIES from the Long Bar Canal Project in the future, AGENCY has entered into a contract with the Wheatland Water District for interim repayment of the cost of the capacity and turnout to serve the MUNICIPAL AGENCIES from the Long Bar Canal Project. DISTRICT has no responsibility to the Wheatland Water District pursuant to the AGENCY contract with Wheatland Water District. All obligations of DISTRICT for Long Bar Canal Project costs and expenses are contained in this contract and DISTRICT shall have no obligations under this contract unless and until DISTRICT exercises its option under this contract.

EXHIBIT A

i. Wheatland Water District has agreed to make per-acre-foot payments for the municipal and industrial water not used by the MUNICIPAL AGENCIES, provided the Wheatland Water District is allocated the use of the reserved municipal and industrial water for agricultural uses within its boundaries until such time as the MUNICIPAL AGENCIES begin to take delivery of the water or until the end of the repayment period, whichever occurs first.

j. For the purpose of financing the construction of the Long Bar Canal Project, AGENCY proposes to enter into a contract ("Loan Contract") with the United States for a Small Project Loan. The Loan Contract will provide for loan funds and interest thereon. The Loan Contract further provides for a repayment contract to be entered into between AGENCY and DISTRICT, assist in funding AGENCY's loan repayment obligations under the Loan Contract if DISTRICT exercises its option to divert. Additional financing for the Long Bar Canal Project will be provided by the sale of a maximum of $4,500,000 in revenue bonds to be sold by AGENCY.

k. DISTRICT and AGENCY desire to provide for the repayment to AGENCY of a portion of the principal and interest and emergency operating fund reserve under the Loan Contract and of AGENCY'S revenue bond issue, which repayment shall commence only if DISTRICT exercises its option to purchase and take delivery of project water. DISTRICT shall be responsible for operating expenses incurred and for the emergency operating fund reserve only after DISTRICT exercises its option to take water, and DISTRICT'S obligation for the emergency operating fund reserve

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shall be a share of only that emergency operating fund reserve which is required under the Loan Contract.

NOW, THEREFORE, in consideration of the performance of the terms and conditions contained herein, it is agreed as follows:

1. Definitions. When used herein, the term:

a. "AGENCY" shall mean the Yuba County Water Agency created by the Yuba County Water Agency Act, Chapter 788, Statutes of 1959, as amended.

b. "DISTRICT" shall mean OLIVEHURST PUBLIC UTILITY WATER DISTRICT.

c. "Loan Contract" means the contract which AGENCY will make with the United States of America for a Small Loan Project under the Small Projects Act of 1956 (70 Stat. 1044) in order to provide a portion of the funds necessary for the construction of the Long Bar Canal Project.

d. "Loan Report" means AGENCY's PL 984 Loan Application Report for the South County Irrigation Project dated July 1980 and amended February 1984.

e. "Long Bar Canal Project" shall mean the project more particularly described in the Loan Report.

f. "Repayment Period" shall mean for municipal and industrial water contractors the first thirty (30) years after February 1 of the federal fiscal year (ending September 30) following the federal fiscal year in which water is first delivered through the Long Bar Canal and the first thirty (30) years after such date for agricultural water contractors. In the event that the repayment period used in the Loan Contract is less

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than 30 years, then the repayment period shall be shortened accordingly.

g. "MUNICIPAL AGENCIES" shall mean the Linda County Water District, the Olivehurst Public Utility District, Beale Air Force Base, and the City of Wheatland.

h. "Project water" shall mean all water scheduled to be diverted by DISTRICT, either from the Long Bar Canal Project at a different diversion point.

i. "Releases" shall mean the passing of water through the Narrows Power Plants.

j. "Stream Flow Release Agreement" shall mean the Stream Flow Release Agreement of September 2, 1965, between AGENCY and the California Department of Fish and Game.

k. "Yuba River Development" shall mean the Yuba River Development as presently operated by the AGENCY on the Yuba River and its tributaries, including all supplemental facilities which may be constructed and/or operated by AGENCY.

2. Term of Contract - Right to Renewal.

a. Term. This Contract shall be effective on the date first above written and shall remain in effect through either April 30, 2016, or until the end of the repayment period provided for in this contract between AGENCY and DISTRICT, whichever is later, unless it is terminated by the written consent and agreement of AGENCY and DISTRICT before that date.

b. Renewal. By written notice to AGENCY at least one (1) year prior to the expiration of the term of this contract, DISTRICT may elect to receive the continued right to service whether or not water is used by DISTRICT during the repayment

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period after expiration of said term for successive forty (40) year terms under the following conditions unless otherwise agreed to:

(1) Service of water in annual amounts (providing that it is being used reasonably and beneficially) up to and including the DISTRICT'S maximum annual entitlement under this contract;

(2) Service of water at no greater cost to DISTRICT than would have been the case had this contract continued in effect;

(3) Service of water under the same physical conditions of service, including time, place, amount and rate of delivery, as are provided for hereunder. Other terms and conditions of the continued service shall be reasonable and equitable and shall be mutually agreed upon.

3. Recognition of Water Rights. DISTRICT agrees and consents to the storage, diversion, and use of the water of the Yuba River and its tributaries pursuant to AGENCY'S water rights and consistent with the various contracts binding upon AGENCY.

4. Reservation of Project Water Supply.

a. Subject to the terms and conditions of this Contract, AGENCY agrees to reserve for DISTRICT and DISTRICT shall have the option to purchase, a maximum of 2,700 acre-feet of project water annually for reasonable and beneficial municipal and

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industrial uses within DISTRICT, in the maximum amounts and for the months set forth below:

Month	Project Water (Acre-Feet)
January	100
February	95
March	100
April	110
May	220
June	400
July	480
August	460
September	340
October	205
November	90
December	100
Total	2,700

b. DISTRICT shall exercise its option to purchase project water by notifying AGENCY in writing on or before January 1 of the calendar year prior to the calendar year during which DISTRICT will first purchase project water of the amount of project water to be delivered to DISTRICT and the date delivery shall commence.

c. DISTRICT shall be obligated each year, after exercising its option, to pay for a minimum amount of project water equal to the maximum quantity ordered for by DISTRICT in any previous year, except DISTRICT and AGENCY may at any time by mutual written agreement increase or decrease the amount of project water thereafter to be furnished each year to DISTRICT by AGENCY pursuant to this Contract.

d. Rescheduling of Monthly Deliveries. On or before an annual date to be determined by AGENCY, DISTRICT may request that AGENCY reschedule delivery for any month or months.

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If the Pacific Gas and Electric Company agrees to the rescheduling, AGENCY shall reschedule delivery to the extent project water is available and any contractual commitments of AGENCY are not impaired, including commitments made for that irrigation season under surplus water contracts. The determination by AGENCY that it cannot reschedule monthly delivery shall not excuse payment for that water under the terms and conditions of this Contract. If more than one district requests that AGENCY reschedule monthly deliveries, and AGENCY cannot reasonably accommodate all rescheduling requests for a month, AGENCY shall reschedule pursuant to each district's request in proportion to the requesting district's monthly allocation of project water for the month to which the district wishes to move its allocation.

5. Point of Delivery.

a. Long Bar Canal Project. Upon completion of the Long Bar Canal Project, and subject to the terms and conditions of this Contract, DISTRICT may request that project water be delivered to DISTRICT at the designated turnout for the MUNICIPAL AGENCIES from the Long Bar Canal Project and AGENCY shall deliver project water to DISTRICT at the designated turnout. DISTRICT may specify a different or additional turnout than the designated turnout for the MUNICIPAL AGENCIES, provided design criteria for the different or additional turnout are approved by AGENCY and the United States. If DISTRICT specifies an additional or different turnout, DISTRICT shall pay all costs of that turnout facility and of its maintenance and operation thereafter.

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b. Alternate Diversion Point. Alternatively, at the sole option of DISTRICT, subject to the terms and conditions of this Contract, DISTRICT may request that project water be delivered to DISTRICT at a different diversion point.

6. Obligations of DISTRICT - Alternate Diversion Point. In the event DISTRICT decides to exercise its option to purchase project water and requests diversion at an alternate diversion point pursuant to paragraph 5(b), then all of the following shall apply:

(1) DISTRICT shall bear all costs in connection with the construction and operation of facilities to divert water at the alternative diversion point and to deliver it to DISTRICT, including but not limited to fish screening, and AGENCY shall have no responsibility in connection with such construction and operation.

(2) If DISTRICT requests that AGENCY petition to add a point of diversion or rediversion to allow DISTRICT to divert at an alternate point of diversion, DISTRICT shall pay all costs of petitioning incurred by AGENCY, including but not limited to all attorneys' fees and engineering costs. Nothing herein shall be construed to mean that any such change or addition is deemed to be required.

(3) If, as a result of AGENCY's petition to add a point of diversion or rediversion for DISTRICT's project, AGENCY is required to make additional fish flow releases or to take other actions for the protection or enhancement of fish and wildlife, DISTRICT shall hold AGENCY harmless and indemnify AGENCY for any expenses, costs, and liability incurred by AGENCY, including

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without limitation to other expenses, all attorneys' fees and engineering costs, so long as this same requirement is placed upon all member unit water contracts executed after the date of this contract. If this same requirement is not imposed on all such contracting member units, this requirement shall have no further force and effect.

(4) DISTRICT shall hold AGENCY free and harmless from and indemnify AGENCY for reasonable expenses or costs, including without limitation attorneys' fees and engineering costs or liability which AGENCY may incur with respect to any fish screening facilities or other fish and wildlife protection requirements imposed as a result of DISTRICT's project.

7. Rate and Method of Payment for Project Water.

a. Regulation Charge. DISTRICT shall pay to AGENCY the AGENCY Regulation Charge of One Dollar ($1.00) per acre-foot for project water which DISTRICT elects to purchase pursuant to this Contract.

b. Adjustment in Regulation Charge. On or after December 29, 1986, and every five (5) years thereafter, the AGENCY regulation charge for project water may be increased (but not decreased) in the amount of the percentage change of the U.S. Department of Labor Consumer Price Index, California composite, using the most recent index published prior to the date of this Contract as the base year index. The regulation charge for project water shall be uniform for all project contractors.

c. Monthly Statements. Each month or at such times as AGENCY and DISTRICT mutually agree upon, AGENCY shall render to DISTRICT a statement covering the amount due and owing

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to AGENCY by DISTRICT for project water which DISTRICT has agreed to accept and pay for pursuant to this Contract, including the AGENCY regulation charge and the operation, maintenance, and replacement charge. Each statement shall be paid by DISTRICT within thirty (30) days after receipt.

d. Overpayments. In the event AGENCY delivers less project water to DISTRICT than DISTRICT is required to accept and pay for, the amount of any overpayment by DISTRICT shall be applied to any past due amounts. Any remaining overpayment shall, at the option of DISTRICT, be refunded or credited to DISTRICT. Such adjustment shall constitute the sole remedy of DISTRICT or anyone claiming a right to the use of DISTRICT's municipal and industrial water, except as otherwise provided in this Contract.

e. Operation, Maintenance, and Replacement. If DISTRICT elects to take delivery of project water from the designated turnout for MUNICIPAL AGENCIES from the Long Bar Canal Project, DISTRICT shall pay to AGENCY a charge to be determined by AGENCY for DISTRICT's share of annual operation, maintenance, and replacement costs related to the Long Bar Canal Project. DISTRICT shall be charged only for its share of annual operation, maintenance, and replacement costs related to the main canal from the diversion point to the end of the main canal. DISTRICT'S share of operation, maintenance, and replacement costs shall be based on the proportionate amount of water delivered to DISTRICT compared to the total amount of water conveyed through the Long Bar Canal Project. The DISTRICT shall not be obligated to pay for any operation, maintenance, and replacement costs for any period

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prior to an election by DISTRICT to take delivery of its water from the Long Bar Canal Project.

8. DISTRICT Repayment Obligations.

a. If DISTRICT elects to take delivery of project water from the designated turnout for MUNICIPAL AGENCIES from the Long Bar Canal Project, DISTRICT shall pay to AGENCY each year:

(1) The amount to be computed by AGENCY of DISTRICT's share of principal and interest payments to be made by AGENCY to the United States of America for that year under the Loan Contract attributable to the capacity of the Long Bar Canal Project used by DISTRICT.

(2) The amount to be computed by AGENCY of DISTRICT's share of principal and interest payments to be made that year on a maximum of $4,500,000 in revenue bonds to be sold y AGENCY for the purpose of financing in part the Long Bar Canal Project attributable to the capacity used by DISTRICT.

(3) The amount to be computed by AGENCY of DISTRICT'S percentage of the Emergency Operating Fund Reserve required by the Loan Contract only for those periods after DISTRICT exercises its option under this Contract.

(4) If DISTRICT first takes delivery of project water after the 22-1/2 year of the repayment period and before the end of the 30th year of the repayment period, then, commencing the year after the end of the repayment period, the amount each year thereafter equivalent to the average annual principal payment to be made by AGENCY during the total repayment period to the United States of America under the loan contract attributable to the proportional share of the capacity of the Long

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Bar Canal Project used by DISTRICT up to a total of seven and one-half years, provided that in no event shall DISTRICT pay more than seven and one-half years after taking delivery of project water after the 22-1/2 year. For example: (a) if DISTRICT takes delivery of project water at the beginning of the 25th year of the repayment period, DISTRICT would pay the amounts set forth in subparagraphs 8a(1), (2) and (3), if applicable, for the 25th through the 30th years of the repayment period and the amount set forth in this subparagraph 8a(4) for two and one-half years after the end of the repayment period; and (b) if DISTRICT takes delivery of project water at the beginning of the 30th year of the repayment period, DISTRICT would pay the amount set forth in subparagraph 8a(1), (2) and (3), if applicable, for the 30th, and final, year of the repayment period and the amount set forth in this subparagraph 8a(4) for six and one-half years after the end of the repayment period. If DISTRICT takes delivery of project water at the beginning of the first year after the end of the repayment period, or any time thereafter, it would not be required to pay any of the amount set forth in this subparagraph 8a(4).

9. Rate of Diversion. Subject to the terms and conditions of this contract, DISTRICT shall be entitled to divert the amounts of project water provided for in paragraph 4 of this contract at a maximum rate of diversion which shall not exceed 15 cubic feet per second.

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10. Billing Procedure and Payment - Repayment Obligations.

a. Billing Procedure. To the extent applicable, annual principal installments, interest charges, reserve funds, and revenue bond payment amounts shall be paid by DISTRICT to AGENCY promptly after receipt of a bill therefor.

b. Prepayment. DISTRICT may at any time prepay all of any part of the loan obligations provided that any prepayment shall be first applied to the payment of all accrued interest and thereafter to the last principal payments to become due hereunder.

c. Late Payment. DISTRICT shall pay to AGENCY a late payment charge on any installments or charges which are payable hereunder and are not paid at the time prescribed by AGENCY. Such late payment charge shall be adequate to cover any penalty borne by AGENCY for a late payment which may be attributable to the delay by DISTRICT in the payment of the amounts due hereunder. In addition to any late payment charge, AGENCY may withhold from DISTRICT any water service to DISTRICT from the Long Bar Canal Project so long as any payment due hereunder remains unpaid.

d. Assurance of Payment. DISTRICT understands and agrees that under the Act under which DISTRICT is formed, DISTRICT has the power to levy and collect such assessments, standby charges, and water tolls, and combinations thereof, as may be required to meet its obligations. DISTRICT hereby agrees to establish a program for the levy and collection of such assessments, standby charges, or water tolls, or combinations

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thereof, and to levy and collect such assessments, standby charges, or water tolls, or combinations thereof, as may be required to meet all of DISTRICT's obligations herein, in accordance with the Act under which DISTRICT is organized. DISTRICT further agrees that should DISTRICT fail to do so, AGENCY may obtain any necessary orders of Court compelling DISTRICT to levy and collect, by any means allowed by law, the amounts necessary to meets its obligations hereunder. The provisions of this subparagraph are not exclusive and AGENCY may use the remedies provided herein in conjunction with, or alternatively to, all other remedies which AGENCY may have pursuant to this Contract or under law, including, but not limited to, an action for damages with payment of any judgment obtained, if not otherwise paid, pursuant to Article 1 (commencing at Section 970) of Chapter 2 of rt 5 of Title 1 of the Government Code. Agency agrees and understands that the District shall have no obligation to repay any portion of the PL 984 loan or the Revenue Bond principal and interest debt until and unless:

1. The Board of Directors shall decide by resolution formally adopted, to be subject to the provisions of this Contract relating to the use of the PL 984 facilities and repayment of costs; and

2. Prior thereto, if required by law or if desired by the District Board should there be no legal requirement, a debt approval or advisory election shall have been conducted and the election approved and the debt authorized, if applicable.

11. Deficiency. The project water supply shall be subject to reduction in critically dry years. Such reduction

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shall be based on the April 1 forecast of unimpaired runoff as presently published in the California Department of Water Resources Bulletin 120 for the Yuba River at Smartville, which forecast shall be effective for determining the reduction for the period beginning May 1 and ending October 31 for each year. The schedule of reduction is as follows:

Forecast Stream Flow Percent of Normal	Percentage of Reduction of Diversion
Less than 50%	20%

12. Releases.

a. Required. Except in years when there is a shortage of water available from the Yuba River Development, and subject to the terms, conditions, and provisions of this Contract, AGENCY agrees to release from the Narrows Power Plants each year amounts of water sufficient to satisfy DISTRICT's project water supply, other contractual water supply obligations of AGENCY, the water rights of diverters located between the Narrows Power Plants and the mouth of the Yuba River which are prior in right to AGENCY, and to make up evaporation and percolation losses between the Narrows Power Plants and DISTRICT's diversion point at the designated turnout from the Long Bar Canal Project.

b. Inability to Deliver. In the event of loss by AGENCY of the water rights necessary for full performance of this Contract, or in the event that water rights of AGENCY or other water diverters are administratively or judicially determined in a manner which adversely affects AGENCY's capability of furnishing the water supply which AGENCY has agreed to furnish pursuant to

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this Contract, this Contract shall be revised or terminated accordingly.

13. AGENCY's Nonliability.

a. If diverters other than AGENCY divert the waters of the Yuba River or its tributaries above Bullards Bar Dam in such amounts or manner that AGENCY cannot release the amounts of water requires in paragraph 12 and fulfill its contractual commitments, AGENCY shall not be in breach of this Contract.

b. If any diverters divert water released from Bullards Bar Dam and such diversion causes a deficiency in the amounts otherwise available to DISTRICT under this Contract, AGENCY shall not be in breach of this Contract, and there shall be deducted from the quantities of project water which DISTRICT is entitled to divert under this Contract the amount of such deficiency.

14. Use of Water Furnished to DISTRICT. All project water furnished to DISTRICT pursuant to this Contract shall not be used by DISTRICT for any purposes other than municipal and industrial purposes without the written consent of AGENCY. No sale or other disposal by DISTRICT for use outside DISTRICT of any project water, or the right of the use thereof, shall be made by DISTRICT without first obtaining the written consent of AGENCY.

15. Return Flow. AGENCY reserves the right to the use of all waste, seepage, and return flow derived from water diverted by DISTRICT pursuant to paragraph 4 and which escapes or is discharged beyond the boundaries of the lands within DISTRICT. Nothing herein shall be construed as an abandonment or a relinquishment of water by AGENCY. AGENCY does not claim any

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right as waste, seepage, or return flow to water being used or reused within the boundaries of DISTRICT.

16. Measurement.

a. Measuring Device. A suitable device or structure acceptable to AGENCY for measuring DISTRICT's diversions shall be installed, maintained, read, and reported at the expense of DISTRICT.

b. Inspection and Records. Measurement records relating to such measurement device or structure shall be open to the inspection of AGENCY, and the measurement records shall be furnished to AGENCY monthly.

c. Accuracy. Upon request of AGENCY, the accuracy of any measurement made by the aforesaid equipment installed, operated, and maintained by DISTRICT shall be investigated and any errors appearing in such measurement adjusted.

17. Responsibility for Distribution of Water.

a. Use of Water. DISTRICT shall, at its own cost, convey the water delivered from its diversion point to the place of use within the District, and shall perform all acts required by law or custom in order to assure the reasonable and beneficial use of the water.

b. Agency Not Liable. Neither AGENCY nor its officers, agents, or employees shall have any liability for or on account of:

(1) The control, carriage, handling, use, disposal, or distribution of said water outside the facilities constructed, operated, and maintained by AGENCY; and

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(2) Claims of damage of any nature whatsoever, including but not limited to, property loss or damage, personal injury, or death arising out of or connected with the control, carriage, handling, use, disposal, or distribution of any water outside of the facilities constructed, operated, and maintained by AGENCY.

18. Water Shortage.

a. No Liability for Shortage. There may occur at times a shortage during any year in the quantity of water available from the Yuba River Development. In no event shall any liability accrue against AGENCY or any of its officers, agents, or employees for any damage, direct or indirect, arising from a shortage of water on account of drought, unavoidable natural causes, accidents or emergencies which result in failure of AGENCY facilities or errors in operation not caused either intentionally or by the negligence of AGENCY or any of its officers, agents, or employees.

b. Reduction in Case of Shortage. In any year in which there occurs a shortage of water from any cause resulting in reductions in water available for diversion in excess of those reductions provided for in paragraph 11 above, AGENCY shall first determine the quantity of project water available after calculating prior rights and AGENCY contract commitments. AGENCY shall determine each contracting member unit's proportionate share of the available project water supply, and shall notify all member units of the amount of available project water to be allocated to each member unit. For purposes of this subparagraph, the advance written consent of AGENCY to exchanges of project water among

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member units shall not be required. DISTRICT shall notify AGENCY of any exchanges it makes.

c. Temporary Discontinuance or Reduction in Delivery. AGENCY may temporarily discontinue or reduce the amount of water furnished to DISTRICT for the purposes of inspection, maintenance, repair, or replacement as may be necessary of any Yuba River Development facilities used in delivering water to DISTRICT. AGENCY will give DISTRICT notice in advance of any temporary discontinuance or reduction, except in cases of emergency. AGENCY will, upon the resumption of service, approximate as nearly as may be feasible and in accordance with the terms and conditions of this Contract, the quantity of water which would have been delivered to DISTRICT in the absence of any temporary discontinuance or reduction in deliveries.

19. Additional Requirements of Loan Contract.

a. Rules and Regulations. If DISTRICT elects to receive water service from the Long Bar Canal Project, DISTRICT agrees to abide by all rules and regulations promulgated to implement the Small Reclamation Projects Act as amended and this Contract is subject to all such lawful rules and regulations now or hereafter in force when not inconsistent with any express and specific provisions herein. Such rules and regulations are made a part of this Contract.

b. Water Conservation, Clean Air Act, and Water Pollution Control Act. AGENCY is required by the Loan Contract to develop and implement an effective water conservation program for all use of water provided from or conveyed through federally constructed or federally financed facilities for AGENCY's use,

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including the Long Bar Canal Project. If DISTRICT elects to receive water service from the Long Bar Canal Project, DISTRICT agrees to comply with the water conservation program as established by AGENCY pursuant to the Loan Contract, with the Clean Air Act and Federal Water Pollution Control Act as more particularly described in the Loan Contract, and to comply with all other provisions of the Loan Contract which may be applicable to actions of DISTRICT.

c. Validation of Contract. DISTRICT, after execution of this Contract, authorizes AGENCY to secure on DISTRICT'S behalf a final decree of the proper Court of the State of California approving and confirming this Contract and creating and adjudging it and the apportionment of the benefits made hereunder to be lawful, valid and binding on DISTRICT. AGENCY shall furnish to DISTRICT a certified copy of such decree and all pertinent supporting records.

20. Ownership of Facilities, Power Revenues, and Wheeling.

a. Hydroelectric Plant and Above. Both before and after completion of the payments to be made by DISTRICT pursuant to paragraph 8, AGENCY shall own and operate the Long Bar Canal Project to the point at which water is discharged from the hydroelectric plant which is a part of the Long Bar Canal Project.

b. Power Revenues. Prior to the completion of the payments to be made by DISTRICT pursuant to paragraph 8, the revenues produced by the hydroelectric plant which is a part of the Long Bar Canal Project shall be applied as provided in the Loan Report. After completion of the payments to be made by

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DISTRICT, pursuant to paragraph 8, the revenues produced by the hydroelectric plant shall be applied first to the operation, maintenance, and replacement of the hydroelectric plant, and then to the operation, maintenance, and replacement of the Long Bar Canal Project to a point one hundred (100) feet downstream from the hydroelectric plant. If in any year, after meeting all costs of operation, maintenance, and replacement mentioned above in this subparagraph, there remain revenues produced by the hydroelectric plant, such revenues shall be retained by AGENCY.

c. Wheeling. If DISTRICT elects to receive water service from the Long Bar Canal Project, then, without the payment of any additional charge, DISTRICT shall have the right to wheel through the Long Bar Canal Project any surplus or other water which DISTRICT may acquire or become entitled to, subject only to the capacity limits of the Long Bar Canal Project, the rate of diversion limit set forth in paragraph 9, limitations on total water delivery by the Agency through the Long Bar Canal Project, and the prorata entitlement of the other contractors taking delivery of water through the Long Bar Canal Project.

21. Water Quality, Water Pollution Control and Water Conservation.

a. Water Quality. AGENCY does not warrant the quality of any water furnished pursuant to this Contract, assumes no responsibility with respect to the quality of such water, and assumes no obligation as to whether any of such water should be distributed without treatment. DISTRICT assumes full responsibility for any use that it may make of such water and

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undertakes to submit any water distributed by DISTRICT to such treatment as may be required.

b. Water Pollution. DISTRICT agrees that it will comply fully with all applicable federal and state water pollution control regulations.

c. Water Conservation. DISTRICT also agrees that it will comply fully with all applicable federal and state water conservation regulations.

d. Environmental Report Compliance in Case of Alternate Diversion. In the event that DISTRICT elects to divert at an alternate diversion point pursuant to subparagraph 5(b), DISTRICT agrees that it will comply fully with all applicable California Environmental Quality Act (CEQA) and Federal Environmental Protection Act requirements. DISTRICT shall be designated lead agency for purposes of CEQA compliance related to DISTRICT's project. DISTRICT agrees to provide AGENCY with a timetable regarding CEQA compliance and to notify AGENCY of all CEQA proceedings related to DISTRICT's project.

22. Refusal of Water in Case of Default. DISTRICT is obligated to pay to AGENCY the charges becoming due as provided in this Contract notwithstanding any default in the payment to DISTRICT by individual water users of the assessments, tolls, or other charges levied by DISTRICT. DISTRICT shall stop diverting project water during any period in which DISTRICT is in arrears in the payment of charges accruing under this Contract. The provisions of this paragraph are not exclusive and action taken pursuant hereto shall not prejudice or preclude AGENCY from

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exercising any other remedy to enforce collection of any amounts due under this Contract.

23. Changes in Organization of DISTRICT. AGENCY hereby reserves the right to terminate this Contract in the event there is any change in DISTRICT by way of exclusion of lands, by a partial or total consolidation, by merger with another district, by proceedings to dissolve, or otherwise, which substantially and negatively affect the ability of DISTRICT to make the payment of charges accruing under this Contract.

24. Waiver of Default. The waiver by either party to this Contract as to any default shall not be construed as a waiver of any other default or as authority of the other party to continue such default.

25. Notices. Until formally notified otherwise, any notice authorized or required to be given or any payment required to be made to AGENCY shall be deemed to have been given or made when mailed, postage prepaid, or delivered as follows:

Administrator
YUBA COUNTY WATER AGENCY
Post Office Box 1569
Marysville, California 95901

Until formally notified otherwise, any notice authorized or required to be given to DISTRICT shall be deemed to have been given when mailed, postage prepaid, or delivered to:

OLIVEHURST PUBLIC UTILITY DISTRICT
P.O. Box 678
Olivehurst, California 95961

26. Assignment Prohibited. The provisions of this Contract shall apply to and bind the successors and assigns of the respective parties, but no assignment, subcontract, or transfer of

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this Contract or any part hereof or interest herein by DISTRICT shall be valid until and unless approved by AGENCY.

27. Remedies Under Contract Not Exclusive. Nothing contained in this Contract shall be construed as in any manner depriving AGENCY or DISTRICT of any other remedy provided in law or equity.

IT WITNESS WHEREOF, the parties hereto have executed this Contract on the date first above written.

ATTEST:

Charles D Carter
Secretary

YUBA COUNTY WATER AGENCY

By: [signature]
Chairman

ATTEST:

Catherine Sharp
Secretary

OLIVEHURST PUBLIC UTILITY DISTRICT

By: Donald F. Brown
President

Appendix E
Groundwater Bulletin 118, Sacramento River Hydrologic Region Basin and South Yuba Subbasin 5-21.61 Descriptions

Sacramento Valley Groundwater Basin, South Yuba Subbasin

- Groundwater Basin Number: 5-21.61
- County: Yuba
- Surface Area: 89,000 acres (138 square miles)

Boundaries and Hydrology

The South Yuba subbasin lies in the southern portion of the Sacramento Basin Hydrologic Study Area. It is bounded on the north by the Yuba River, on the west by the Feather River, on the south by the Bear River, and on the east by the Sierra Nevada and encompasses nearly 107,000 acres. Elevations range from about 150 feet in the northwest region of the basin to about 30 feet in the southwest corner near the confluence of the Feather and Bear Rivers.

Average precipitation is less than 20 inches in the southwest and 20 to 24 inches in the rest of the basin.

Hydrogeologic Information

Water Bearing Formations

The South Yuba Subbasin aquifer system is comprised of continental deposits of Quaternary (Recent) to Late Tertiary (Miocene) age. The cumulative thickness of these deposits increases from a few hundred feet near the Sierra Nevada foothills on the east to over 1400 feet along the western margin of the basin (DWR 1978). The base of the aquifer system overlies the Pre-Tertiary metamorphosed igneous and sedimentary rocks of the Sierra Nevada block.

Holocene Dredger Tailings. These deposits occur along the Yuba and Bear Rivers within the eastern region of the South Yuba Groundwater subbasin. The coarse gravels and cobbles can be up to 125 feet thick and are highly permeable.

Holocene Stream Channel and Floodplain Deposits. These alluvial materials occur as coarse sand and gravels along present stream channels of the Yuba, Feather, and Bear Rivers. Coarser grained materials occur near streams with thicknesses up to 110 feet. Both grain size and thickness decrease with increased distance from streams. These deposits are highly permeable and provide for large amounts of groundwater recharge within the subbasin. Well yields are reported in the range of 2,000 to 4,000 gpm.

Pleistocence Victor Formation. The Victor Formation lies unconformably above the Laguna Formation. The majority of the formation occurs as alluvium throughout the North Yuba Groundwater subbasin, but floodplain deposits are present along stream channels above the alluvium.

Pleistocene Floodplain Deposits. These deposits occur as gravelly sand, silt, and clay from flood events along the Feather River and its tributaries. This unit overlies the Older Alluvium, underlies Quaternary Deposits, and ranges in thickness from 5 to 15 feet. These deposits provide a good medium

for groundwater recharge, provided the groundwater can pass the lower contact with the Older Alluvium.

Pleistocene Alluvium. This unit occurs at over 50 percent of the basin surface and at least 60 percent of its irrigated agricultural lands. Its thickness is highly variable due to its lower contact with the Laguna Formation. The Older Alluvium is comprised of Sierran alluvial fan deposits of loosely compacted silt, sand, and gravel with lesser amounts of clay deposits. The deposits occur as lenticular beds with decreasing thickness and grain size with increasing distance from the Yuba River and the foothills. Hardpan and claypan soils have developed to form an impermeable surface, but below this the Older Alluvium is moderately permeable and provides for most of the groundwater from domestic and shallow irrigation wells. Wells in the older alluvium have yields up to 1,000 gpm.

Pliocene Laguna Formation. The Laguna Formation is the most extensive water-bearing unit within the South Yuba Groundwater subbasin (Bookman-Edmonston 1992). The formation is comprised of reddish to yellowish or brown silt to sandy silt with abundant clay (Bookman-Edmonston 1992) and minor lenticular gravel beds. It overlies the Mehrten Formation and occurs at the surface intermittently at the east end of the basin (Olmsted and Davis 1961). The continental deposits of the Laguna dip to the west beneath the Victor Formation and range in thickness from 400 feet near the Yuba River up to 1,000 feet in the southwest portion of the county. Although the occurrence of thin sand and gravel zones is common, many of them have reduced permeability due to cementation. This coupled with its fine-grained character, leads to an overall low permeability for the Laguna Formation. Most of the groundwater produced from wells in the Laguna comes from overlying units.

Miocene-Pliocene Mehrten Formation. The Mehrten Formation is a sequence of volcanic rocks of late Miocene through middle Pliocene age. Surficial exposures are limited to a few square miles in the northeast corner of the basin (Olmsted and Davis 1961) and thickness varies from 200 feet near the eastern margin of the basin to 500 feet near the Feather River. The Merhten Formation is composed of two distinct units. One unit occurs as intervals of gray to black, well-sorted fluvial andesitic sand (up to 20 feet thick), with andesitic stream gravel lenses and brown to blue clay and silt beds. These sand intervals are highly permeable and wells completed in them can produce high yields. The second unit is an andesitic tuff-breccia that acts as a confining layer between sand intervals. A more detailed description of the Mehrten Formation can be found in Bulletin 118-6 (DWR 1978).

Recharge Areas

Stream channel and floodplain deposits present along the Yuba River, Feather River, and Honcut Creek are highly permeable and provide for large amounts of groundwater recharge within the subbasin. The potential for artificial recharge of groundwater in the basin is limited since areas which have available storage space typically have overlying soils with very low infiltration rates that would restrict recharge potential (Bookman-Edmonston Engineering, Inc. 1992).

Groundwater Level Trends

As early as 1960 groundwater levels showed a well-developed cone of depression beneath the South Yuba basin. Water levels in the center of the cone of depression were just below sea level. Nearly all water levels were well below adjacent river levels on the Bear, Feather, and Yuba Rivers. Groundwater conditions in 1984 reflect a continued reliance on ground water pumping in the South Yuba Basin. Water levels in the center of the South Yuba cone of depression had fallen to 30 feet below sea level. The water level contours adjacent to the Bear and Yuba Rivers indicated a large gradient and seepage from the rivers. By 1990, water levels in the South Yuba Basin cone of depression rose to 10 feet above sea level. The rise in water levels was due to increasing surface water irrigation supplies and reduced groundwater pumping. Current DWR records indicate groundwater levels continue to increase. Bookman-Edmonston Engineering, Inc. (1992)

Groundwater Storage

Groundwater Storage Capacity. An unpublished study by Bookman-Edmonston Engineering, Inc. (1992) estimated groundwater storage in the South Yuba basin. The estimated storage capacity for the South Yuba basin is 1,090,000 acre-feet. This estimate was based on an area of 88,700 acres, which closely corresponds to boundaries used by DWR. The Bookman-Edmonston Engineering, Inc. calculated an average specific yield of 6.9 percent and an assumed thickness of 200 feet.

Groundwater in Storage. There are no published reports, which discuss groundwater in storage.

Groundwater Budget (Type A)

Previous DWR unpublished studies have estimated natural and applied recharge. DWR has also estimated urban and agriculture extractions and subsurface outflow. Basin inflows include natural recharge of 53,700 af, and applied water recharge of 26,000 af. Outflows include urban extraction of 6,000 af, agricultural extraction of 93,400 af, and subsurface outflow of 24,900 af.

Groundwater Quality

Characterization. The generally good water quality characteristics are apparent in the overall salinity of ground water in the study area. In general, total dissolved solids (TDS) concentrations in the study area are below 500 milligrams per liter (mg/l) throughout the entire basin. Bookman-Edmonston Engineering, Inc. (1992). DWR maintains data for 27 water quality wells in the South Yuba Subbasin. Data collected from these wells indicate a TDS range of 141 to 686 mg/l and a median of 224mg/l. The primary water chemistry in the area, mapped by Bertoldi (1991) indicates calcium magnesium bicarbonate or magnesium calcium bicarbonate groundwater. Some magnesium bicarbonate can be found in the northwest portion of the basin.

Impairments. There are no documented impairments to groundwater quality in the subbasin.

Water Quality in Public Supply Wells

Constituent Group[1]	Number of wells sampled[2]	Number of wells with a concentration above an MCL[3]
Inorganics – Primary	38	2
Radiological	31	0
Nitrates	43	0
Pesticides	33	0
VOCs and SVOCs	33	1
Inorganics – Secondary	38	32

[1] A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).
[2] Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.
[3] Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

	Well yields (gal/min)	
Municipal/Irrigation		Average: 1,650 (44 Well Completion Reports)
	Total depths (ft)	
Domestic	Range: 40-650	Average: 186 (253 Well Completion Reports)
Municipal/Irrigation	Range:88-642	Average: 343 (90 Well Completion Reports)

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
DWR	Groundwater levels	20 wells semi-annually
YCWA		6 monthly
Wheatland WD		28 wells semi-annually 1 well semi-annually
DWR YCWA	Mineral, nutrient, & minor element.	11 wells biennially
Department of Health Services	Coliform, nitrates, mineral, organic chemicals, and radiological.	32 wells as required in Title 22, Calif. Code of Regulations

Basin Management

Groundwater management:	South Yuba WD completed an AB3030 plan in 1998. Yuba County Water Agency-AB3030 plan.
Water agencies	
Public	Yuba County Water Agency, Brophy Water District, Linda County Water District, Wheatland Water District, South Yuba Water District, Plumas Water District, Reclamation District 794
Private	

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Errata

Updated groundwater management information and added hotlinks to applicable websites. (1/20/06)

Sacramento River Hydrologic Region

Figure 33 Sacramento River Hydrologic Region

Basins and Subbasins of the Sacramento River Hydrologic Region

Basin/subbasins	Basin name
5-1	Goose Lake Valley
5-1.01	Lower Goose Lake Valley
5-1.02	Fandango Valley
5-2	Alturas Area
5-2.01	South Fork Pitt River
5-2.02	Warm Springs Valley
5-3	Jess Valley
5-4	Big Valley
5-5	Fall River Valley
5-6	Redding Area
5-6.01	Bowman
5-6.02	Rosewood
5-6.03	Anderson
5-6.04	Enterprise
5-6.05	Millville
5-6.06	South Battle Creek
5-7	Lake Almanor Valley
5-8	Mountain Meadows Valley
5-9	Indian Valley
5-10	American Valley
5-11	Mohawk Valley
5-12	Sierra Valley
5-12.01	Sierra Valley
5-12.02	Chilcoot
5-13	Upper Lake Valley
5-14	Scotts Valley
5-15	Big Valley
5-16	High Valley
5-17	Burns Valley
5-18	Coyote Valley
5-19	Collayomi Valley
5-20	Berryessa Valley
5-21	Sacramento Valley
5-21.50	Red Bluff
5-21.51	Corning
5-21.52	Colusa
5-21.53	Bend
5-21.54	Antelope
5-21.55	Dye Creek
5-21.56	Los Molinos
5-21.57	Vina
5-21.58	West Butte
5-21.59	East Butte
5-21.60	North Yuba
5-21.61	South Yuba
5-21.62	Sutter
5-21.64	North American
5-21.65	South American
5-21.66	Solano
5-21.67	Yolo
5-21.68	Capay Valley

Basin/subbasins	Basin name
5-30	Lower Lake Valley
5-31	Long Valley
5-35	Mccloud Area
5-36	Round Valley
5-37	Toad Well Area
5-38	Pondosa Town Area
5-40	Hot Springs Valley
5-41	Egg Lake Valley
5-43	Rock Prairie Valley
5-44	Long Valley
5-45	Cayton Valley
5-46	Lake Britton Area
5-47	Goose Valley
5-48	Burney Creek Valley
5-49	Dry Burney Creek Valley
5-50	North Fork Battle Creek
5-51	Butte Creek Valley
5-52	Gray Valley
5-53	Dixie Valley
5-54	Ash Valley
5-56	Yellow Creek Valley
5-57	Last Chance Creek Valley
5-58	Clover Valley
5-59	Grizzly Valley
5-60	Humbug Valley
5-61	Chrome Town Area
5-62	Elk Creek Area
5-63	Stonyford Town Area
5-64	Bear Valley
5-65	Little Indian Valley
5-66	Clear Lake Cache Formation
5-68	Pope Valley
5-86	Joseph Creek
5-87	Middle Fork Feather River
5-88	Stony Gorge Reservoir
5-89	Squaw Flat
5-90	Funks Creek
5-91	Antelope Creek
5-92	Blanchard Valley
5-93	North Fork Cache Creek
5-94	Middle Creek
5-95	Meadow Valley

Description of the Region

The Sacramento River HR covers approximately 17.4 million acres (27,200 square miles). The region includes all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties (Figure 33). Small areas of Alpine and Amador counties are also within the region. Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border, to the Sacramento-San Joaquin Delta. The Sacramento Valley, which forms the core of the region, is bounded to the east by the crest of the Sierra Nevada and southern Cascades and to the west by the crest of the Coast Range and Klamath Mountains. Other significant features include Mount Shasta and Lassen Peak in the southern Cascades, Sutter Buttes in the south central portion of the valley, and the Sacramento River, which is the longest river system in the State of California with major tributaries the Pit, Feather, Yuba, Bear and American rivers. The region corresponds approximately to the northern half of RWQCB 5. The Sacramento metropolitan area and surrounding communities form the major population center of the region. With the exception of Redding, cities and towns to the north, while steadily increasing in size, are more rural than urban in nature, being based in major agricultural areas. The 1995 population of the entire region was 2.372 million.

The climate in the northern, high desert plateau area of the region is characterized by cold snowy winters with only moderate precipitation and hot dry summers. This area depends on adequate snowpack to provide runoff for summer supply. Annual precipitation ranges from 10 to 20 inches. Other mountainous areas in the northern and eastern portions of the region have cold wet winters with large amounts of snow, which typically provide abundant runoff for summer supplies. Annual precipitation ranges from 40 to more than 80 inches. Summers are generally mild in these areas. The Coast Range and southern Klamath Mountains receive copious amounts of precipitation, but most of the runoff flows to the coast in the North Coastal drainage. Sacramento Valley comprises the remainder of the region. At a much lower elevation than the rest of the region, the valley has mild winters with moderate precipitation. Annual precipitation varies from about 35 inches in Redding to about 18 inches in Sacramento. Summers in the valley are hot and dry.

Most of the mountainous portions of the region are heavily forested and sparsely populated. Three major national forests (Mendocino, Trinity, and Shasta) make up the majority of lands in the Coast Range, southern Klamath Mountains, and the southern Cascades; these forests and the region's rivers and lakes provide abundant recreational opportunities. In the few mountain valleys with arable land, alfalfa, grain and pasture are the predominant crops. In the foothill areas of the region, particularly adjacent to urban centers, suburban to rural housing development is occurring along major highway corridors. This development is leading to urban sprawl and is replacing the former agricultural production on those lands. In the Sacramento Valley, agriculture is the largest industry. Truck, field, orchard, and rice crops are grown on approximately 2.1 million acres. Rice represents about 23 percent of the total irrigated acreage.

The Sacramento River HR is the main water supply for much of California's urban and agricultural areas. Annual runoff in the HR averages about 22.4 maf, which is nearly one-third of the State's total natural runoff. Major water supplies in the region are provided through surface storage reservoirs. The two largest surface water projects in the region are USBR's Shasta Lake (Central Valley Project) on the upper Sacramento River and Lake Oroville (DWR's State Water Project) on the Feather River. In all, there are more than 40 major surface water reservoirs in the region. Municipal, industrial, and agricultural supplies to the region are about 8 maf, with groundwater providing about 2.5 maf of that total. Much of the remainder of the runoff goes to dedicated natural flows, which support various environmental requirements, including in-stream fishery flows and flushing flows in the Delta.

Groundwater Development

Groundwater provides about 31 percent of the water supply for urban and agricultural uses in the region, and has been developed in both the alluvial basins and the hard rock uplands and mountains. There are 88 basins/subbasins delineated in the region. These basins underlie 5.053 million acres (7,900 square miles), about 29 percent of the entire region. The reliability of the groundwater supply varies greatly. The Sacramento Valley is recognized as one of the foremost groundwater basins in the State, and wells developed in the sediments of the valley provide excellent supply to irrigation, municipal, and domestic uses. Many of the mountain valleys of the region also provide significant groundwater supplies to multiple uses.

Geologically, the Sacramento Valley is a large trough filled with sediments having variable permeabilities; as a result, wells developed in areas with coarser aquifer materials will produce larger amounts of water than wells developed in fine aquifer materials. In general, well yields are good and range from one-hundred to several thousand gallons per minute. Because surface water supplies have been so abundant in the valley, groundwater development for agriculture primarily supplement the surface supply. With the changing environmental laws and requirements, this balance is shifting to a greater reliance on groundwater, and conjunctive use of both supplies is occurring to a greater extent throughout the valley, particularly in drought years. Groundwater provides all or a portion of municipal supply in many valley towns and cities. Redding, Anderson, Chico, Marysville, Sacramento, Olivehurst, Wheatland, Willows, and Williams rely to differing degrees on groundwater. Red Bluff, Corning, Woodland, Davis, and Dixon are completely dependent on groundwater. Domestic use of groundwater varies, but in general, rural unincorporated areas rely completely on groundwater.

In the mountain valleys and basins with arable land, groundwater has been developed to supplement surface water supplies. Most of the rivers and streams of the area have adjudicated water rights that go back to the early 1900s, and diversion of surface water has historically supported agriculture. Droughts and increased competition for supply have led to significant development of groundwater for irrigation. In some basins, the fractured volcanic rock underlying the alluvial fill is the major aquifer for the area. In the rural mountain areas of the region, domestic supplies come almost entirely from groundwater. Although a few mountain communities are supplied in part by surface water, most rely on groundwater. These groundwater supplies are generally quite reliable in areas that have sufficient aquifer storage or where surface water replenishes supply throughout the year. In areas that depend on sustained runoff, water levels can be significantly depleted in drought years and many old, shallow wells can be dewatered. During 2001, an extreme drought year on the Modoc Plateau, many well owners experienced problems with water supply.

Groundwater development in the fractured rocks of the foothills of the southern Cascades and Sierra Nevada is fraught with uncertainty. Groundwater supplies from fractured rock sources are highly variable in terms of water quantity and water quality and are an uncertain source for large-scale residential development. Originally, foothill development relied on water supply from springs and river diversions with flumes and ditches for conveyance that date back to gold mining era operations. Current development is primarily based on individual private wells, and as pressures for larger scale development increase, questions about the reliability of supply need to be addressed. Many existing foothill communities have considerable experience with dry or drought year shortages. In Butte County residents in Cohasset, Forest Ranch, and Magalia have had to rely on water brought up the ridges in tanker trucks. The suggested answer has been the development of regional water supply projects. Unfortunately, the area's development pattern of small, geographically dispersed population centers does not lend itself to the kind of financial base necessary to support such projects.

Groundwater Quality

Groundwater quality in the Sacramento River HR is generally excellent. However, there are areas with local groundwater problems. Natural water quality impairments occur at the north end of the Sacramento Valley in the Redding subbasin, and along the margins of the valley and around the Sutter Buttes, where Cretaceous-age marine sedimentary rocks containing brackish to saline water are near the surface. Water from the older underlying sediments mixes with the fresh water in the younger alluvial aquifer and degrades the quality. Wells constructed in these areas typically have high TDS. Other local natural impairments are moderate levels of hydrogen sulfide in groundwater in the volcanic and geothermal areas in the western portion of the region. In the Sierra foothills, there is potential for encountering uranium and radon-bearing rock or sulfide mineral deposits containing heavy metals. Human-induced impairments are generally associated with individual septic system development in shallow unconfined portions of aquifers or in fractured hard rock areas where insufficient soil depths are available to properly leach effluent before it reaches the local groundwater supply.

Water Quality in Public Supply Wells

From 1994 through 2000, 1,356 public supply water wells were sampled in 51 of the 88 basins and subbasins in the Sacramento River HR. Samples analyzed indicate that 1,282 wells, or 95 percent, met the state primary MCLs for drinking water. Seventy-four wells, or 5 percent, have constituents that exceed one or more MCL. Figure 34 shows the percentages of each contaminant group that exceeded MCLs in the 74 wells.

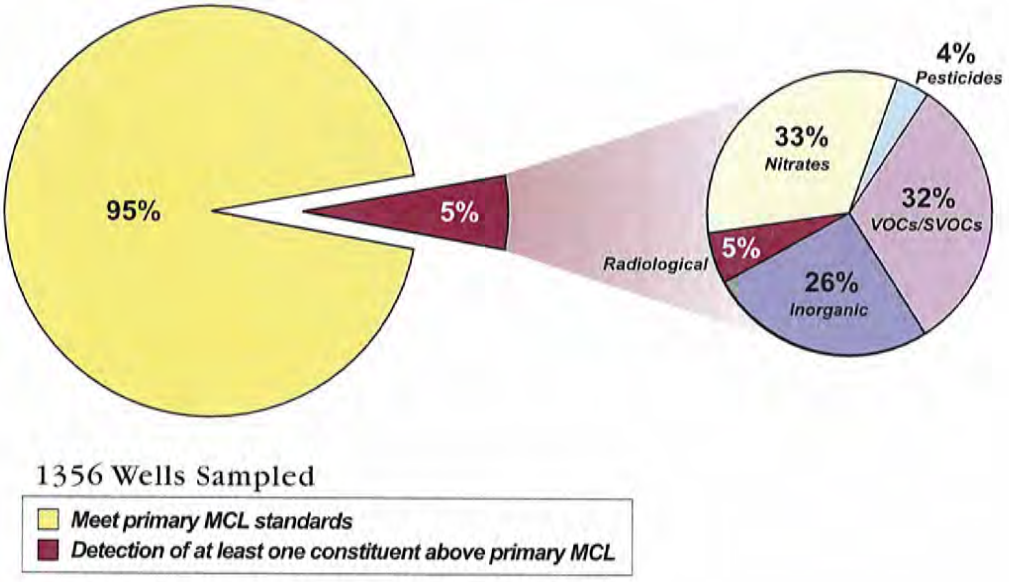


Figure 34 MCL exceedances in public supply wells in the Sacramento River Hydrologic Region

Table 25 lists the three most frequently occurring contaminants in each of the six contaminant groups and shows the number of wells in the HR that exceeded the MCL for those contaminants.

Table 25 Most frequently occurring contaminants by contaminant group in the Sacramento River Hydrologic Region

Contaminant group	Contaminant - # of wells	Contaminant - # of wells	Contaminant - # of wells
Inorganics – Primary	Cadmium – 4	Chromium (Total) – 3	3 tied at 2
Inorganics – Secondary	Manganese – 221	Iron – 166	Specific Conductance – 3
Radiological	Gross Alpha – 4		
Nitrates	Nitrate (as NO_3) – 22	Nitrate + Nitrite – 5	Nitrate Nitrogen (NO_3-N) – 2
Pesticides	Di(2-Ethylhexyl)phthalate – 4		
VOCs/SVOCs	PCE – 11	TCE – 7	Benzene – 4

PCE = Tetrachloroethylene
TCE = Trichloroethylene
VOC = Volatile Organic Compounds
SVOC = Semivolatile Organic Compound

Changes from Bulletin 118-80

Some modifications from the groundwater basins presented in Bulletin 118-80 are incorporated in this report. These are listed in Table 26.

Table 26 Modifications since Bulletin 118-80 of groundwater basins and subbasins in Sacramento River Hydrologic Region

Basin name	New number	Old number
Fandango Valley	5-1.02	5-39
Bucher Swamp Valley	deleted	5-42
Modoc Plateau Recent Volcanic Areas	deleted	5-32
Modoc Plateau Pleistocene Volcanic Areas	deleted	5-33
Mount Shasta Area	deleted	5-34
Sacramento Valley Eastside Tuscan Formation Highlands	deleted	5-55
Clear Lake Pleistocene Volcanics	deleted	5-67

No additional basins were assigned to the Sacramento River HR in this revision. However, four basins have been divided into subbasins. Goose Lake Valley Groundwater Basin (5-1) has been subdivided into two subbasins, Fandango Valley (5-39) was modified to be a subbasin of Goose Lake Valley. Redding Area Groundwater Basin has been subdivided into six subbasins, Sierra Valley Groundwater Basin has been subdivided into two subbasins, and the Sacramento Valley Groundwater Basin has been subdivided into 18 subbasins.

There are several deletions of groundwater basins from Bulletin 118-80. Bucher Swamp Valley Basin (5-42) was deleted due to a thin veneer of alluvium over rock. Modoc Plateau Recent Volcanic Areas (5-32), Modoc Plateau Pleistocene Volcanic Areas (5-33), Mount Shasta Area (5-34), Sacramento Valley Eastside Tuscan Formation Highlands (5-55), and Clear Lake Pleistocene Volcanics (5-67) are volcanic aquifers and were not assigned basin numbers in this bulletin. These are considered to be groundwater source areas as discussed in Chapter 6.

Table 27 Sacramento River Hydrologic Region groundwater data

Basin/Subbasin	Basin Name	Area (acres)	Groundwater Budget Type	Well Yields (gpm)		Types of Monitoring			TDS (mg/L)	
				Maximum	Average	Levels	Quality	Title 22	Average	Range
5-1	GOOSE LAKE VALLEY									
5-1.01	LOWER GOOSE LAKE	36,000	B	-	400	9	9	-	183	68 - 528
5-1.02	FANDANGO VALLEY	18,500	B	2,000	-	3	-	-	-	-
5-2	ALTURAS AREA								357	180 - 800
5-2.01	SOUTH FORK PITT RIVER	114,000	B	5,000	1,075	9	-	8	-	-
5-2.02	WARM SPRINGS VALLEY	68,000	B	400	314	3	-	11	-	-
5-3	JESS VALLEY	6,700	B		3,000	-	-	-	-	-
5-4	BIG VALLEY	92,000	B	4,000	880	19	9	10	260	141 - 633
5-5	FALL RIVER VALLEY	54,800	B	1,500	266	16	7	3	174	115 - 232
5-6	REDDING AREA									
5-6.01	BOWMAN	85,330	B	2,000	589	8	2	13	-	70 - 247
5-6.02	ROSEWOOD	45,320	B	-	-	4	-	-	-	118 - 218
5-6.03	ANDERSON	98,500	B	1,800	46	11	10	69	194	109-320
5-6.04	ENTERPRISE	60,900	B	700	266	11	3	43	-	160 - 210
5-6.05	MILLVILLE	67,900	B	500	254	6	5	4	140	-
5-6.06	SOUTH BATTLE CREEK	32,300	B	-	-	0	0	0	360	-
5-7	LAKE ALMANOR VALLEY	7,150	B	-	-	10	4	4	105	53 - 260
5-8	MOUNTAIN MEADOWS VALLEY	8,150	B	-	-	-	-	-	-	-
5-9	INDIAN VALLEY	29,400	B	-	-	-	4	9	-	-
5-10	AMERICAN VALLEY	6,800	B	40	40		4	11	-	-
5-11	MOHAWK VALLEY	19,000	B	-	500	1	2	15	248	210 - 285
5-12	SIERRA VALLEY									
5-12.01	SIERRA VALLEY	117,700	B	1,500	640	34	15	9	312	110 - 1,620
5-12.02	CHILCOOT	7,550	B	-	-	15	-	8	-	-
5-13	UPPER LAKE VALLEY	7,260	B	900	302	12	3	6	-	-
5-14	SCOTTS VALLEY	7,320	B	1,200	171	9	1	9	158	140 - 175
5-15	BIG VALLEY	24,210	B	1,470	475	49	11	7	535	270 - 790
5-16	HIGH VALLEY	2,360	B	100	37	5	2	-	598	480 - 745
5-17	BURNS VALLEY	2,900	B	-	30	1	5	-	335	280 - 455
5-18	COYOTE VALLEY	6,530	B	800	446	6	3	3	288	175 - 390
5-19	COLLAYOMI VALLEY	6,500	B	1,000	121	10	4	3	202	150 - 255
5-20	BERRYESSA VALLEY	1,400	C	-	-	0	-	0	-	-
5-21	SACRAMENTO VALLEY									
5-21.50	RED BLUFF	266,750	B	1,200	363	30	10	56	207	120 - 500
5-21.51	CORNING	205,640	B	3,500	977	29	7	30	286	130 - 490
5-21.52	COLUSA	918,380	B	5,600	984	98	30	134	391	120 - 1,220
5-21.53	BEND	20,770	B	-	275	0	3	9		334-360
5-21.54	ANTELOPE	18,710	B	800	575	4	5	22	296	-
5-21.55	DYE CREEK	27,730	B	3,300	890	8	1	3	240	159 - 396
5-21.56	LOS MOLINOS	33,170	B	1,000	500	3	3	9	217	
5-21.57	VINA	125,640	B	3,850	1,212	23	5	69	285	48 - 543
5-21.58	WEST BUTTE	181,600	B	4,000	1,833	32	8	36	293	130 - 676

Table 27 Sacramento River Hydrologic Region groundwater data (continued)

Basin/Subbasin	Basin Name	Area (acres)	Groundwater Budget Type	Well Yields (gpm)		Types of Monitoring			TDS (mg/L)	
				Maximum	Average	Levels	Quality	Title 22	Average	Range
5-21.59	EAST BUTTE	265,390	B	4,500	1,019	43	4	44	235	122 - 570
5-21.60	NORTH YUBA	100,400	C	4,000	-	21	-	32	-	-
5-21.61	SOUTH YUBA	107,000	C	4,000	1,650	56	-	6	-	-
5-21.62	SUTTER	234,000	C	-	-	34	-	115	-	-
5-21.64	NORTH AMERICAN	351,000	A	-	800	121	-	339	300	150 - 1,000
5-21.65	SOUTH AMERICAN	248,000	C	-	-	105	-	247	221	24-581
5-21.66	SOLANO	425,000	C	-	-	123	23	136	427	150 - 880
5-21.67	YOLO	226,000	B	4,000+	1,000	127	20	185	880	480 - 2,060
5-21.68	CAPAY VALLEY	25,000	C	-	-	11	-	3	-	-
5-30	LOWER LAKE VALLEY	2,400	B	100	37		3	5	568	290 - 1,230
5-31	LONG VALLEY	2,600	B	100	63	-	-	-	-	-
5-35	MCCLOUD AREA	21,320	B	-	380	-	-	1	-	-
5-36	ROUND VALLEY	7,270	B	2,000	800	2				148 - 633
5-37	TOAD WELL AREA	3,360	B	-	-	-	-	-	-	-
5-38	PONDOSA TOWN AREA	2,080	B	-	-	-	-	-	-	-
5-40	HOT SPRINGS VALLEY	2,400	B	-	-	-	-	-	-	-
5-41	EGG LAKE VALLEY	4,100	B	-	20	-	-	-	-	-
5-43	ROCK PRAIRIE VALLEY	5,740	B	-	-	-	-	-	-	-
5-44	LONG VALLEY	1,090	B	-	-	-	-	-	-	-
5-45	CAYTON VALLEY	1,300	B	-	400	-	-	-	-	-
5-46	LAKE BRITTON AREA	14,060	B	-	-	-	-	2	-	-
5-47	GOOSE VALLEY	4,210	B	-	-	-	-	-	-	-
5-48	BURNEY CREEK VALLEY	2,350	B	-	-	-	-	2	-	-
5-49	DRY BURNEY CREEK VALLEY	3,070	B	-	-	-	-	-	-	-
5-50	NORTH FORK BATTLE CREEK VALLEY	12,760	B	-	-	-	-	3	-	-
5-51	BUTTE CREEK VALLEY	3,230	B	-	-	-	-	-	-	-
5-52	GRAYS VALLEY	5,440	B	-	-	-	-	-	-	-
5-53	DIXIE VALLEY	4,870	B	-	-	-	-	-	-	-
5-54	ASH VALLEY	6,010	B	3,000	2,200	-	-	-	-	-
5-56	YELLOW CREEK VALLEY	2,310	B	-	-	-	-	-	-	-
5-57	LAST CHANCE CREEK VALLEY	4,660	B	-	-	-	-	-	-	-
5-58	CLOVER VALLEY	16,780	B	-	-	-	-	-	-	-
5-59	GRIZZLY VALLEY	13,400	B	-	-	-	-	1	-	-
5-60	HUMBUG VALLEY	9,980	B	-	-	-	-	8	-	-
5-61	CHROME TOWN AREA	1,410	B	-	-	-	-	-	-	-
5-62	ELK CREEK AREA	1,440	B	-	-	-	-	-	-	-
5-63	STONYFORD TOWN AREA	6,440	B	-	-	-	-	-	-	-
5-64	BEAR VALLEY	9,100	B	-	-	-	-	-	-	-
5-65	LITTLE INDIAN VALLEY	1,270	B	-	-	-	-	-	-	-
5-66	CLEAR LAKE CACHE FORMATION	30,000	B	245	52		-	4	-	-
5-68	POPE VALLEY	7,180	C	-	-	-	-	1	-	-
5-86	JOSEPH CREEK	4,450	B	-	-	-	-		-	-

Table 27 Sacramento River Hydrologic Region groundwater data (continued)

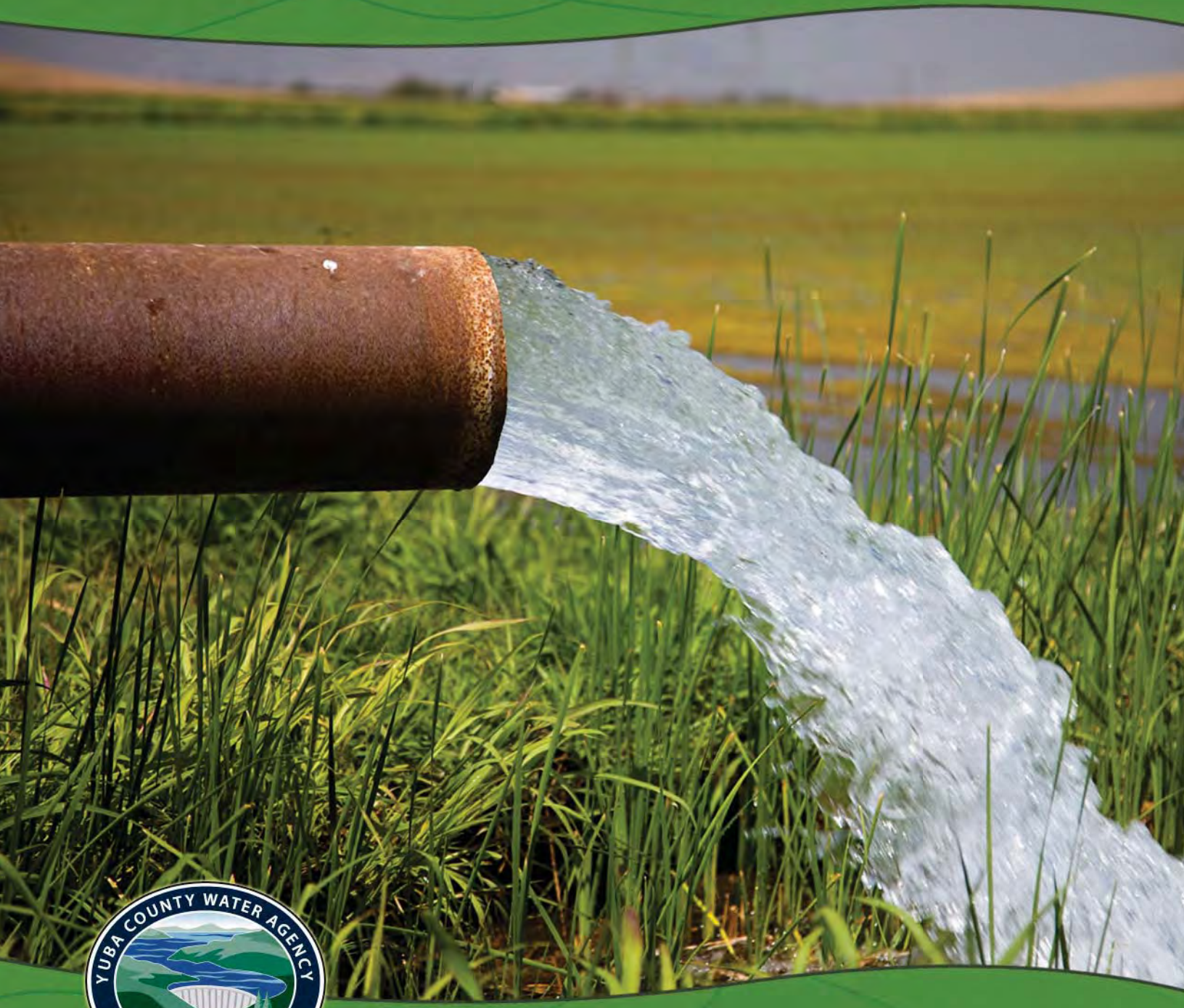
Basin/Subbasin	Basin Name	Area (acres)	Groundwater Budget Type	Well Yields (gpm)		Types of Monitoring			TDS (mg/L)	
				Maximum	Average	Levels	Quality	Title 22	Average	Range
5-87	MIDDLE FORK FEATHER RIVER	4,340	B	-	-	-	-	2	-	-
5-88	STONY GORGE RESERVOIR	1,070	B	-	-	-	-	-	-	-
5-89	SQUAW FLAT	1,300	C	-	-	-	-	-	-	-
5-90	FUNKS CREEK	3,000	C	-	-	-	-	-	-	-
5-91	ANTELOPE CREEK	2,040	B	-	-	-	-	-	-	-
5-92	BLANCHARD VALLEY	2,200	B	-	-	-	-	-	-	-
5-93	NORTH FORK CACHE CREEK	3,470	C	-	-	-	-	-	-	-
5-94	MIDDLE CREEK	700	B	-	75	-	-	1	-	-
5-95	MEADOW VALLEY	5,730	B	-	-	-	-	1	-	-

gpm - gallons per minute
mg/L - milligram per liter
TDS -total dissolved solids

Appendix F
Yuba County Water Agency Groundwater Management Plan
(compact disc)

YUBA COUNTY WATER AGENCY

Groundwater Management Plan



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ABBREVIATIONS AND ACRONYMS

µS/cm..... microSiemens per centimeter
AB ..... Assembly Bill
AF ..... acre-feet
AFB..... Air Force Base
Bay-Delta ..... San Francisco Bay/Sacramento-San Joaquin Delta
bgs ..... below ground surface
BMO..... basin management objectives
CALFED..... CALFED Bay-Delta Program
CASGEM ..... California Statewide Groundwater Elevation Monitoring
cfs ..... cubic feet per second
County ..... Yuba County
CVP ..... Central Valley Project
CWC ..... California Water Code
D-1641 ..... Water Right Decision 1641
DEH ..... Department of Environmental Health
DMS..... data management system
DPH ..... California Department of Public Health
DWR ..... California Department of Water Resources
DWSAP..... Drinking Water Source Assessment and Protection
EC..... electrical conductivity
EIR..... Environmental Impact Report
EIS ..... Environmental Impact Statement
FERC ..... Federal Energy Regulatory Commission
GAMA ..... Groundwater Ambient Monitoring and Assessment
GAMT ..... groundwater adaptive management tool
GMP..... Groundwater Management Plan
gpm..... gallons per minute
IRWMP ..... Integrated Regional Water Management Plan
LLNL ..... Lawrence Livermore National Laboratory
LUST..... leaky underground storage tank
M&I ..... municipal and industrial
MAF ..... million acre-feet
MCL ..... maximum contaminant level
mg/L..... milligrams per liter
MOU ..... memoranda of understanding
msl ..... mean sea level
MTBE..... methyl tert-butyl ether
NGS ..... National Geodetic Survey
NOI ..... notice of intent
O&M..... operation and maintenance
OPUD ..... Olivehurst Public Utility District
PAD ..... Preapplication Document
PBE..... physical barrier effectiveness

PCA ..... potential contaminating activity
PG&E..... Pacific Gas and Electric Company
Phase 8..... Sacramento Valley Water Management Program Short-Term Agreement of 2001
RD-1644 ..... State Water Resources Control Board Revised Water Right Decision 1644
Reclamation..... U.S. Department of the Interior, Bureau of Reclamation
RWQCB ..... Regional Water Quality Control Board
SB ..... Senate Bill
SCADA ..... supervisory control and data acquisition
SOP ..... standard operating procedure
SVWMP ..... Sacramento Valley Water Management Program
SWP..... State Water Project
SWRCB ..... State Water Resources Control Board
TAF ..... thousand acre-feet
TCE..... trichloroethylene
TDS..... total dissolved solids
USACE ..... U.S. Army Corps of Engineers
USCS..... Unified Soil Classification System
USGS..... U.S. Geological Survey
WAC ..... water advisory committee
YCWA..... Yuba County Water Agency
YRDP..... Yuba River Development Project
Yuba Accord ..... Lower Yuba River Accord

CHAPTER 1.0
INTRODUCTION

This Groundwater Management Plan (GMP) was created by the Yuba County Water Agency (YCWA) in accordance with Assembly Bill (AB) 3030 and the California Water Code (CWC) Sections 10750 et seq. The purpose of the YCWA GMP is to build on and formalize the historically successful management of the County's groundwater resource, and to develop a framework for implementing future activities. YCWA developed and adopted a GMP in 2005. This updated GMP reflects groundwater basin conditions through spring 2010, summarizes the status of management actions documented in the 2005 GMP, provides information on other YCWA water management activities within the basin, and presents an updated list of groundwater management actions.

1.1. YUBA COUNTY WATER AGENCY

YCWA is an independent, stand-alone government organization created in 1959 by the Yuba County Water Agency Act, hereafter referred to as the Act (see **Appendix A** for the complete Act). YCWA was created to develop and promote the beneficial use and regulation of the water resources of Yuba County (see **Figure 1-1** for the location of the Yuba County and YCWA boundaries). Two sections of the Act are of particular importance to groundwater management in Yuba County (County). The first section relates to water supply:

§SECTION 84-4. AVAILABILITY OF WATER SUPPLY; NECESSARY ACTS

> *Sec. 4. The agency shall have the power as limited in this act to do any and every lawful act necessary in order that sufficient water may be available for any present or future beneficial use or uses of the lands or inhabitants within the agency, including, but not limited to irrigation, domestic, fire protection, municipal, commercial, industrial, recreational, and all other beneficial uses and purposes. (Stats.1959, c. 788, p. 2783, Section 4.)*

The second section relates to the storage of water:

> *Section 84-4.3 Storage of water; conservation and reclamation; actions involving use of waters or water rights*
>
> *Sec. 4.3. The agency shall have the power to store water in surface or underground reservoirs within or outside the agency for the common benefit of the agency; to conserve and reclaim water for present and future use within the agency; to appropriate and acquire water and water rights, and to import water into the agency and to conserve and utilize, within or outside the agency, water for any purpose useful to the agency; …(Stats.1959, c. 788, p. 2783, Section 4.3)*

YCWA has a long history of actively managing the County's water resources for beneficial use in cooperation with its member units,[1] stakeholders, and local, State of California (State), and federal agencies. An example is the YCWA's contribution to reversing a potentially serious overdraft situation in the South Yuba subbasin (see **Figure 1-1** for subbasin location). Between 1948 and 1981, groundwater elevations in the South Yuba subbasin declined an estimated 130 feet.[2] In 1984, YCWA began delivering surface water from its New Bullards Bar Reservoir to the subbasin to offset groundwater extraction, resulting in a groundwater elevation rise to near-historical levels.

[1] As defined in the Act, member units refer to any district that enters into a contract with YCWA for the delivery of water or repayment of infrastructure to deliver water. Currently, eight districts are member units of YCWA: Brophy Water District, Browns Valley Irrigation District, Cordua Irrigation District, Dry Creek Mutual Water Company, Hallwood Irrigation Company, Ramirez Water District, South Yuba Water District, and Wheatland Water District.

[2] Based on the hydrograph for State Well ID 14N05E06B01M, located in Brophy Water District.

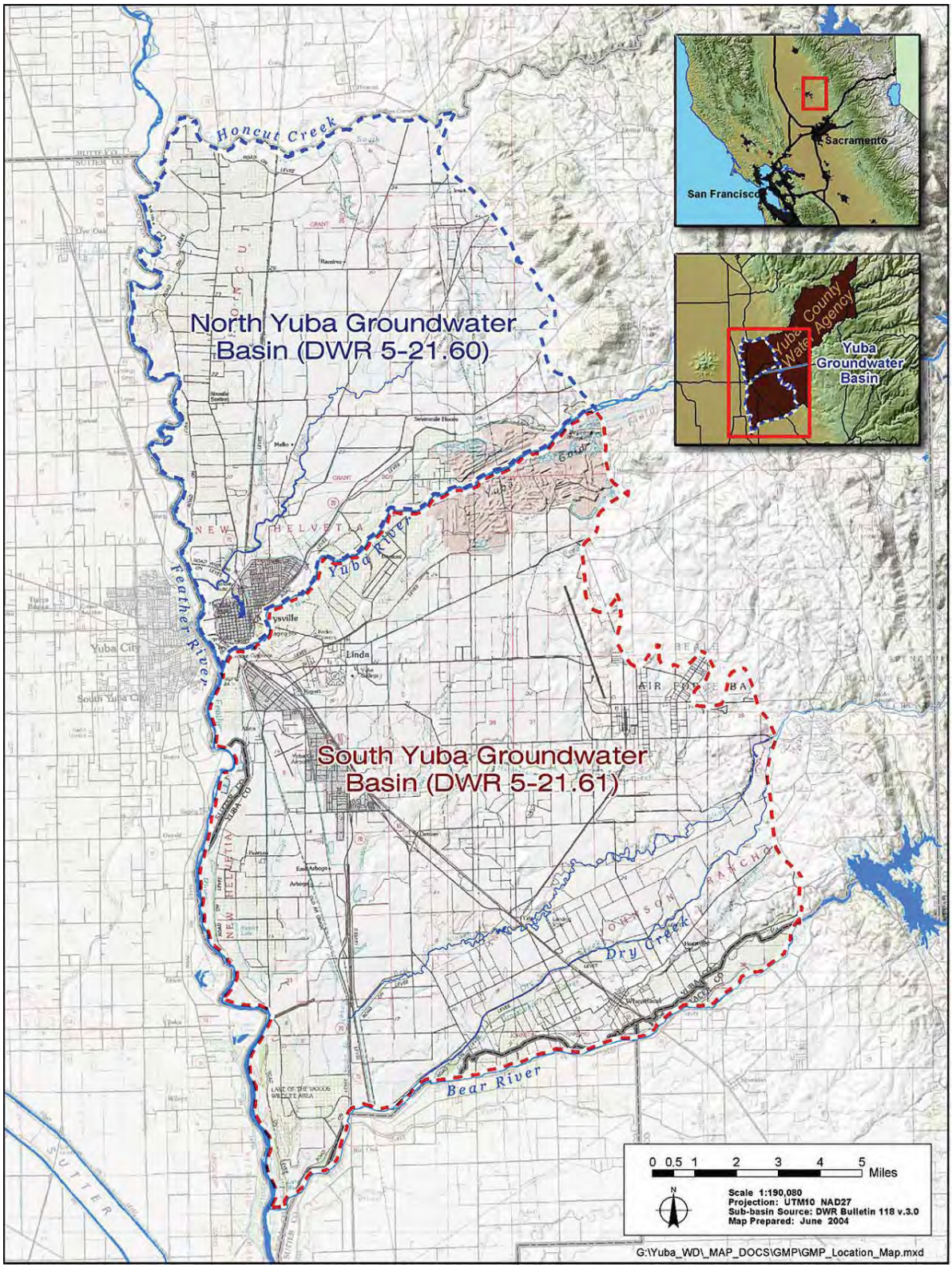


Figure 1-1. Location of Yuba County, Yuba County Water Agency, and Yuba Groundwater Basin (Groundwater Management Plan Area)

Such active surface water and groundwater conjunctive management is at the core of YCWA's commitment to resource management, a commitment that has led to the following activities:

- Monitoring North and South Yuba groundwater subbasin levels in cooperation with the California Department of Water Resources (DWR)
- Measuring groundwater quality
- Conducting groundwater studies
- Exercising the groundwater resource for the benefit of the County and State

In recognition of the importance of groundwater management, YCWA has undertaken efforts to formalize its historical groundwater management program by developing this GMP consistent with provisions of the CWC Section10750 et seq. The area covered by the GMP is shown in **Figure 1-1**.

1.2. ACTIVITIES AFFECTING RESOURCE MANAGEMENT

Over the past several decades, YCWA has met water resources management challenges brought on by the following:

- Floods of 1955, 1986, and 1997
- Droughts of 1976–1977 , 1987–1992, 2001–2002, and 2007–2009
- Bay-Delta Accord of 1994, State Water Resources Control Board (SWRCB) Water Right Decision 1641 (D-1641), and subsequent Sacramento Valley Water Management Program Short-Term Agreement of 2001 (Phase 8)
- Listing in 1999 of steelhead and spring run Chinook salmon under protection of the Endangered Species Act
- SWRCB Revised Water Right Decision 1644 (RD-1644) regarding minimum instream flows in the Lower Yuba River and the resulting Lower Yuba River Accord (Yuba Accord) (SWRCB, 2010)
- Yuba County's participation in meeting increasing statewide water demands through the YCWA transfer program
- Yuba County Integrated Regional Water Management Plan (IRWMP) of 2008 (Yuba County, 2008)

YCWA and its member units have invested substantial time and resources in planning efforts to address many of the aforementioned items. Some of these activities, listed above, are discussed in more detail below.

1.2.1. Sacramento Valley Water Management Program Short-Term Agreement (Phase 8)

The Sacramento Valley Water Management Program (SVWMP) is an integrated effort by Sacramento Valley water users to provide water as a mechanism to avoid an SWRCB hearing to determine which water users would be responsible to meet water quality standards set forth by the 1994 Bay-Delta Accord. Rather than face a hearing, the Sacramento Valley Water Management Agreement (Agreement) establishes a framework to meet supply, water quality, and environmental needs in the Sacramento Valley (Reclamation and DWR, 2005). YCWA is a signatory to the Agreement and is thereby committed to providing water for San Francisco Bay/Sacramento-San Joaquin Delta (Bay-Delta) water quality needs while it continues to manage the resource for local supply reliability and beneficial use within the County.[3] To implement the Agreement, Northern California water districts and companies have proposed more than 50 projects that will be included in both short- and long-term work plans. The U.S. Department of the Interior, Bureau of Reclamation (Reclamation), and DWR, in coordination with the signatory water districts and companies, are currently preparing the Short-Term Sacramento Valley Water Management Agreement Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) (Reclamation and DWR, 2005).

1.2.2. State Water Resources Control Board Water Right Decision 1644 and Lower Yuba River Accord

In 1988, a complaint was filed with SWRCB against YCWA by a coalition of fisheries groups. The coalition's main contention was that instream flow requirements did not provide an adequate level of protection for fishery resources in the lower Yuba River. On March 1, 2001, SWRCB issued Water Right Decision 1644 (D-1644) and on July 16, 2003, SWRCB issued RD-1644, which defines minimum instream flows in the lower Yuba River.[4]

Historically, collaborative management of the Yuba Basin has led to highly reliable water supplies both locally and statewide, including groundwater substitution transfers in 1991, 1994, 2001, 2002, 2008, 2009, and 2010. YCWA has worked within a broad coalition of 17 agricultural, environmental, and fisheries interests, including State and federal agencies, to develop an innovative set of agreements that together form a framework – the Lower Yuba River Accord (Yuba Accord) – that resolved nearly 15 years of controversy and litigation over instream flow requirements for the lower Yuba River. YCWA and 16 other interested parties signed memoranda of understanding (MOU) that specify the terms of the Yuba Accord, a comprehensive, consensus-based program to protect and enhance aquatic habitat in the Yuba River downstream from U.S. Army Corps of Engineers' (USACE) Englebright Dam. Following environmental review, YCWA and parties executed the following four agreements in 2007, which together comprise the Yuba Accord: (1) Lower Yuba River Fisheries Agreement, which specifies the Yuba Accord's lower Yuba River minimum streamflows and creates a detailed fisheries monitoring and evaluation program, (2) Water Purchase Agreement, under which DWR purchases water from YCWA for the CALFED Bay-

[3] For a list of the signatories of the agreement, see the Sacramento Valley Water Management Agreement, September 2001. (DWR, 2001)

[4] A copy of RD-1644 is available from the SWRCB board Web site : http://www.waterrights.ca.gov/hearings/decisions/RevisedWRD1644.pdf

Delta Program (CALFED) Environmental Water Account and for Central Valley Project (CVP) and State Water Project (SWP) contractors, (3) Conjunctive Use Agreements with seven of YCWA's member units that specifies the terms of the Yuba Accord's groundwater conjunctive use program, and (4) amendments to the 1966 Power Purchase Contract between YCWA and the Pacific Gas and Electric Company (PG&E). Together, this package of agreements provides more water for instream flows and greater reliability for both instream and consumptive uses than would have been possible without the agreements.

YCWA has been operating the Project in conformance with the Yuba Accord since 2006. The 2006, 2007, and early 2008 operations were conducted under 1-year pilot programs approved by SWRCB. YCWA, DWR, and Reclamation prepared a draft EIS/EIR for the Yuba Accord in June 2007, and released the final EIS/EIR in October 2007. On May 20, 2008, SWRCB adopted its Corrected Order WR 2008-0014, which approved long-term amendments to YCWA's water-right permits that were necessary to allow YCWA to continue to implement the Yuba Accord. In 2009, YCWA and others who helped author the Accord won the California Governor's Environmental and Economic Leadership Award, the State's highest environmental honor.

1.2.3. Yuba County Water Agency Transfer Program

In addition to supplying water to its local member units, YCWA has transferred water to other parts of the State when there was both a need for additional supply in other areas and when available water from the Yuba River was greater than local need. As detailed in **Table 1-1**, YCWA has significant experience in water transfers, both surface water and groundwater substitution transfers. These transfers were often developed through cooperation between YCWA and its member units in the form of groundwater substitution transfers. For groundwater substitution transfers, YCWA participates in close monitoring of the groundwater basin. Groundwater substitution transfers are discussed in more detail in Section 2.

Table 1-1. Yuba County Water Agency Historical Water Transfers 1987 Through 2010

Year	Sacramento Valley Index[i] Water-Year Type	Buyer	Stored-Water Transfer (acre-feet)	Groundwater Substitution Transfer (acre-feet)
1987	Dry	California Department of Water Resources	83,100	
1988	Critical	California Department of Water Resources	135,000	
1989	Dry	California Department of Water Resources	90,000	
		California Department of Water Resources for California Department of Fish and Game	110,000	
		City of Napa	7,000	
		East Bay Municipal Utility District	60,000a	
1990	Critical	City of Napa	6,700	
		California Department of Water Resources	109,000	
		Tudor Mutual Water Company/Feather Water District	2,951	
1991	Critical	State Water Bank	99,200[b]	84,840
		State Water Bank – California Department of Fish and Game	28,000	
		City of Napa	7,500	
1992	Critical	State Water Bank	30,000[c]	
1994	Critical	California Department of Water Resources		26,033
1997	Wet	Reclamation for Refuge Water	25,000[d]	
		Sacramento Area Flood Control Agency for American River Fishery	48,857	
2001	Dry	Environmental Water Account	50,000[e]	
		California Department of Water Resources	52,912	61,140
2002	Dry	Environmental Water Account	79,742	55,258
		California Department of Water Resources	22,050	
		Contra Costa Water District	5,000	
2003	Above–Normal	Environmental Water Account	65,000[f]	
		Contra Costa Water District	5,000	
2004	Below–Normal	Environmental Water Account	100,000[f]	
		California Department of Water Resources	487	
2005	Above–Normal	Environmental Water Account	6,086[f]	
2006	Wet	Environmental Water Account	60,000[a]	
2007	Dry	Yuba Accord Water Purchase Participants	65,000[f,g,h]	
2008	Critical	Yuba Accord Water Purchase Participants	117,212[f,g]	48,875
2009	Dry	Yuba Accord Water Purchase Participants	91,100[f,g]	
		DWR Drought Water Bank		88,900[j]
2010	Below–Normal	Yuba Accord Water Purchase Participants	74,179 [f,g]	
		Yuba Accord Water Purchase Participants		66,213
Total			1,636,076	431,259

Notes:
[a] Sold but not delivered.
[b] In 1991, BVID transferred an additional 5.5 TAF to the State Water Bank through conservation.
[c] In 1992, BVID transferred an additional 5.5 TAF to the State Water Bank through conservation.
[d] In 1997, the transfer included 5 TAF from BVID.
[e] In 2001, BVID transferred an additional 4.5 TAF to DWR (stored water transfer) and 3.5 TAF to the EWA (groundwater substitution pumping).
[f] In 2002, 2003, 2003, 2007, 2008, 2009 and 2010, BVID transferred an additional 3.1 TAF to SCVWD through conservation.
[g] Transfers to the Yuba Accord Water Purchase Participants includes 60 TAF of stored water for the Environmental Water Account
[h] The 2007 transfer was under Yuba Accord Pilot Program. It also included 60 TAF of transfer to the EWA purchased in 2006.
[I] Sacramento Valley Index as defined in SWRCB RD-1641
[j] In 2009, CID transferred an additional 8.3 TAF to the DWR Drought Water Bank.
Key:
AF = Acre-feet EWA = Environmental Water Account

The historical success of YCWA's transfer program, the requisite monitoring program, and cooperation with member units, local stakeholders and local, State, and federal agencies exemplify YCWA's commitment to resource management, and form the foundation for the GMP.

1.2.4. Yuba County Integrated Regional Water Management Plan

The IRWMP, released in 2008 (Yuba County, 2008), was developed to facilitate regional-scale coordination of water management opportunities, including improving water supply reliability, flood protection, and other water resources needs in an environmentally appropriate way to maximize benefits for citizens of Yuba County. YCWA served as the regional lead agency in the coordinated development of the IRWMP with the Management Group, which comprised 11 local districts, cities, and agencies. YCWA also served as the lead agency for the Management Group in preparing the Proposition 50 IRWMP Planning Grant Application, which funded preparation of the Yuba County IRWMP.

As part of the IRWMP process, the Management Group identified the following strategies as most important for addressing water resources issues in Yuba County:

- Flood management
- Water supply reliability
- Water quality protection and improvement
- Ecosystem restoration
- Water recycling and reuse
- Recreation and public access

The complex and integrated nature of water resources in the County is reflected in the relationships between water management issues, and requires integration of these strategies to meet the differing needs in a cost-effective manner. During development of the IRWMP, more than 65 projects were identified that support implementation of these strategies. These projects were evaluated, screened, and prioritized by the Management Group to guide the order of implementation.

YCWA is updating the 2008 IRWMP and the updated version will be used by the Management Group and individual local agencies to provide guidance on water management planning, and to support implementation of projects and programs that improve water management in the County. Public participation will continue to be encouraged and promoted, and will be an essential part of implementing projects and refining the IRWMP. This updated GMP will serve as the groundwater component of the updated Yuba Region IRWMP.

1.3. AUTHORITY TO PREPARE AND IMPLEMENT GROUNDWATER MANAGEMENT PLAN

The authority to manage the County's groundwater resource is provided through the Act and CWC Division 6, Part 2.75 (Section 10750 et seq.). YCWA prepared the 2005 GMP and this updated GMP update consistent with the provisions of CWC Section 10750 et seq., as amended January 1, 2003.

The State groundwater management law (CWC Division 6, Part 2.75, commencing with Section 10750) prohibits YCWA from managing groundwater within the service area of another local water district, public utility, or mutual water company, without the agreement of that other entity (Section 10750.9(b)). This GMP and YCWA's implementation of the GMP shall comply with these and other applicable limitations of State law.

State law encourages local water agencies to coordinate on GMPs (see CWC Sections 10755.2–10755.4.) The draft GMP should indicate whether or not any of the local districts has adopted its own GMP. If one or more local districts have adopted a GMP, the YCWA GMP should address coordination among the GMPs and involved districts; both South Yuba Water District and Cordua Irrigation District have adopted GMPs.

1.4. GROUNDWATER MANAGEMENT PLAN COMPONENTS

The YCWA GMP includes the following required and recommended components:

- CWC Section 10750 et seq. (seven mandatory components). Recent amendments to the CWC Section 10750 et seq. require GMPs to include several components to be eligible for the award of funds administered by DWR for construction of groundwater projects or groundwater quality projects.

- DWR Bulletin 118 (2003) components (seven recommended components).

- CWC Section 10750 et seq. (12 voluntary components). CWC Section 10750 et seq. includes 12 specific technical issues that could be addressed in GMPs to manage basins optimally and protect against adverse conditions.

Table 1-2 lists the section(s) in which each component is addressed.

Table 1-2. Location of Yuba County Water Agency's Groundwater Management Plan Components

Description	Section(s)
A. CWC Section 10750 *et seq.*, Mandatory Components	
1. Documentation of public involvement statement.	3.4.1, 3.4.3
2. Basin management objectives (BMO).	3.2
3. Monitoring and management of groundwater elevations, groundwater quality, inelastic land surface subsidence, and changes in surface water flows and quality that directly affect groundwater levels or quality or are caused by pumping.	3.5
4. Plan to involve other agencies located within groundwater basin.	3.4.2
5. Adoption of monitoring protocols by basin stakeholders.	3.5
6. Map of groundwater basin showing area of agency subject to GMP, other local agency boundaries, and groundwater basin boundary as defined in DWR Bulletin 118.	Figure 1-1
7. For agencies not overlying groundwater basins, preparation GMP using appropriate geologic and hydrogeologic principles.	NA
B. DWR Recommended Components	
1. Manage with guidance of advisory committee.	3.4.3
2. Describe area to be managed under GMP.	2.1 – 2.4
3. Create link between BMOs and goals and actions of GMP.	3.2, 3.3
4. Describe GMP monitoring program.	3.5
5. Describe integrated water management planning efforts.	3.4.5
6. Report on implementation of GMP.	4.1
7. Evaluate GMP periodically.	4.2
C. CWC Section 10750 *et seq.*, Voluntary Components	
1. Control of saline water intrusion.	3.6.6
2. Identification and management of wellhead protection areas and recharge areas.	3.6.2, 3.6.3
3. Regulation of the migration of contaminated groundwater.	3.6.4
4. Administration of well abandonment and well destruction program.	3.6.1
5. Mitigation of conditions of overdraft.	3.5.1, 3.7
6. Replenishment of groundwater extracted by water producers.	3.7
7. Monitoring of groundwater levels and storage.	3.5.1
8. Facilitating conjunctive use operations.	3.7
9. Identification of well construction policies.	3.6.1
10. Construction and operation by local agency of groundwater contamination cleanup, recharge, storage, conservation, water recycling, and extraction projects.	NA
11. Development of relationships with State and federal regulatory agencies.	3.4.4
12. Review of land use plans and coordination with land use planning agencies to assess activities that create reasonable risk of groundwater contamination.	3.6.5

Key:
BMO = Basin Management Objective
CWC = California Water Code
DWR = California Department of Water Resources
GMP = Groundwater Management Plan
NA = not applicable
State = State of California

CHAPTER 2.0
YUBA COUNTY WATER RESOURCES

The following section describes the hydrology of the Yuba River watershed and the Yuba groundwater basin, as well as water use within the area overlying the groundwater basin.

2.1. YUBA RIVER WATERSHED, HYDROLOGY, AND SURFACE WATER SUPPLIES

The Yuba River watershed drains approximately 1,339 square miles of the western Sierra Nevada slope, including portions of Sierra, Placer, Yuba, and Nevada counties. The Yuba River is a tributary of the Feather River, which, in turn, is a tributary of the Sacramento River (**Figure 2-1**). The average annual unimpaired flow of the Yuba River at Smartville is 2.36 million acre-feet (MAF); however, a significant portion of this water is diverted out of the watershed and is not available to the lower Yuba River. The annual unimpaired flow has ranged from a high of 4.925 MAF in 1986 to a low of 370 thousand acre-feet (TAF) in 1977.

Yearly precipitation as recorded at Marysville, CA has averaged approximately 21 inches per year since 1950. Most of the rainfall occurs in the late fall to early spring months (October to April).

2.2. SURFACE WATER FACILITIES

Since the mid 1800s, the Yuba River watershed has been significantly developed for gold mining, debris control, water supply, power generation, flood control, fish enhancement, and recreation. This development includes upstream hydroelectric diversions by PG&E; hydroelectric and water supply diversions by Nevada Irrigation District and South Feather Water and Power Agency; construction of Daguerre Point Dam and Englebright Dam by the California Debris Commission, now operated and maintained by USACE for debris control; and construction of New Bullards Bar Dam by YCWA for water supply, flood control, hydroelectric generation, recreation, and fish and wildlife enhancement (**Figure 2-1**).

Daguerre Point Dam, the first dam constructed on the lower Yuba River that still exists, is located about 12.5 miles downstream from the current Englebright Dam. Construction was completed in 1906, with diversion of the river over the dam being completed in 1910. Today, Daguerre Point Dam is the location of the majority of water diversions from the lower Yuba River. Daguerre Point Dam, because of its impoundment of water, provides enhanced recharge from the Yuba River to both the North and South Yuba groundwater subbasins.

Englebright Dam, the second dam constructed on the lower river, was built in 1941 by the California Debris Commission, now operated and maintained by USACE, to collect placer-mining debris moving down the Yuba River into the Sacramento Valley, and provide for beneficial use of water, recreation, flood control, and downstream navigation. The North, Middle and South branches of the Yuba River flow into Englebright Reservoir. Consequently, construction of Englebright Dam completely blocked anadromous fish migration into the North, Middle, and South branches of the Yuba River. The dam constitutes the upstream extent of anadromous fish migration today. The approximately 24-mile-long reach of the Yuba River between Englebright Dam and its confluence with the Feather River has been defined as the lower Yuba River (**Figure 2-1**).

YCWA began operation of its Yuba River Development Project (YRDP) in 1970. As part of the YRDP, New Bullards Bar Dam was built on the North Yuba River. YCWA owns and operates the Colgate and Narrows II powerhouses below New Bullards Bar and Englebright dams, respectively. Release capacity of the Narrows II Powerhouse is approximately 3,400 cubic feet per second (cfs), which defines the YCWA's greatest controlled release capability from Englebright Reservoir into the lower Yuba River.

New Bullards Bar Reservoir, located upstream from Englebright Dam, is the primary storage reservoir within the Yuba River watershed, with a storage capacity of about 966,000 acre-feet. Fifteen other reservoirs have been constructed in the upper portion of the watershed on the Middle and South Yuba rivers, with a combined storage capacity of approximately 400,000 acre-feet. With the exception of New Bullards Bar Reservoir, there is only minimal storage for regulation of snowmelt within the watershed. Smaller storage facilities at the headwaters of the South Yuba River and Middle Yuba River usually fill with early runoff. Hence, in wetter years, much of the spring and early summer flow to the lower Yuba River is a result of uncontrolled snowmelt within the watershed. In summer and early fall, before the precipitation season, most of the flow in the lower Yuba River is provided by releases from New Bullards Bar Reservoir.

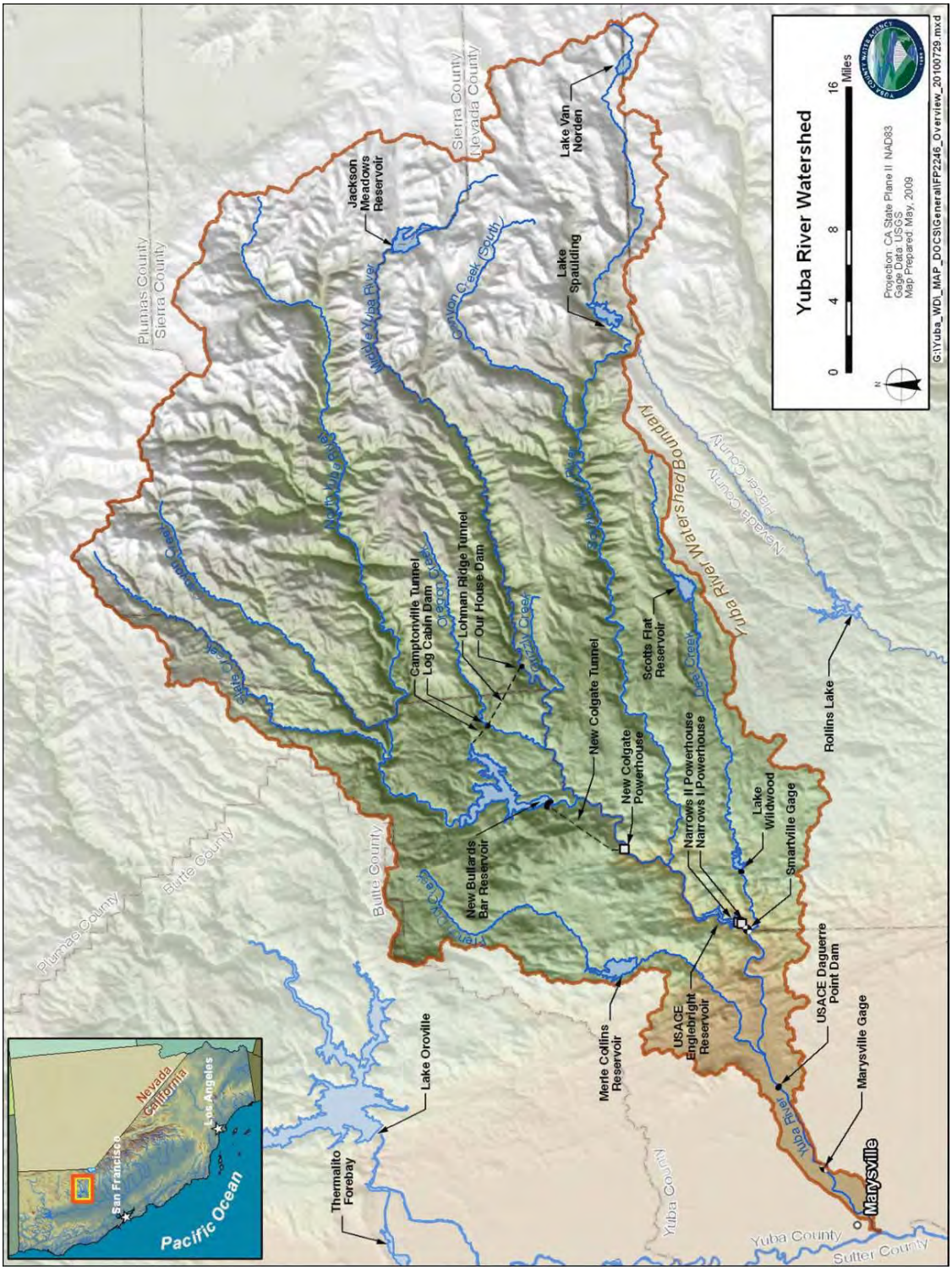


Figure 2-1. Major Water Development Facilities in Yuba River Watershed

The coupled operation of New Bullards Bar Reservoir and Englebright Reservoir includes releases through the New Colgate, Narrows I (owned by PG&E), and Narrows II hydroelectric generating facilities, providing the principal regulation of the lower Yuba River. Under existing water rights and agreements, PG&E may operate up to 45 of the 75 TAF of Englebright Reservoir storage, but only about 10 TAF of this capacity is typically exercised. This fluctuation of the Englebright Reservoir storage is principally for daily or weekly regulation of winter freshets and because Englebright Reservoir is an afterbay for Colgate Powerhouse operations. Average impaired inflow into Englebright Reservoir is about 1.6 MAF per year. On average, 1.1 MAF per year pass through New Bullards Bar Reservoir; the remaining 500 TAF are local inflow and flow from the South Yuba and Middle Yuba rivers directly into Englebright Reservoir. Below Englebright Reservoir, local inflow and runoff from Deer Creek contributes, on average, an additional 170 TAF per year below the Smartville gage, just below Englebright Dam.

The New Bullards Bar Dam and Reservoir, Our House and Log Cabin diversion dams, Colgate Powerhouse, Narrows II Powerhouse, and lower Yuba River diversions and other conveyance facilities make up the principal components of the YRDP, which the YCWA constructed in the late 1960s.

2.3. GROUNDWATER SUPPLIES

This section provides a regional description of the geologic and hydrogeologic conditions of the groundwater basin underlying Yuba County. As defined by DWR Bulletin 118 (2003), the basin is divided by the Yuba River into the North Yuba and South Yuba subbasins (**Figure 1-1**). DWR defines the subbasins as follows:

- North Yuba subbasin (groundwater basin number 5-21.60) is bounded on the north by Honcut Creek, the Feather River on the west, on the south by the Yuba River, and on the east by the Sierra Nevada.

- South Yuba subbasin (groundwater basin number 5-21.61) is bounded on the north by the Yuba River, the Feather River on the west, on the south by the Bear River, and on the east by the Sierra Nevada.

These two subbasins are considered subbasins to the larger Sacramento Valley groundwater basin, and are hydraulically isolated from the rest of the Sacramento Valley basin by the surface streams that surround it. The Yuba County groundwater subbasins encompass an area of approximately 270 square miles.

Information provided in this section summarizes an extensive investigation and report titled *Hydrogeologic Understanding of the Yuba Basin* (Hydrogeologic Understanding report) (YCWA, 2008), as well as other studies conducted and data collected since release of the 2005 GMP (YCWA, 2005)). In particular, the following topics are discussed:

- Regional geologic setting

- Characterization of subsurface lithology

- Characterization of groundwater elevations, groundwater flow, and basin storage

- Assessment of groundwater budget components
- Groundwater response to historical water transfers
- Yuba Basin groundwater quality

Although the North Yuba subbasin and South Yuba subbasin are hydraulically isolated from each other, the underlying geology of the two subbasins is similar. Therefore, the following regional geologic setting subsection discusses the two subbasins as if they are one.

2.3.1. Regional Geologic Setting

Alluvial deposits and nonwater-bearing rocks occurring in the groundwater basin are subdivided into geologic units called formations. Ages of these formations range from Paleozoic bedrock to the present-day overlying alluvial materials. The older Alluvium, the Laguna, and the Mehrten formations are significant water-bearing formations in the groundwater basin and comprise over 95 percent of the basin volume.

Older Alluvium — Pleistocene

The Older Alluvium is composed of floodplain deposits (Modesto Formation) and alluvial fan deposits (Riverbank Formation). Estimates on unit thickness range from 100 feet in the south to 150 feet in the Yuba River vicinity. Several wells with depths of 150 feet below ground surface (bgs) or less have yielded 1,000 to 1,200 gallons per minute (gpm).

Laguna Formation – Pliocene

The Laguna Formation is exposed along the eastern basin boundary and found in deep wells to the west. Its thickness ranges between 180 and 400 feet depending on specific locations and variable underlying and overlying contact units. Wells screened in the Laguna Formation are capable of producing up to 2,000 gpm.

Mehrten Formation – Late Miocene to Pliocene

The Mehrten Formation is of great importance to the fresh groundwater basin in the Central Valley. Generally, the Mehrten Formation yields large quantities of water to wells, although hydraulic conductivity in the Mehrten varies from place to place. Surficial exposures of this unit are limited to a few square miles in the eastern central portion of the basin south and east of the Yuba Goldfields, dipping to the west and extending to great depths.

2.3.2. Characterization of Subsurface Lithology

Lithologic data were compiled and analyzed to produce cross-sectional profiles characterizing the thickness and lateral extent of coarse and fine-textured deposits in the Yuba Basin. Lithologic data used in the Hydrogeologic Understanding report came primarily from well logs obtained from DWR and YCWA. Three hundred and thirty well logs were reviewed to select logs that were representative of lithologic conditions throughout the Yuba Basin. Approximately 130 lithologic logs were selected for further analysis. These 130 selected logs were then entered into a data management tool capable of generating lithologic cross sections. Data entered from these logs were classified in two ways in the data management tool:

- All lithology descriptions were assigned a unique symbol using the Unified Soil Classification System (USCS). Under the USCS, soils are grouped based on texture and composition.

- A second classification system was devised to assign a numeric value that enables statistical analysis and correlation of lithologic types, hereby termed "K-classes." The most permeable materials, sands and gravel, were assigned a K-class value of 1; more impermeable materials, such as silt and clay, were assigned a K-class value of 6.

Table 2-1 shows K-classes assigned to Yuba basin lithologic data.

Table 2-1. Lithologic Classification System Used for Yuba Basin Lithologic Data

K-Class	Description of Lithologies
1	Coarse sand and bigger gravel, cobble
2	Sand and smaller gravel, coarse to fine gravel, conglomerate
3	Coarse to fine sand, silty sand, fractured lithified rock
4	Sandy clay, clayey gravel, silty gravel
5	Gravel with fines, sand with fines, sandy silt, clayey sand, clay, silt, sand with shale
6	Clay, shale, sandstone and other lithified material of sedimentary, igneous, and metamorphic origin, crystalline rock, and hardpan

As part of the Hydrogeologic Understanding Report (YCWA, 2008), six lithologic cross sections (three oriented north-south and three oriented east-west) were prepared to represent the thickness and extent of subsurface deposits. The overall trend in lithology type shows a westward fining, with coarse-grained materials in the eastern mountain front regions. Along the Bear and Yuba rivers, lithologic evidence of fluvial deposits exists, such as cobbles and coarse-grained sand and gravel. Several lenses of interconnected clay with silt, sand, and gravel are located throughout the basins and thin out toward the north and south.

2.3.3. Characterization of Groundwater Elevations, Groundwater Flow, and Basin Storage

Hydrographs of key wells showing historical trends of groundwater elevations in the North and South Yuba subbasins were prepared for the 2009 – 2010 Annual Measurement and Monitoring Report (YCWA, 2010) using data from DWR's water data library (available online at http://wdl.water.ca.gov). Hydrographs are presented in **Figure 2-2** and **Figure 2-3**, respectively. The hydrographs in the areas along the Feather River (in the North and South subbasins) show that groundwater levels have been generally stable in these areas since at least 1960, with some seasonal fluctuations between spring and summer conditions. **Figure 2-2** shows that groundwater elevations in central parts of the North Yuba subbasin (Ramirez Water District, Cordua Irrigation District, and Browns Valley Irrigation District) have shown apparent improvement starting in the 1970s, which coincides with the extension of surface water deliveries to Ramirez Water District. **Figure 2-3** shows that groundwater elevations in the central parts of the South Yuba subbasin have largely recovered from historical overdraft

conditions in the subbasin (in Brophy Water District, Dry Creek Mutual Water Company, South Yuba Water District, and Wheatland Water District). The hydrographs for these areas also show a reverse in the declining trend of groundwater levels, starting in the 1980s, which coincides with the extension of surface water deliveries to the South Yuba subbasin. These hydrographs in the central parts of the North and South Yuba subbasins also show the effect of groundwater substitution transfers (during 1991, 1994, 2001, 2002, 2008, and 2009), in the form of reduced groundwater levels followed by recovery to pre-transfer levels.

The general groundwater flow in Yuba County is from east to west, from the mountain front recharge regions into the Central Valley discharge region. **Figure 2-4** shows a map of interpolated spring 2010 groundwater elevations based on the most recent groundwater elevation data collected by DWR and Beale Air Force Base (AFB). The map indicates that groundwater flows from about 140 feet above mean sea level (msl) in the east to 30 feet above msl toward the western border of Yuba County. These general spring 2009 groundwater flow conditions are similar to historical conditions, In the past decade, spring groundwater elevations have generally ranged from 140 feet msl to 30 feet msl across the basin, including spring 2004 and spring 2007 (MWH, 2008).

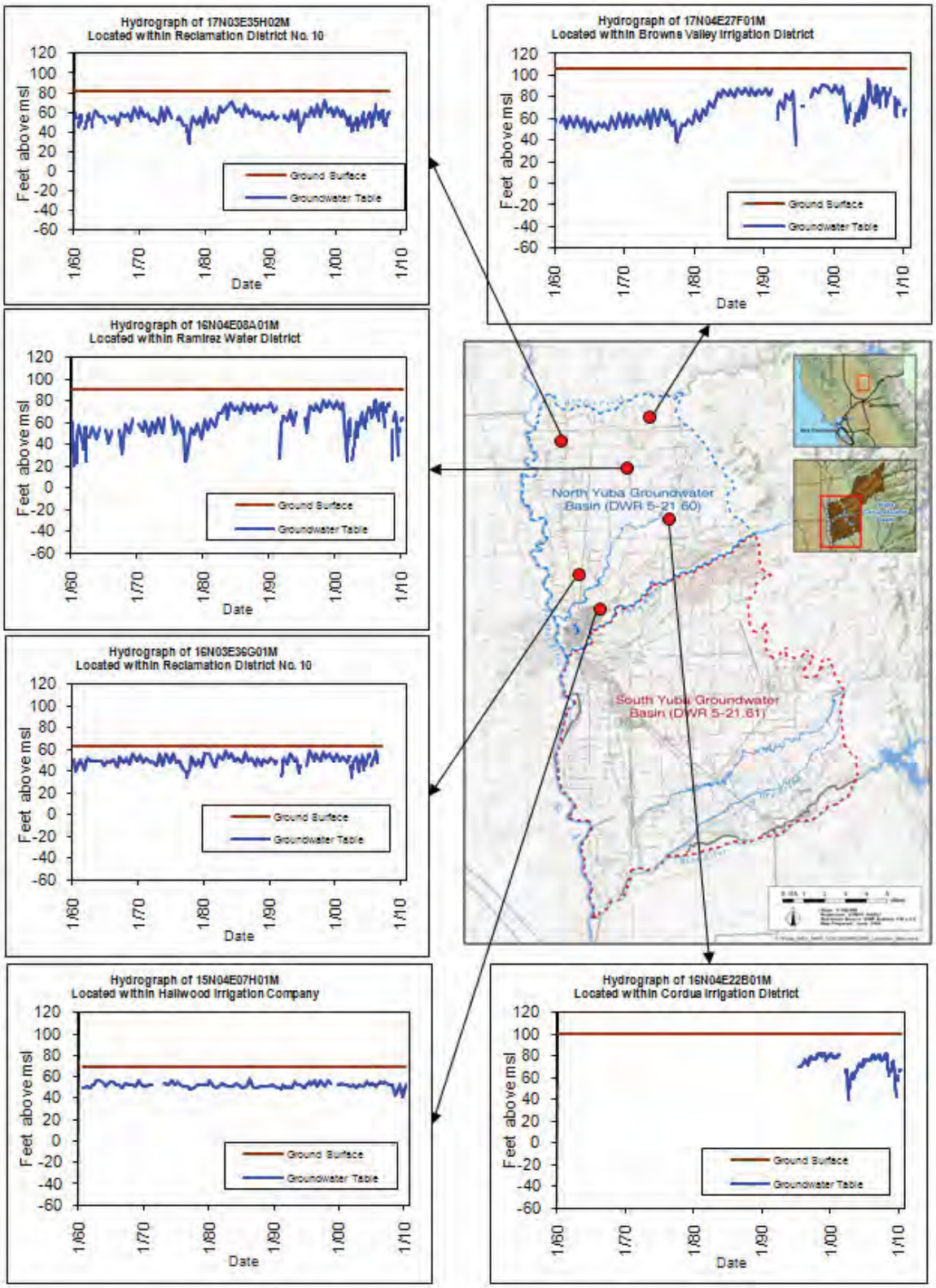


Figure 2-2. Key Groundwater Hydrographs in North Yuba Groundwater Subbasin

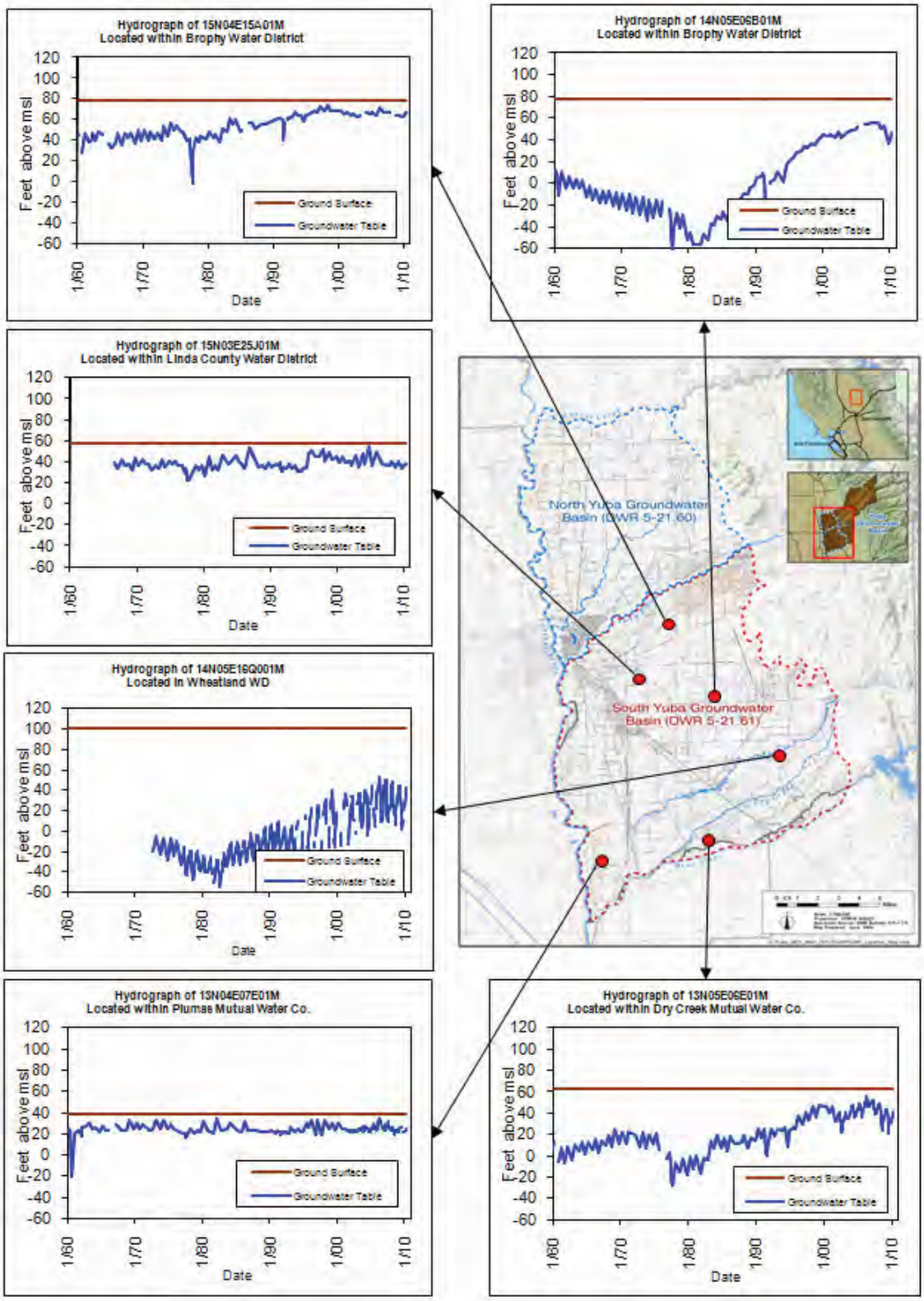


Figure 2-3. Key Groundwater Hydrographs in South Yuba Groundwater Subbasin

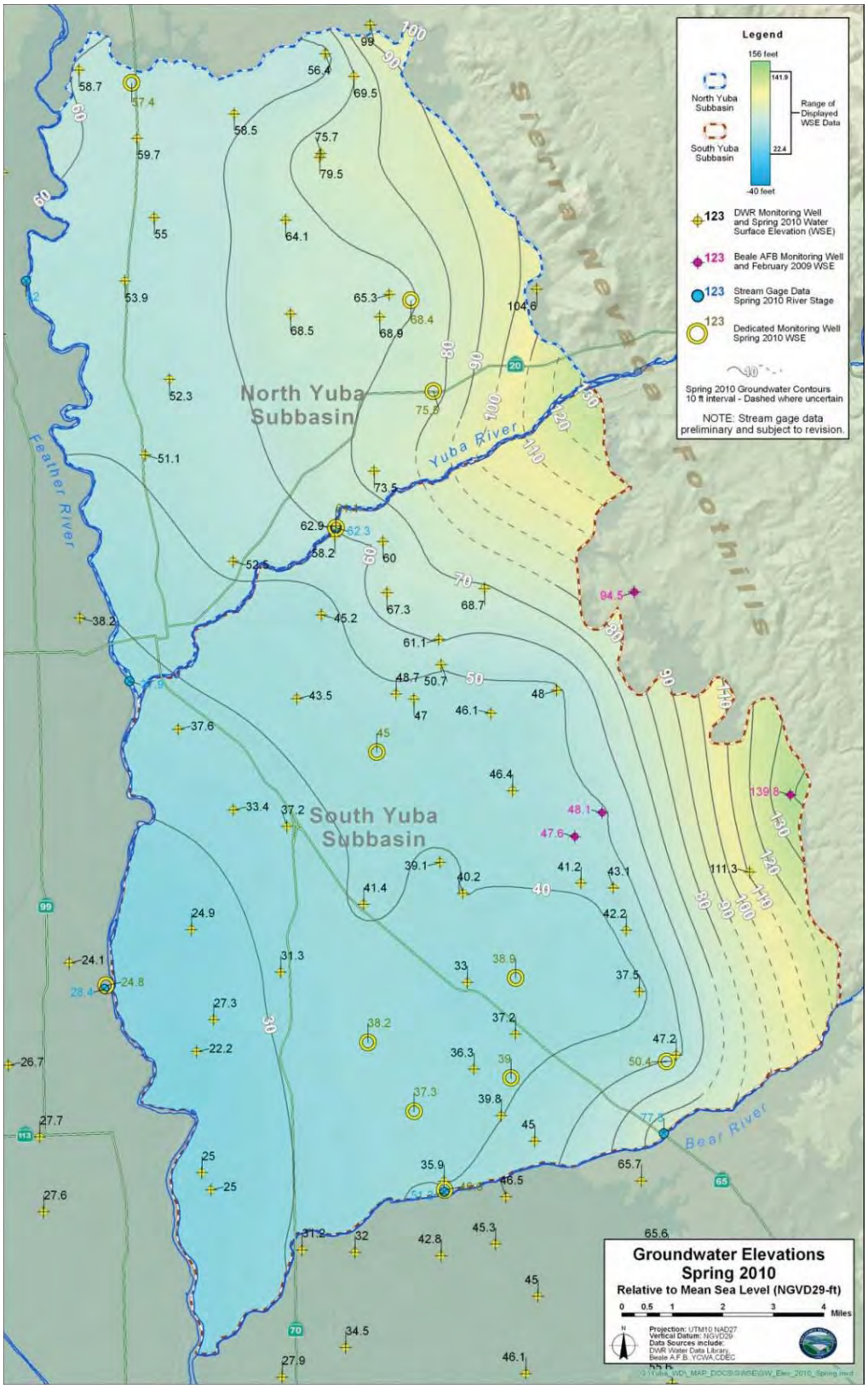


Figure 2-4. Spring 2010 Groundwater Elevations in Yuba Basin

The volume of freshwater within the Yuba County groundwater basin was estimated by evaluating the storage characteristics of aquifer material occurring above the base of freshwater and below the spring 2003 groundwater surface. Total freshwater in storage in Yuba County's groundwater basin is estimated to be 7.5 MAF. The base of freshwater is estimated to range from less than 300 ft. in the eastern portion of the basin to about 700 ft in the western portion, with depths to as much as 900 ft at the Feather River in the South Subbasin. However, since most wells are screened at less than 300 feet bgs, readily accessible freshwater is estimated at 4.0 MAF. A relationship, shown in **Figure 2-5**, was developed between groundwater storage in the Yuba Basin and groundwater elevation, based on spring 2003 conditions. **Figure 2-5** indicates that 4.0 MAF of freshwater are stored to 300 feet below the spring 2003 groundwater surface conditions. Similarly, 2.8 MAF of freshwater are stored to 200 feet below the spring 2003 conditions. This analysis suggests that past groundwater substitution transfers depleted only a small portion of the basin capacity.

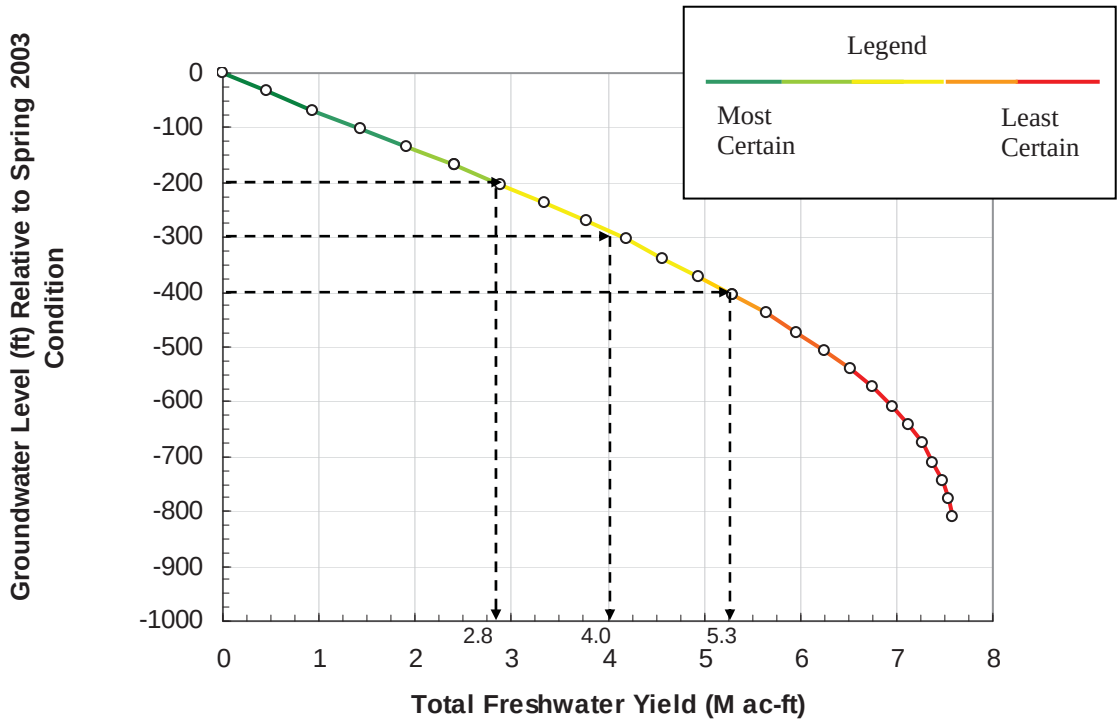


Figure 2-5. Freshwater Yield vs. Depth Relative to Spring 2003 Measured Groundwater Levels in Yuba Basin

2.3.4. Assessment of Groundwater Budget Components

The groundwater budget study presented here is an example of a framework for analyzing major components of water supply and water demand in the basin. This framework can be used as a guide to deal with the primary challenge typically encountered in managing groundwater resources: balancing water supply and water demand.

Water budget components shown in **Figure 2-6** are qualitative representations of major water input components (water supply) into the Yuba Basin and major water output components (water demand) from the Yuba Basin. The overall contribution of natural recharge from precipitation, while anticipated to be relatively large, should be viewed in conjunction with other water inputs to the basin, such as inflow across basin boundaries and percolation from applied surface water in agricultural lands. Because the majority of water demand is crop water use from irrigated agriculture, runoff from irrigated lands may be a significant basin-scale component of the groundwater budget in the Yuba Basin. Agricultural and urban water uses (in the right pie chart) in Yuba County are discussed further in Section 2.5.

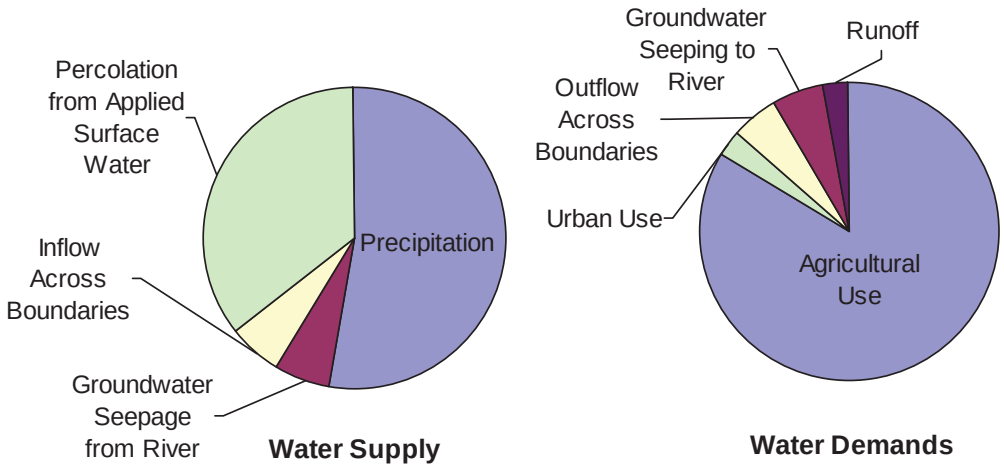


Figure 2-6. Components of Hypothetical Groundwater Budget in Yuba Basin

2.3.5. Groundwater Response to Historical Water Transfers

YCWA has performed six groundwater substitution transfers, beginning in 1991. Groundwater substitution transfers are implemented by YCWA member units when member unit irrigators pump groundwater for irrigation instead of using their normal surface water deliveries from the Yuba River. The surface water, stored in New Bullards Bar Reservoir, is then scheduled by YCWA for release down the Yuba River to the Delta at a time when it can be delivered to a purchaser of the water. Groundwater substitution transfer planning commences early in the water year and continues through the winter and early spring, with an assessment of basin conditions, determination of expected groundwater levels under various pumping plans, and determinations that expected levels will be not result in either overdraft of the basin or substantial impacts to third parties. An improved understanding of basin conditions has resulted from developing stress-response relationships correlating pumping with groundwater level response. **Figure 2-7** shows the total volume of groundwater pumped by member units for transfer in the Yuba Basin during the six groundwater substitution years. **Figures 2-8** and **2-9** show the volume of groundwater pumped by member unit for the north and south Yuba subbasins in these years. **Table 2-2** shows monthly pumping volume by member unit, where data are available, during the six groundwater substitution transfer years.

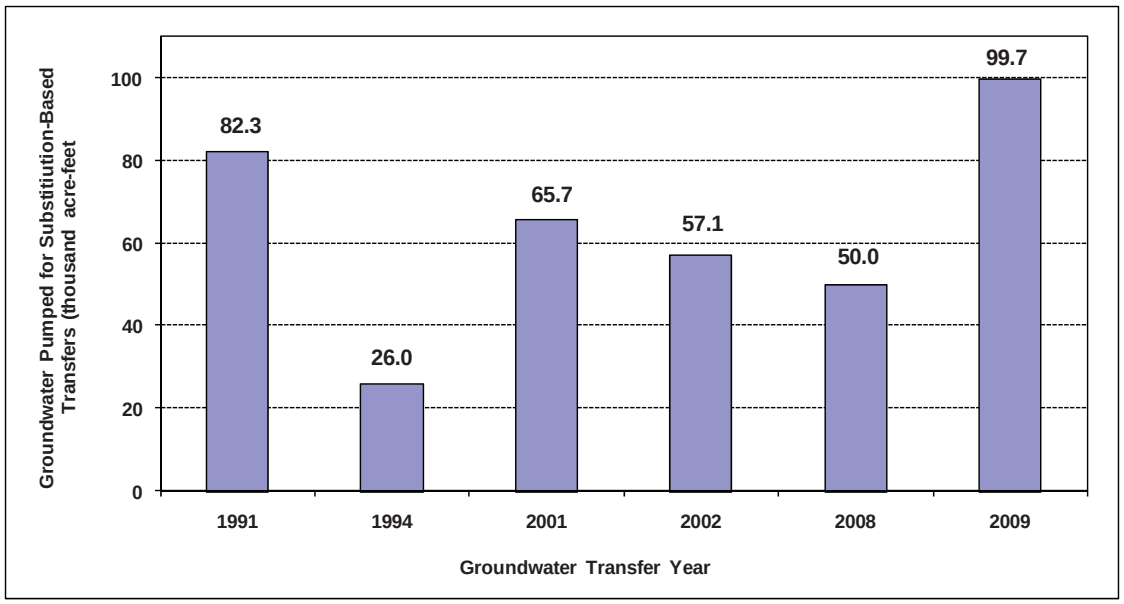


Figure 2-7. Groundwater Pumped for Substitution-Based Transfers in Yuba Basin

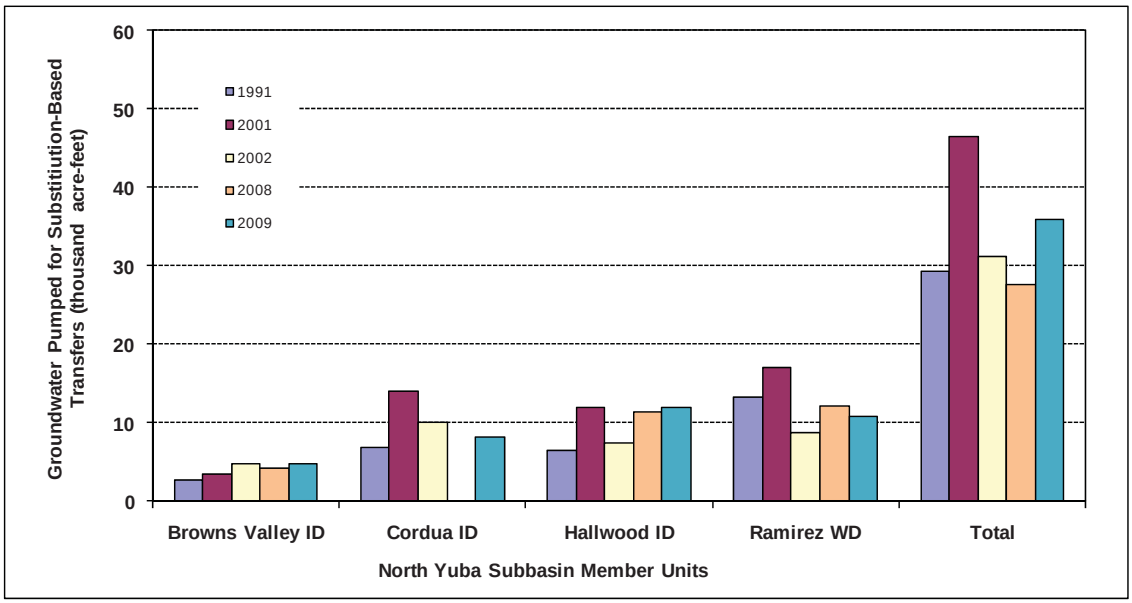


Figure 2-8. Groundwater Pumped for Substitution-Based Transfers in North Yuba Subbasin, 1991 – 2009

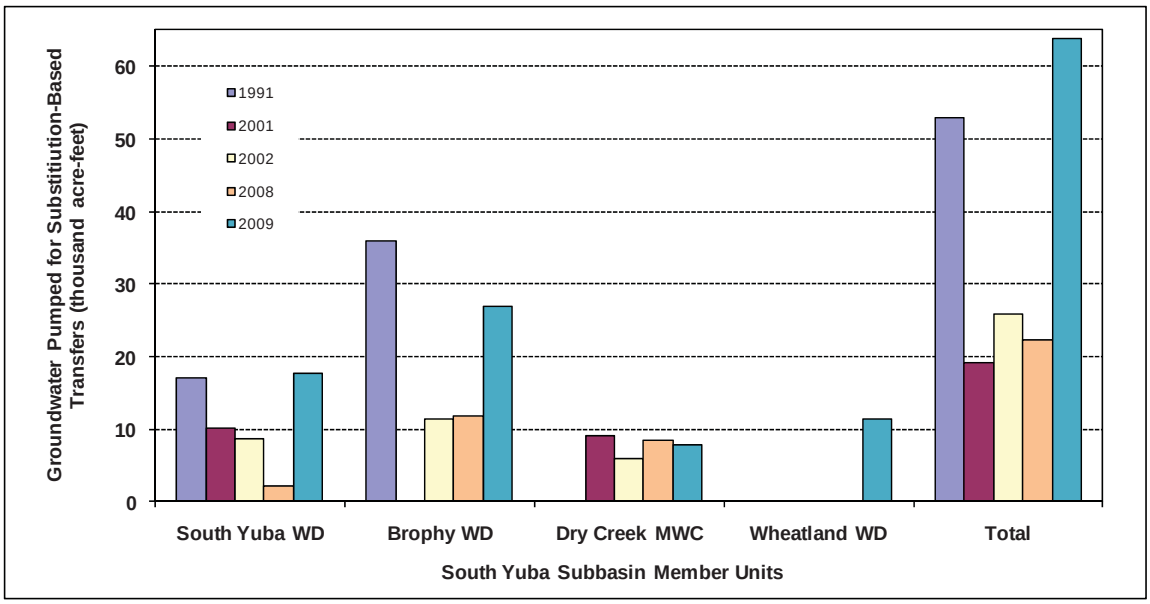


Figure 2-9. Groundwater Pumped for Substitution-Based Transfers in South Yuba Subbasin, 1991 – 2009

Table 2-2. Yuba County Water Agency Historical Groundwater Substitution Pumping[a]

Member Unit	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1991 Pumping Volumes (acre-feet)										
Brophy Water District	NA	NA	NA	NA	NA	NA	NA	NA	NA	36,000
Browns Valley Irrigation District	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,679
Cordua Irrigation District	NA	NA	NA	NA	NA	NA	NA	NA	NA	6,803
Dry Creek Mutual Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	-
Hallwood Irrigation Company	NA	NA	NA	NA	NA	NA	NA	NA	NA	6,510
Ramirez Water District	NA	NA	NA	NA	NA	NA	NA	NA	NA	13,277
South Yuba Water District	NA	NA	NA	NA	NA	NA	NA	NA	NA	17,000
Wheatland Water District	NA	NA	NA	NA	NA	NA	NA	NA	NA	-
Subtotal	NA	NA	NA	NA	NA	NA	NA	NA	NA	82,268
2001 Pumping Volumes[b] (acre-feet)										
Brophy Water District	-	-	-	-	-	-	-	-	-	-
Browns Valley Irrigation District[c]	NA	NA	NA	NA	NA	NA	NA	NA	NA	3,500
Cordua Irrigation District	-	1,606	2,887	2,935	2,965	1,293	2,314	-	-	14,000
Dry Creek Mutual Water	104	1,131	2,364	2,006	2,888	668	-	-	-	9,161
Hallwood Irrigation Company	492	1,879	2,075	2,618	2,056	900	1,999	-	-	12,020
Ramirez Water District	712	2,228	2,627	2,229	2,057	1,373	2,149	2,102	1,532	17,009
South Yuba Water District	91	2,758	2,955	3,196	-	996	-	-	-	9,996
Wheatland Water District	-	-	-	-	-	-	-	-	-	-
Subtotal	1,398	9,602	12,909	12,983	9,967	5,229	6,463	2,102	1,532	65,684

Table 2-2. Yuba County Water Agency Historical Groundwater Substitution Pumping[a] (Continued)

Member Unit	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2002 Pumping Volumes[d] (acre-feet)										
Brophy Water District		187	1,350	4,965	2,938	411	1,440	-	-	11,292
Browns Valley Irrigation District	-	349	307	739	832	810	868	992	-	4,897
Cordua Irrigation District	-	957	1,927	3,912	-	2,325	938	-	-	10,059
Dry Creek Mutual Water	-	747	562	1,971	1,632	964	-	-	-	5,876
Hallwood Irrigation Company	-	728	947	2,884	2,029	794	-	-	-	7,382
Ramirez Water District	-	615	1,345	2,926	1,257	717	1,952	-	-	8,812
South Yuba Water District	-	434	-	5,919	1,676	-	739	-	-	8,767
Wheatland Water District	-	-	-	-	-	-	-	-	-	-
Subtotal	-	4,017	6,438	23,316	10,364	6,021	5,937	992	-	57,084
2008 Pumping Volumes[e] (acre-feet)										
Brophy Water District	719	1,877	3,226	2,915	2,364	342	227	155	-	11,825
Browns Valley Irrigation District	338	512	596	681	686	750	564	107	-	4,236
Cordua Irrigation District	-	-	-	-	-	-	-	-	-	-
Dry Creek Mutual Water	715	1,317	1,761	1,750	1,619	859	403	-	-	8,424
Hallwood Irrigation Company	366	1,551	2,561	2,401	2,785	1,132	270	256	-	11,321
Ramirez Water District	853	1,321	2,289	2,054	1,509	1,408	2,050	596	-	12,081
South Yuba Water District	-	390	403	512	476	279	42	-	-	2,103
Wheatland Water District	-	-	-	-	-	-	-	-	-	-
Subtotal	2,991	6,968	10,837	10,313	9,439	4,771	3,556	1,114	-	49,989
2009 Pumping Volumes[f] (acre-feet)										
Brophy Water District	-	405	5,283	8,131	8,289	2,461	2,388	-	-	26,957
Browns Valley Irrigation District	-	54	1,224	1,154	933	357	1,112	-	-	4,834
Cordua Irrigation District[f]	-	-	-	3,485	3,644	1,133	-	-	-	8,262
Dry Creek Mutual Water	-	709	1,360	2,028	1,611	1,352	679	-	-	7,739
Hallwood Irrigation Company	-	38	2,505	2,616	3,047	1,821	1,988	-	-	12,015
Ramirez Water District	-	175	2,324	2,284	2,137	1,162	2,708	-	-	10,790
South Yuba Water District	-	389	2,804	4,688	4,537	1,690	3,497	-	-	17,605
Wheatland Water District	-	419	1,824	3,943	2,691	1,187	1,409	-	-	11,473
Subtotal	-	2,189	17,324	28,329	26,889	11,163	13,781	-	-	99,675
2001 + 2002 + 2008 + 2009 Pumping Volumes										
Monthly Volume (acre-feet)	4,389	22,776	47,508	74,941	56,659	27,184	29,737	4,208	1,532	268,934
Monthly Distribution (%)	2%	8%	18%	28%	21%	10%	11%	2%	1%	100%

Notes
[a] Total groundwater pumped and transferred in 1994 was 26,000 acre-feet. Monthly and member unit data not available.
[b] Includes 1,044 acre-feet in addition to water transfer amount.
[c] Browns Valley Irrigation District's transfer of 3,500 acre-feet was not administered by Yuba County Water Agency
[d] Includes 1,826 acre-feet in addition to water transfer amount.
[e] Includes 1,114 acre-feet in addition to water transfer amount.
[f] Includes 2.513 acre-feet in addition to water transfer amount.
[g] Cordua Irrigation District's transfer of 8,262 acre-feet was not administered by Yuba County Water Agency.
Key:
- = no pumping
NA =not available

Groundwater elevation data from 2001 and 2004 summarized in the Hydrogeologic Understanding report a show similar response and recovery pattern (YCWA, 2008). Groundwater elevation data from spring 2004 suggest that in most locations, groundwater elevations recovered to, and even exceeded, spring 2001 conditions. In some areas, full

recovery to spring 2001 conditions occurred by spring 2005. This indicates that groundwater levels recovered to pre-pumping spring conditions within 2 to 3 years following the transfers. It is anticipated that future pumping volumes within past groundwater substitution transfer volumes would result in responses and recoveries similar to those experienced historically under similar hydrologic conditions.

In 2009, during the second year of groundwater substitution transfers and in the third year of relatively dry conditions, irrigators in Reclamation District 10 notified the Member Units and YCWA that certain wells within Reclamation District 10 were experiencing substantially reduced discharge rates attributed to lower groundwater levels. Groundwater levels in this area in the summer and fall of 2009 were lower than the past six years. Lower groundwater elevations in 2009 are believed to be due to a combination of dry hydrologic conditions, increased irrigation pumping due to dry conditions, and groundwater substitution transfer pumping. However, groundwater elevations in 2009 were within the range of elevations observed in this area during previous dry periods, most recently in the 2001 to 2002 time period. In response to concerns of the Reclamation District 10 irrigators, Member Units initiated an investigation of groundwater levels and pumping rates potentially contributing to reduced groundwater elevations within Reclamation District 10. Additionally, Reclamation District 10 irrigators monitored water elevations in production wells throughout Reclamation District 10 in 2010 and plan to do additional monitoring in the future. Both parties plan to explore additional actions to address the Reclamation District 10 irrigators' concerns.

2.3.6. Yuba Basin Groundwater Quality

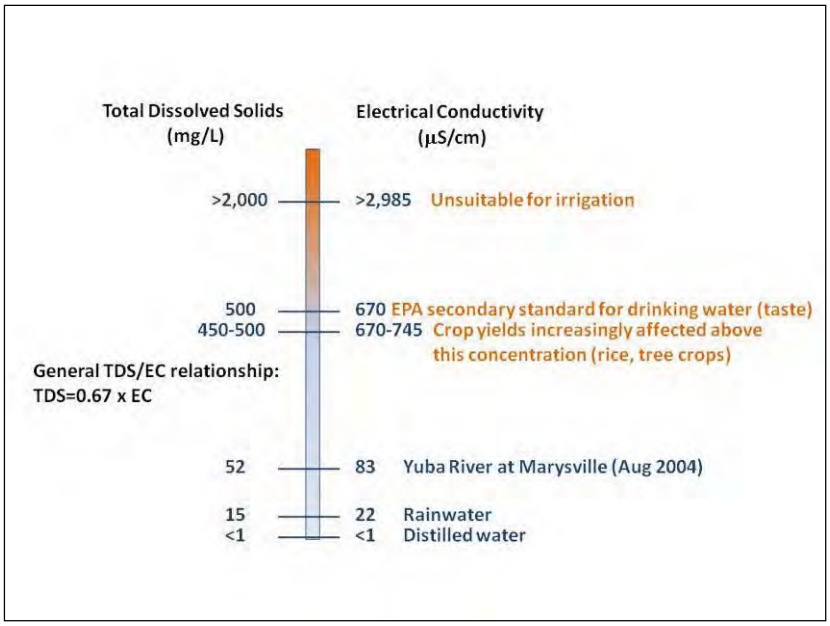
Groundwater quality data have been collected in the Yuba Basin since 1965. YCWA coordinates with DWR-North Central Region on conducting annual surveys of water quality in selected wells in the North and South Yuba subbasins. DWR-North Central Region regularly collects water quality samples from 10 wells (5 in the North and 5 in the South Yuba subbasins). A 2008 survey of water quality monitoring wells reported that no sample in wells less than 200 feet deep exceeded either the primary or secondary drinking water maximum contaminant level (MCL) in the North Yuba subbasin, as shown in **Table 2-3**. However, water quality in one well in the South Yuba subbasin exceeded the primary MCL for nitrate. Furthermore, water in wells greater than 200 feet deep commonly approach or exceed the secondary MCL for total dissolved solids (TDS) of 500 milligrams per liter (mg/L), and show TDS concentrations elevated above historical concentrations (**Table 2-3**). Based on historical data summarized in the Hydrogeologic Understanding report, most areas in the North and South Yuba subbasins show trends of increasing concentrations of calcium, bicarbonate, chloride, alkalinity, and TDS, as well as electrical conductivity (EC) (YCWA, 2008).

Table 2-3. Summary of Water Quality Indicators from DWR Survey for Yuba Subbasins

Constituent	Yuba Subbasin	Water Quality Limit (mg/L)	Water Quality Range (Minimum – Maximum) (mg/L)	
			1965 to 2007 Survey of Water Quality Monitoring Wells	2008 Survey of Water Quality Monitoring Wells
Arsenic	North	0.010[1]	-	-
	South		-	-
Nitrate	North	45 (1)	ND – 56*	2.7
	South		ND – 29	ND – 77.6*
Sodium	North	-	8 – 23	17
	South		5 – 28 {24 – 115*}	22 – 28 {72 – 115}
Total Dissolved Solids	North	500[2]	142 – 551*	90
	South		97 – 414 {373 – 1418*}	243 – 403 {898 – 1410}

Notes:
[1] Primary Drinking Water Maximum Contaminant Level (MCL)
[2] Secondary Drinking Water MCL
Key:
- = the analyte was not measured
* = Water quality that exceeds the MCL
{} = Water quality samples from deep wells (depth greater than 200 feet)
mg/L = milligram per liter
ND = No detect (concentration of constituent in the sample is below detection limit)

Although the TDS MCL was developed to regulate the taste of drinking water, elevated TDS concentrations can also result in negative impacts to irrigated agriculture. A scale showing typical TDS concentrations associated with different types of freshwater, including concentrations associated with potential damage to crops, is shown in **Figure 2-10**. EC, which is highly dependent on the concentration of dissolved constituents in water, is a good indicator of TDS. **Figure 2-10** also shows the general relationship between EC and TDS values.



Key:
EC = electrical conductivity
µS/cm = MicroSiemens per centimeter
mg/L = milligrams per liter
EPA = Environmental Protection Agency
TDS = total dissolved solids

Figure 2-10. Typical Electrical Conductivity Values

The most current state of groundwater salinity is reflected by field EC data collected by YCWA member units from 185 transfer wells during the 2009 groundwater substitution transfer. As shown in **Figure 2-11**, it can generally be observed that groundwater salinity increases with distance from the Yuba River. EC values ranged from 275 microSiemens per centimeter (µS/cm) in Hallwood Irrigation Company to 1,100 µS/cm in Wheatland Water District in 2009. Across the Yuba Basin, EC values were highest in the Wheatland area of the South Yuba subbasin, measuring a maximum of 1,100 µS/cm. In South Yuba Water District, the maximum EC measured was 800 µS/cm, and EC values reached 725 µS/cm in Brophy Irrigation District. In the North Yuba subbasin, a maximum EC value of 550 µS/cm was measured in Cordua Irrigation District, and maximum values of 500 µS/cm were found in Ramirez Irrigation District and Browns Valley Irrigation District. In 2010, Reclamation District 10 landowners reported EC values ranging from 300 to 1,275 µS/cm.

Water quality data can also indicate groundwater flow and recharge patterns. Stable isotope data collected by DWR and summarized in the Hydrogeologic Understanding report suggest that water recharging the Yuba Basin aquifers comes from two major sources: (1) Sierra Nevada snowmelt and runoff and (2) locally derived precipitation (YCWA, 2008). Additionally, deeper aquifer zones with heavier isotopic ratios may represent paleogroundwater sourced from local precipitation that occurred under cooler climatic conditions than those today.

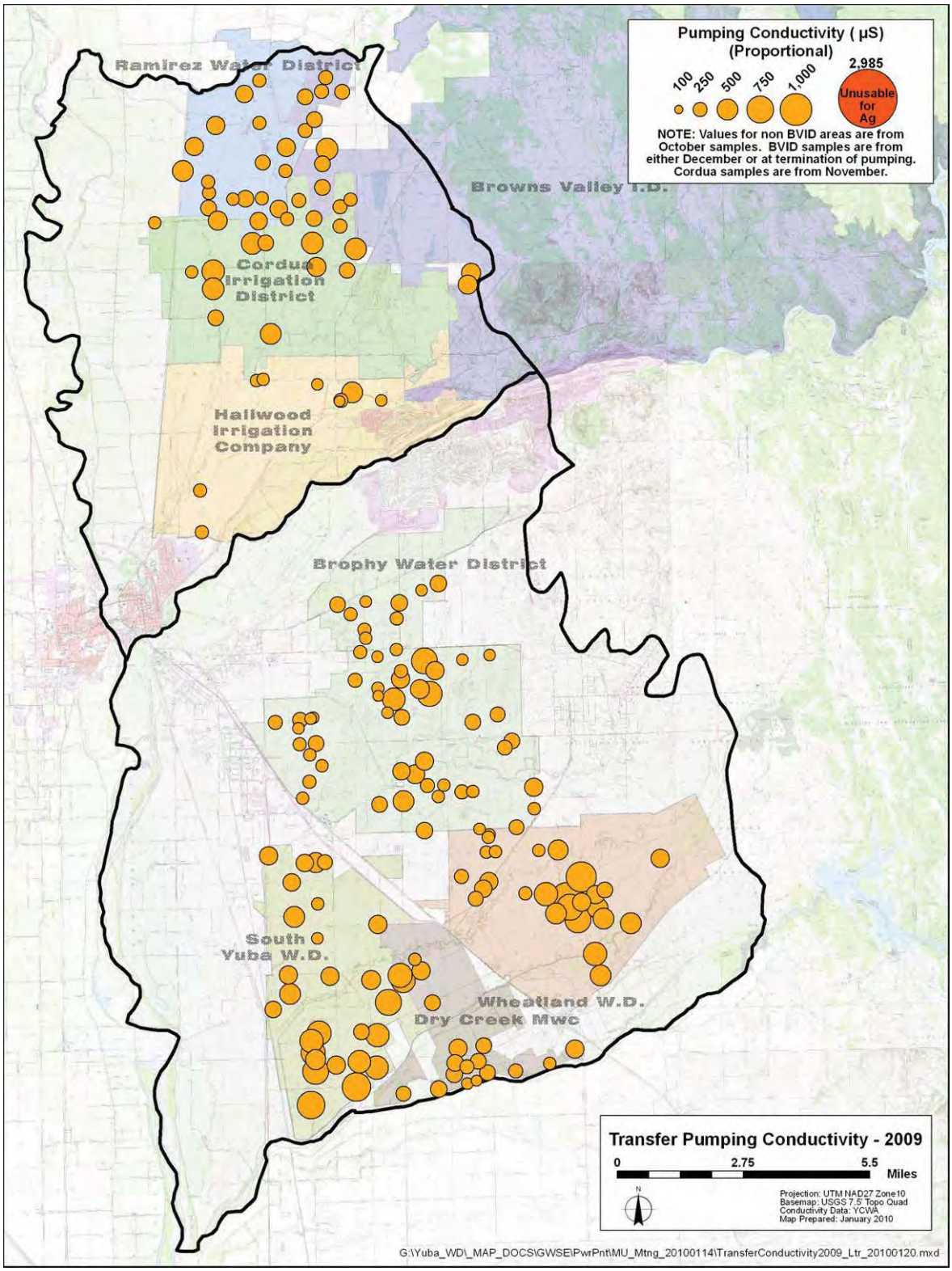


Figure 2-11. Electrical Conductivity in Yuba Basin During 2009 Groundwater Substitution Transfer

2.3.7. Groundwater in Sierra Foothills

The Sierra Foothill region of Yuba County to the east of the groundwater basin is largely supplied by groundwater from fractured rock aquifers; because of the highly unreliable and unpredictable nature of fractured-rock wells, this portion of Yuba County is not covered by this GMP.

2.4. WATER USE IN YUBA COUNTY

Within the County, water purveyors currently use both surface water and groundwater to meet demand. YCWA, by its Act, wholesales water to entities authorized to purvey water. YCWA has water service agreements to deliver surface water to its member units and several former river diverters. The member units include Brophy Water District, Browns Valley Irrigation District, Cordua Irrigation District, Dry Creek Mutual Water Company, Hallwood Irrigation Company, Ramirez Water District, South Yuba Water District, and Wheatland Water District. In addition to the surface water delivered by the YCWA, the member units have existing capacity to pump groundwater to meet part of their demand. Approximately 30 percent of the county's irrigation supply comes from groundwater and most groundwater pumping for irrigation occurs south of the Yuba River.

The five municipal purveyors located in the County rely exclusively on groundwater to meet their needs. The municipal purveyors are California Water Service, Linda County Water District, the City of Wheatland, Olivehurst Public Utility District (OPUD), and Beale AFB. Other water purveyors in the County use a combination of groundwater and surface water supplies to meet demand. Locations of all water purveyors within the County are shown in **Figure 2-12**. In addition, most rural domestic water needs are met with groundwater.

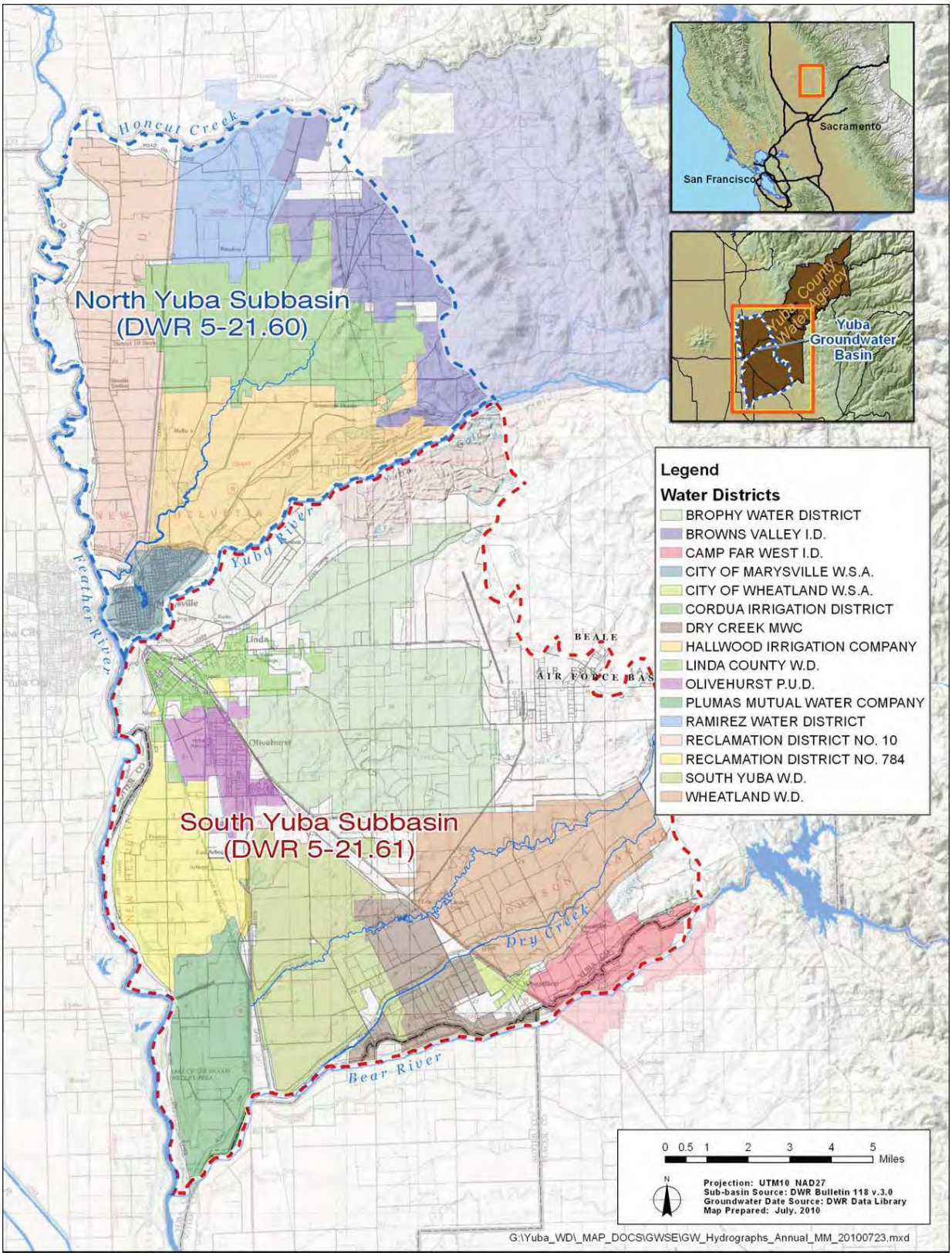


Figure 2-12. Location of Water Purveyors Within Yuba County

Use of groundwater in Yuba County for irrigation and municipal supply developed gradually as the need for water increased. This provided benefits to water users in the basin, but as early as the 1950s, groundwater levels in southern Yuba County were falling because of overdraft. During this period, groundwater pumping exceeded the rate of recharge to the groundwater basin.

Partly in response to this groundwater level decline, YCWA began to provide Yuba River water to Brophy Water District and South Yuba Water District in 1983. Monitoring indicates that groundwater levels have recovered since the early 1980s. To promote recovery of groundwater levels in the Wheatland area, YCWA and Wheatland Water District completed the Yuba-Wheatland Canal Project to deliver surface water to its farmers in 2009. Currently both the North Yuba subbasin and the South Yuba subbasin are in good health. Water levels have rebounded to near historical high levels in most areas, and a substantial volume of water has replenished the basins, particularly the South Yuba subbasin.

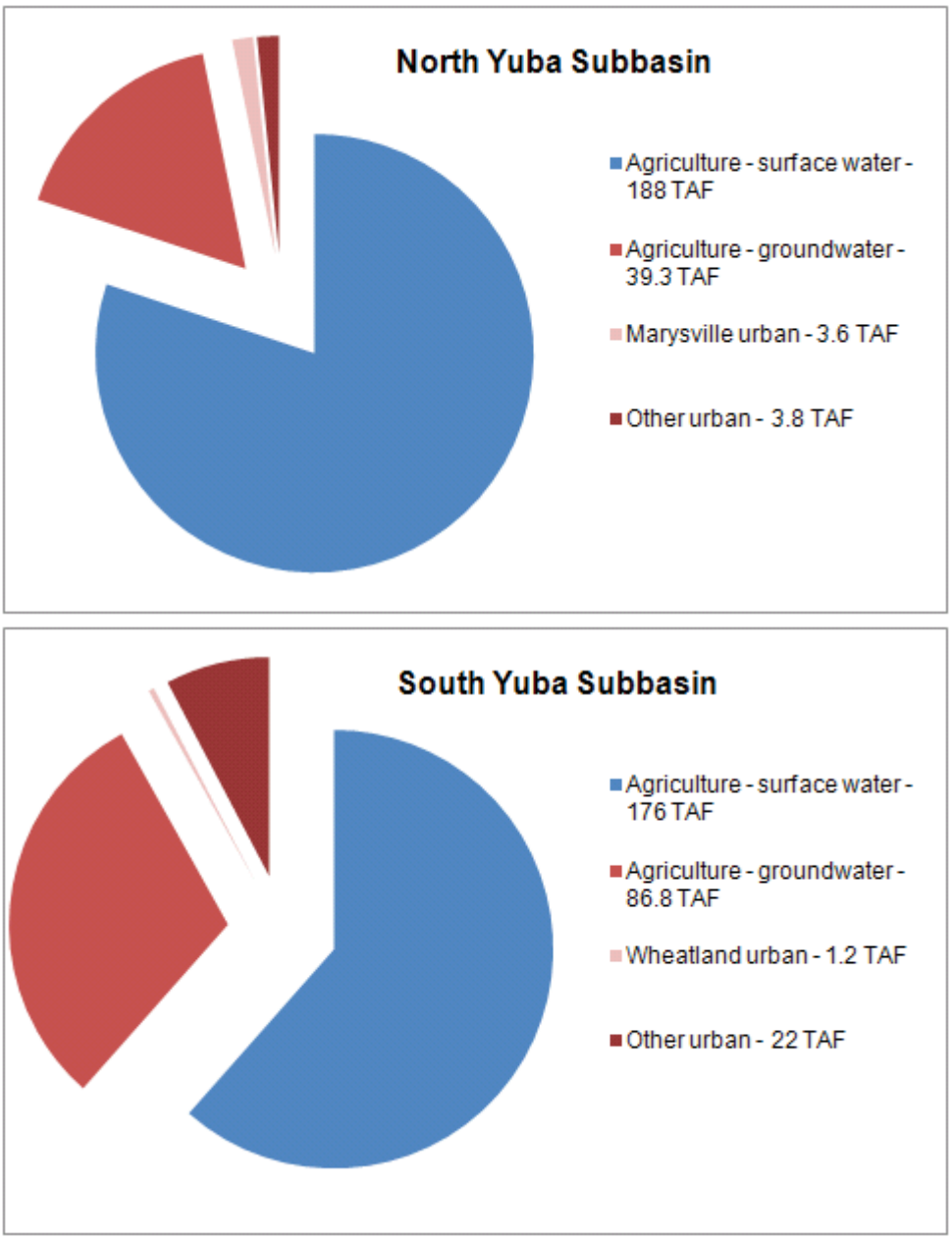
Irrigation in Yuba County is primarily supplied by surface water. Exceptions include Reclamation District 10 in the North Yuba subbasin and parts of Reclamation District 784 in the South Yuba subbasin, where groundwater is the primary source of irrigation water. All YCWA member units in both subbasins use groundwater to supplement surface water supply for agricultural use.

To represent current water demand conditions, water use in 2005 in the Yuba Basin was estimated for the 2008 IRWMP based on land use and climate data (Yuba County, 2008). Water use in the Yuba Basin in 2005 is shown in **Table 2-4** and **Figure 2-13**. As shown in **Table 2-4**, total crop water use for the entire Yuba Basin in 2005 was estimated to be approximately 491 TAF. Of this amount, an estimated 126 TAF of groundwater were pumped to meet agricultural demands, 39 TAF in the North Yuba subbasin and 87 TAF in the South Yuba subbasin. Estimates of 2005 urban water use in the IRWMP were based on an evaluation of current specific plans. Estimated values were intended to include all water uses associated with the urban land use categories, including residential, commercial, and industrial uses. As shown in **Table 2-4**, urban water use in 2005 was estimated to total about 31 TAF. The Olivehurst-Linda-Plumas Lake area had the greatest urban water use in Yuba County in 2005.

Table 2-4. Water Use in Yuba County, 2005

Area	Agricultural Uses (acre-feet)			Urban Uses (acre-feet)			Total (acre-feet)
	Surface Water	Ground-water	Total	Surface Water	Ground-water	Total	
North Yuba Subbasin							
North Yuba Subbasin (except City of Marysville)	188,500	39,000	227,500	0	3,800	3,800	231,300
City of Marysville	0	300	300	0	3,600	3,600	3,900
Subtotal	188,500	39,300	227,800	0	7,400	7,400	235,200
South Yuba Subbasin							
South Yuba Subbasin (except City of Wheatland)	170,100	82,700	252,800	0	22,000	22,000	274,800
City of Wheatland	6,300	4,100	10,400	0	1,200	1,200	11,600
Subtotal	176,400	86,800	263,200	0	23,200	23,200	286,400
Total	364,900	126,100	491,000	0	30,600	30,600	521,600

Source: Yuba County, 2008

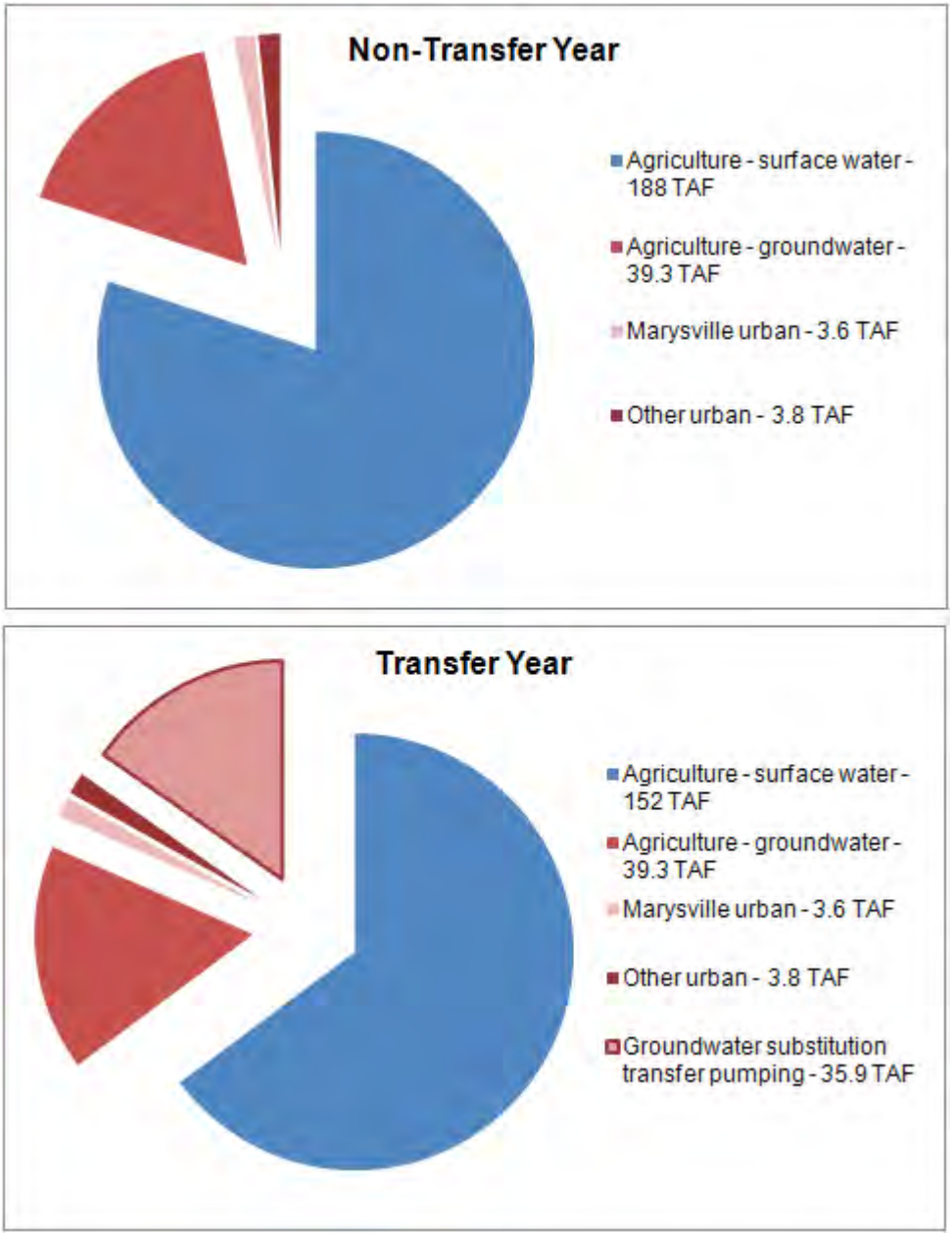


Key:
Blue indicates surface water use, red colors indicate groundwater use.
TAF=thousand acre-feet

Figure 2-13. Water Demand in Yuba Basin, 2005

YCWA groundwater supplies also help meet demand around the State through groundwater substitution transfers, as described in Section 1. Groundwater substitution transfers have been completed in 6 relatively dry years, including 1991, 1994, 2001, 2002, 2008, 2009, and 2010. **Figure 2-14** shows an example of the change in groundwater and surface water demands in the North Yuba subbasin during a groundwater substitution transfer year. During such a year, groundwater demand can double. The groundwater pumped during a transfer year is recharged by natural sources in subsequent wet seasons and when surface water is

delivered during non-transfer years, generally within 2 to 3 years after substitution pumping ends (MWH, 2008).



Note: Water demand data from 2005; groundwater substitution transfer volume from 2009
Key:
Blue indicates surface water use, red colors indicate groundwater use.
TAF=thousand acre-feet

Figure 2-14. Example Comparison of North Yuba Subbasin Water Demand During Groundwater Substitution Transfer and Non-transfer Years

2.5. NEW AND FUTURE TOOLS, FACILITIES, AND OPERATIONS

Since completion of the 2005 GMP, YCWA has engaged in a variety of activities to improve its water resources management capabilities. New projects and operations since 2005 are described below.

2.5.1. Yuba- Wheatland Canal Project

When the YRDP was constructed in the late 1960s to deliver surface water to YCWA member units and produce hydropower, financing limitations resulted in postponing the construction of conveyance facilities that would have delivered water to Wheatland Water District. Continued use of groundwater for irrigation in Wheatland Water District, as in other areas of the south subbasin from the 1940s through the 1980s resulted in further groundwater overdraft and degradation of groundwater quality because of increased salinity in the Wheatland area. Delivery of surface water to other member units in the south subbasin has greatly improved water levels in the Wheatland Water District area, but pumping continues to affect groundwater quality.

To complete surface water delivery to the South Yuba subbasin and bring surface water to Wheatland Water District, YCWA and Wheatland Water District applied for and received a grant from DWR. This grant and local funds financed completion of Phase 1 of the Yuba-Wheatland Canal Project in 2009. The completed Phase 1 provides surface water to approximately 7,750 acres of the approximately 9,200 total acres to be served upon completion of Phase 2, the second and final phase. Under Phase 1, Wheatland Water District's contract with YCWA provides for a total allocation (base and supplemental) of 23,092 acre-feet (AF) per year. The completion of Phase 2 will provide Wheatland Water District with a total of 40,230 acre-feet per year.

2.5.2. Installation of New Monitoring Wells

YCWA, in coordination with DWR, is making continuous efforts to improve water management operations within the basin. In 2006, YCWA installed eight new dedicated monitoring wells to supplement the existing monitoring well network with grant funding through DWR's Local Groundwater Assistance Program and Proposition 13, the Safe Drinking Water, Clean Water, Watershed Protection, Flood Protection Act of 2000. Groundwater elevation and water quality data collected from these wells will improve basin understanding, including characterization of recharge and discharge areas.

2.5.3. Lower Yuba River Accord Operations

Integration of surface water and groundwater supplies has been a key element of the YCWA transfer program for the past 14 years. Under the Yuba Accord, this integration is used to provide a supplemental dry year supply of groundwater to irrigate local farmland and facilitate use of storage in New Bullards Bar Reservoir to meet instream flow objectives of the Yuba Accord. The Yuba Accord thereby improves instream flows in the lower Yuba River for salmon and other fish species and, additionally, improves water supply reliability for other areas of California while maintaining local supply reliability.

2.5.4. Groundwater Adaptive Management Tool

In 2008, a groundwater adaptive management tool (GAMT) was developed to quantitatively integrate groundwater basin conditions into YCWA's planning process. The GAMT is a regression-based spreadsheet tool based on the wealth of historical groundwater level data in the Yuba River basin. In coordination with the Yuba River Basin Model, the existing surface water planning tool, the GAMT helps address groundwater substitution transfer requests from DWR and other potential water purchasers. The GAMT can be used in the following ways:

- As a predictive tool of basin response and recovery to plan for future groundwater transfers
- To help create a report documenting the status of the groundwater basin, pre- and post-transfers

The GAMT contributes to proactive management of the YCWA conjunctive use program by helping to accomplish the following:

- Prevent adverse short-term effects on other surface water and groundwater users from future groundwater substitution transfers
- Promote the long-term sustainability of the groundwater basin
- Provide additional understanding of basin response to annual variation in hydrologic conditions and potential change in air temperature and precipitation patterns because of climate change.

The GAMT provides a platform for a forward-looking analysis of groundwater basin conditions. Not only does it build on the goals of YCWA, but it also assists YCWA in fulfilling its duties to its member units and the State.

2.5.5. FERC Relicensing

YCWA holds the initial Federal Energy Regulatory Commission (FERC) license for the YRDP, which was issued to YCWA by the Federal Power Commission, FERC's predecessor. The initial license was effective on May 1, 1963, for a term ending April 30, 2016. YCWA intends to apply to FERC for a new license using FERC's Integrated Licensing Process. Consistent with federal regulations, YCWA intends to file with FERC a notice of intent (NOI) to apply for a new license and a Preapplication Document (PAD) after November 1, 2010, but no later than April 30, 2011. YCWA plans to file an application for a new license by April 30, 2014. YCWA is also developing a hydrologic operations model to support the relicensing process. As part of obtaining a new license for the project, license terms which could affect the operation of the YRDP could be added, or changed. A change in the terms of the license for the YRDP could impact water deliveries which could also affect the amount and timing of groundwater use in the basin. Any proposed changes in license terms would be analyzed as part of the re-licensing process.

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CHAPTER 3.0
GROUNDWATER MANAGEMENT PLAN ELEMENTS

The elements of this GMP include an overall goal, a set of management objectives, and a series of plan components that discuss and identify actions necessary for meeting the goal and objectives. Plan elements are summarized in the diagram in **Figure 3-1**.

3.1. GROUNDWATER MANAGEMENT GOAL

The goal of the YCWA GMP is to maintain a viable groundwater resource for the beneficial use of the people of Yuba County.

3.2. BASIN MANAGEMENT OBJECTIVES

To meet the goal stated above, YCWA has adopted seven specific basin management objectives (BMO). For each BMO identified in this section, cross-references are provided to plan actions presented and described in Sections 3.4 to 3.7.

These BMOs include the following:

- **Maintain groundwater elevations that provide for sustainable use of the groundwater basin**. YCWA intends to maintain groundwater levels by continuing and expanding the delivery of surface water to its Member Units and by managing conjunctive use activities to avoid unreasonable impacts that may occur from changes in groundwater elevations because of external transfers. YCWA has recently expanded the delivery of surface water to Wheatland Water District; this is expected to increase basin storage in the South Yuba subbasin. In addition, change in groundwater elevation which may occur as a result of groundwater extraction to meet local and out of county demands in drier years, will be monitored by YCWA.

- **Protect against potential inelastic land surface subsidence. Land subsidence can cause significant damage to essential infrastructure.** Historically, land surface subsidence within Yuba County has not been observed, and there have been no known impacts to existing infrastructure. Therefore, the potential for land surface subsidence from groundwater extraction in the north and south subbasin areas is remote given that groundwater levels are not expected to drop below historical lows. However, YCWA intends to coordinate with DWR to monitor for potential land surface subsidence.

- **Maintain and improve groundwater quality in the Yuba basin for the benefit of groundwater users**. Generally, the groundwater in the Yuba basin is of excellent quality. However, occurrences of both groundwater contamination from industrial activities and increases in TDS because of deep groundwater pumping are documented in the basin. Therefore, YCWA will coordinate with appropriate local, State, and federal agencies to pursue actions that result in the containment and remediation of these two problems.

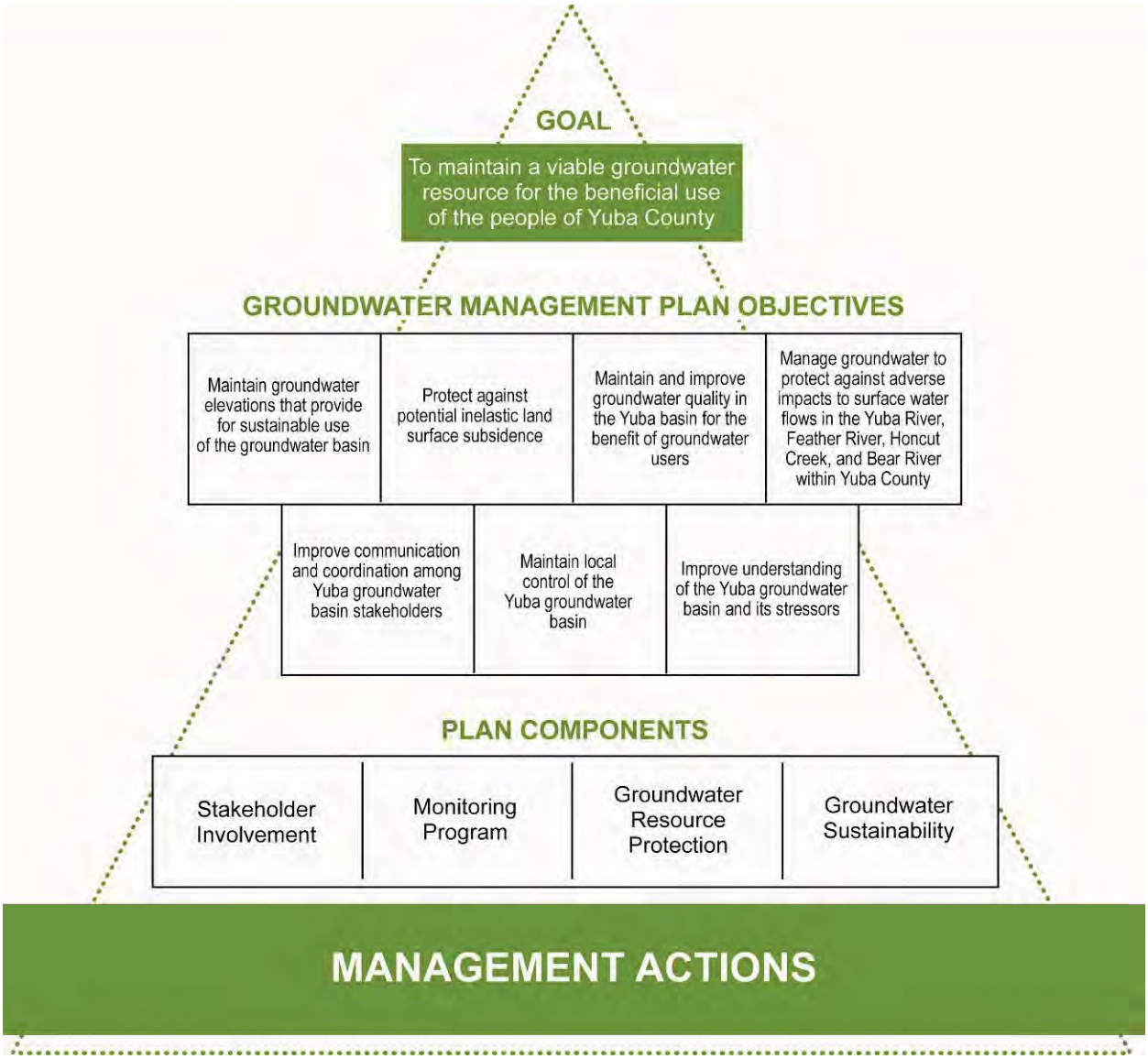

Figure 3-1. Organization of Groundwater Management Plan Elements

- **Manage groundwater to protect against adverse impacts to surface water flows in the Yuba River, Feather River, Honcut Creek, and Bear River within Yuba County.** Among other important uses, the Yuba River provides habitat for a variety of fish and wildlife species. YCWA will continue to coordinate with DWR in monitoring efforts that evaluate the relationship (if any) between groundwater pumping within the North and South Yuba subbasins and flows in the Yuba River, Feather River, Bear River, and Honcut Creek.

- **Improve communication and coordination among Yuba groundwater basin stakeholders**. The Yuba groundwater basin is used by many for a range of purposes. To make groundwater users and interested parties aware of various groundwater-

related activities within the basin, and to prevent potential misunderstandings about those activities, YCWA will improve communication and coordination among the various groundwater basin stakeholders.

- **Maintain local control of the Yuba groundwater basin**. YCWA will actively manage the groundwater basin and implement legislated mandates, as needed, so that local groundwater and surface water rights are maintained. Groundwater is a local resource, and should be managed by local management institutions with goals and objectives, to support the needs of local stakeholders and to protect the resource and ecosystem. YCWA will work to maintain local management of groundwater as a successful and sustained endeavor in Yuba County.

- **Improve understanding of the Yuba groundwater basin and its stressors**. Monitoring data programs and exploratory studies by YCWA, its member units, and DWR have resulted in a solid understanding of the hydrogeologic drivers of large portions of the Yuba County groundwater basin. However, in localized areas of the basin, substantial data gaps regarding groundwater usage, geology, and flow exist. YCWA will continue to improve its understanding of the groundwater basin through collection of additional monitoring and usage information and analysis of the groundwater basin.

3.3. GROUNDWATER MANAGEMENT PLAN COMPONENTS

This GMP includes a variety of components that are required by CWC Section 10753.7, recommended in DWR Bulletin 118 California's Groundwater (DWR 2003), and identified as optional programs under CWC Section 10753.8. It also includes groundwater management elements already in place. These components are grouped into four general categories:

1. Stakeholder involvement.
2. Monitoring program.
3. Groundwater resource protection.
4. Groundwater sustainability.

The components or programs are presented in this section and summarized in **Table 3-1** for reference. The table correlates activities that are related to one or more BMO. Each component includes a discussion and proposed actions. Note that many actions will require funding, and their implementation is thus dependent on obtaining such funding.

This GMP includes a variety of components that are required by CWC Section 10753.7, recommended by DWR Bulletin 118 (2003), and optional under CWC Section 10753.8. These components can be grouped into five general categories:

1. Stakeholder involvement.
2. Monitoring program.
3. Groundwater resource protection.
4. Groundwater replenishment.

5. Planning integration.

Each category and its components are presented in this section. Each component is discussed, actions are proposed, and objectives identified toward which the component is directed.

3.4. COMPONENT CATEGORY 1: STAKEHOLDER INVOLVEMENT PLAN

YCWA actively promotes the involvement of stakeholders when fulfilling its responsibilities, as described in the Act to "…develop and promote the beneficial use and regulation of the water resources of Yuba County…"

Many and various water purveyors, agencies, and organizations actively participate in basin monitoring and measurement throughout Yuba County. YCWA has used the GMP development process to consolidate information and, to the extent appropriate, improve management efficiency by formalizing the existing process of basin management. This GMP was developed with the involvement of YCWA's eight member units, municipal purveyors within the County, other agricultural purveyors, members of the public and DWR. The following subsections describe actions that will be taken to continue involving groundwater stakeholders.

3.4.1. Involving the Public

Groundwater in California is used by the public, and YCWA is committed to involving the public in the development and implementation of its GMP (**Figure 3-2**). Although the CWC does not explicitly address public noticing for GMP updates, YCWA chose to follow the noticing requirements prescribed in the CWC for original GMP documents to maximize stakeholder involvement in the GMP update process. In preparation of this GMP update, YCWA filed notices in the Appeal Democrat (**Appendix B**). First, in accordance with CWC Section 10753.2, a NOI to adopt a resolution to prepare an update to the 2005 GMP was published in the Appeal Democrat on October 12 and 19, 2010. The YCWA Board of Directors adopted the resolution of intent to prepare an updated GMP on October 26, 2010, at a publicly held board meeting. The adopted resolution was published in the Appeal Democrat on November 2, 2010.

Figure 3-2. Groundwater Management Plan Update Public Outreach Process

YCWA held an initial public meeting on August 19, 2010 to provide information about the GMP update process and to solicit input from stakeholders about the overall GMP goal and BMOs. The stakeholder comment period for the GMP goals and BMOs closed on September 10, 2010. YCWA published a stakeholder review draft of the GMP on October 12, 2010; the comment period on this initial draft closed on October 29, 2010. The public review draft GMP was released for review and comment on November 12, 2010; the review period closed on November 26, 2010. A public meeting, which was advertised in the Appeal Democrat on November 14, 2010, was held on November 18, 2010 to give members of the public an overview of the GMP progress to date and to solicit comments on the public review draft GMP. An ordinance to adopt the final GMP was introduced at a YCWA board workshop on December 14, 2010. The ordinance to adopt the final GMP was passed and adopted on December 28, 2010. The adopted ordinance was posted on the YCWA web site and published in the Appeal Democrat on December 31, 2010.

Table 3-1. Summary of Basin Management Objectives, Groundwater Management Plan Components, and Management Actions

Basin Management Objective (BMO)	BMO No. 1 Maintain Groundwater Levels	BMO No. Protect Against Subsidence	BMO No. 3 Maintain Groundwater Quality	BMO No. 4 Surface Water/ Groundwater Interaction	BMO No. 5 Improve Collaboration	BMO No. 6 Maintain Local Control	BMO No. 7 Improve Basin Understanding
Component No. 1 – Stakeholder Involvement							
Involving the Public	●	●	●	●	●	●	
Involving Other Agencies Within and Adjacent to YCWA Area					●	●	
Forming an Advisory Committee	●	●	●	●	●	●	
Developing Relationships with State and Federal Agencies	●	●	●	●	●	●	●
Pursuing Partnership Opportunities					●	●	●
Component No. 2 – Monitoring Program							
Groundwater Storage and Elevation Monitoring	●			●	●	●	●
Groundwater Quality Monitoring			●	●	●	●	●
Inelastic Subsidence Monitoring		●			●	●	●
Groundwater and Surface Water Interaction Monitoring	●		●	●	●	●	●
Data Management	●	●	●	●	●	●	●

Table 3-1. Summary of Basin Management Objectives, Groundwater Management Plan Components, and Management Actions (continued)

Basin Management Objective (BMO)	BMO No. 1 Maintain Groundwater Levels	BMO No. 2 Protect Against Subsidence	BMO No. 3 Maintain Groundwater Quality	BMO No. 4 Surface Water/ Groundwater Interaction	BMO No. 5 Improve Collaboration	BMO No. 6 Maintain Local Control	BMO No. 7 Improve Basin Understanding
Component No. 3 – Groundwater Resource Protection							
Well Construction, Abandonment, and Destruction Policies	●	●	●	●	●	●	●
Wellhead Protection Measures			●		●	●	●
Protection of Recharge Areas	●	●	●	●	●	●	●
Control of Migration and Remediation of Contaminated Groundwater			●	●	●	●	●
Fuel Storage Tanks			●		●	●	●
Control of Saline Water Intrusion			●	●	●	●	●
Component No. 4 – Groundwater Sustainability							
Understand Groundwater Stressors	●		●	●	●	●	●
Land Use Changes	●		●	●	●	●	●

Actions

YCWA will take the following actions to promote public involvement:

- Publish an Annual Groundwater Monitoring Report summarizing groundwater conditions in the Yuba groundwater basin relative to historical trends, and describing ongoing groundwater management activities. Also, publish a groundwater fact sheet (i.e., a one-page summary of findings from the annual groundwater monitoring report) annually. Both reports will be posted on the YCWA Web page and will be available for public distribution.

- Hold annual public/stakeholder meetings to provide updates on groundwater management activities and groundwater conditions in the basin; these meetings can be scheduled to coincide with the release of the Annual Groundwater Monitoring Report.

- Develop an enhanced Internet presence for YCWA groundwater activities; potential items to include on the Web site are the Proposition 13 Hydrogeologic Understanding Report (MWH, 2008), annual groundwater monitoring reports and fact sheets, notices for public meetings, and groundwater monitoring data.

- Develop a conjunctive use brochure for the general public highlighting the benefits of conjunctive use.

3.4.2. Involving Other Agencies Within and Adjacent to YCWA Area

Figure 2-1 shows many of the agencies within Yuba County that YCWA collaborates and coordinates with regarding groundwater management and planning activities. Each of the agencies included in this figure are involved in groundwater pumping, groundwater monitoring, and groundwater data management. Therefore, information sharing and collaboration on groundwater activities is mutually beneficial to protect and preserve the resource. **Table 3-2** summarizes these agencies.

Table 3-2. Agencies Within or Adjacent to Yuba County Water Agency with Groundwater Interests

Agency Within or Adjacent to Yuba County Water Agency	Interest in Groundwater	Represented on Water Advisory Committee
Yuba County Water Agency Member Units		
Hallwood Irrigation District	Agricultural irrigation	✓
Cordua Irrigation District	Agricultural irrigation	✓
Ramirez Irrigation District	Agricultural irrigation	✓
Browns Valley Irrigation District	Agricultural irrigation	✓

Table 3-2. Agencies Within or Adjacent to Yuba County Water Agency with Groundwater Interests (Continued)

Agency Within or Adjacent to Yuba County Water Agency	Interest in Groundwater	Represented on Water Advisory Committee
Brophy Water District	Agricultural irrigation	✓
Wheatland Water District	Agricultural irrigation	✓
South Yuba Water District	Agricultural irrigation	✓
Dry Creek Mutual Water Company	Agricultural irrigation	✓
Other Irrigators		
Reclamation District No. 10	Agricultural irrigation	✓
Reclamation District No. 784	Agricultural irrigation	✓
Camp Far West Irrigation District	Agricultural irrigation	✓
Public Water Suppliers		
California Water Service Company (City of Marysville)	Municipal supply	✓
Linda County Water District	Municipal supply	✓
Olivehurst Public Utility District	Municipal supply	✓
Plumas Mutual Water Company	Agricultural irrigation	
City of Wheatland	Municipal Supply	
Other Agencies Within Basin		
Beale Air Force Base	Municipal supply ;Groundwater remediation	✓
Yuba County	Well permitting, approval of development plans that may rely on groundwater for supply, general plan	✓
Agencies Adjacent to Yuba County		
Butte County	Groundwater management planning	✓
Sutter County	Groundwater management planning	✓
Placer County	Groundwater management planning	
Yuba City	Municipal supply	

Actions

YCWA will take the following actions to coordinate with agencies in and around the Yuba groundwater basin:

- YCWA will invite each of the agencies included in **Table 3-2** to an annual groundwater briefing to present and discuss the Annual Groundwater Monitoring Report.
- YCWA will encourage sharing of groundwater level, quality, and pumping data among these agencies.
- YCWA will attend meetings for groundwater management planning activities in Butte, Sutter, and Placer counties and share relevant information with Yuba County interests.

3.4.3. Forming Advisory Committee for Groundwater Management Plan Development

YCWA used a water advisory committee (WAC) in its GMP development (see **Appendix C**). On August 19, 2010, YCWA held a meeting with the WAC to discuss the GMP update scheduled for 2010. An invitation to the meeting was mailed to all of the agencies listed in **Table 3-2**.

Actions

YCWA will take the following actions to continue collaboration with the WAC:

- YCWA will meet with the WAC annually to present and discuss findings from the Annual Groundwater Monitoring Report.

3.4.4. Developing Relationships with State and Federal Agencies

Working relationships between YCWA and local, State, and federal regulatory agencies are critical to developing and implementing the various groundwater management strategies and actions detailed in this updated GMP. Water transfers described in Section 1.0 of the GMP are examples of YCWA's ability to work cooperatively with regulatory agencies.

Building on existing relationships with DWR, YCWA will refine and formalize the existing monitoring and measurement program in cooperation with the DWR North Central Region.

Actions

YCWA will take the following actions for the involvement of State and federal agencies:

- Continue to develop working relationships with local, State, and federal regulatory agencies.

3.4.5. Pursuing Partnership Opportunities

YCWA has successfully partnered with DWR in developing and expanding the groundwater monitoring program and in conducting local and regional scale investigations to improve

understanding of the groundwater system in Yuba County. Partnerships with local, State and federal agencies were successful in developing the Yuba Accord, under which YCWA and its member units are participating in groundwater substitution transfers to provide water for the State and economic stimulus for Yuba County. YCWA is also leading the IRWMP and implementation activities, which involve ten partners working together to manage the water resources of Yuba County in a coordinated plan. The IRWMP is an important mechanism for obtaining State grant money for water management programs and projects through the sale of water bonds.

Actions

YCWA will take the following actions to pursue partnership opportunities:

- YCWA will continue to track and pursue grant opportunities to fund groundwater management activities and local water infrastructure projects.

3.5. COMPONENT CATEGORY 2: MONITORING PROGRAM

YCWA participates in monitoring and measuring water resources as part of the power granted in the Act to "…carry on technical and other necessary investigations, make measurements, collect data, make analyses, studies, and inspections pertaining to water supply…"

This section of the GMP describes monitoring programs for all four categories of monitoring required by the CWC:

- Groundwater storage and elevation monitoring
- Groundwater quality monitoring
- Inelastic subsidence
- Groundwater and surface water interaction

Each of these categories is discussed below. The intent of this section of the GMP is to review monitoring efforts to date and determine if any enhancements are needed.

3.5.1. Groundwater Storage and Elevation Monitoring

The Yuba groundwater basin is monitored to evaluate both the long-term health of the basin and localized short-term impacts of pumping on groundwater elevations.

Long-term basin health is monitored as changes in groundwater levels and storage over time. Managing the long-term health of the basin meets the BMO of achieving groundwater elevations that provide for sustainable use of the groundwater basin. Estimates of changes in groundwater storage are developed using monitoring data that report the changes in groundwater surface elevation throughout the basin.[5]

[5] By using water level measurements and estimates of specific yield, the change in groundwater storage may be estimated.

Such monitoring data also serve another purpose, to indicate potential localized, short-term impacts of pumping. YCWA strives to accomplish the following:

- Avoid potential unreasonable impacts that may occur from changes in groundwater surface elevations because of external transfers.
- Monitor any lowering of groundwater surface elevations that may occur as a result of groundwater extraction to meet local demands in drier years.

YCWA has compiled historical water level measurements from 1947 to the present. Sources of historical water level data for the North and South Yuba subbasins include the following:

- DWR
- YCWA
- Member units
- Beale AFB
- Municipalities

Groundwater Storage and Elevation Monitoring Efforts in Yuba County

Groundwater elevation monitoring in Yuba County wells has evolved over time. DWR maintains a database that contains records dating back to 1947. Originally, water level measurements were collected by DWR. When DWR budget cuts threatened to eliminate its monitoring program, the Yuba County Agriculture Department agreed to continue measuring water levels because of the value of the data. When Yuba County Agriculture Department budget cuts threatened to eliminate its monitoring activities, YCWA agreed to continue collecting water level data.

Currently, groundwater monitoring is done cooperatively between DWR and YCWA. In 1995, the DWR-YCWA monitoring network was modified to increase efficiency. To reduce ongoing monitoring costs, DWR developed a plan that discontinued monitoring at a number of wells in exchange for installing fewer, more strategically located wells. YCWA paid approximately $100,000 to DWR to install the new wells.

YCWA successfully applied for and received an AB 303 Groundwater Assistance Grant totaling $250,000 in 2005, and a Proposition 13 Groundwater Construction Grant totaling $1,500,000 in 2001. Among other activities, YCWA used funds from the grants to install two triple-completion and six single-completion groundwater monitoring wells in the Yuba County groundwater basin in 2006. Also, YCWA successfully applied for and received an additional AB 303 grant in 2008 totaling $250,000 for the installation of five single-completion groundwater monitoring wells. The five additional wells are scheduled to be installed in summer 2011.

There are approximately 87 groundwater elevation monitoring locations within the County boundary in the current DWR/YCWA monitoring program. The locations of those wells are

shown in **Figure 3-3**. In addition to showing the location of wells monitored for groundwater surface elevations, **Figure 3-3** also indicates which agency monitors each well and how often each well is monitored (as of 2010). A standard operating procedure (SOP) for manual water level measurements was presented in Appendix A of the 2008 YCWA Measurement and Monitoring Report.

Responsibilities of both DWR and YCWA in the monitoring program are explained below.

DWR. As of 2010, 48 of the wells in the monitoring network are monitored by DWR. Of these wells, 31 are monitored monthly and 17 are continuously monitored using pressure transducers equipped with data loggers. The water level in each well is measured manually by DWR staff, using a water level indicator. As the term implies, "monthly" measurements are taken 12 times a year.

YCWA. YCWA monitors 39 of the wells in the monitoring network. Of these wells, 12 are measured semiannually, 15 are measured monthly, and 12 (six single completion and 2 triple completion wells) are continuously monitored using pressure transducers equipped with data loggers. Semiannual measurements are generally taken within 3-week windows in the spring (e.g., March) and fall (e.g., October). The water level in each well is measured manually by YCWA staff, using a water level indicator. Measured water level in the semiannual and monthly wells is provided to DWR staff for inclusion in the DWR Water Data Library (http://www.water.ca.gov/waterdatalibrary/). As of 2010, YCWA is working with DWR staff to also load the continuous data collected by the agency into the Water Data Library.

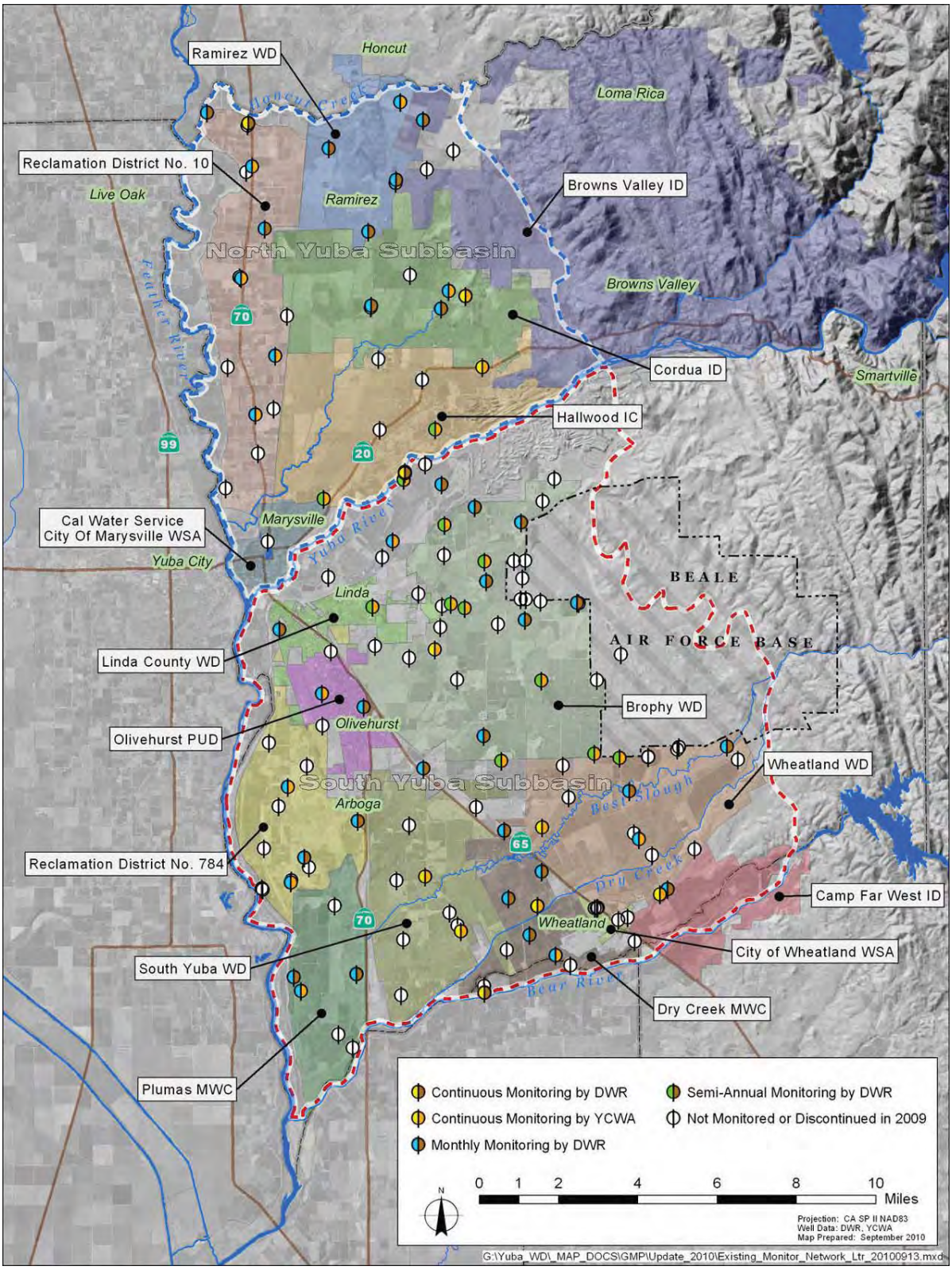

Figure 3-3. Yuba Groundwater Basin Wells Monitored for Elevation by YCWA and DWR

In addition to the groundwater surface elevation monitoring done by YCWA and DWR, YCWA member units monitor changes in groundwater elevation during groundwater substitution transfers. During 1991, the State experienced a major drought emergency, and the Governor was proposing to suspend agricultural water right diversions to meet urban demands. YCWA was instrumental in working with the State to develop a groundwater substitution drought water bank program under which groundwater was pumped for crop irrigation, and surface water normally used for irrigation was transferred to urban users for a fee. Additional groundwater substitution transfers occurred in 1994, 2001, 2002, 2008, 2009, and 2010 (see **Table 1-1** in Section 1 of this document for details of these transfers).

Since 2001, monitoring of groundwater surface elevations has increased during transfer years. This increased monitoring effort focused on wells involved in the transfers and was done to (1) assess the effects of the transfers on the groundwater resource, providing the ability to respond to unexpected low water levels, should they occur, and (2) provide reasonable assurance that the water pumped and accounted for, as part of the transfer, was in lieu of surface water deliveries.

The 2007 Lower Yuba River Accord Conjunctive Use Agreement formalized the Groundwater Monitoring and Reporting Program for groundwater substitution transfers. Member units participating in groundwater substitution transfers are required to measure the water level in selected transfer wells each year before pumping, and monthly, after pumping, until water levels recover to pre-pumping levels or until the spring high water level is reached.

Municipalities. The following municipalities measure water levels in their wells on at least a monthly basis:

- California Water Service Company (City of Marysville)
- OPUD
- Linda County Water District
- City of Wheatland

The California Water Service Company (City of Marysville) and City of Wheatland have developed a supervisory control and data acquisition (SCADA) system. Use of SCADA in monitoring implies that monitoring occurs in real time.

Table 3-3 presents a tabular summary of the number and type of wells currently being monitored for groundwater surface elevation in the Yuba County groundwater subbasins and frequency of monitoring.

Table 3-3. Summary of DWR/YCWA Water Elevation Monitoring Wells

	Number of Wells Monitored			
	Semiannually	Monthly	Continuous	Total
DWR	0	31	17	48
YCWA[1]	12	15	12	39
Transfer				Up to 240
Municipal[2]			~35	~35

Notes:
Numbers include monitoring at individual completions of multiple-completion piezometers.
[1] Several wells monitored semiannually and monthly by YCWA are measured on behalf of DWR.
[2] California Water Service Company (City of Marysville) and City of Wheatland have SCADA systems; therefore, monitoring data is real-time.
Key:
DWR = California Department of Water Resources
YCWA = Yuba County Water Agency

Refinement of Existing Groundwater Storage and Elevation Monitoring

Composition of the monitoring network has been in continual flux (i.e., wells added and dropped over time). For these reasons, YCWA is coordinating with its member units, DWR, and other basin groundwater extractors to determine if any refinements are needed to provide adequate basin coverage.

YCWA is also tracking the requirements of Senate Bill (SB) X7 6. In 2009, the Legislature passed SB X7 6, which establishes, for the first time in California, collaboration between local monitoring parties and DWR to collect groundwater elevations statewide, and that this information be made available to the public.

SB X7 6 provides for the following:

- Local parties may assume responsibility for monitoring and reporting groundwater elevations.
- DWR will work cooperatively with local Monitoring Entities to achieve monitoring programs that demonstrate seasonal and long-term trends in groundwater elevations.
- DWR will accept and review prospective Monitoring Entity submittals, then determine the designated monitoring entity, notify the monitoring entity and make that information available to the public.
- DWR will monitor groundwater elevation in basins where no local party has agreed to perform monitoring functions.

If local parties (e.g., counties) do not volunteer to perform groundwater monitoring functions, and DWR assumes those functions, the parties become ineligible for water grants or loans from the State.

YCWA is currently coordinating with its member units and other groundwater stakeholders to identify and agree on the monitoring entity for Yuba County. YCWA is also aware of two significant deadlines under the new program:

- On or before January 1, 2011. Parties seeking to assume groundwater elevation monitoring functions must notify DWR (CWC Section 10928)

- On or before January 1, 2012. Monitoring Entities will begin reporting seasonal groundwater elevation measurements (CWC Section 10932)

DWR is currently developing guidance for the program, which is being referenced as the "California Statewide Groundwater Elevation Monitoring" program. More information on the program is available online at http://www.water.ca.gov/groundwater/casgem/.

Actions

Enhancements to existing groundwater storage and elevation monitoring efforts will be considered on a cost-effective basis by YCWA when and if the following occur:

- Existing monitoring efforts continually report confusing or inaccurate findings.

- Potential impacts to the groundwater basin are reported in areas where little or no existing monitoring occurs.

- State regulations require more stringent monitoring, particularly to maintain local control of the groundwater resource.

- Further coordination becomes necessary to support monitoring activities performed at Beale AFB for both the remediation program and water service.

Types of actions to be pursued if enhancements are required include the following:

- Coordinate with member units, DWR, and other basin groundwater extractors (e.g., Beale AFB, municipalities) to identify an appropriate group of wells for monitoring to better understand groundwater level fluctuations. Preference will be given to wells currently in an agency's monitoring network that (1) have long records of historic water level data and are useful in assessing trends within the subbasins, (2) have uniform protocols used for measuring and recording water level data, (3) are nonproducing wells or have relatively low extraction volumes so that water level readings represent relatively static levels, and (4) have well construction information. Geographic distribution, basin hydrogeology, and areas of extraction will also be considered.

- Coordinate with member units, DWR, and other basin groundwater extractors so that selected wells are maintained as part of a long-term monitoring network.

- Coordinate with member units, DWR, and other basin groundwater extractors so that needed water level data are collected, verify that uniform data collection protocols are

used among the agencies, and confirm that data sharing and archiving procedures are implemented.

- Provide training for member units and other basin groundwater extractors on implementation of data collection protocols, as required or if requested.
- Consider ways to fill gaps in the monitoring well network by identifying additional existing suitable wells or identifying opportunities for constructing new monitoring wells.
- Seek outside funding and identify potential candidate wells for well characterization survey(s) to determine extraction intervals and total well depth for improved understanding of vertical gradients.
- Seek outside funding for installation of a multilevel piezometer near the Yuba Goldfields area to improve understanding of recharge in that portion of the basin.
- Semiannually obtain groundwater elevation measurements from Beale AFB.
- Identify opportunities and potential outside funding sources for monitoring groundwater levels near current or proposed future municipal pumping locations
- Track requirements for the upcoming California Statewide Groundwater Elevation Monitoring (CASGEM) program and provide the required information to DWR.

3.5.2. Groundwater Quality

The purpose of the groundwater quality component of the overall monitoring program is to develop and implement actions that will help YCWA meet BMO No. 3 – maintain and improve groundwater quality in the Yuba basin for the benefit of groundwater users. This process requires (1) collection and analysis of adequate data, and (2) if a problem is detected, coordination with appropriate local, State, and federal agencies to pursue actions resulting in remediation.

Because the majority of the wells in the groundwater basin are used for agricultural supplies, limited water quality data exist. YCWA is compiling available historical water quality data extending from the 1940s to the present. Sources of water quality data include the following:

- Member units
- DWR
- Municipalities
- SWRCB
- Beale AFB

Groundwater Quality Monitoring Efforts in Yuba County

Member Units. Member Units participating in groundwater substitution transfers under the Yuba Accord are required to collect EC measurements from transfer wells at the onset of pumping, halfway through pumping, and at the end of the pumping season from accessible transfer wells. EC data are summarized in annual Groundwater Monitoring Reports.

DWR. DWR Central District maintains data for 62 water quality wells in the two subbasins (35 in the north, 27 in the south). These data were collected starting in the 1940s. Currently, DWR collects data for 13 water quality wells in the two subbasins on a regular basis, depending on funding. In a typical year, water quality samples are collected from approximately half of the wells in the water quality monitoring network. Samples are collected after the onset of pumping in May, June, and July. Constituents analyzed include minerals, nutrients, and nitrates.

Municipalities. As required under Title 22, municipalities collect water quality data for required constituents and report that data to the California Department of Public Health (DPH). This level of monitoring is sufficient under existing regulatory guidelines to ensure that the public is provided with a safe, reliable drinking water supply. Municipalities include the following:

- California Water Service Company (City of Marysville)
- OPUD
- Linda County Water District
- City of Wheatland

SWRCB. The California Legislature and Governor, as well as private citizens, have become increasingly concerned about the recent public supply well closures because of the detection of chemicals, such as methyl tert-butyl ether (MTBE) from gasoline and various solvents with industrial sources. As a result of the increased awareness about groundwater quality, the Supplemental Report of the 1999 Budget Act required SWRCB to develop a comprehensive ambient groundwater monitoring plan.

The Groundwater Ambient Monitoring and Assessment (GAMA) Program is California's comprehensive groundwater quality monitoring program. Groundwater quality sampling and reporting for select Yuba County wells are included in the GAMA program. The GAMA Program was created by SWRCB in 2000. It was later expanded by AB 599 – the Groundwater Quality Monitoring Act of 2001. The main goals of GAMA are as follows:

- Improve statewide groundwater monitoring
- Increase the availability of groundwater quality information to the public

Major groundwater supply basins are a specific focus of the GAMA Program. The legislatively mandated program (AB 599) is funded by Proposition 50 and special fund fees.

There are four active GAMA projects:

- Priority Basin Project
- Domestic Well Project
- Special Studies Project
- GeoTracker GAMA

Results of testing in the Yuba County groundwater basin and surrounding counties under the Priority Basin Project are included in the Middle Sacramento Valley Study Unit Report completed in 2006, and available online at http://www.swrcb.ca.gov/water_issues/programs/gama/docs/dsr_midsac.pdf.

In 2002, the GAMA Domestic Well Project sampled 128 domestic wells in Yuba County and analyzed for chemicals that are most commonly a concern in domestic well water. The information report, last revised in July 2010, is available online at http://www.swrcb.ca.gov/water_issues/programs/gama/docs/yubareportsummary.pdf

Special studies currently in progess under the GAMA program include the following:

- Groundwater recharge
- Continuing studies on changes in chemistry of groundwater recharged by surface waters
- Development of field-deployable apparatus for extraction and collection of dissolved gasses from groundwater samples

YCWA will track the results of these special studies in an effort to identify applications for the Yuba County groundwater basin. Additional information on the GAMA Special Studies program is available online at http://www.swrcb.ca.gov/water_issues/programs/gama/special_studies.shtml.

Beale AFB. Water quality data are collected at Beale AFB for both the groundwater remediation program and the service of municipal water. YCWA will be coordinating with Beale AFB to review the monitoring activities.

Ostrom Road Landfill. The Ostrom Road Landfill, located northeast of Wheatland, currently provides solid waste disposal services to regional municipal and commercial customers. The landfill operates to Subtitle D regulations requiring liner systems, leachate collection and recovery systems, water quality monitoring systems, and other environmental protection measures. Monitoring wells around the Ostrom Road Landfill have been monitored quarterly since 1990, and results are reported to the Central Valley Regional Water Quality Control Board on a semi-annual basis. The Ostrom Road Landfill is subject to regulatory oversight for the listed permits from the following:

- Central Valley Water Quality Control Board – Waste discharge permit

- Feather River Air Quality Management District – Title V Federal Clean Air Act permit
- California Department of Resources Recycling and Recovery – Solid waste facility permit
- County of Yuba – Conditional use permit

There are no known groundwater quality issues at present. YCWA will coordinate with the Ostrom Road Landfill to review monitoring protocol and data.

Yuba County. The Yuba County Department of Environmental Health (DEH) is another repository for groundwater quality information in Yuba County. YCWA will exchange information with DEH under the GMP. The DEH private well program permits and reviews all private wells for proper construction and siting. During well construction, DEH inspections are made to verify proper seals and site information. DEH requires that private wells be drilled and tested for water quality purposes before the release of building permits for habitable structures. The public water program is to help provide an adequate and safe drinking water supply for the residents of Yuba County who are supplied from a centralized water system. The program permits and reviews all public water systems for proper construction, maintenance, and water quality testing. Inspections are made to verify proper operation and maintenance (O&M). **Figure 3-4** shows the locations of wells monitored for water quality by DWR and SWRCB.

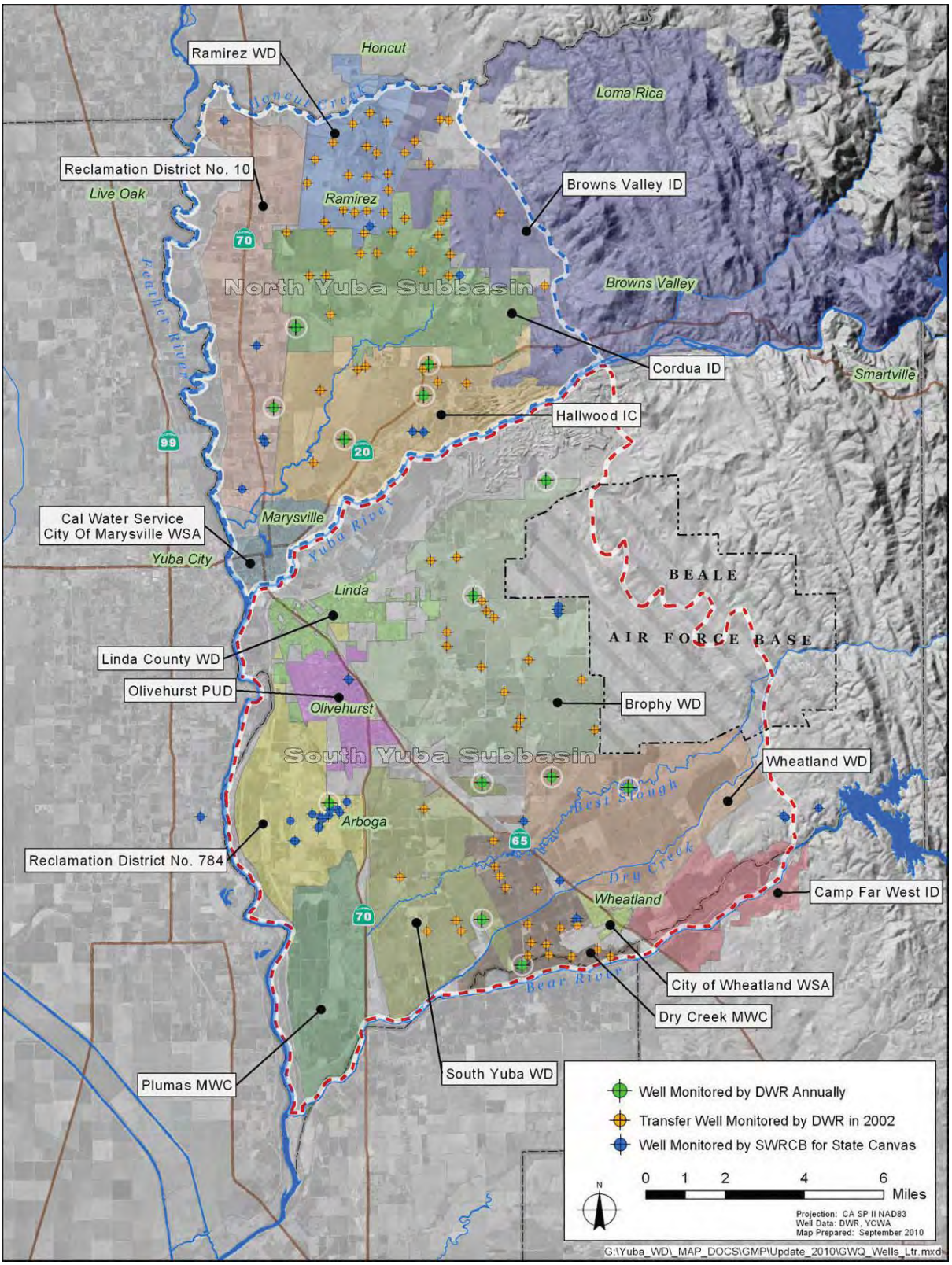

Figure 3-4. Yuba Groundwater Basin Wells Monitored for Water Quality

Refinement of Existing Groundwater Quality Monitoring

Compositions of the monitoring networks have been in continual flux, with monitoring wells added and dropped over time. For this reason, YCWA is coordinating with its member units, DWR, and other basin groundwater extractors to determine if any refinements are needed to provide adequate basin coverage.

Actions

Enhancements to existing groundwater quality monitoring efforts will be considered on a cost-effective basis by YCWA when and if the following occur:

- Existing monitoring efforts continually report confusing or inaccurate findings, or potential impacts to the groundwater basin are reported in areas where little or no existing monitoring occurs.

- State regulations require more stringent monitoring, particularly to maintain local control of the groundwater resource.

Types of actions to be pursued if enhancements are required include the following:

- Coordinate with member units, DWR, and other basin groundwater extractors (e.g., Beale AFB, municipalities, etc.) to identify an appropriate group of wells for monitoring both during transfer and non-transfer years. Preference will be given to wells currently in an agency's monitoring network that (1) have long records of historic water quality data and are useful in assessing trends within the subbasins, (2) have uniform protocols used for measuring and recording water quality data, (3) are either producing or nonproducing wells, appropriately selected for the constituent being monitored, and (4) have well construction information. Geographic distribution, basin hydrogeology, and areas of extraction will also be considered.

- Coordinate with member units, DWR, and other basin groundwater extractors so that needed water quality data are collected, verify that uniform data collection protocols are used among the agencies, and confirm that data sharing and archiving procedures are implemented.

- Coordinate with member units, DWR, other basin groundwater extractors, and other local, State, and federal agencies to identify where wells may be present in areas with sparse groundwater quality data. Identify opportunities for collecting and analyzing water quality samples from those wells. If wells are sampled through other programs, coordinate with the appropriate agency to share data.

3.5.3. Inelastic Subsidence

Subsidence of the land surface resulting from compaction of underlying formations affected by head (water level) decline is a well-documented concern throughout much of the Central Valley. During a typical pumping season, changes in land surface elevation can be observed as a result of both elastic and inelastic subsidence in the underlying groundwater basin. Elastic subsidence results from the reduction of pore fluid pressures in the aquifer, and

typically rebounds when pumping ceases or when groundwater is otherwise recharged, resulting in increased pore fluid pressure. Inelastic subsidence occurs when pore fluid pressures decline to the point that aquitard (a clay bed of an aquifer system) sediments collapse, resulting in permanent compaction and reduced ability to store water in that portion of an aquifer.

The purpose of the inelastic subsidence component of the overall monitoring program is to develop and implement actions that will help YCWA meet BMO 3 – protect against potential inelastic land surface subsidence. This process requires (1) coordination with DWR to monitor for potential land surface subsidence, (2) collection and analysis of adequate data, and (3) investigation of appropriate actions to avoid adverse impacts (if inelastic subsidence is documented in conjunction with declining groundwater elevations).

Inelastic Subsidence Monitoring Efforts in Yuba County

YCWA reviewed the existing subsidence monitoring network maintained by the National Oceanic and Atmospheric Administration's National Geodetic Survey (NGS). Review of NGS monuments identified 16 monuments in or near Yuba County. Three additional geodetic control marks were installed in Yuba County in 2007 using Proposition 13 grant funding, bringing the total number of monuments in the county to nineteen, shown in **Figure 3-5**. The three additional monuments were installed to provide increased resolution in the eastern portions of the groundwater basin. The baseline survey for the new monuments was conducted in 2008, in coordination with the Sacramento Valley Height-Modernization Project. The NGS published the Sacramento Valley portion of the Sacramento Valley Height-Modernization Project in 2010.

Actions

The following actions will be implemented by YCWA to monitor for land subsidence in the Yuba groundwater basin:

- Perform repeat level surveys on subsidence monitoring benchmarks at least every 5 years or on an agreed schedule with DWR.

- Identify locations especially vulnerable to damage from subsidence (e.g., levees, canals, pipelines) and ensure that monitoring network is adequate in those areas.

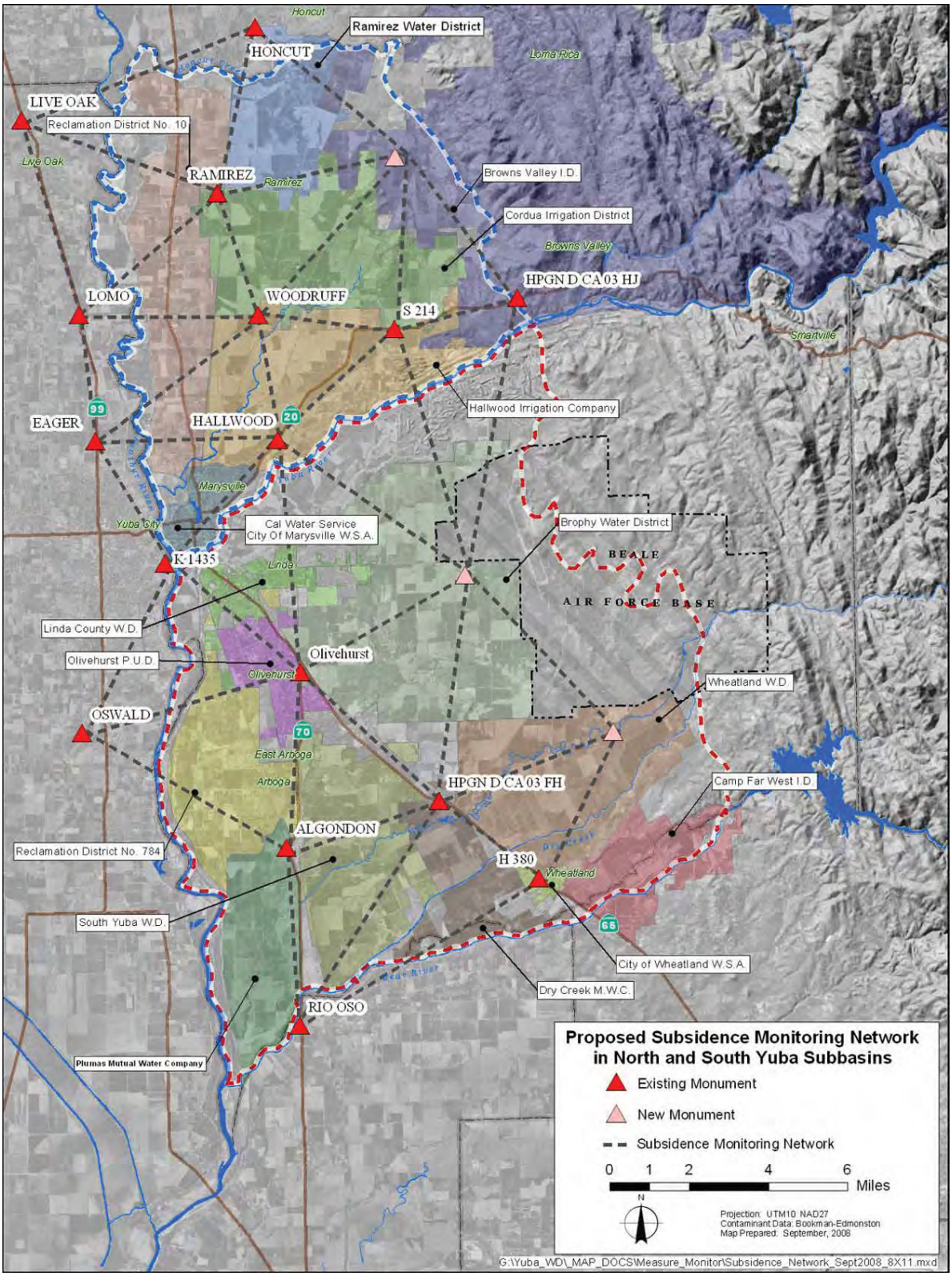

Figure 3-5. Subsidence Monitoring Network in North and South Yuba Subbasins

3.5.4. Groundwater and Surface Water Interaction

The purpose of the groundwater and surface water interaction component of the overall monitoring program is to develop and implement actions that will help YCWA meet BMO 4 – protect against adverse impacts to surface water flows. YCWA is committed to meeting flow requirements in the Yuba River for protection of fish and wildlife habitat. In addition, YCWA plans to coordinate with DWR in monitoring efforts that evaluate the relationship (if any) between groundwater pumping and adjacent river or stream flows.

Groundwater and Surface Water Interaction Monitoring Efforts in Yuba County

The interaction between groundwater and surface water has not been extensively evaluated within the two subbasins. Both DWR and YCWA have initiated evaluation efforts.

In recent years, DWR has studied groundwater and surface water interaction in the groundwater basin. DWR conducted aquifer pump tests at eight locations and is using multilevel piezometers, as shown in **Figure 3-6**. In March 2003, DWR installed a multilevel piezometer in close proximity to both its Bear River stream gage (near Pleasant Grove Road) and a production well subscribed in the YCWA transfer program. Data were recorded at both the piezometer and stream gage on synchronized, 15-minute intervals, and stable isotope samples were taken and analyzed. DWR has collected data for more than 14 months and is preparing a report based on those data. In summer 2004, DWR installed another multilevel piezometer in close proximity to YCWA's Yuba River stream gage (near Marysville). In 2005, DWR installed a multilevel piecometer near the Feather River, near the Boyd's Landing river stage gage. A fourth multilevel piezometer was installed near Honcut Creek in 2006, but no stream gage currently exists in its immediate proximity. The data collected and analyzed at these stations in non-transfer years will establish a baseline that will allow DWR and YCWA to observe changes in water levels and composition resulting from transfer program extractions. DWR is exploring the installation of additional groundwater/surface water interaction stations.

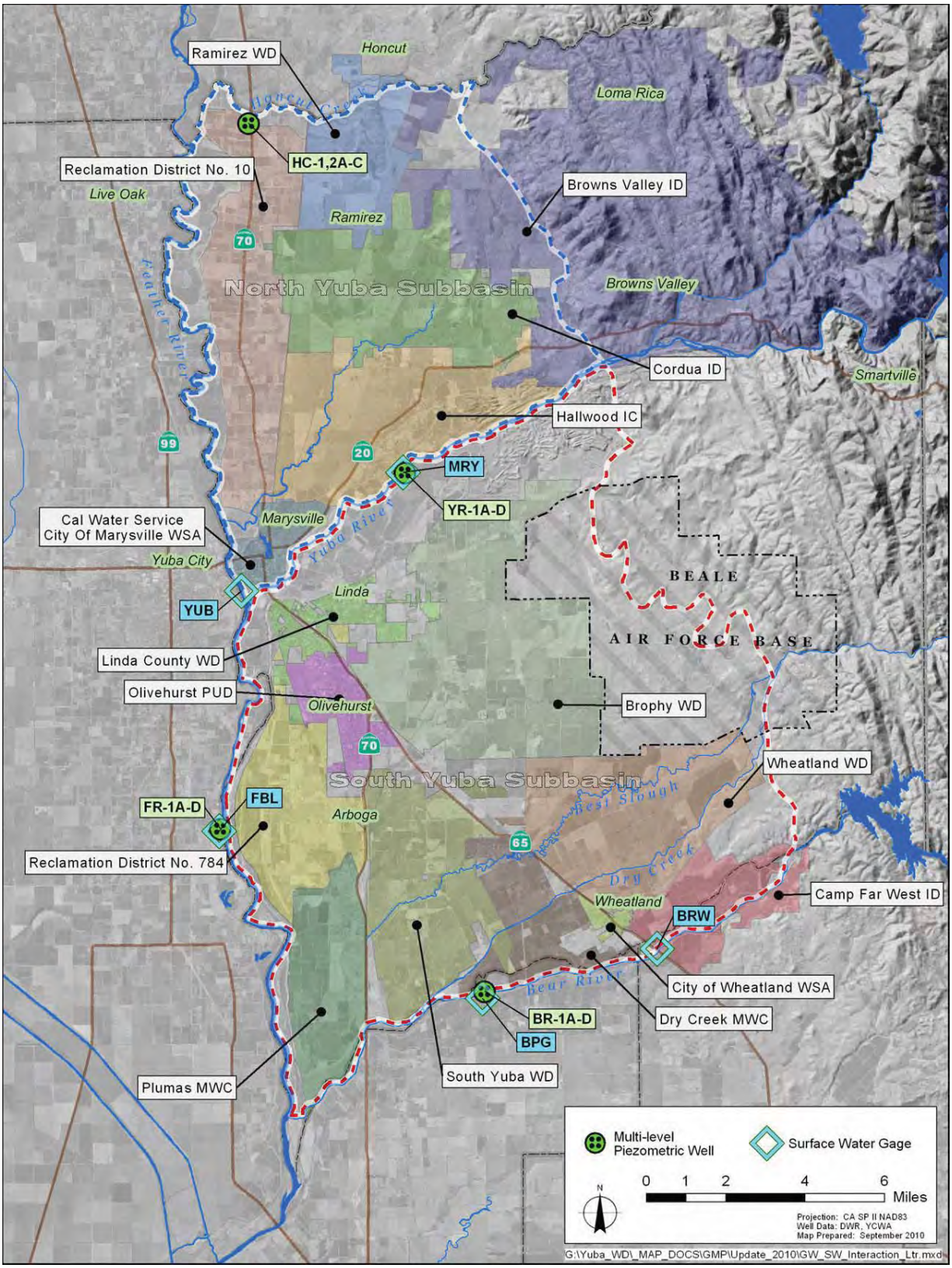

Figure 3-6. Multilevel Piezometers and River Stage Monitoring Stations

Actions

YCWA will take the following actions to further the monitoring of groundwater and surface water interaction.

- Evaluate the need for other future groundwater – surface water interaction studies.
- Evaluate the need for and cost effectiveness of installing additional monitoring stations adjacent to surface water bodies.
- Coordinate with DWR on developing uniform data collection protocols and data sharing and archiving procedures.
- Seek outside funding to characterize production wells near the Bear River to improve understanding of the groundwater-surface water interaction.
- Seek outside funding to perform aquifer testing at selected Bear River wells to improve understanding of aquifer parameters in this area.
- Seek outside funding to perform aquifer testing near the Yuba Goldfields while monitoring response in new multilevel piezometer. Correlate groundwater elevations with pond elevations in the Yuba Goldfields.
- Exchange groundwater information with companies operating in the Yuba Goldfield to better understand recharge characteristics in this portion of the basin.

3.5.5. Data Management

YCWA, DWR, YCWA's eight member units, the four municipal water purveyors, and Beale AFB maintain a varying range of groundwater-related data in a wide variety of formats. DWR currently maintains much of the groundwater elevation data described in Section 3.5.1. In 2007, YCWA implemented a data management system (DMS) using the Hydstra Data Management Suite. The DMS provides a centralized data storage system for data collected by YCWA and automated tools for data collection, reporting, and sharing. The DMS was developed in coordination with DWR, which also uses Hydstra for its Water Data Library database.

To the extent that groundwater quality data become necessary for YCWA to meet its objective of developing and promoting the beneficial use and regulation Yuba County water resources, YCWA will also develop a system for collecting and maintaining groundwater quality data. The same is true of data for inelastic ground subsidence and groundwater – surface water interaction.

Other data that will be gathered and maintained on an as-needed basis include well construction details and lithologic data available from borings and construction of wells.

Actions

To maintain and improve the usability of data regarding groundwater and aquifer properties in Yuba County, YCWA will take the following actions:

- Continue to coordinate with member units and other water purveyors to determine types of available data and data formats.
- Develop data management methods on an as-needed basis for data determined to be critical to management of water resources in Yuba County.
- Improve the exchange and sharing of data with DWR.
- Develop a data reporting format consistent with CASGEM requirements.

3.6. COMPONENT CATEGORY 3: GROUNDWATER RESOURCE PROTECTION

YCWA considers groundwater protection to be one of the most critical components of ensuring a sustainable groundwater resource, and is empowered through the Act to do the following:

> *…prevent contamination, pollution or otherwise rendering unfit for beneficial use the surface or subsurface water used in said agency, and to commence, maintain and defend actions and proceedings to prevent any such interference with such waters as may endanger or damage the inhabitants, lands, or use of water in, or flowing into the agency…*

In this GMP, resource protection includes both preventing contamination from entering the groundwater basin and remediating existing contamination. Prevention measures include proper well construction and destruction practices, development of wellhead protection measures, and protection of recharge areas. Containment and remediation include measures to prevent contamination from human activities as well as contamination from natural substances such as saline water bodies.

YCWA is committed to coordinating with the various State, local and federal agencies that monitor groundwater quality and are responsible for projects that clean up groundwater contamination where it may exist. Specifically, YCWA does not operate a project related to groundwater contamination cleanup, recharge, storage, or extraction. YCWA's involvement in various aspects of groundwater resource protection are detailed below by category.

3.6.1. Well Construction, Abandonment, and Destruction Policies

Well Construction Policies

Proper construction of water wells is necessary to not only provide a reliable water supply, but also to protect the groundwater resource. CWC Section 231 requires DWR to develop well standards to protect groundwater quality. DWR has documented well standards in Bulletin 74-81 (DWR, 1981) and Bulletin 74-90 (DWR, 1991), the supplement to Bulletin 74-81.

Most counties and some cities have adopted ordinances to protect groundwater quality. In Yuba County, the agency responsible for well construction permitting and inspection is the DEH per Chapter 7.03 of the County Ordinances. Yuba County DEH enforces the DWR well standards, and requires that a permit (**Appendix D**) be issued before a well can be drilled or

modified. Yuba County reviews the permit application to verify that proposed well location and construction details meet DWR requirements. When a well is constructed, modified, or destroyed, the law requires that the drilling contractor submit a Well Completion Report to DWR. The well owner should obtain a copy of this report from the drilling contractor. The well completion report for an existing well should be available in the files of DWR's North Central Region Office.

Only qualified personnel can deepen an existing well, drill a new well, or destroy a well. The California Business and Professions Code requires that "No person shall undertake to dig, bore, or drill a water well, cathodic protection well, groundwater monitoring well, or geothermal heat exchange well, to deepen or reperforate such a well, or to abandon or destroy such a well, unless the person responsible for that construction, alteration, destruction, or abandonment possesses a C-57 Water Well Contractor's License." The California Contractor State License Board Web page shows whether a contractor is licensed and the status of a license, as well as providing information on hiring a contractor.

Contact information for the County regarding wells is as follows:

Yuba County Department of Environmental Health
915 Eighth Street, Suite 123
Marysville, CA 95901-5273
(530) 749-5450

Well Abandonment Policies

Water well standards used by DWR define a well as either abandoned or permanently inactive if it has not been used for 1 year, unless the owner demonstrates intention to use the well again. In accordance with Section 24400 of the California Health and Safety Code, the well owner shall properly maintain an inactive well as evidence of intention for future use in such a way that follows strict requirements enforced by DWR. According to Yuba County Ordinance 7.03.090, a well is deemed abandoned by the definition in DWR Bulletin 74-81 and such abandoned well shall be destroyed or placed inactive by its owner.

Well Destruction Policies

Proper destruction of water wells is necessary to protect the groundwater resource. In Yuba County, the agency responsible for well destruction oversight is the Department of Environmental Health per Chapter 7.03 of the County ordinances. The Yuba County ordinance requires a permit to be issued before a well can be drilled or modified. Yuba County reviews the permit application to verify that proposed abandonment and destruction details meet DWR requirements (DWR 1981, 1991) Therefore, when a well is destroyed, the law requires that the drilling contractor submit a Well Completion Report to DWR. The well owner should obtain a copy of this report from the drilling contractor. The well completion report for an existing well should be available in the files of DWR's North Central Region Office.

Actions

The actions listed below will provide improved dissemination of information regarding well construction, well abandonment, and well destruction policies within Yuba County to appropriate agencies.

- Schedule a meeting with the County Department of Environmental Health, member units, and interested municipal and industrial (M&I) water purveyors to facilitate an exchange of information on existing County well ordinances and discuss possible new ordinances, such as a minimum depth for new wells.

- Assist Yuba County with development of well permitting requirements.

3.6.2. Wellhead Protection Measures

Identification of wellhead protection areas is a component of the Drinking Water Source Assessment and Protection (DWSAP) Program, administered by DPH. DPH set a goal for all water systems statewide to complete Drinking Water Source Assessments by mid-2003. All municipalities within Yuba County have completed their required assessments by performing the three major components required by DPH:

- Delineation of capture zones around sources (wells)

- Inventory of potential contaminating activities (PCA) within protection areas

- Vulnerability analysis to identify PCAs to which the source is most vulnerable

Delineation of capture zones includes using groundwater gradient and hydraulic conductivity data to calculate the surface area overlying the portion of an aquifer that contributes water to a well within specified time-of-travel periods. Typically, areas are delineated representing 2-, 5-, and 10-year time-of-travel periods. These protection areas need to be managed to protect the drinking water supply from viral, microbial, and direct chemical contamination.

Inventories of PCAs include identifying potential origins of contamination to the drinking water source and protection areas. PCAs may consist of commercial, industrial, agricultural, and residential sites, or infrastructure sources such as utilities and roads. Depending on the type of source, each PCA is assigned a risk ranking, ranging from “very high” for such sources as gas stations, dry cleaners, and landfills, to “low” for such sources as schools, lakes, and non-irrigated cropland.

Vulnerability analysis includes determining the most significant threats to the quality of the water supply by evaluating PCAs in terms of risk rankings, proximity to wells, and physical barrier effectiveness (PBE). PBE takes into account factors that could limit infiltration of contaminants, including type of aquifer, aquifer material (for unconfined aquifers), pathways of contamination, static water conditions, hydraulic head (for confined aquifers), well operation, and well construction. The vulnerability analysis scoring system assigns point values for PCA risk rankings, PCA locations within wellhead protection areas, and well area PBE; the PCAs to which drinking water wells are most vulnerable are apparent once vulnerability scoring is complete.

Actions

YCWA will take the following actions at address wellhead protection:

- Request that municipalities provide vulnerability summaries from the DWSAP to YCWA to be used for guiding management decisions in the Yuba County groundwater basin.

3.6.3. Protection of Recharge Areas

The California Legislature and Governor, as well as private citizens, have become increasingly concerned about groundwater quality and public supply well closures because of the detection of chemicals, such as the gasoline additive MTBE, solvents from industrial sources, and more recently perchlorate. To address these concerns, the Supplemental Report of the 1999 Budget Act and later the Groundwater Quality Monitoring Act of 2001 (AB 599 – Statutes of 2001) required SWRCB to develop a comprehensive ambient groundwater monitoring plan. SWRCB is collaborating with the U.S. Geological Survey (USGS) and Lawrence Livermore National Laboratory (LLNL) to implement the GAMA Program. Section 3.5 provides a detailed explanation of the GAMA program, with Web links for additional information.

Actions

YCWA will take the following actions to protect recharge areas:

- Track the results of ongoing GAMA Special Studies related to groundwater recharge characterization, and determine if these findings warrant further investigation of Yuba County's recharge areas.

- Seek outside funding to quantify the components of recharge to the North and South Yuba subbasins. Compare analytical results to soil and surface geology maps to develop a map of areas that are contributing significant recharge to the basin.

- Work with Yuba County to publicize the need to protect prominent groundwater recharge areas, especially in developing portions of the South Yuba subbasin.

3.6.4. Control of Migration and Remediation of Contaminated Groundwater

Lands overlying the North and South Yuba subbasins are primarily farmland and, as such, have potential for contaminating activities from nitrates and pesticides. Additionally, potential sources of groundwater contamination may occur around urban growth areas, such as Wheatland, Olivehurst, and Marysville, and Beale AFB.

Evaluation of the extent and types of contaminants present at Beale AFB began in 1985 and has resulted in the removal of source areas and implementation of remedial activities such as installation of groundwater treatment plants. Beale AFB's goal is to prevent contaminants that exceed drinking water MCLs from leaving the property. The lead agency for groundwater cleanup at the base is the Central Valley Regional Water Quality Control Board (RWQCB). YCWA will coordinate with RWQCB on aspects of this project that could affect groundwater levels near Beale AFB.

Twenty-two locations on the base have been investigated for soil and groundwater contamination. The most common contaminant is trichloroethylene (TCE), a volatile organic compound that was commonly used as a degreaser. Several distinct TCE groundwater contamination plumes are scattered throughout the base. Most plumes are contained within the base, with the exception of Site 13, which is located near the western boundary of the base. Concentrations of TCE below drinking water MCLs have been detected in some off-site domestic and monitoring wells along North Beale Road. RWCQB has suggested consideration of establishing "Consultation Zones" in areas where groundwater actions such as pumping could affect migration or containment of groundwater plumes. However, at this time, no action has been considered by RWQCB or Beale AFB.

Other remedial actions are occurring at Beale AFB to prevent migration of contaminated groundwater. This information is published in annual reports by the Office of Environmental Restoration at Beale AFB. Contact information at Beale AFB is as follows:

Environmental Restoration
9 CES/CEVR
6601 B Street
Beale AFB, CA 95903-1708
DSN: 368-3856
(530) 634-3856

Actions

YCWA will take the following actions to address contaminated groundwater:

- Coordinate with member units, DWR, other basin groundwater extractors, and other local, State, and federal agencies to pursue actions that result in containment and remediation of water quality problems within the subbasins.

- Request data annually from Beale AFB, RWQCB, and Yuba County DEH regarding groundwater contaminant plumes in Yuba County.

3.6.5. Fuel Storage Tanks

Leaky underground storage tanks (LUST) are another source of groundwater contamination in the area; 43 LUST sites have potential or actual groundwater contamination. Work on the sites ranges from initial characterization to remediation. Groundwater contamination is typically limited to shallow groundwater bearing zones, with downgradient areas being the most affected. MTBE has been detected in groundwater near some of the LUST sites. (MTBE is a gasoline oxygenate that is very mobile in groundwater.)

Actions

YCWA will take the following actions to gain information on fuel storage tanks:

- Provide YCWA members units with information obtained from RWQCB on the extent of the investigation areas of contaminant plumes and LUST sites for their information in developing groundwater extraction patterns and siting of future production or monitoring wells.

3.6.6. Control of Saline Water Intrusion

Saline water can slowly degrade a groundwater basin and ultimately render all or part of a basin unusable. Several sources can contribute to increased salinity in groundwater. In addition to sea water intrusion, saline degradation of groundwater can be caused by use and reuse of the water supply; lateral or upward migration of saline water; downward seepage of sewage and industrial wastes; downward seepage of mineralized surface water from streams, lakes, and lagoons; and interzonal or interaquifer migration of saline water.

At present, saline water intrusion has not been identified as a problem in the Yuba groundwater basin, but saline water impacts can be a threat to water quality. YCWA will test for saline water, when appropriate.

YCWA, in cooperation with DWR, has undertaken the task of better understanding the quality of groundwater throughout the basin. This information will be used to manage groundwater resources throughout the basin. Activities under this component may include water quality monitoring, investigation into causes, analysis of impacts, and development and implementation of solutions.

Actions

YCWA will take the following actions:

- Periodically develop contour maps of basin-wide salinity
- Request EC and other water quality data from M&I groundwater users in Yuba County
- Coordinate with DWR to collect water quality data throughout the Yuba groundwater basin
- Seek outside funding to collect TDS concentrations in transfer wells sampled by DWR in 2002. Correlate TDS with depth and distance from recharge areas and describe observed trends. Publish information obtained from DWR and other sources on salinity trends in an annual basin report.

3.7. COMPONENT CATEGORY 4: GROUNDWATER SUSTAINABILITY

Sustainability of the groundwater resource is critical to all citizens in Yuba County. Groundwater is relied on by agricultural and M&I users. For a long-term viable supply of groundwater, YCWA and its member units are seeking ways to increase the conjunctive management abilities in the subbasins over the long term. In 2009, YCWA and Wheatland Water District completed Phase 1 construction of infrastructure needed to deliver surface water to approximately 7,750 acres of land within the District. This project allows groundwater elevations underlying Wheatland Water District to increase naturally (in-lieu recharge) by providing surface water to an area that has historically relied on groundwater. Recharge can also occur via direct recharge. At present, YCWA is not investigating direct recharge because natural recharge and in-lieu recharge have proved sufficient to maintain the health of the basin.

The subsections below describe how YCWA will work toward continued sustainability of groundwater in the Yuba County basin.

3.7.1. Sustainable Management of the Groundwater Basin

Groundwater sustainability is critically important to the stated goal of the GMP, which is to maintain a viable groundwater resource for the beneficial use of the people of Yuba County. Groundwater is used throughout the basin by agricultural, municipal, industrial, and residential users, and many of those users rely solely on groundwater for their water supply. This GMP and the actions proposed herein contribute to the sustainability of the groundwater resource

Regarding groundwater management and conjunctive use operations, under the Yuba Accord, Member Units make decisions about the volume and distribution of pumping during groundwater substitution transfers. YCWA's responsibility is to make recommendations to the Member Units based on hydrologic conditions in the basin. It is reasonable to expect that, in some years, YCWA will recommend reducing or halting pumping in certain areas of the basin to allow groundwater elevations to recover. If a third party is impacted by groundwater substitution transfers, any claims will be addressed directly by the nearest Member Unit. YCWA may provide technical support to a Member Unit to determine whether a claim is related to conjunctive use of groundwater, and recommend the best methods for mitigating the impact.

Actions

YCWA will take the following action to guide management of the groundwater basin:

- Make yearly recommendations to Yuba Accord Member Units regarding the volume and distribution of pumping for groundwater substitution transfers.

3.7.2. Increase Understanding of Groundwater Stressors in Yuba County Basin

One key element in ensuring sustainability of the groundwater resource in the Yuba County basin is to increase understanding of groundwater and how it responds to various stresses. These stresses include groundwater extractions, changes in recharge to the aquifer, and changes in climate.

Actions

YCWA will take the following actions to better understand and quantify stressors to the Yuba groundwater basin:

- Pursue outside funding to assist in improving available tools and models to support groundwater management
- Analyze potential effects of climate change on recharge of the Yuba County groundwater basin
- Develop and implement a plan to characterize recharge of the groundwater basin from the Yuba Goldfields

3.7.3. Evaluation of Future Land Use Changes and Impact to Groundwater Resources

Yuba County is updating its General Plan concurrent with the update of this GMP. Representatives from the County have indicated significant growth is projected in the County, particularly in the South Yuba subbasin area. Much of the growth will take place through replacement of agricultural lands, supplied with surface water, for municipal or industrial land uses, supplied by groundwater. This type of land use change and associated water supply has potential to affect groundwater conditions because of both increased pumping and a loss of aquifer recharge from agricultural irrigation.

Actions

YCWA will take the following actions to better understand projected land use changes and their impacts to the Yuba groundwater basin:

- Work with Yuba County to develop policies regarding conversion of agricultural lands, supplied by surface water, to M&I usage, supplied by groundwater
- Work with Yuba County to characterize current and projected groundwater usage in Yuba County outside the member unit areas
- Work with Yuba County on characterization of water usage in its General Plan Update

CHAPTER 4.0
PLAN IMPLEMENTATION

Table 4-1 summarizes the action items presented in Chapter 3 and presents an implementation schedule. Many of these actions involve coordination by DWR with other local and federal agencies; most actions will begin within 6 months, following adoption of this updated GMP. A few activities involve assessing trends in basin monitoring data to determine adequacy of the monitoring network. These assessments will be made as new monitoring data become available for review by YCWA; results will be documented in the Annual Monitoring and Measurement Report (see below).

4.1. ANNUAL MONITORING AND MEASUREMENT REPORT

Since the adoption of the GMP in 2005, YCWA has documented the results of groundwater monitoring activities annually. YCWA will continue to report on progress made implementing this updated GMP in the Annual Monitoring and Measurement Report, which will summarize groundwater conditions in the subbasins and document groundwater management activities from the previous year. The Annual Monitoring and Measurement Report includes the following:

- Summary of monitoring results, including a discussion of historical trends.
- Summary of management actions during the period covered by the report.
- Discussion, supported by monitoring results, of whether management actions are achieving progress in meeting BMOs.
- Summary of any plan component changes, including addition or modification of BMOs, during the period covered by the report.

The Annual Monitoring and Measurement Report is completed by June 1 each year and reports on conditions and activities completed through April 31 of the prior year. Annual meetings are held with local agencies that are managing groundwater within the basin, and are complying with the YCWA GMP (pursuant to CWC Section 10755.3).

4.2. FUTURE REVIEW OF GROUNDWATER MANAGEMENT PLAN

This GMP is intended to be a framework for regionally coordinated management efforts in the Yuba County groundwater subbasins. Many of the identified actions will likely evolve as YCWA actively manages and learns more about the basin. Many additional actions will also be identified in the Annual Monitoring and Measurement Report described above. The GMP is therefore intended to be a living document, and evaluating all of the actions and objectives over time will be important to determine how well they are meeting the overall goal of the GMP. YCWA plans to evaluate this entire plan within five years of adoption and update it as necessary.

4.3. NEAR-TERM IMPLEMENTATION ACTIONS

It is envisioned that implementation of the GMP, as well as many other groundwater management-related activities, will be funded from a variety of sources, including revenues from the water transfers under the Yuba Accord; YCWA; in-kind services by member units; State or federal grant programs; and local, State, and federal partnerships. Some of the items that would likely require additional resources include the following:

- Collection of additional subsidence data
- Construction of monitoring wells where critical data gaps exist
- Recharge area investigations
- Stream-aquifer interaction studies
- Development of tools for improved groundwater basin understanding and management

During the first year of plan implementation, YCWA will prepare an estimate of some of the likely costs associated with the above activities and other management actions included in **Table 4-1**. Once these costs are better understood, YCWA will collaborate with members of the WAC and State and federal agencies to identify and pursue funding opportunities to implement the management actions.

4.4. INTEGRATED REGIONAL WATER MANAGEMENT

This GMP will become the groundwater management component in the Yuba County IRWMP which is currently being updated. However, the GMP only pertains to the alluvial portion of the IRWM Plan area. It is anticipated that some of the management actions included in the GMP could be funded through DWR's IRWM Program. YCWA will continue to track funding opportunities for groundwater management actions during the implementation of the IRWM Plan. Updates on status of management actions and funding sources will be provided in the GMP annual reports.

Table 4-1. Implementation Information for GMP Actions

		Relative Cost	Implementability	Schedule
Component Category 1: Involving the Public				
Involving the Public				
1	Publish an Annual Groundwater Monitoring Report summarizing groundwater conditions in the Yuba County groundwater basin relative to historical trends, and describing ongoing groundwater management activities. Also publish a groundwater fact sheet (i.e., a one-page summary of findings from the Annual Groundwater Monitoring Report) annually. Both reports will be posted on YCWA Web page and available for public distribution.	$	Immediate	Recurring Annually
2	Hold annual public/stakeholder meetings to provide updates on groundwater management activities and groundwater conditions in the basin; this meeting can be scheduled to coincide with release of the Annual Groundwater Monitoring Report.	$	Immediate	Recurring Annually
3	Develop an enhanced Internet presence for YCWA groundwater activities; potential items to include on the Web site are the Proposition 13 Hydrogeologic Understanding Report, annual groundwater monitoring reports and fact sheets, notices for public meetings, and groundwater monitoring data.	$	Immediate	One Time with Periodic Updates
4	Develop a conjunctive use brochure for the general public highlighting the benefits of conjunctive use.	$	Immediate	One Time
Involving Other Agencies Within and Adjacent to YCWA Area				
5	YCWA will invite each of the agencies included in Table 3-2 to an annual groundwater briefing to present and discuss the Annual Groundwater Monitoring Report.	$	Immediate	Recurring Annually
6	YCWA will encourage the sharing of groundwater level, quality and pumping data among these agencies.	$	Immediate	Ongoing
7	YCWA will attend meetings for groundwater management planning activities in Butte, Sutter, and Placer counties and share relevant information with Yuba County interests.	$	Immediate	Ongoing
Formation of Advisory Committee for GMP Development				
8	YCWA will meet with the WAC annually to present and discuss findings from the Annual Groundwater Monitoring Report.	$	Immediate	Recurring Annually
Develop relationships with State and federal agencies				
9	Continue to develop working relationships with local, State, and federal regulatory agencies.	$	Immediate	Ongoing

Table 4-1. Implementation Information for GMP Actions (Continued)

		Relative Cost	Implementability	Schedule
Pursuing Partnership Opportunities				
10	YCWA will continue to track and pursue grant opportunities to fund groundwater management activities and local water infrastructure projects.	$	Immediate	Ongoing
Component Category 2: Monitoring Program				
Groundwater Storage and Elevation Monitoring				
11	Coordinate with member units, DWR, and other basin groundwater extractors (e.g., Beale AFB, municipalities, etc.) to identify an appropriate group of wells for monitoring to better understand groundwater level fluctuations. Preference will be given to wells currently in an agency's monitoring network that (1) have long records of historical water level data and are useful in assessing trends within the subbasins, (2) have uniform protocols used for measuring and recording water level data, (3) are nonproducing wells or have relatively low extraction volumes so that water level readings represent relatively static levels, and (4) have well construction information. Geographic distribution, basin hydrogeology, and areas of extraction will also be considered.	$	Immediate	Ongoing
12	Coordinate with member units, DWR, and other basin groundwater extractors to ensure that selected wells are maintained as part of a long-term monitoring network.	$	Immediate	Ongoing
13	Coordinate with member units, DWR, and other basin groundwater extractors to ensure that needed water level data are collected, verify that uniform data collection protocols are used among the agencies, and confirm that data sharing and archiving procedures are implemented.	$	Immediate	Ongoing
14	Provide training for the member units and other basin groundwater extractors on implementing data collection protocols, as required or if requested.	$	Immediate	Ongoing
15	Consider ways to fill gaps in the monitoring well network by identifying additional existing suitable wells or identifying opportunities for constructing new monitoring wells.	$	Immediate	Ongoing
16	Seek outside funding and identify potential candidate wells for well characterization survey(s) to determine extraction intervals and total well depth for improved understanding of vertical gradients.	$$	Funding Required	One Time
17	Seek outside funding for installation of a multilevel piezometer near the Yuba Goldfields area to improve understanding of recharge in that portion of the basin.	$$	Funding Required	One Time
18	Semiannually obtain groundwater elevation measurements from Beale AFB.	$	Immediate	Semiannually

Table 4-1. Implementation Information for GMP Actions (Continued)

		Relative Cost	Implementability	Schedule
19	Identify opportunities and potential outside funding sources for monitoring groundwater levels near current or proposed future municipal pumping locations.	$	Immediate	Ongoing
20	Track the requirements for the upcoming CASGEM Program and provide the required information to DWR.	$	Requires Program Finalization	Ongoing
Groundwater Quality Monitoring				
21	Coordinate with member units, DWR, and other basin groundwater extractors (e.g., Beale AFB, municipalities, etc.) to identify an appropriate group of wells for monitoring both during transfer and non-transfer years. Preference will be given to wells currently in an agency's monitoring network that (1) have long records of historical water quality data and are useful in assessing trends within the subbasins, (2) have uniform protocols used for measuring and recording the water quality data, (3) are either producing or nonproducing wells, appropriately selected for the constituent being monitored, and (4) have well construction information. Geographic distribution, basin hydrogeology, and areas of extraction will also be considered.	$	Immediate	Ongoing
22	Coordinate with member units, DWR, and other basin groundwater extractors to ensure that needed water quality data are collected, verify that uniform data collection protocols are used among the agencies, and confirm that data sharing and archiving procedures are implemented.	$	Immediate	Ongoing
23	Coordinate with member units, DWR, other basin groundwater extractors, and other local, State, and federal agencies to identify where wells may exist in areas with sparse groundwater quality data. Identify opportunities for collecting and analyzing water quality samples from those wells. If wells are sampled through other programs, coordinate with the appropriate agency for sharing data.	$	Immediate	Ongoing
Inelastic Subsidence				
24	Perform repeat level surveys on subsidence monitoring benchmarks at least every 5 years or on an agreed schedule with DWR.	$	Immediate	Every 5 Years
25	Identify locations especially vulnerable to damage from subsidence (e.g., levees, canals, pipelines) and ensure that monitoring network is adequate in those areas.	$$		One-Time with Periodic Updates

Table 4-1. Implementation Information for GMP Actions (Continued)

		Relative Cost	Implementability	Schedule
Groundwater and Surface Water Interaction				
26	Evaluate the need for other future groundwater surface water interaction studies.	$	Immediate	Ongoing
27	Evaluate the need and cost effectiveness of installing additional monitoring stations adjacent to surface water bodies.	$	Immediate	Ongoing
28	Coordinate with DWR on development of uniform data collection protocols and data sharing and archiving procedures.	$	Immediate	One Time with Periodic Updates
29	Seek outside funding to characterize production wells near the Bear River to improve understanding of the groundwater-surface water interaction.	$$	Requires Funding	One Time
30	Seek outside funding to perform aquifer testing at selected Bear River wells to improve understanding of aquifer parameters in this area.	$$	Requires Funding	One Time
31	Seek outside funding to perform aquifer testing near the Yuba Goldfields while monitoring response in new multilevel piezometer. Correlate groundwater elevations with pond elevations in Yuba Goldfields.	$$	Requires Funding	One Time
32	Exchange groundwater information with companies operating in the Yuba Goldfields to better understand recharge characteristics in this portion of the basin.	$	Immediate	Ongoing
Data Management				
33	Continue to coordinate with member units and other water purveyors to determine types of data and data formats available.	$	Immediate	Ongoing
34	Develop data management methods on an as needed basis for data determined critical to management of water resources in Yuba County.	$	Immediate	Ongoing
35	Improve the exchange and sharing of data with DWR.	$	Immediate	Ongoing
36	Develop data reporting format consistent with CASGEM requirements.	$	Immediate	Ongoing
Component Category 3: Groundwater Resource Protection				
Well Construction, Abandonment, and Destruction Policies				
37	Schedule a meeting with the County Division of Environmental Services, member units, and interested M&I water purveyors to facilitate an exchange of information on existing County well ordinances, and discuss possible new ordinances, such as a minimum depth for new wells.	$	Immediate	Annually
38	Assist Yuba County with development of well permitting requirements.	$	Immediate	One Time

Table 4-1. Implementation Information for GMP Actions (Continued)

		Relative Cost	Implementability	Schedule
Wellhead Protection Measures				
39	Request that municipalities provide vulnerability summaries from the DWSAP to YCWA to be used for guiding management decisions in the basin.	$	Immediate	One Time
Protection of Recharge Areas				
40	Track the results of ongoing GAMA Special Studies Projects related to groundwater recharge characterization, and determine if these findings warrant further investigation of Yuba County's recharge areas.	$	Immediate	Ongoing
41	Seek grant funding to quantify the components of recharge to the North and South Yuba Subbasins. Compare analytical results to soil and surface geology maps to develop a map of areas that are contributing significant recharge to the basin	$$	Requires Funding	One Time
42	Work with Yuba County to publicize the need to protect prominent groundwater recharge areas, especially in the developing portions of the South Yuba Subbasin.	$	Immediate	Ongoing
Control of Migration and Remediation of Contaminated Groundwater				
43	Coordinate with member units, DWR, other basin groundwater extractors, and other local, State, and federal agencies to pursue actions that result in containment and remediation of water quality problems within the subbasins.	$	Immediate	Ongoing
44	Request data annually from Beale AFB, RWQCB, and Yuba County DPH regarding groundwater contaminant plumes in Yuba County.	$	Immediate	Annually
Fuel Storage Tanks				
45	Provide YCWA members units with information obtained from RWQCB on the extent of the contaminant plumes and LUST sites to develop groundwater extraction patterns and site future production or monitoring wells.	$	Immediate	Annually
Control of Saline Water Intrusion				
46	Periodically develop contour maps of basin wide salinity.	$	Immediate	Annually
47	Request EC and other water quality data from M&I groundwater users in Yuba County.	$	Immediate	Annually
48	Seek outside funding to collect TDS concentrations in transfer wells sampled by DWR in 2002. Correlate TDS with depth and distance from recharge areas and describe observed trends.	$$	Funding Required	One Time
49	Publish information obtained from DWR and other sources on salinity trends in annual basin report.	$	Immediate	Annually

Table 4-1. Implementation Information for GMP Actions (Continued)

		Relative Cost	Implementability	Schedule
Component Category 4: Groundwater Sustainability				
50	Make yearly recommendations to Yuba Accord Member Units regarding the volume and distribution of pumping for groundwater substitution transfers.	$	Immediate	Annually
Increase Understanding of Groundwater Stressors in Yuba Basin				
51	Pursue outside funding to assist in improving available tools and models to support groundwater management.	$$	Funding Required	One Time
52	Analyze potential effects of climate change on recharge of the Yuba County groundwater basin.	$$	Funding Required	One Time
53	Develop and implement a plan to characterize recharge of the groundwater basin from the Yuba Goldfields.	$$	Contingent on Funding for Goldfields Monitoring Well and Aquifer Testing	One Time
Evaluation of Future Land Use Changes and Impact to Groundwater Resources				
54	Work with Yuba County to develop county policies regarding conversion of agricultural lands, supplied by surface water, to M&I usage, supplied by groundwater.	$	Requires Cooperation with Yuba County	One Time
55	Work with Yuba County to characterize current and projected groundwater usage in Yuba County outside the member unit areas.	$	Requires Cooperation with Yuba County	One Time
56	Work with Yuba County on characterization of water usage in its General Plan Update	$	Requires Cooperation with Yuba County	One Time

Key:
$ = Low cost (<$50,000)
$$ = Medium cost ($50,000-$200,000)
$$$ = High cost ($>200,000)
AFB = Air Force Base
CASGEM = California Statewide Groundwater Elevation Monitoring
DEH = California Department of Environmental Health
DPH = California Department of Public Health
DWR = California Department of Water Resources
EC = electrical conductivity
GAMA = Groundwater Ambient Monitoring and Assessment
LUST = leaking underground storage tank
M&I = municipal and industrial
RWQCB = Regional Water Quality Control Board
State = State of California
TDS = total dissolved solids
YCWA = Yuba County Water Agency

CHAPTER 5.0
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Appendix A

The Yuba County Water Agency Act

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CHAPTER 84

YUBA COUNTY WATER AGENCY ACT

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An act to create the Yuba County Water Agency, to develop and promote the beneficial use and regulation of the water resources of Yuba County, prescribing the agency's powers and duties, providing for its organization, operation and management and authorizing the acquisition of property and works to carry out the purposes of the agency, authorizing the incurrence of indebtedness, providing for the issuance of bonds payable solely from revenues, providing for the levy and collection of taxes for the payment of general agency expenses, and for co-operation and contracts with any entity. (Stats.1959, c. 788, p. 2780.)

Cross References

Procedure for letting contracts, see Public Contract Code § 21351.

§ 84–1. Creation; name; territory

Section 1. A district hereinafter called an agency is hereby created for the purpose of accomplishing a function of statewide importance. Said agency shall be known as the Yuba County Water Agency and shall include all territory lying within the exterior boundaries of the County of Yuba, and shall also include territory contiguous to but outside said boundaries which becomes or is included within a member unit as hereinafter defined.

(Stats.1959, c. 788, p. 2780, § 1.)

Cross References

Boundaries of Yuba County, see Government Code § 23158.

Library References

Waters and Water Courses ⇐183½.
WESTLAW Topic No. 405.
C.J.S. Waters § 243.

§ 84–2. Definitions

Sec. 2. As used in this act, the following words shall have the following respective meanings unless the context indicates otherwise:

(a) "Agency" is the Yuba County Water Agency.

(b) "County" or "principal county" is the County of Yuba of the State of California.

(c) "United States" is the United States of America including any one or more of the bureaus, commissions, divisions, departments, boards, agencies, and officers of the United States of America.

(d) "State" means the State of California including any one or more of the bureaus, commissions, divisions, departments, boards, agencies, and officers of the State of California.

(e) "Work" or "works" includes dams and dam sites, reservoirs and reservoir sites, and all conduits and other facilities useful in the control, conservation, diversion and transmission of water; power generation and transmission facilities, and all land, property, franchises, easements, rights-of-way and privileges necessary or useful to operate or maintain any of the foregoing.

(f) "District" as used hereafter means any of the following lying within or partially within, or contiguous to the agency: irrigation districts, county water districts, water conservation districts, water districts, soil conservation districts, municipalities, towns, flood control districts, levee districts, mutual water companies, public utilities as defined in Section 216 of the Public Utilities Code, and any other districts or political subdivisions of the state empowered by law to appropriate water and deliver water to water users.

(g) "Member unit" means any district which enters into a contract with the agency for (i) the repayment in whole or in part to the agency or any other person, corporation, public district, State of California or any political subdivision thereof, or the United States, of any or all the construction costs of any works constructed by or on behalf of the agency or such district, or for (ii) the underwriting in whole or in part of any or all of such construction costs, or for (iii) the repayment in whole or in part to the agency or any other person, corporation, public district, State of California or any political subdivision thereof, or the United States, of any or all of the cost of furnishing water or a water supply to the agency or such district or the underwriting in whole or in part of such cost, or for (iv) the payment in whole or in part for water to be furnished or sold to such district by the agency or the United States.

(h) "Elector" means a resident of the agency who is qualified under the laws of the State of California to vote at a general election.

(i) "May" is permissive and "shall" is mandatory.

(j) "Board" means the board of directors of the agency.

(Stats.1959, c. 788, p. 2780, § 2. Amended by Stats.1978, c. 914, p. 2876, § 1.)

§ 84–3. Body politic and corporate; general powers; exercise of powers

Sec. 3. The Yuba County Water Agency is hereby declared to be and is a body politic and corporate, and as such shall have, among others, the powers enumerated in this act and such other powers as the law may provide. The powers of the agency shall, except as otherwise provided, be exercised by the board of directors thereof.

(Stats.1959, c. 788, p. 2781, § 3.)

§ 84–3.1. Perpetual succession

Sec. 3.1. The agency shall have perpetual succession.

(Stats.1959, c. 788, p. 2781, § 3.1.)

§ 84–3.2. Seal

Sec. 3.2. The agency shall have the power to adopt a seal and alter it at its pleasure.

(Stats.1959, c. 788, p. 2782, § 3.2).

§ 84–3.3. Actions

Sec. 3.3. The agency shall have the power to sue and be sued, except as otherwise provided herein or by law, in all actions and proceedings in all courts, commissions, boards and tribunals of competent jurisdiction.

(Stats.1959, c. 788, p. 2782, § 3.3.)

Library References

Sovereign immunity study. Cal.Law Revision Comm. (1963) Vol. 5, p. 30.

§ 84–3.4. Eminent domain

Sec. 3.4. The agency shall have the power of eminent domain to acquire within or without the agency any property necessary for carrying out the powers and purposes of the agency, except that the agency shall not have the power to acquire by condemnation publicly owned property, nor property owned by private irrigation companies, held or used for the development, storage or distribution of water for public use, unless provision is made to furnish substitute facilities for the use of such public agency or private irrigation company.

In lieu of compensation and damages for the taking or damaging of any public utility facility which must be replaced by the public utility to provide service to the public equivalent to that provided by the facility taken or damaged, the agency shall pay to the public utility owning such facility its

actual cost incurred to replace in kind the facility so taken or damaged, less proper deductions for depreciation together with its actual cost incurred to rearrange or rehabilitate the facilities of such public utility not taken or damaged but required to be rearranged or rehabilitated by reason of such taking or damaging.

No action in eminent domain to acquire property or interests therein outside the boundaries of the County of Yuba shall be commenced unless the board of supervisors of each affected county has consented to such acquisition by resolution.

(Stats.1959, c. 788, p. 2782, § 3.4. Amended by Stats.1975, c. 581, p. 1171, § 18.)

Law Revision Commission Comment

1975 Amendment

The deleted portions of Section 3.4 [Water C.App. § 84–3.4] are superseded by provisions of the Eminent Domain Law. See Code Civ.Proc. §§ 1230.020 (uniform procedure), 1240.610 et seq. (more necessary public use), 1240.010 (declaration that a use is a public use is unnecessary), 1240.110 (right to take any property or any right or interest in property), 1250.210 (identification of plaintiff). See also Code Civ.Proc. §§ 1240.040 and 1245.210 et seq. (resolution of necessity), 1235.170 ("property" defined).

Historical and Statutory Notes

Operative effect of 1975 amendment, see note under § 102–7.

Library References

Eminent Domain ⟹9.
WESTLAW Topic No. 148.
C.J.S. Eminent Domain § 24.
Recommendations relating to condemnation law and procedure in special districts. 12 Cal.L.Rev.Comm. Reports 1101 (1974).
Sovereign immunity study. Cal.Law Revision Comm. (1963) Vol. 5, p. 87.

§ 84–3.5. Property acquisition; use; disposal

Sec. 3.5. The agency shall have the power to take absolutely or on condition, by grant, purchase, gift, devise, lease, or otherwise, with or without the privilege of purchasing, real and personal property of any kind, or any interest in real or personal property, within or without the agency, necessary to the full exercise of its powers, and to hold, use, enjoy, and to lease or dispose of the same subject to the limitations set forth in Section 11.

(Stats.1959, c. 788, p. 2782, § 3.5.)

§ 84–3.6. Contracts; employment of labor; necessary acts; construction

Sec. 3.6. The agency shall have the power to make contracts, employ labor and to do all acts necessary for the full exercise of its purposes and powers. The board may cause construction or other work to be performed or carried out by contracts or by the agency under its own superintendence as hereinafter provided.

(Stats.1959, c. 788, p. 2783, § 3.6.)

§ 84–3.7. Contracts for water service

Sec. 3.7. The agency shall have power to enter into contracts with any private company formed and existing exclusively to provide water service within Yuba County whenever such contract appears to the board to be in the public interest.

(Stats.1959, c. 788, p. 2783, § 3.7.)

§ 84–3.8. Indebtedness

Sec. 3.8. The agency shall have power to borrow money, incur indebtedness and issue bonds or other evidence of such indebtedness in the manner provided herein; also to refund or retire any indebtedness or lien that may exist against the agency or property thereof.

(Stats.1959, c. 788, p. 2783, § 3.8.)

§ 84–4. Availability of water supply; necessary acts

Sec. 4. The agency shall have the power as limited in this act to do any and every lawful act necessary in order that sufficient water may be available for any present or future beneficial use or uses of the lands or inhabitants within the agency, including, but not limited to irrigation, domestic, fire protection, municipal, commercial, industrial, recreational, and all other beneficial uses and purposes.

(Stats.1959, c. 788, p. 2783, § 4.)

Library References

Waters and Water Courses ⟹190.
WESTLAW Topic No. 405.
C.J.S. Waters § 228.

§ 84–4.1. Hydroelectric power; development; sale

Sec. 4.1. The agency shall have the power to develop hydroelectric power to the extent that such power can be developed in connection with the construction and operation of its projects, and to enter into contracts for the sale thereof for a term not to exceed 50 years, and to pledge the revenue therefrom for the payment of principal and interest on revenue bonds. Such power may be marketed at the bus bar and at wholesale rates to any public or private agency, or both, engaged in the sale of electric power at retail.

(Stats.1959, c. 788, p. 2783, § 4.1.)

§ 84–4.2. Flood control; conservation

Sec. 4.2. The agency shall have the power to control the flood and storm waters of the agency and the flood and storm waters of streams that have their sources outside of the agency, which streams and floodwaters flow into the agency, and to conserve such waters for beneficial and useful purposes of said agency by spreading, storing, retaining and causing to percolate into the soil within or without said agency, or to save or conserve in any manner all or any

of such waters and protect from damage from such flood or storm waters the watercourses, watersheds, public highways, life and property in said agency, and the watercourses outside of the agency of streams flowing into the agency.
(Stats.1959, c. 788, p. 2783, § 4.2.)

Library References

Levees and Flood Control ⟹9.
WESTLAW Topic No. 235.
C.J.S. Levees and Flood Control § 24 et seq.

§ 84–4.3. Storage of water; conservation and reclamation; actions involving use of waters or water rights

Sec. 4.3. The agency shall have the power to store water in surface or underground reservoirs within or outside of the agency for the common benefit of the agency; to conserve and reclaim water for present and future use within the agency; to appropriate and acquire water and water rights, and import water into the agency and to conserve and utilize, within or outside of the agency, water for any purpose useful to the agency; to commence, maintain, intervene in, defend or compromise, in the name of the agency in behalf of the landowners therein, or otherwise, and to assume the costs and expenses of any action or proceeding involving or affecting the ownership or use of waters or water rights, within or without the agency, used or useful for any purpose of the agency or of common benefit to any land situate therein or involving the wasteful use of water therein, or to prevent the interference with or diminution of, or to declare rights in the natural flow of any stream or surface or subterranean supply of waters used or useful for any purpose of the agency or of common benefit to the lands within the agency or to its inhabitants, or to prevent unlawful exportation of water from said agency, or to prevent contamination, pollution or otherwise rendering unfit for beneficial use the surface or subsurface water used in said agency, and to commence, maintain and defend actions and proceedings to prevent any such interference with such waters as may endanger or damage the inhabitants, lands, or use of water in, or flowing into, the agency; except that the agency shall have no power to intervene or take part in, or to pay the costs or expenses of, actions or controversies between the owners of lands or water rights which do not affect the interests of the agency.
(Stats.1959, c. 788, p. 2783, § 4.3.)

Library References

Waters and Water Courses ⟹193, 222.
WESTLAW Topic No. 405.
C.J.S. Waters §§ 241, 257, 316.

§ 84–4.4. Acquisition of works, waters and water rights

Sec. 4.4. The agency shall have the power within or outside the agency to construct, purchase, lease, or otherwise acquire works and to purchase, lease, appropriate or otherwise acquire water and water rights useful or necessary to make use of water for any purposes authorized by this act.
(Stats.1959, c. 788, p. 2784, § 4.4.)

Library References

Waters and Water Courses ⟹183(1).
WESTLAW Topic No. 405.
C.J.S. Waters §§ 228, 235.

§ 84–4.5. Operation and maintenance of works and property

Sec. 4.5 The agency shall have the power to operate, repair, improve, maintain, renew, replace and extend all works and property of the agency.
(Stats.1959, c. 788, p. 2784, § 4.5.)

Library References

Waters and Water Courses ⟹193.
WESTLAW Topic No. 405.
C.J.S. Waters §§ 241, 257.

§ 84–4.6. Investigations; studies

Sec. 4.6. The agency shall have the power to carry on technical and other necessary investigations, make measurements, collect data, make analyses, studies, and inspections pertaining to water supply, water rights, control of flood and storm waters, and use of water both within and without said agency relating to watercourses or streams flowing in or into said agency.
(Stats.1959, c. 788, p. 2784, § 4.6.)

Library References

Administrative Law and Procedure ⟹343.
WESTLAW Topic No. 15A.
C.J.S. Public Administrative Law and Procedure §§ 76, 78.

Sovereign immunity study. Cal.Law Revision Comm. (1963) Vol. 5, p. 119.

§ 84–4.7. Transmission of electric energy

Sec. 4.7. The agency shall have the power to construct its pipes, pipelines, flumes and tunnels and other conduits, including facilities for the transmission of electric energy to the works of the agency, along, under or across any public road, street, alley, avenue, highway or sidewalk, or across any stream of water, watercourse, railway, canal, ditch, or flume which the route of said pipes, pipelines, canals, flumes, tunnels, or other conduits may intersect or cross, except that such works shall be constructed in compliance with any applicable laws and in such manner as to afford security for life and property and the agency shall restore at its own expense any such crossings and intersections to their former state as nearly as may be or to an extent which does not unnecessarily impair their usefulness. Every company, municipality, or district whose right-of-way shall be intersected or crossed by said pipes, pipelines, canals, flumes, tunnels or other conduits shall unite with the agency in forming said intersections and crossings and grant the rights therefor.
(Stats.1959, c. 788, p. 2784, § 4.7.)

Library References

Sovereign immunity study. Cal.Law Revision Comm. (1963) Vol. 5, p. 94.

§ 84–4.8. Blank

§ 84–4.9. Repealed by Stats.1975, c. 585, p. 1244, § 36

Law Revision Commission Comment

1975 Repeal

Section 4.9 [Water C.App. § 84–4.9] is superseded by Section 1240.330 of the Code of Civil Procedure and Section 861 of the Public Utilities Code.

Historical and Statutory Notes

The repealed section, added by Stats.1959, c. 788, § 4.9, related to relocation of an improvement or works.

Operative effect of 1975 repealer, see note under § 40–39.

§ 84–4.10. Reimbursement of county for expenses

Sec. 4.10. The agency may reimburse the county for any funds expended by the county in investigations, elections, or other acts incidental to the establishment and purposes of the agency.
(Stats.1959, c. 788, p. 2785, § 4.10.)

§ 84–4.11. Contracts for sale of right to use falling water for power purposes

Sec. 4.11. In connection with the construction and operation of the works of the agency, the agency shall have the power to contract for a term not to exceed 50 years, for the sale of the right to use falling water for power purposes with any public or private entity, engaged in the sale of electric power at retail.
(Stats.1959, c. 788, p. 2785, § 4.11.)

Library References

Waters and Water Courses ⇐200(1), 201.
WESTLAW Topic No. 405.
C.J.S. Waters §§ 264 et seq., 277 et seq.

§ 84–4.12. Use of water for development of county in which water originates

Sec. 4.12. Nothing contained in this act shall deprive a county in which water originates of any water necessary for the development of such county.
(Stats.1959, c. 788, p. 2785, § 4.12.)

§ 84–4.13. Hydroelectric alternate energy supply sources

Sec. 4.13. The agency may develop hydroelectric alternate energy supply sources under 75 megawatts in accordance with Chapter 3.2 (commencing with Section 4217.10) of Division 5 of Title 1 of the Government Code.
(Added by Stats.1985, c. 314, § 2.)

Historical and Statutory Notes

Section 4 of Stats.1985, c. 314, provides:

"Sections 1 and 3 of this act shall not become operative if Senate Bill 245 of the 1985–86 Regular Session [Stats.1985, c. 1054] is enacted and becomes operative."

§ 84–5. Transfer of water or rights to use agency works; charges; contract provisions

Sec. 5. Any water or rights to the use of the works of the agency for the conservation, control or transportation of water may be sold, leased or otherwise transferred by the agency to member units, and the agency may fix and collect rates and charges for such purposes. The agency may transfer such water or the use of agency works to other than member units for use in or outside the agency upon a temporary or short-term basis, upon a finding by the board that such water or works exceed the needs of member units. Each contract for or sale of surplus water or the use of such water facilities shall expressly state that the sale or disposition is subject to the prior right to the use of such water or facilities by or for member units.

(Stats.1959, c. 788, p. 2785, § 5.)

§ 84–5.1. Contracts with member units; purposes

Sec. 5.1. The agency may enter into contracts with any member unit or with any district which becomes a member unit of the agency for any of the following purposes:

(a) The lease, purchase, or other acquisition by the agency of any of the works of such member unit or district.

(b) The construction of works by the agency for the conservation, regulation or transmission of water for the benefit of such member unit or district; or for the furnishing or sale by the agency or the State of California or the United States to such member unit or by such member unit to the agency of water or a water supply for any purpose.

(c) The sale, lease, or other disposition of water, water rights, and water storage facilities or interests therein, by the agency or by such member unit.

(d) The operation of works and the delivery of water by the agency or by such member unit, except that:

(1) The works shall be operated in conformity with the vested rights and appropriations of each of its member units having an interest therein.

(2) There shall be delivered to each member unit all water to which such member unit is entitled under the contract entered into by the agency and such member unit.

(3) There shall not be delivered to any member unit more water than the amount to which such member unit is entitled under the contract entered into by the agency and such member unit, except that the release of water from any reservoir in the amount required to satisfy any vested right shall not constitute a delivery of water, and any amount of water assigned under Section 5.6 by one member unit to another member unit shall be delivered to the latter.

(e) No contract may be entered into between the agency and a member unit which provides for the sale of project water for agricultural purposes, industrial purposes, or for power plant cooling purposes upon any term or condition more favorable than the same term or condition contained in the agricultural water contracts entered into between the agency and member units prior to January 1, 1978.

(Stats.1959, c. 788, p. 2786, § 5.1. Amended by Stats.1978, c. 914, p. 2877, § 2.)

Library References

Waters and Water Courses ⇐200(1).
WESTLAW Topic No. 405.
C.J.S. Waters § 264 et seq.

§ 84–5.2. Long-term contracts; sale of surplus water; public hearings

Sec. 5.2. (a) The agency may enter into long-term contracts for the sale of water, for use outside the boundaries of the agency by other than a member unit, if the board of directors determines that the transferred water is surplus to the amount of water available to meet the contractual requirements of member units.

(b)(1) Before the board may enter into a contract pursuant to subdivision (a), it shall hold a public hearing to receive oral and written comments on the transfer proposal.

(2) The board shall provide notice of the hearing by publication in a newspaper of general circulation once a week for two consecutive weeks prior to the hearing, with the last publication being at least seven days before the hearing.

(3) At the time and place fixed for the hearing, or at any time to which the hearing is continued, the board shall consider all written and oral objections to the proposed contract. Upon the conclusion of the hearing the board may abandon or proceed with the proposed contract, unless, prior to the conclusion of the hearing, written protests against the proposed contract signed by a majority in number of registered voters residing within Yuba County are filed with the board, in which event further proceedings relating to the contract must be suspended for not less than six months following the date of the conclusion of the hearing, or the proceeding may be abandoned in the discretion of the board.

(c) A long-term contract for the sale of water pursuant to this section shall not be implemented until the state board, pursuant to Section 386 of the Water Code, finds that the water transfer may be made without injuring any legal user of the water, without unreasonably affecting fish, wildlife, or other instream beneficial use, and without unreasonably affecting the overall economy of the area from which the water is to be transferred.

(Stats.1959, c. 788, p. 2786, § 5.2. Amended by Stats.1993, c. 801 (A.B.1316), § 1.)

Historical and Statutory Notes

The Senate Daily Journal for the 1993–94 Regular Session, page 2658, contained the following letter dated 8/16/93 to Assembly Member Richter regarding the intent of A.B. 1316 (Stats. 1993, c. 801):

"As you know, we are the attorneys for Yuba County Water Agency. You have introduced AB 1316 at the request of the Agency. It would amend the provisions of the Yuba County Water Agency Act concerning long-term water transfers.

"The Department of Water Resources has raised the question whether the phrase at page 2 of AB 1316, lines 25–28, which reads, 'if the board of directors determines that the transferred water is surplus to the amount of water available to meet the contractual requirements of member units', could be construed to not authorize the transfer of water within the contractual requirement of a member unit, even if such water were made available for transfer by a water user within the member unit agreeing to forgo use of the water for the duration of the transfer, and the Agency, the member unit and the water user agreed to the terms of the transfer. In the past, member units of the Agency, pursuant to agreements among the Agency, member units and water users, transferred to the Governor's Water Bank water that otherwise would have been delivered to them pursuant to such contractual requirements and that was made available by their water users agreeing to forgo the use of the water by instead pumping groundwater. The Department of Water Resources wants to be sure that the amendments proposed under AB 1316 would not prevent similar transfers from occurring in the future.

"This letter is to confirm the intent of Yuba County Water Agency that AB 1316 would not prevent a member unit or water user within a member unit from transferring, on terms agreed to by the Agency, the member unit and the water user, water that otherwise would be available for their use pursuant to contractual requirements with the Agency, by forgoing its use of that water. We believe that the Yuba County Water Agency Act, as amended by AB 1316, would be read to be consistent with other provisions of the Water Code that include within the definition of 'surplus water', water made available when a water user forgoes its use on terms agreed to by the water supplier and water user. For example, see Water Code Sections 383 and 1745–1745.11.

"We would appreciate you including a copy of this letter in the file for AB 1316, to reflect the author's intent on this issue."

§ 84–5.3. Suspension of delivery of water to delinquent member units

Sec. 5.3. The agency in its discretion may suspend delivery of water conserved by the agency or obtained by or on behalf of the agency or a member unit to any member unit during the period which said member unit is delinquent in its payment for or obligations due in respect to such water under any contract entered into by it with the agency.

(Stats.1959, c. 788, p. 2787, § 5.3.)

Library References

Waters and Water Courses ⇐203(13).
WESTLAW Topic No. 405.
C.J.S. Waters § 305.

§ 84–5.4. Liability of member units for taxes; contract provisions

Sec. 5.4. The liability of each member unit, as distinguished from the liability of its taxpayers and property therein for taxes levied by the agency for agency purposes, shall be limited to that portion of the total cost for water or water supply or to that portion of the total cost of construction and the operation and maintenance cost of the works acquired or constructed by or on behalf of the agency or member unit which such member unit agrees to bear.

The liability of each member unit shall be set forth fully in a written contract which shall be legally approved by the member unit in accordance with the laws governing such member unit. No contract shall be altered or modified without the consent of the agency and the legal approval of the member unit.

Each contract may provide, among other things:

(a) The total capital obligation which the member unit agrees to bear.

(b) The minimum annual payments which the member unit shall make in amortization of its capital obligation.

(c) The amount or pro rata portion of water which shall be delivered to or held in storage for the member unit.

(d) The basis of allocation of operation and maintenance costs to be borne by the member unit.

(e) The amount or other measure of water supply or water agreed to be acquired by or furnished or sold to such member unit and the cost thereof to such member unit.

Such contracts shall be executed in accordance with the laws governing such districts.

(Stats.1959, c. 788, p. 2787, § 5.4.)

Library References

Waters and Water Courses ⟹198.
WESTLAW Topic No. 405.
C.J.S. Waters and Water Courses §§ 229, 262.

§ 84–5.5. Reduction of obligations

Sec. 5.5. (a) In the event of any reduction in the principal of any debt of the agency underwritten by one or more member units, order than by payment thereof, the amounts to be paid to the agency by each member unit in amortization of its remaining portion of such debt shall be reduced proportionately so that the relative obligations of each such member unit shall be unchanged.

(b) In the event of any reduction in the rate of interest being paid on any part of a debt of the agency for which one or more member units are responsible, the amounts to be paid the agency by each such member unit shall be reduced proportionately so that the relative obligation of each such member unit remains unchanged in respect to its obligation to pay any remaining interest.

(c) In determining the amounts which member units shall pay for water due consideration shall be given to revenues to be derived from the sale of electric energy. All main water conduits to member districts' boundaries shall be included in the feasibility report and considered as part of the agency project.

(Stats.1959, c. 788, p. 2787, § 5.5.)

§ 84–5.6. Assignment of rights by member units

Sec. 5.6. Any member unit may reduce its obligations under its contract with the agency by assignment to and acceptance by another member unit of any part of its right to receive water under its contract except that the assignment shall be legally approved, in accordance with the laws governing such member unit, by each member unit which is a party to the assignment. The total of all payments to be made by such member units to the agency shall not be reduced by virtue of the assignment and the assignor member unit may

be required by the agency to guarantee the payments assumed by the assignee member unit.

(Stats.1959, c. 788, p. 2788, § 5.6.)

Library References

Waters and Water Courses ⇐189.
WESTLAW Topic No. 405.
C.J.S. Waters § 244 et seq.

§ 84–5.7. Sale or disposal of capital assets; use of proceeds

Sec. 5.7. If any capital asset of the agency is sold or otherwise disposed of, the net proceeds therefrom shall be distributed to the member units, or applied against any liability of the member units to the agency in proportion to the amount contributed by each member unit to the cost of the capital asset. However, if any liability on the part of the agency or its member units for the original cost or any subsequent improvement or refinancing of such capital asset is not completely extinguished at or before the time of the sale or disposal thereof, the agency may apply as much of the proceeds of the sale as are necessary to extinguish the liability. In extinguishing such liability, the proceeds of the sale shall be applied only as the interests and liabilities of the agency and its member units shall appear.

(Stats.1959, c. 788, p. 2788, § 5.7.)

§ 84–6. Cooperation and contracts with United States; reclamation

Sec. 6. The agency shall have the power to co-operate and contract with the United States under the Federal Reclamation Act of June 17, 1902, and all acts amendatory thereof and supplementary thereto or any other act of Congress heretofore or hereafter enacted permitting co-operation or contract for the purposes of construction of works, whether for irrigation, drainage, or flood control, or for the acquisition, purchase, extension, operation and maintenance of such works, or for a water supply for any purposes, or for the assumption as principal or guarantor of indebtedness to the United States, or for carrying out any of the purposes of the agency, and for said purposes the agency shall have, in addition to the powers set forth in this act, all powers, rights and privileges possessed by irrigation districts as set out in Chapter 2 (commencing at Section 23175) of Part 6 of Division 11 of the Water Code, not inconsistent with the provisions of this act.

(Stats.1959, c. 788, p. 2788, § 6.)

Library References

Waters and Water Courses ⇐222.
WESTLAW Topic No. 405.
C.J.S. Waters § 316.

§ 84–6.1. United States contract fund; use

Sec. 6.1. All money collected in pursuance of contract with the United States shall be paid into the county treasury to the credit of the agency and

shall be held in a fund to be known as the "United States contract fund" to be used for payments due to the United States under contract.
(Stats.1959, c. 788, p. 2789, § 6.1.)

§ 84–6.2. Cooperation with United States, state, municipalities, districts, etc.; contracts

Sec. 6.2. The agency may co-operate and act in conjunction and contract with the United States, State of California, any municipality, district, public or private corporation, or any person, in the purchase and sale of water, in the acquisition of water or a water supply, in the construction of any works for the controlling of flood or storm waters in the agency, or for the protection of property, watersheds, watercourses, highways and life, or for the purpose of conserving and transporting said waters for beneficial uses and purposes, including recreational uses and the generation of electric energy, and for the use, operation and management and ownership of such works. The agency also may make and perform any agreement with the United States, the State, any county, municipality, district, public or private corporation, or any person for the joint acquisition, disposition, operation or management of any property, works, water or water supply of a kind which might be acquired, disposed of, or operated by the agency.

Any irrigation district, California water district, public utility district, municipal utility district, soil conservation district, county water district, water conservation district, municipality, flood control district, mutual water company and any other district or political subdivision of the State empowered by law to appropriate water and deliver water to users may:

(a) Co-operate, act in conjunction with and enter into contracts with the agency for all the purposes for which the agency is empowered to act.

(b) Carry out the terms of such contracts.
(Stats.1959, c. 788, p. 2789, § 6.2.)

§ 84–6.3. Contracts with state or agency for assumption of indebtedness

Sec. 6.3. The agency shall have the power to contract with the State of California or any agency thereof for the assumption, as principal guarantor, of indebtedness to the State of California or any agency thereof for carrying out any of the purposes of the agency. The power to borrow money and assume such liability shall not be subject to Sections 12 and 13 of this act.
(Added by Stats.1964, 1st Ex.Sess., c. 10, p. 114, § 1.)

§ 84–7. Directors; compensation; powers; quorum

Sec. 7. (a)(1) The board of directors shall consist of seven members. The members of the board of supervisors of the county shall be ex officio members of the board of directors of the agency. Two members of the board of directors shall be elected by the voters in accordance with this section. Each elected

director shall be a registered voter, a resident of the county, and eligible to hold elected office. One elected director shall reside north of the Yuba River and shall be elected by the voters residing north of the Yuba River. The other elected director shall reside south of the Yuba River and shall be elected by voters residing south of the Yuba River.

(2) Notwithstanding paragraph (1), the board of directors shall, by resolution, adjust the boundaries of the geographical areas from which the two directors are elected to create two divisions pursuant to Chapter 8 (commencing with Section 22000) of Division 21 of the Elections Code.

(b) The term of office of the two elected directors shall be four years, except that the initial terms of office shall be staggered with one director, chosen by lot, serving for a term of two years. The two elected directors shall initially be elected at the general election held on November 6, 1990, and shall take office at the first meeting of the board of directors after January 1, 1991. One elected director shall thereafter be elected at each statewide primary election held in an even-numbered year, except that if no candidate receives more than 50 percent of the votes cast for the office at that election, the two candidates receiving the highest number of votes for the office shall be on the ballot at the general election held the following November. The elected directors shall take office at the first meeting of the board of directors after the first day of January following their election.

(c) Directors shall be entitled to receive from the agency the sum of twenty dollars ($20) for each meeting attended, plus actual, necessary and reasonable traveling expenses. The basis for compensation of the directors, and the amount thereof, may be altered only by a five-sevenths vote of the directors. The board of directors may adopt reasonable rules and regulations to carry out its powers and duties. The board of directors shall elect a chairperson and vice chairperson. The chairperson shall preside at all meetings of the board and in case of his or her absence or inability to act, the vice chairperson shall preside. In case of the absence of the chairperson and vice chairperson or their inability to act, the members present shall, by an order entered in the records, select a member to act as temporary chairperson. Any member of the board may administer oaths when necessary in the performance of his or her official duties. A majority of the members of the board shall constitute a quorum for the transaction of business, but no act of the board shall be valid or binding unless a majority of all members concur therein.

(Stats.1959, c. 788, p. 2789, § 7. Amended by Stats.1979, c. 719, p. 2249, § 1; Stats.1989, c. 414, § 1; Stats.1990, c. 405 (A.B.3786), § 1; Stats.1998, c. 435 (A.B. 2543), § 23.)

Historical and Statutory Notes

Section 2 of Stats.1989, c. 414, provides:

"The Yuba County Water Agency Advisory Council is hereby abolished."

§ 84–7.1. Repealed by Stats.1971, c. 189, p. 257, § 1

Historical and Statutory Notes

The repealed section, added by Stats.1959, c. 788, § 7.1, prohibited directors from having an interest in contracts.

§§ 84–7.2 to 84–7.4. Repealed by Stats.1963, c. 1685, pp. 3309, 3310, §§ 41 to 43

Historical and Statutory Notes

The repealed sections, added by Stats.1959, c. 788, p. 2790, §§ 7.2 to 7.4, related to liability of directors, officers, agents, or employees.

Operative effect of Stats.1963, c. 1685, p. 3307, see Historical and Statutory Notes under repeal line for Water Code § 8535.

Liability of public employees, see, now, Government Code § 820 et seq.

§ 84–8. County officers and employees as officers and employees of agency; performance of duties

Sec. 8. All officers of the county, and their assistants, deputies, clerks, and employees, shall be ex officio officers, assistants, deputies, clerks and employees respectively of the agency, and shall perform, unless otherwise provided by the board, the same duties for the agency as performed for the county; except that if the county surveyor is a registered civil engineer and is employed to supervise the engineering work of the agency, the board may provide compensation for his services in addition to his salary as county surveyor which shall be payable from the funds of the agency.

(Stats.1959, c. 788, p. 2791, § 8.)

Library References

Counties ⚷81.
WESTLAW Topic No. 104.
C.J.S. Counties §§ 122, 127.

§ 84–8.1. Employment of additional personnel

Sec. 8.1. The board may employ agents, superintendents, engineers, attorneys, and employees necessary to carry out the provisions of this act.

The board may appoint a secretary and such other officers, agents and employees for the board or agency as in its judgment may be deemed necessary, prescribe their duties and fix their compensation. Such officers, agents and employees so appointed shall hold their respective offices or positions during the pleasure of the board.

(Stats.1959, c. 788, p. 2791, § 8.1.)

§ 84–9. Ordinances, resolutions and other legislative acts; initiative and referendum

Sec. 9. All ordinances, resolutions and other legislative acts of the agency shall be adopted by the board, and certified to, recorded and published in the

same manner, except as herein otherwise expressly provided, as are ordinances, resolutions or other legislative acts of the county.

The initiative and referendum powers are hereby granted to the electors of the agency to be exercised in relation to the enactment or rejection of agency ordinances in accordance with the procedure established by the laws of this State for the exercise of such powers in relation to counties.

(Stats.1959, c. 788, p. 2791, § 9.)

Cross References

County initiative and referendum, see Elections Code § 9100 et seq.
County ordinances, see Government Code § 25120 et seq.

§ 84–10. Claims against agency; law governing; preparation; presentation; audit

Sec. 10. Claims for money or damages against the agency are governed by Part 3 (commencing with Section 900) and Part 4 (commencing with Section 940) of Division 3.6 of Title 1 of the Government Code, except as provided therein. Claims not governed thereby or by other statutes or by ordinances or regulations authorized by law and expressly applicable to such claims shall be prepared and presented to the governing body, and all claims shall be audited and paid, in the same manner and with the same effect as are similar claims against the county.

(Added by Stats.1961, c. 2011, p. 4221, § 2. Amended by Stats.1963, c. 1715, p. 3422, § 148.)

Historical and Statutory Notes

Former § 84–10, added by Stats.1959, c. 788, p. 2791, § 10, relating to claims against agency, was repealed by Stats.1961, c. 2011, p. 4221, § 1.

Applicability of Stats.1963, c. 1715, p. 3369, see Historical and Statutory Notes under Government Code § 900.

Library References

Claims, actions and judgments against public entities and public employees; recommendation. Cal.Law Revision Comm. (1963) Vol. 4, p. 1007 et seq.

§ 84–11. Property

Sec. 11. The legal title to all property acquired under the provisions of this act shall be in the agency and shall be held for the uses and purposes of this act. The board may hold, use, acquire, manage, occupy and possess such property and, after declaring by resolution entered in the minutes that any real or personal property held by the agency is no longer necessary, may sell or otherwise dispose of such property, or lease the same, in the manner provided by law for the disposition and sale of property by counties.

(Stats.1959, c. 788, p. 2791, § 11.)

Cross References

Sale of county property, see Government Code §§ 23004, 25354 et seq.

§§ 84–12, 84–12.1. Repealed by Stats.1984, c. 1128, §§ 144, 145

Historical and Statutory Notes

Former § 84–12, added by Stats.1959, c. 788, § 12, related to requirements for contracts.

Former § 84–12.1, added by Stats.1966, 1st Ex.Sess., c. 7, § 1, related to rejection of bids.

See, now, Pub. Con. C. § 21351.

§ 84–13. Debt limit

Sec. 13. The agency shall not incur any indebtedness or liability exceeding in any year the income and revenue provided for such year, and any indebtedness or liability incurred in violation of this section shall be absolutely void and unenforceable. This section shall have no application to debts or liabilities incurred for feasibility reports nor to indebtedness incurred pursuant to the provisions of this act authorizing the issuance of bonds, the execution of contracts with the United States, nor the incurring of any indebtedness or liability authorized by a vote of the electors of the agency at an election held for such purpose. This section shall have no application to debts or liabilities incurred for the employment of officers, agents, and employees pursuant to Section 8.1.

(Stats.1959, c. 788, p. 2792, § 13. Amended by Stats.1964, 1st Ex.Sess., c. 9, p. 113, § 1.)

§ 84–13.1. Bonded indebtedness; limitation

Sec. 13.1. The agency shall have no power to incur any bonded indebtedness except as provided in Section 16.

(Stats.1959, c. 788, p. 2792, § 13.1.)

§ 84–14. Ad valorem tax; purposes; limitation

Sec. 14. If from any cause, the revenues of the agency shall be, or in the judgment of the board are likely to be, inadequate to pay the expenses, costs, liabilities and indebtedness of the agency, the board shall have the power in any year to levy an ad valorem tax upon all taxable property in the agency to pay the costs and expenses of the agency to carry out the provisions of this act, except that the aggregate taxes levied for any one fiscal year shall not exceed ten cents ($0.10) on each one hundred dollars ($100) of the assessed valuation of the taxable property in the agency.

(Stats.1959, c. 788, p. 2792, § 14.)

§ 84–14.1. Assessments; collection of taxes

Sec. 14.1. The board shall avail itself of the assessments made by the assessors of the counties within which the agency or any parts thereof are situated, and of the assessments made by the State Board of Equalization for those counties, and shall take such assessments as a basis for agency taxation and have its taxes collected by the county officials if the board declares its election so to do by resolution or ordinance and files a certified copy of the

resolution or ordinance on or before the first day of August with the auditors of the counties in which the agency or any parts thereof are situated. Thereafter, each year and until otherwise provided by the board, all assessments shall be made for the agency by the State Board of Equalization and the county assessors, and all taxes shall be collected for the agency by the tax collectors of the counties in which the agency or any part thereof is situated.
(Stats.1959, c. 788, p. 2793, § 14.1.)

Cross References

Collection of county taxes, see Revenue and Taxation Code § 2501 et seq.

§ 84–14.2. Statement of total value of property within agency

Sec. 14.2. The county auditor shall on or before the third Monday in August of each year, transmit to the board a statement in writing showing the total value of all property within the agency, ascertained from the assessments referred to in Section 14.1 as equalized.
(Stats.1959, c. 788, p. 2793, § 14.2.)

§ 84–14.3. Tax rate; levy

Sec. 14.3. The board shall on or before the first weekday in September, or if such weekday falls upon a holiday, then on the first business day thereafter, subject to the provisions of Section 14, fix the rate of taxes, designating the number of cents upon each hundred dollars, using as a basis the value of property transmitted to the board by the county auditors, which rate of taxation, subject to the limitations of Section 14, shall be sufficient to raise the amount previously fixed by the board. These acts by the board shall constitute a valid assessment of the property and a valid levy of the taxes so fixed.
(Stats.1959, c. 788, p. 2793, § 14.3.)

§ 84–14.4. Statement of tax rate; transmittal to county auditors

Sec. 14.4. The board shall immediately after fixing the rate of taxes as above provided transmit to the county auditors of the counties in which the agency or any portion thereof is situated a statement of the rate of taxes fixed by the board.
(Stats.1959, c. 788, p. 2793, § 14.4.)

§ 84–14.5. Time and manner of collection of taxes; payment to treasurer of principal county

Sec. 14.5. The agency's taxes so levied shall be collected at the same time and in the same manner as county taxes. When collected, the net amount, ascertained as provided in this act, shall be paid to the treasurer of the principal county under the general requirements and penalties provided by law for the settlement of other taxes.
(Stats.1959, c. 788, p. 2793, § 14.5.)

Cross References

Collection of county taxes, see Revenue and Taxation Code § 2501 et seq.

§ 84–14.6. Apportionment of money paid for redemption from tax sales

Sec. 14.6. Whenever any real property situated in the agency has been sold for taxes due to the agency and has been redeemed, the money paid for redemption shall be apportioned and paid to the agency by the county auditor receiving it in accordance with the provisions of Chapter 1c (commencing at Section 4656) of Part 8 of Division 1 of the Revenue and Taxation Code.
(Stats.1959, c. 788, p. 2793, § 14.6.)

§ 84–14.7. Lien of tax; enforcement of collection

Sec. 14.7. All taxes levied under this act are a lien on the property on which they are levied. Unless the board has by ordinance otherwise provided, the enforcement of the collection of such taxes shall be in the same manner and by the same means provided by law for the enforcement for county taxes, all the provisions of law relating to the enforcement of the latter being made a part of this act so far as applicable.
(Stats.1959, c. 788, p. 2793, § 14.7.)

§ 84–15. Bonds; resolution; special bond election; liability of member units

Sec. 15. (a) Whenever the board determines that a bonded indebtedness should be incurred to pay the cost of any work of improvement for the benefit of any member unit, as determined in an agreement between the agency and the member unit, it may determine and declare by resolution the amount of bonds necessary to be issued in each member unit affected for such work of improvement. The board shall cause a copy of the resolution duly certified by the clerk to be filed with the governing board of such member unit.

(b) After such resolution is filed, the governing board of such member unit may call a special bond election to be held and conducted in the member unit in accordance with the laws applicable to the holding of such elections in such member units; but the adoption or filing of such resolution shall not be a condition precedent to the calling of special bond elections by member units.

(c) No member unit nor the property therein nor other land within the agency shall be liable for the share of bonded indebtedness of any other member unit for which bonds are issued under this act, nor shall any moneys derived from taxation or assessment in any of the several member units be used in payment of principal or interest or otherwise of the share of bonded indebtedness chargeable to any other member unit.
(Stats.1959, c. 788, p. 2794, § 15.)

§ 84–16. Bonds; issuance under Revenue Bond Law of 1941

Sec. 16. If the board by resolution determines that a bonded indebtedness to pay for the acquisition or construction of any works for any purposes of the

agency or for refunding any outstanding bonds should be incurred and can be repaid and liquidated as to both principal and interest from revenues designated by the board, the agency is authorized and shall have the power to define such works as an "enterprise" and to issue revenue bonds all in the manner and as provided in the Revenue Bond Law of 1941 as amended, and for such purpose the agency shall be considered a "local agency," as defined by Section 54307 of the Government Code; provided, however, that notwithstanding the provisions of Section 54310 of the Government Code, the board shall have the power, subject to the limitations of Section 4.1 hereof, to borrow money and issue revenue bonds for, and to define "enterprise" to include systems, plants, works or undertakings for the generation, production, transmission and sale of hydroelectric energy as authorized in this act; and provided, further, that notwithstanding the provisions of Section 54400 of the Government Code, the board may determine and provide, in any resolution for the issuance of revenue bonds, for maturity dates of the revenue bonds not exceeding 50 years from their date of issuance.

(Stats.1959, c. 788, p. 2794, § 16. Amended by Stats.1961, c. 33, p. 940, § 1, eff. March 24, 1961.)

§ 84–17. Revenue bonds as legal investments

Sec. 17. All revenue bonds issued by the agency may be certified as legal investments pursuant to the Districts Securities Law (Chapter 1 (commencing with Section 20000) of Division 10 of the Water Code), in the manner and to the extent provided in Sections 54433 and 54434 of the Government Code; provided, however, that Sections 20003 and 20004 of the Water Code shall not be applicable to the agency.

(Stats.1959, c. 788, p. 2794, § 17. Amended by Stats.1971, c. 214, p. 326, § 203.)

§ 84–18. Improvement; conformity to report, plans and specifications; additional bonds; defeat of bond proposal; waiting period

Sec. 18. Any improvement for which bonds are voted under the provisions of this act, shall be made in conformity with the report, plans, specifications and maps theretofore adopted unless the doing of any of such work described in said report shall be prohibited by law, or be rendered contrary to the best interest of the agency by some change of conditions in relation thereto, in which event the board may order necessary changes made in such proposed work of improvement, and may cause any plans and specifications to be made and adopted therefor.

Whenever bonds have been authorized and the proceeds of the sale thereof have been expended as authorized in this act, and the board shall by resolution determine that additional bonds shall be issued for carrying out any of the purposes of this act, the board may again proceed as provided in this act, and submit to the qualified voters the question of issuing additional bonds in the same manner and with like procedures as provided in this act, and the above provisions of this act for the issuing and sale of such bonds, and for the

expenditure of the proceeds thereof, shall be deemed to apply to such issue of additional bonds.

Should a proposition for issuing bonds submitted at any election under this act fail to receive the requisite number of votes of the qualified electors voting at such election to incur the indebtedness the board shall not call to order, within six months after such election, another election for incurring indebtedness and issuing bonds under this act for the same purpose.

The repeal or amendment of this act shall not in any way affect or release any of the property in the agency or any member unit thereof from the obligations of any outstanding bonds or indebtedness until all such bonds and outstanding indebtedness have been fully paid and discharged.
(Stats.1959, c. 788, p. 2795, § 18.)

§ 84–19. Surplus moneys; disposition; use

Sec. 19. After all of the revenue bonds shall have been fully paid and discharged, or provision for their payment and discharge irrevocably made, any surplus moneys in the construction fund shall, subject to the limitations and restrictions in any indenture providing for the issuance of the revenue bonds, become and be the property of the agency, and be used by the agency for any lawful purpose.
(Stats.1959, c. 788, p. 2795, § 19.)

§ 84–20. Maintenance and operation costs; apportionments from revenue; use of surplus

Sec. 20. If the interest and principal of the revenue bonds and all charges to protect or secure them are paid when due, an amount for the necessary and reasonable maintenance and operation costs of the enterprise, which costs include the reasonable expenses of management, repair and other expenses necessary to maintain and preserve the enterprise in good repair and working order, may be apportioned from the revenues, and subject to any limiting covenants in the resolution providing for the issuance of bonds, the remaining surplus may be used for any lawful purpose of the agency, which without limiting the generality of the foregoing shall include the right and authority to expend any or all of such surplus as contributions in aid of necessary extensions of water storage and distribution facilities of the agency and the purchase or obtaining of additional water supplies.
(Stats.1959, c. 788, p. 2795, § 20.)

§ 84–21. Action to test validity of bonds or contract

Sec. 21. An action to determine the validity of bonds or a contract may be brought pursuant to Chapter 9 (commencing with Section 860) of Title 10 of Part 2 of the Code of Civil Procedure. In any such action all findings of fact or conclusions of the board upon all matters shall be conclusive unless the action was instituted within six months after the finding or conclusion was made.
(Stats.1959, c. 788, p. 2796, § 21. Amended by Stats.1961, c. 1491, p. 3337, § 1.)

Cross References

Pleading, see Code of Civil Procedure § 420 et seq.
Publication in newspapers, see Government Code § 6000 et seq.
Summons, service by publication, see Code of Civil Procedure § 415.50.

Library References

Declaratory Judgment ⇐211.
WESTLAW Topic No. 118A.
C.J.S. Declaratory Judgments § 78.

§ 84–22. Effect upon municipalities, districts or other agencies

Sec. 22. Neither the establishment of the agency nor any provision of this act shall affect, restrict nor supersede the existence, property, right, or power of any municipality, public district, or public agency now or hereafter established in or partially within the limits of the agency for the purpose of flood control, reclamation, conservation, storage, distribution, sale, use, or development of water. The Legislature, because of conditions special to the county, hereby expressly declares its intent to permit within the limits of the Yuba County Water Agency, the existence of more than one district, municipality or combination thereof, having similar powers over similar territory in regard to flood control, reclamation and water conservation, storage, distribution, sale, use or development.
(Stats.1959, c. 788, p. 2796, § 22.)

§ 84–23. Vested rights

Sec. 23. Neither the formation of the agency nor this act shall impair the vested right of any person, association, corporation, municipality or district in or to any water or the use thereof.
(Stats.1959, c. 788, p. 2797, § 23.)

§ 84–24. Action to test validity of existence of agency

Sec. 24. The agency, in order to determine the legality of its existence, may institute a proceeding therefor in the Superior Court of this State, in and for the County of Yuba, by filing with the clerk of said county a complaint setting forth the name of the agency, its exterior boundaries, the date of its organization and a prayer that it be adjudged a legal agency formed under this act. The summons in such proceeding shall be served by publishing a copy thereof once a week for four weeks in a newspaper of general circulation published in the county. The State of California shall be a defendant in such action, and consent therefor is given. Service of summons therein shall be made on the Attorney General. The Attorney General shall appear in such action on behalf of the State in the same manner as with appearances in civil actions. Within thirty (30) days after proof of publication of said summons the State, any property owner or resident in said agency, or any person interested may appear as a defendant in said action by serving and filing an answer to said complaint, in which case said answer shall set forth the facts relied upon to show the invalidity of the agency and shall be served upon the district attorney before

being filed in such proceeding. Such proceeding is hereby declared to be a proceeding in rem and the final judgment rendered therein shall be conclusive against all persons whomsoever, including the agency and the State of California.

(Stats.1959, c. 788, p. 2797, § 24.)

Cross References

Publication in newspapers, see Government Code § 6000 et seq.
Summons, service by publication, see Code of Civil Procedure § 415.50.

Library References

Declaratory Judgment ⇐204.
WESTLAW Topic No. 118A.
C.J.S. Declaratory Judgments § 88.

§ 84–25. Dissolution

Sec. 25. The agency may be dissolved in the manner provided for the dissolution of districts by Chapter 4 (commencing at Section 58950) of Division 1 of Title 6 of the Government Code, and the agency shall be considered a district within the meaning of all of the provisions of said chapter; provided, however, that if within 90 days after the effective date of this act, a petition is filed with the Board of Supervisors of Yuba County, the agency may be dissolved in the following manner. Upon the filing of the petition with the board signed by qualified electors of Yuba County equal in number to 10 percent of all the votes cast in the county for all candidates for Governor at the last preceding general election at which a Governor was elected, the board shall submit the question of dissolution of the agency to the agency electors. The question of dissolution shall be submitted at a special election held for that purpose not later than the ninetieth day after filing of the petition with the secretary of the board.

If a majority of the votes favor dissolution, the board shall by resolution dissolve the agency. The board shall file a certified copy of the resolution with the Secretary of State and for record in the office of the county recorder. Thereupon the agency is dissolved for all purposes.

(Stats.1959, c. 788, p. 2797, § 25.)

§ 84–26. Legislative findings and declaration

Sec. 26. The Legislature hereby finds that water problems in the County of Yuba require countywide water conservation, flood control and development of water resources; that all land within the county will be benefited thereby; that the solution of these problems lies within and is peculiar to the area to be included in the Yuba County Water Agency; that the county for many years has made investigations and engineering surveys of the county's water resources by private, public and United States engineers; that county water districts, municipalities, irrigation districts and reclamation districts now exist within portions of the county, have acquired property and works, developed a limited water supply, and have incurred indebtedness, but have been and are unable alone to

economically develop an adequate water supply and control the floods of said county, and for such reason it is necessary to have a political entity at least coextensive with the geographical limits of the entire county. It is therefore hereby declared that a general law cannot be made applicable to said county, and that the enactment of this special law is necessary for the conservation, development, control and use of said water for the public good and for the protection of life and property therein.

(Stats.1959, c. 788, p. 2798, § 26.)

§ 84–27. Partial invalidity

Sec. 27. If any provision of this act is declared unconstitutional or invalid, for any reason, the remainder of the act shall not thereby be invalidated, but shall remain in full force and effect.

(Stats.1959, c. 788, p. 2798, § 27.)

Library References

Statutes ⟹64(2).
WESTLAW Topic No. 361.
C.J.S. Statutes § 96 et seq.

§ 84–28. Short title

Sec. 28. This act may be designated and referred to as "The Yuba County Water Agency Act," and any reference thereto by such designation shall be sufficient for all purposes.

(Stats.1959, c. 788, p. 2798, § 28.)

Appendix B

Public Involvement Process

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Attachment B.1

Public Notice for YCWA Board Meeting to Adopt a Resolution of Intent to Update the GMP

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APPEAL-DEMOCRAT

1530 Ellis Lake Drive, Marysville, CA 95901
(530) 741-2345

Affidavit of Publication

(2015.5 C.C.P)

STATE OF CALIFORNIA,

Counties of Yuba and Sutter

Yuba County Water Agency

Public Notice

I am not a party to, nor interested in the above entitled matter. I am the principal clerk of the printer and publisher of THE APPEAL-DEMOCRAT, a newspaper of general circulation, printed & published in the City of Marysville, County of Yuba, to which Newspaper has been adjudged a newspaper of general circulation by The Superior Court of the County of Yuba, State of California under the date of November 9, 1951, No. 11481, and County of Sutter to which Newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Sutter, State of California under the date of May 17, 1999, Case No. CV PT99-0819 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:

October 12 & 19, 2010

I declare under penalty of perjury
that the foregoing is true and correct.
Executed at Marysville, California

October 20, 2010

Date: _____

Kelly Smith

(Signature)

This space is for the County Clerk's filing stamp.

OCT 22 2010

PROOF OF PUBLICATION

Public Notice

The Yuba County Water Agency (YCWA) is a public agency charged with developing and promoting the beneficial use and regulation of the water resources of Yuba County. YCWA will hold a public hearing on Tuesday, October 26, 2010 at 8:30 am, in the Yuba County Government Center, Supervisor's Chambers, 915 8th Street, Marysville, California. The purpose of the hearing will be to receive public comments on the Agency's proposed adoption of a resolution of intent to prepare an update of the Groundwater Management Plan (GMP) previously adopted in March 2005. Members of the public may submit oral or written comments on this matter at that time, or they may submit written comments before the public hearing to the Agency at 1220 F Street, Marysville, California 95901-4740.

The proposed update would be an evaluation of the actions and objectives of the 2005 GMP to determine how well they are meeting the overall goal of the plan and will update the GMP to reflect changes in groundwater management since the current plan's adoption. A five year evaluation of the entire plan is required by the current GMP.

Signed: Jeanene Upton
Assistant Secretary

October 12 & 19, 2010

Ad #00197572

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Attachment B.2

YCWA Board Resolution of Intent to Draft a GMP Update

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RESOLUTION NO. 2010-16
OF THE BOARD OF DIRECTORS OF THE
YUBA COUNTY WATER AGENCY OF INTENTION TO
PREPARE AN UPDATED GROUNDWATER MANAGEMENT PLAN PURSUANT TO
WATER CODE SECTION 10750, ET SEQ. AND
SUPERSEDING RESOULUTION NO. 2010-12

WHEREAS, Assembly Bill 3030, which took effect on January 1, 1993, authorizes a local agency whose service area includes a groundwater basin that is not subject to groundwater management pursuant to other provisions of law or court decision, to adopt and implement a groundwater management plan; and

WHEREAS, the Yuba County Water Agency ("Agency") is authorized to adopt a groundwater management plan pursuant to the provision of AB 3030; and

WHEREAS, the Agency adopted a groundwater management plan in March 2005 that is in accordance with Assembly Bill 3030; and

WHEREAS, the Agency has committed to a five-year evaluation interval of its groundwater management plan; and

WHEREAS, updating the groundwater management plan is in furtherance of and consistent with the Agency's goals and objectives; and

WHEREAS, Water Code section 10753.2 requires that, before preparing a groundwater management plan, a local agency must first hold a public hearing to consider whether to adopt a resolution of intention to prepare a groundwater management plan; and

WHEREAS, following publication of notice as required by law, the Agency held a public hearing on August 10, 2010 to receive public comment on whether or not it should adopt a resolution of intention to prepare an updated groundwater management plan; and

WHEREAS, after considering the public comment and other information presented at the hearing, the Board of Directors of the agency determines that is in the best interest of the Agency that it prepare an updated groundwater management plan.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Agency as follows.

1. The foregoing recitals are true and are incorporated by reference.
2. The Agency hereby declares its intention to prepare an updated groundwater management plan pursuant to Water Code section 10750, et seq.
3. The General Manger of the Agency or his designee is hereby authorized and directed to establish working groups including other public and nonpublic water purveyors that depend upon the same groundwater basin that serves the Agency's service area, to assist in coordinating the preparation of the Agency's updated groundwater management plan.
4. The General Manager or his designee is further directed to take additional action necessary and appropriate to implement this resolution.
5. This resolution supersedes Resolution No. 2010-12 and shall take effect immediately.

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Attachment B.3

Publication of the YCWA Board Resolution of Intent to Draft a GMP Update

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APPEAL-DEMOCRAT

1530 Ellis Lake Drive, Marysville, CA 95901
(530) 741-2345

Affidavit of Publication

(2015.5 C.C.P)

NOV 4 2010

STATE OF CALIFORNIA,

Counties of Yuba and Sutter

Yuba County Water Agency

Resolution No. 2010-16

I am not a party to, nor interested in the above entitled matter. I am the principal clerk of the printer and publisher of THE APPEAL-DEMOCRAT, a newspaper of general circulation, printed & published in the City of Marysville, County of Yuba, to which Newspaper has been adjudged a newspaper of general circulation by The Superior Court of the County of Yuba, State of California under the date of November 9, 1951, No. 11481, and County of Sutter to which Newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Sutter, State of California under the date of May 17, 1999, Case No. CV PT99-0819 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:

November 2, 2010

I declare under penalty of perjury
that the foregoing is true and correct.
Executed at Marysville, California

November 2, 2010

Date: _____

Kalee Smith

(Signature)

This space is for the County Clerk's filing stamp

**RESOLUTION NO. 2010-16
OF THE BOARD OF DIRECTORS OF THE
YUBA COUNTY WATER AGENCY OF INTENTION
TO PREPARE AN UPDATED GROUNDWATER
MANAGEMENT PLAN PURSUANT TO WATER CODE
SECTION 10750, ET SEQ. AND SUPERSEDING
RESOLUTION NO. 2010-12**

WHEREAS, Assembly Bill 3030, which took effect on January 1, 1993, authorizes a local agency whose service area includes a groundwater basin that is not subject to groundwater management pursuant to other provisions of law or court decision, to adopt and implement a groundwater management plan; and

WHEREAS, the Yuba County Water Agency ("Agency") is authorized to adopt a groundwater management plan pursuant to the provisions of AB 3030; and

WHEREAS, the Agency adopted a groundwater management plan in March 2005 that is in accordance with Assembly Bill 3030; and

WHEREAS, the Agency has committed to a five-year evaluation interval of its groundwater management plan; and

WHEREAS, updating the groundwater management plan is in furtherance of and consistent with the Agency's goals and objectives; and

WHEREAS, Water Code section 10753.2 requires that, before preparing a groundwater management plan, a local agency must first hold a public hearing to consider whether to adopt a resolution of intention to prepare a groundwater management plan; and

WHEREAS, following publication of notice as required by law, the Agency held a public hearing on August 10, 2010 to receive public comment on whether or not it should adopt a resolution of intention to prepare an updated groundwater management plan; and

WHEREAS, after considering the public comment and other information presented at the hearing, the Board of Directors of the agency determines that it is in the best interest of the Agency that it prepare an updated groundwater management plan.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Agency as follows:

1. The foregoing recitals are true and are incorporated by reference.
2. The Agency hereby declares its intention to prepare an updated groundwater management plan pursuant to Water Code section 10750, et seq.
3. The General Manager of the Agency or his designee is hereby authorized and directed to establish working groups including other public and nonpublic water purveyors that depend upon the same groundwater basin that serves the Agency's service area, to assist in coordinating the preparation of the Agency's updated groundwater management plan.
4. The General Manager or his designee is further directed to take additional action necessary and appropriate to implement this resolution.
5. This resolution supersedes Resolution No. 2010-12 and shall take effect immediately.

The foregoing resolution was duly passed and adopted by the Board of Directors of the Agency at a meeting thereof held on October 26, 2010 by the following roll call vote:

AYES: Directors Abe, Griego, Muck, Nicoletti, Stocker and Vasquez
NOES: None
ABSTAIN: None
ABSENT: Director Belza

By: John Nicoletti for
Tib Belza, Chairman

ATTEST: Jeanene Upton
Assistant Secretary

CERTIFICATION

I hereby certify that I am the duly appointed Assistant Secretary of the Yuba County Water Agency and that the foregoing resolution was duly and regularly adopted by the Board by the Board of Directors at a meeting thereof held on October 26, 2010.

By: Jeanene Upton
Assistant Secretary

November 2, 2010 Ad #00108883

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Attachment B.4

Letter Mailed to the Water Advisory Committee in Notice of the First Public Meeting

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Flood Control • Water Supply • Fishery Enhancement • Recreation • Hydro Electric Generation

Announcement to:

Beale Air Force Base
Browns Valley Irrigation District
Butte County Water and Resource Conservation
Camptonville Community Services District
California Department of Water Resources
Dry Creek Mutual Water Company
District 10 Landowners c/o Don Schrader
Linda County Water District
Olivehurst Public Utility District
Ramirez Water District
Reclamation District No. 784
Reclamation District No. 2103
River Highland Community Services District
Sutter County Water Resources Division
Yuba County Resource Conservation District
Yuba County Agricultural Commissioner
Brophy Water District
Camp Far West Irrigation District
California Water Service
City of Wheatland
City of Marysville
Cordua Irrigation District
Hallwood Irrigation Company
Marysville Levee Commission
Plumas Mutual Water District
Reclamation District No. 10
Reclamation District No. 817
South Yuba Water District
Wheatland Water District
Yuba County Water District
Yuba County Planning Division

Yuba County Water Agency
Groundwater Management Plan Update
Public Meeting

The Yuba County Water Agency encourages your participation in a public meeting on the impending update to YCWA's Groundwater Management Plan. Participants will learn more about Yuba County's groundwater basins, receive an overview of the current Groundwater Management Plan, and get details on the purpose, schedule, and stakeholder involvement opportunities for the Plan Update. The meeting will be held at the YCWA offices:

DATE: August 19, 2010

TIME: 9:00 a.m.

PLACE: 1220 F Street, Marysville

We hope to see you there. For more information on YCWA water planning and management, please contact Scott Matyac at 530.741.6278 or smatyac@ycwa.com or visit our website at www.ycwa.com

1220 F Street • Marysville, CA 95901-4740 • 530.741.6278 • Fax 530.741.6541
www.ycwa.com

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Attachment B.5

Appeal Democrat Advertisement for the First Public Meeting

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Margolin did not object to the rates in her Sacramento testimony this February. But in the

significant for those individuals," she said. "And for that, I personally feel very, very sorry."

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sal deal

ation's No. 2 cable company, returned 67 percent o shareholders, and New York's Cablevision eturned 57 percent over he last year, according to Bloomberg News. Comcast rails with 26 percent. The eturns include reinvested lividends.

On a positive note, Comcast has outperformed ompetitors Verizon Communications Inc., which eturned 8.9 percent to hareholders, and AT&T, 0.7 percent over the same eriod.

YUBA COUNTY WATER AGENCY
GROUNDWATER MANAGEMENT PLAN MEETING NOTICE

Yuba County Water Agency is preparing to update its groundwater management plan originally adopted in 2005. YCWA encourages individuals interested in the update process to attend this meeting.

WHEN: August 19, 2010
TIME: 9:00 a.m.
PLACE: 1220 F Street, Marysville

For more information on YCWA or about our groundwater management planning efforts, contact *Scott Matyac*
at **530.741.6278 x 117**
or ***smatyac@ycwa.com***
or visit our website at ***www.ycwa.com***

IRA Rollover

Need Help?

RYAN WEALTH MANAGEMENT

Call for a NO OBLIGATION Retirement Plan evaluation today

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Attachment B.6

YCWA Web Page Announcement for First Public

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Yuba County Water Agency :: Groundwater Management Plan Update

Page 1 of 1

Home | Relicensing | About | Contact | Meetings and Minutes | Employment | Links

Groundwater Management Plan Update

The Yuba County Water Agency encourages those interested in groundwater management to attend a public meeting on the update process for YCWA's Groundwater Management Plan. Participants will learn more about Yuba County's groundwater basins, receive an overview of the current Groundwater Management Plan, and get details on the purpose, schedule, and stakeholder involvement opportunities for the Plan Update. The meeting will be held at the YCWA offices:

DATE: August 19, 2010
TIME: 9:00 a.m.
PLACE: 1220 F Street, Marysville

We hope to see you there. For more information on YCWA water planning and management, please contact Scott Matyac at 530.741.6278 or smatyac@ycwa.com or visit our website at www.ycwa.com.

Flood Control | Water Supply | Fishery Enhancement | Recreation | Hydroelectric Generation

http://www.ycwa.com/projects/detail/12

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Attachment B.7

Cover Letter Mailed with Hard Copies of the Public Review Draft

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Flood Control • Water Supply • Fishery Enhancement • Recreation • Hydro Electric Generation

November 12, 2010

Beale Air Force Base
Browns Valley Irrigation District
Butte County Water and Resource Conservation
Camptonville Community Services District
California Department of Water Resources
Dry Creek Mutual Water Company
District 10 Landowners c/o Don Schrader
Linda County Water District
Olivehurst Public Utility District
Ramirez Water District
Reclamation District No. 784
Reclamation District No. 2103
River Highland Community Services District
Sutter County Water Resources Division
Yuba County Resource Conservation District
Yuba County CDSA
Brophy Water District
Camp Far West Irrigation District
California Water Service
City of Wheatland
City of Marysville
Cordua Irrigation District
Hallwood Irrigation Company
Marysville Levee Commission
Plumas Mutual Water District
Reclamation District No. 10
Reclamation District No. 817
South Yuba Water District
Wheatland Water District
Yuba County Planning Division
Yuba County Agricultural Commissioner

Enclosed is the Public Review Draft of the Yuba County Water Agency (YCWA) Groundwater Management Plan (GMP). YCWA is inviting the public to review the GMP and provide comments by November 26, 2010. Comments can be provided in one of two ways: (1) on the attached comment form or (2) directly in the Word® document. **If you choose to make edits in the Word® document please be sure that the Track Changes feature is turned on.**

YCWA will host a public meeting on November 18, 2010 at 9:00 a.m. at the **Yuba County Government Center, Conference Room #2 at 915 8th Street in Marysville** to give members of the public an opportunity to learn about the development and contents of the proposed GMP.

After the close of the public review period, YCWA will incorporate comments and suggestions into the Final Draft GMP. The Final Draft GMP will be presented for adoption to the Yuba County Water Agency Board of Directors on December 14, 2010.

We look forward to receiving your comments and suggestions. Please contact me at 530-741-6278 x 117 or smatyac@ycwa.com if you have any questions or need further information.

Scott Matyac
Water Resources Manager
Yuba County Water Agency

1220 F Street Marysville, CA 95901-4740 530.741.6278 Fax 530.741.6541

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Attachment B.8

Appeal Democrat Advertisement for the Second Public Meeting

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Yuba County Water Agency Groundwater Management Plan Meeting Notice

Yuba County Water Agency is releasing a public draft of their Groundwater Management Plan on November 12, 2010. A copy of the public draft Groundwater Management Plan will be available for review at YCWA's office located at 1220 F Street, in Marysville from 8:00 am until 5:00 pm, Monday through Friday, between November 12 and November 26, at which time the period for public comment will be closed. YCWA will be making a presentation about the public draft Groundwater Management Plan at the Yuba County Government Center in Conference room #2 at 9:00 am on November 18, 2010. YCWA encourages individuals interested in the Groundwater Management Plan process to attend this meeting. The Yuba County Government Center is located at 915 8th Street in Marysville.

For more information about YCWA or about our groundwater management planning efforts, or to receive a digital copy of the public draft GMP, contact Scott Matyac at 530.741.6278 x117 or smatyac@ycwa.com or visit our website at www.ycwa.com

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Attachment B.9

YCWA Web Page Announcement for Second Public

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Yuba County Water Agency :: Groundwater Management Plan Update Page 1 of 1

Home Relicensing About Contact Meetings and Minutes Employment Links

Groundwater Management Plan Update

YUBA COUNTY WATER AGENCY GROUNDWATER MANAGEMENT PLAN NOTICE

Yuba County Water Agency is releasing a public draft of their Groundwater Management Plan on November 12, 2010. A copy of the public draft Groundwater Management Plan will be available for review at YCWA's office from 8:00 am until 5:00 pm, Monday through Friday, between November 12 and November 26, at which time the period for public comment will be closed. YCWA will be making a presentation about the public draft Groundwater Management Plan at their offices at 9:00 am on November 18, 2010. YCWA encourages individuals interested in the Groundwater Management Plan process to attend this meeting. YCWA's office is located at 1220 F Street in Marysville.

For more information about YCWA or about our groundwater management planning efforts, or to receive a digital copy of the public draft GMP, contact Scott Matyac at 530.741.6278 x117 or smatyac@ycwa.com, or visit our website at www.ycwa.com

Flood Control Water Supply Fishery Enhancement Recreation Hydroelectric Generation

http://www.ycwa.com/projects/detail/12

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Attachment B.10

Public Notice for YCWA Board Meeting to Adopt the Updated GMP

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APPEAL-DEMOCRAT

1530 Ellis Lake Drive, Marysville, CA 95901
(530) 741-2345

Affidavit of Publication

(2015.5 C.C.P)

STATE OF CALIFORNIA,

Counties of Yuba and Sutter

Yuba County Water Agency

Hearing Notice

I am not a party to, nor interested in the above entitled matter. I am the principal clerk of the printer and publisher of THE APPEAL-DEMOCRAT, a newspaper of general circulation, printed & published in the City of Marysville, County of Yuba, to which Newspaper has been adjudged a newspaper of general circulation by The Superior Court of the County of Yuba, State of California under the date of November 9, 1951, No. 11481, and County of Sutter to which Newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Sutter, State of California under the date of May 17, 1999, Case No. CV PT99-0819 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:

December 1 & 7, 2010

I declare under penalty of perjury
that the foregoing is true and correct
Executed at Marysville, California

December 10, 2010

Date: _____

Kaus Smith

(Signature)

This space is for the County Clerk's filing stamp.

PROOF OF PUBLICATION

Yuba County Water Agency
Notice of Public Hearing Concerning Adoption of a Groundwater Management Plan

The Yuba County Water Agency (Agency) will hold a public hearing on Tuesday, December 14, 2010 commencing at 8:30 am at the Yuba County Government Center, Supervisor's Chambers at 915 6th Street, Marysville, CA. The purpose of the public hearing will be to receive public comments on whether or not the Agency should adopt a groundwater management plan (GMP), pursuant to California Water Code division 6, part 2.75 (Assembly Bill No. 3030).

On February 22, 2005, the Agency Board of directors adopted an ordinance (Ordinance No. 9) adopting a GMP that had been developed in participation with a Water Advisory Committee comprised of local water purveyors, reclamation districts, Yuba County agencies, the Yuba County Resource Conservation District, and Beale Air Force Base. That GMP included a provision that it should be updated after five years.

On October 26, 2010, the Agency Board of Directors approved a resolution of intent (Resolution No. 2010-16) that formally directs the Agency to proceed with the development of a GMP. The Agency has held public meetings and solicited comments and input on the draft GMP. The final proposed GMP summarizes the status of the County's groundwater resources and outlines the Agency's historical management of the groundwater basin and plan to continue protecting Yuba County's valuable groundwater resources. The GMP sets forth seven basin management objectives to address groundwater storage and elevation monitoring, maintaining and improving groundwater quality, protecting against inelastic land surface subsidence, protection against adverse impacts to surface water flows, improving communication and coordination among basin stakeholders, maintaining local control of the groundwater basin, and improving the understanding of the groundwater basin and its stressors. The basin management objectives presented in the GMP memorialize the successful conjunctive

0001 0001

meetings among stakeholders and annual reporting of groundwater conditions.

The proposed GMP is available for public inspection at the Agency's office, 1220 F Street, Marysville, California or at the Yuba County Library, 303 2nd St., Marysville California at the reference desk. Digital copies of the plan are also available at the Agency's website, www.ycwa.com, or on compact disk by request.

The public is invited to attend and provide protests and comments either before the Board hearing or at the Board hearing. The Board shall consider all protests to adoption of the GMP submitted by any landowner within the County at any time prior to the conclusion of the hearing. Written protests can be filed either prior to the Board hearing at the Agency office or at the Board hearing. Written protests by any landowner shall include the landowner's signature and a description of the land owned sufficient to identify the land. The Agency encourages potential protests to be brought to the Agency's attention prior to the Board hearing to expedite the resolution of such protests. If you would like more information about the proposed GMP, please contact Scott Matyac, Water Resources Manager, (530) 741-6278, smatyac@ycwa.com.

December 1 & 7, 2010 Ad #00110486

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Attachment B.11

YCWA Web Page Announcement for Board Meeting to Adopt GMP

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Groundwater Management Plan Update

Yuba County Water Agency
Notice of Public Hearing Concerning Adoption of a Groundwater Management Plan

The Yuba County Water Agency (Agency) will hold a public hearing on Tuesday, December 14, 2010, commencing at 8:30 am at the Yuba County Government Center, Supervisor's Chambers at 915 8th Street, Marysville, CA. The purpose of the public hearing will be to receive public comments on whether or not the Agency should adopt a groundwater management plan (GMP), pursuant to California Water Code division 6, part 2.75 (Assembly Bill No. 3030).

On February 22, 2005, the Agency Board of directors adopted an ordinance (Ordinance No. 9) adopting a GMP that had been developed in participation with a Water Advisory Committee, comprised of local water purveyors, reclamation districts, Yuba County agencies, the Yuba County Resource Conservation District, and Beale Air Force Base. That GMP included a provision that it should be updated after five years.

On October 26, 2010, the Agency Board of Directors approved a resolution of intent (Resolution No. 2010-16) that formally directs the Agency to proceed with the development of a GMP. The Agency has held public meetings and solicited comments and input on the draft GMP. The final proposed GMP summarizes the status of the County's groundwater resources and outlines the Agency's historical management of the groundwater basin and plan to continue protecting Yuba County's valuable groundwater resources. The GMP sets forth seven basin management objectives to address groundwater storage and elevation monitoring, maintaining and improving groundwater quality, protecting against inelastic land surface subsidence, protection against adverse impacts to surface water flows, improving communication and coordination among basin stakeholders, maintaining local control of the groundwater basin, and improving the understanding of the groundwater basin and its stressors. The basin management objectives presented in the GMP memorialize the successful conjunctive water management program the Agency began with the construction of the Yuba River Development Project. The GMP also includes a plan for implementing specific actions to support the basin management objectives, including periodic meetings among stakeholders and annual reporting of groundwater conditions.

The proposed GMP is available for public inspection at the Agency's office, 1220 F Street, Marysville, California or at the Yuba County Library, 303 2nd St., Marysville California at the reference desk. Digital copies of the plan are also available at the Agency's website, www.ycwa.com, or on compact disk by request.

The public is invited to attend and provide protests and comments either before the Board hearing or at the Board hearing. The Board shall consider all protests to adoption of the GMP submitted by any landowner within the County at any time prior to the conclusion of the hearing. Written protests can be filed either prior to the Board hearing at the Agency office or at the Board hearing. Written protests by any landowner shall include the landowner's signature and a description of the land owned sufficient to identify the land. The Agency encourages potential protests to be brought to the Agency's attention prior to the Board hearing to expedite the resolution of such protests. If you would like more information about the proposed GMP, please contact Scott Matyac, Water Resources Manager, (530) 741-6278, smatyac@ycwa.com.

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Attachment B.12

YCWA Board Ordinance No. 13 to Adopt the Updated GMP

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ORDINANCE NO. 13

AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE YUBA COUNTY WATER AGENCY ADOPTING UPDATED GROUNDWATER MANAGEMENT PLAN

The Board of Directors of the Yuba County Water Agency ordains as follows:

Section 1. This ordinance is adopted with reference to the following background recitals:

a. Water Code section 10750 et seq. and the Yuba County Water Agency Act authorize the Agency to adopt, implement and from time to time update a groundwater management plan.

b. The Agency adopted a groundwater management plan in March 2005. The Agency has committed to a five-year evaluation interval of its groundwater management plan. Updating the groundwater management plan is in furtherance of and consistent with the Agency's goals and objectives.

c. Water Code sections 10753.2 and 10753.5 require that, before adopting a groundwater management plan, the Agency must hold two public hearings concerning the proposed groundwater management plan. The Agency has duly noticed and conducted the two public hearings on August 10, 2010 and December 14, 2010.

d. After considering the public comment and other information presented at the December 16, 2010 hearing, the Board of Directors determines that (i) the Agency has not received a majority written protest against the proposed groundwater management plan pursuant to Water Code section 10753.6, and (ii) it is in the best interests of the Agency that it adopt the updated groundwater management plan.

Section 2. The Board of Directors hereby adopts the updated Yuba County Water Agency Groundwater Management Plan dated December, 2010 in the form as presented at this Board meeting.

Section 3. This ordinance shall take effect 30 days after its final passage.

Section 4. Within 15 days from the date of passage of this ordinance, the Agency Secretary shall (a) publish it one time in a newspaper of general circulation published and circulated in the

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Agency, and (b) submit a copy of the plan in electronic format to the State Department of Water Resources.

INTRODUCED by the Board of Directors on the 14th day of December 2010.

PASSED AND ADOPTED by the Board of Directors of the Yuba County Water Agency on the 28th day of December 2010, by the following vote:

AYES: DIRECTORS ABE, BELZA, MUCK, RICCOLETTI, STOCKER AND VASQUEZ
NOES: NONE
ABSTAIN: NONE
ABSENT: DIRECTOR ENRIGO

Chair, Board of Directors

Attest:

Jeanene Upton, Assistant Secretary

I hereby certify that the foregoing is a true and correct copy of Yuba County Water Agency Ordinance No. 13, which ordinance was duly introduced, adopted and posted pursuant to law.

Jeanene Upton, Assistant Secretary

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-2-

Attachment B.13

Publication of YCWA Board Ordinance to Adopt the Updated GMP

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APPEAL-DEMOCRAT

1530 Ellis Lake Drive, Marysville, CA 95901
(530) 741-2345

This space is for the County Clerk's filing stamp.

Affidavit of Publication

(2015.5 C.C.P)

STATE OF CALIFORNIA,

Counties of Yuba and Sutter

Yuba County Water Agency

Ordinance No. 13

I am not a party to, nor interested in the above entitled matter. I am the principal clerk of the printer and publisher of THE APPEAL-DEMOCRAT, a newspaper of general circulation, printed & published in the City of Marysville, County of Yuba, in which Newspaper has been adjudged a newspaper of general circulation by The Superior Court of the County of Yuba, State of California under the date of November 9, 1951, No. 11481, and County of Sutter to which Newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Sutter, State of California under the date of May 17, 1990, Case No. CV PT99-0519 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:

December 31, 2010

I declare under penalty of perjury
that the foregoing is true and correct.
Executed at Marysville, California

January 4, 2011

Date: _____

Kelle Smith

(Signature)

ORDINANCE NO. 13

AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE YUBA COUNTY WATER AGENCY ADOPTING UPDATED GROUNDWATER MANAGEMENT PLAN

The Board of Directors of the Yuba County Water Agency ordains as follows:

Section 1. This ordinance is adopted with reference to the following background recitals:

a. Water Code section 10750 et seq. and the Yuba County Water Agency Act authorize the Agency to adopt, implement and from time to time update a groundwater management plan.

b. The Agency adopted a groundwater management plan in March 2005. The Agency has committed to a five-year evaluation interval of its groundwater management plan. Updating the groundwater management plan is in furtherance of and consistent with the Agency's goals and objectives.

c. Water Code section 10753.2 and 10753.5 require that, before adopting a groundwater management plan, the Agency must hold two public hearings concerning the proposed groundwater management plan. The Agency has duly noticed and conducted the two public hearings on August 10, 2010 and December 14, 2010.

d. After considering the public comment and other information presented at the December 16, 2010 hearing, the Board of Directors determines that (i) the Agency has not received a majority written protest against the proposed groundwater management plan pursuant to Water Code section 10753.8, and (ii) it is in the best interests of the Agency that it adopt the update groundwater management plan.

Section 2. The Board of Directors hereby adopts the updated Yuba County Water Agency Groundwater Management Plan dated December, 2010 in the form as presented at this Board meeting.

Section 3. This ordinance shall take effect 30 days after its final passage.

Section 4. Within 15 days from the date of passage of this ordinance, the Agency Secretary shall (a) publish it one time in a newspaper of general circulation published and circulated in the Agency, and (b) submit a copy of the plan in electronic format to the State Department of Water Resources.

INTRODUCED by the Board of Directors on the 14th day of December 2010.

PASSED AND ADOPTED by the Board of Directors of the Yuba County Water Agency on the 28th day of December 2010, by the following vote:

AYES: Directors Abe, Beiza, Muck, Nicoletti, Stocker and Vasquez
NOES: None
ABSTAIN: None
ABSENT: Director Griego

Tib Beiza
Chair, Board of Directors

Attest:

Jeanene Upton, Assistant Secretary

I hereby certify that the foregoing is a true and correct copy of Yuba County Water Agency Ordinance No. 13, which ordinance was duly introduced, adopted and posted pursuant to law.

Jeanene Upton, Assistant Secretary

December 31, 2010

Ad #00111994

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Attachment B.14

YCWA Web Page Notice for Board Adoption of GMP

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Groundwater Management Plan Update

The Yuba County Water Agency Board of Directors adopted the updated Groundwater Management Plan on December 14, 2010. Following is the text of the adopting ordinance.

Printed and electronic copies of the GMP report are in production and will be available soon. For further information, please contact Scott Matyac, Water Resources Manager, at 530-741-6278 x117 or smatyac@ycwa.com

ORDINANCE NO. 13

AN ORDINANCE OF THE BOARD OF DIRECTORS
OF THE YUBA COUNTY WATER AGENCY

ADOPTING UPDATED GROUNDWATER MANAGEMENT PLAN

The Board of Directors of the Yuba County Water Agency ordains as follows:

Section 1. This ordinance is adopted with reference to the following background recitals:

a. Water Code section 10750 et seq. and the Yuba County Water Agency Act authorize the Agency to adopt, implement and from time to time update a groundwater management plan.

b. The Agency adopted a groundwater management plan in March 2005. The Agency has committed to a five-year evaluation interval of its groundwater management plan. Updating the groundwater management plan is in furtherance of and consistent with the Agency's goals and objectives.

c. Water Code sections 10753.2 and 10753.5 require that, before adopting a groundwater management plan, the Agency must hold two public hearings concerning the proposed groundwater management plan. The Agency has duly noticed and conducted the two public hearings on August 10, 2010 and December 14,2010.

d. After considering the public comment and other information presented at the December 16, 2010 hearing, the Board of Directors determines that (i) the Agency has not received a majority written protest against the proposed groundwater management plan pursuant to Water Code section 10753.6, and (ii) it is in the best interests of the Agency that it adopt the updated groundwater management plan.

Section 2. The Board of Directors hereby adopts the updated Yuba County Water Agency Groundwater Management Plan dated December, 2010 in the form as presented at this Board meeting.

Section 3. This ordinance shall take effect 30 days after its final passage.

Section 4. Within 15 days from the date of passage of this ordinance, the Agency Secretary shall (a) publish it one time in a newspaper of general circulation published and circulated in the Agency, and (b) submit a copy of the plan in electronic format to the State Department of Water Resources.

INTRODUCED by the Board of Directors on the 14th day of December 2010.

PASSED AND ADOPTED by the Board of Directors of the Yuba County Water Agency on the 28th day of December 2010.

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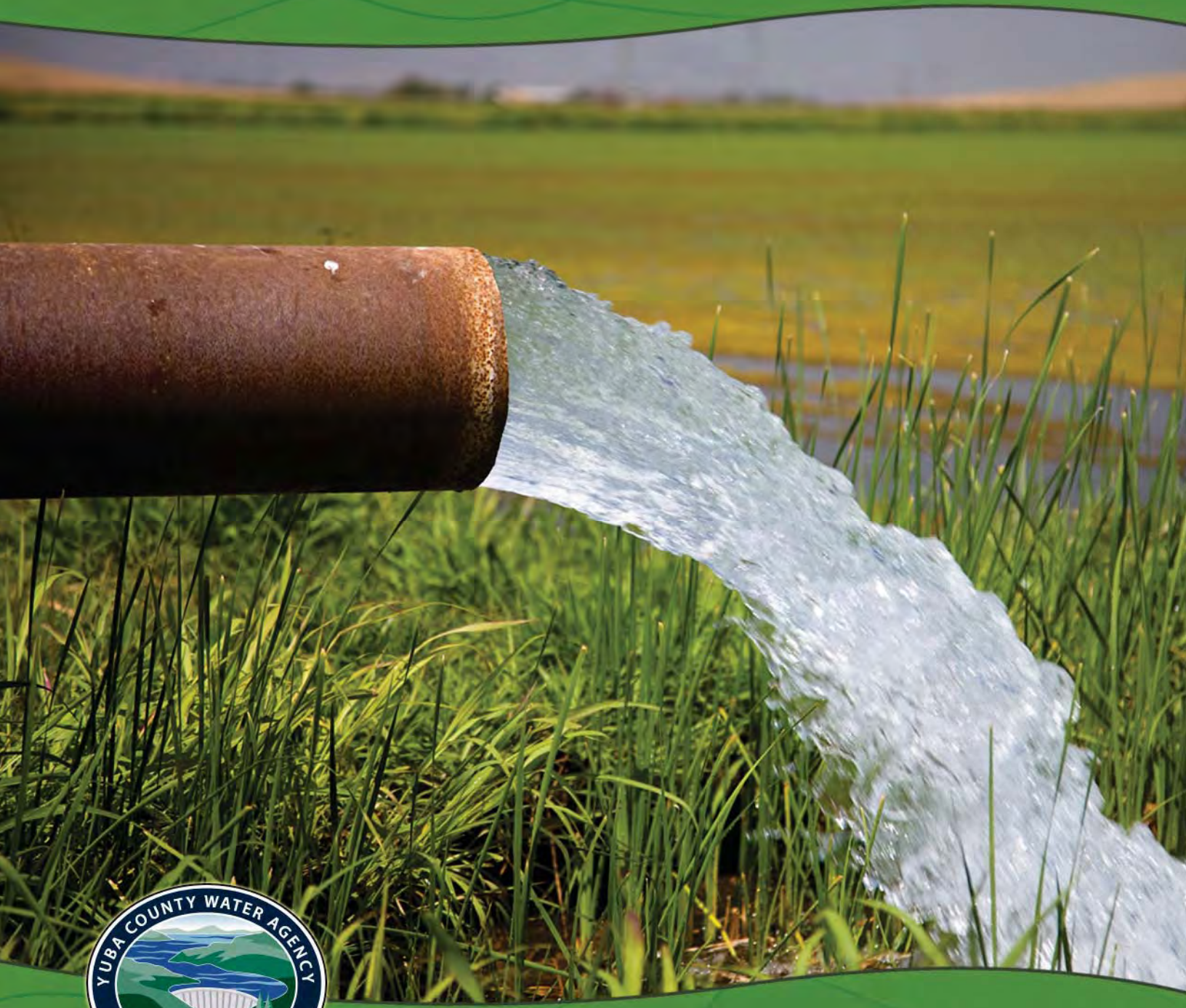

YUBA COUNTY WATER AGENCY

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Appendix G
2010 Consumer Confidence Report

Olivehurst Public Utility District
2010 Water Quality Consumer Confidence Report
Public Water System Numbers 5810003 and 5805001

For additional information concerning your drinking water, contact **Timothy R. Shaw** at **(530) 743-0317**

Este informe contiene informacion muy importante sobre su agua beber. Traduzcalo o hable con alguien que lo entienda bien.

Water for the Olivehurst Public Utility District originates from several groundwater sources as follows:

System # 5810003 (Olivehurst)	System # 5805001(Plumas Lake)
Iron and manganese treatment Plant #1 (for wells 10 and 28), #2 (for wells 1 and 4), and #3 (Wheeler Ranch, for Wells 29 and 30) provide treated water to the distribution system. Wells 9, and 14 can pump directly into the distribution system during high demand.	There is one iron and manganese Treatment Plant that treats water from Wells 1 and 2. Well 3 can pump directly into the distribution system in case of an emergency.

DEFINITIONS OF TERMS USED IN THIS REPORT:

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

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

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

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

Notification Level: Notification levels are health-based advisory levels established by the CA Dept. of Public Health (CDPH) for chemicals in drinking water that lack a primary maximum contaminant level. When chemicals are found at concentrations greater than their notification level, certain requirements and recommendations apply**.**

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

TON: threshold odor number

ppb: parts per billion or micrograms per liter

ppm: parts per million or milligrams per liter

nd: non detectable at testing limit

TDS: total dissolved solids

NTU: Nephelometric Turbidity Units

BACTERIOLOGICAL WATER QUALITY:

Testing for bacteriological contaminants in the distribution system is required by State regulations. This testing is done regularly to verify that the water system is free from coliform bacteria. The maximum number of positive coliform samples that is allowed by regulations in any one month is one.

In Olivehurst, four samples per week are required by regulations. Coliform bacteria were not detected in any samples in 2010.
In Plumas Lake, three samples per month are required by regulations. Coliform bacteria were not detected in any samples in 2010.

DETECTED CONTAMINANTS IN OUR WATER SUPPLY:

The following table gives a list of all detected chemicals in our water during the most recent sampling. Please note that not all sampling is required annually so in some cases our results are more than one year old.

Plumas Lake Lead and Copper

	Year Tested	Numbers of Samples Collected	Number of Samples above AL	MCLG	90th Percentile Result (ppb)	Action Level (ppb)
Lead	2009	25	0	2 ppb	0	15
Copper	2009	25	0	170 ppb	155	1300

Olivehurst Lead and Copper

	Year Tested	Numbers of Samples Collected	Number of Samples above AL	MCLG	90th Percentile Result (ppb)	Action Level (ppb)
Lead	2007	30	0	2 ppb	0	15
Copper	2007	30	0	170 ppb	0	1300

OLIVEHURST

Sodium and Hardness PPM (No Standards – For Information Only)							
Chemical Detected	Year	Source(s) with detection(s)	Range of Detections	Average Detected	MCL or MRDL	PHG	Origin
Sodium	2005 2006	All sources	11.7 - 41	19.4	none	none	Naturally Occurring
Hardness	2003 2005	All sources	81 - 190	120	none	none	Naturally Occurring.
Contaminants with a Primary MCL (PPB unless otherwise stated)							
Arsenic	2009	Wells 1,4,10,28,30	ND – 3.8	0.63	50	0.004	Naturally Occurring.
Barium	2009	Well 30	n/a, one detection	56	1000	2000	Naturally Occurring.
Cis-1,2 Dichloro-ethylene	2010	Well 1	0.59 – 1.40	0.98	6	3	Industrial chemical and is breakdown product of common degreasing solvents
Ethylbenzene	2010	Well 1	ND – 2.8	0.7	300	300	Industrial chemical, solvent
Xylenes	2010	Well 1	ND – 10	2.5	1750	1800	Industrial chemical, solvent
Nitrate	2010	All sources	ND – 20 ppm	3 ppm	45 ppm	45 ppm	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Fluoride	2010	Well 29	n/a, one detection	0.15 ppm	2 ppm	1 ppm	Naturally Occurring. Also a water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha	2007	Wells 14, 29, 30	1.1 - 1.8	1.55	15	none	Naturally occurring. Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation. Units are pCi/L.
Haloacetic Acid	2009	Well 30	n/a, one detection	7.7	60	n/a	Byproduct of drinking water disinfection
Contaminants with a Secondary MCL (Non-Health Based, PPB unless otherwise stated)							
Chloride	2009	Well 29	n/a, one detection	88 ppm	500 ppm	none	Naturally Occurring.
Specific Conductance	2010	Well 29	n/a, one detection	599 µΩ	1600 µΩ	none	Substances that form ions when in water; seawater influence.
TDS	2010	Well 29	n/a, one detection	388 ppm	1000 ppm	none	Naturally Occurring
Iron	2010	Treatment Plants	ND - 54	0.05	300	none	Naturally Occurring.
Manganese	2010	Treatment Plants	ND – 0.20	0.01	50	none	Naturally Occurring.
Zinc	2009	Well 29	n/a, one detection	6.5	5000	none	Naturally Occurring.
Color	2009	System	n/a, one detection	7 units	15 units	none	Naturally occurring organic materials.
Odor	2009	System	1-2 units	1.4 units	3 units	none	Naturally occurring organic materials.
Fluoride	2010	System	110 - 190	150	None	None	Treatment added to the drinking water
Chlorine Residuals of the bacteriological samples							
Free Chlorine	2010	All Sources	0.49 – 0.84 ppm	0.70 ppm	4.0 ppm	4 ppm	Disinfectant added to the drinking water.

Plumas Lake

Sodium and Hardness PPM (No Standards – For Information Only							
Chemical Detected	Year	Source(s) with detection(s)	Range of Detections	Average Detected	MCL or MRDL	PHG	Origin
Hardness	2007	Well 1	91	91	none	none	Generally found in ground and surface water
Sodium	2007	Well 1	46	46	none	none	Naturally Occurring
Contaminants with a Primary MCL (PPB unless otherwise stated)							
Barium	2003	Wells 2, 3	110 - 120	116	1000	1000	Discharge of oil drilling wastes and from metal refineries; erosion of natural deposits
Fluoride	2006 2010	Well 2 All sources	100 - 210	148	2000	1000	Naturally Occurring. Water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Chemical Detected	Year	Source(s) with detection(s)	Range of Detections	Average Detected	MCL or MRDL	PHG	Origin
Nitrate	2010	All sources	ND – 3.4 ppm	1.3 ppm	45 ppm	45 ppm	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Gross Alpha	2008	Well 3	n/a, One Detection	3.3	15	none	Naturally occurring. Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation. Units are pCi/L.
Contaminants with a Secondary MCL (Non-Health Based, PPB unless otherwise stated)							
Iron	2010	Plant	ND - 150	21	300	none	Naturally Occurring
Manganese	2010	Plant	ND – 6.8	1.3	50	none	Naturally Occurring
Chloride	2003,6	Wells 1, 2, 3	38 – 52.2 ppm	0.04 ppm	500 ppm	none	Naturally Occurring.
Specific Conductance	2009	Wells 1, 2, 3	283 - 313 μΩ	298 μΩ	1600 μΩ	none	Substances that form ions when in water; seawater influence.
TDS	2003,6 2010	Wells 1, 2, 3, 32	201 - 388 ppm	240 ppm	1000 ppm	N/A	Naturally Occurring
Chlorine Residuals of the bacteriological samples							
Free Chlorine	2010	All Sources	1.23 – 1.65 ppm	1.39 ppm	4 ppm	4 ppm	Disinfectant added to the drinking water.
Unregulated Contaminants (contaminants without MCLs or PHGs, but with Notification Levels, PPB) Notification Level, ppb							
Boron	2003	Well 1	100	None	1000	None	Naturally occurring
Vanadium	2003	Well 3	7	None	50	None	Naturally occurring
Hexavalent Chromium	2003	Well 3	2	None	none	None	Naturally occurring

GENERAL INFORMATION ON DRINKING WATER:

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

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

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

Contaminants that may be present in source water include:

- *Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
- *Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
- *Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.*
- *Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, agricultural application, and septic systems.*
- *Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.*

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the State Department of Health Services (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

ARSENIC:

While your drinking water meets the current EPA standard for arsenic, it does contain low levels of arsenic. The standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. The California Department of Public Health continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

REGULAR MEETINGS:
The Olivehurst Public Utility Board of Directors meets regularly on the third Thursday of every month at 7:00 p.m. The Meetings are held in the Board Chambers at 1970 9th Ave Olivehurst, CA.

A Water and Sewer Committee meets each month and reports back to the Board. The meetings are held at the OPUD offices at 1970 9th Ave Olivehurst, CA.

Copies of Board Meeting agendas and Committee agendas can be obtained by contacting the OPUD office at (530) 743-4657 or visiting the OPUD web site: www.opud.org

A source water assessment *has been completed for the wells serving Olivehurst and Plumas Lake. The sources are considered most vulnerable to the following activities:*

Olivehurst:
Contaminant plume from lumber manufacturing, railroad yards, and sewer collection systems (Well 1 and 4)
Agricultural Drainage and Animal Grazing (Well 10)
Existing and Historic Gas Stations (Well 14)
Sewer Collection Systems (Wells 9, 10, 29, 30)
Septic Systems (Well 14)
Auto Body Shops (Wells 9 and 10)
Airports and Military Installations (Well 28)

Plumas Lake:
Sewer collection systems
Agricultural drainage
Grazing
Agricultural wells

A copy of the complete assessments may be viewed at:

DHS Valley District Office
415 Knollcrest Drive, Suite 110
Redding, CA 96002
Attention: Richard Hinrichs, 530-224-4867

Olivehurst Public Utility District
P.O. Box 670
Olivehurst, CA 95961
Attention: Tim Shaw, 530-743-4657

Violation Information

Lead and Copper for Historic Olivehurst System:
OPUD was required to take lead and copper samples in 2010 for the Historic Olivehurst system #5810003. These samples are a State requirement and typically relate to systems with corrosive water that would attack lead and/or copper pipes. OPUD does not have corrosive water. The lead and copper samples for Historic Olivehurst are in the process of being doen at this time.

ADDITIONAL INFORMATION:

Metered Water

To comply with State requirements, drinking water meters were installed on all new construction homes in the OPUD service area, e.g. Plumas Lake, Wheeler Ranch, Summerfield, etc. Several other projects have meters but lack the radio transmitters to facilitate reading large numbers with finite staffing. OPUD has begun billing the radio read meters based on the meter reading. State law requires that all meters be read by 2010. Accordingly, OPUD has begun a program of converting manual read meters to radio read meters. The goal is to be 100% metered rates by 2025.

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. OPUD is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or at http://www.epa.gov/safewater/lead.

Future Improvements

OPUD has begun adding fluoride to the drinking water in both the Olivehurst and Plumas Lake systems. Contact OPUD or visit the web page (WWW.OPUD.ORG) for details.

Appendix H
Ordinance 185 – Rules and Regulations for Water Service, Providing Procedures and Penalties for its Enforcement

ORDINANCE NO. 185

AN ORDINANCE RESCINDING ORDINANCE NO. 151, ADOPTED MARCH 1, 1974, AS AMENDED, AND ESTABLISHING RULES AND REGULATIONS FOR WATER SERVICE, AND PROVIDING PROCEDURES AND PENALTIES FOR ITS ENFORCEMENT; AND RESCINDING ORDINANCE NO. 161, ADOPTED AUGUST 15, 1974, AND ESTABLISHING DEPOSIT REQUIREMENTS UPON APPLICATION FOR WATER SERVICE

BE IT ENACTED, by the Board of Directors of the Olivehurst Public Utility District as follows:

1. Ordinance No. 151, "An Ordinance Rescinding Ordinance No. 102, adopted October 3, 1968, as amended, and Establishing Rates, Rules, and Regulations for Water Service by Olivehurst Public Utility District", adopted March 1, 1973, as subsequently amended, is hereby rescinded.

2. Ordinance No. 161, "An Ordinance Rescinding Ordinance No. 141, as amended, and Establishing Deposit Requirements upon Application for Water and/or Sewer Service", adopted August 15, 1974, is hereby rescinded.

3. The rules, regulations, and deposit requirements for water service by Olivehurst Public Utility District shall be as follows:

ARTICLE I. GENERAL PROVISIONS

1. Short Title. This ordinance shall be known and may be cited as "Olivehurst Water Ordinance".

2. Words and Phrases. For the purpose of this ordinance, all words used herein in the present tense shall include the future; all words in the plural number shall include the singular number; and all words in the singular number shall include the plural numbers.

3. Water System. The District will furnish a system plant, works and undertaking used for and useful in obtaining, conserving, and distributing water for public and private uses, including all parts of said system, all appurtenances to it, and lands, easements, rights in land, water rights, contract rights, franchises, and other water supply, storage and distribution facilities and equipment.

4. Policy. The District will furnish water service in accordance with this and any other applicable ordinance or regulation

to any property within the boundaries of the District and to such other areas as the Board may designate.

5. Separability. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this ordinance.

6. Pressure Conditions. All applicants for service connections of water service shall be required to accept such conditions of pressure and service as are provided by the distribution system at the location of the proposed service connection, and to hold the District harmless for any damages arising out of low pressure or high pressure conditions or interruptions in service.

7. Tampering with District Property. No one except an employee or representative of the Board shall at any time in any manner operate the curb cocks or valves, main cocks, gates or valves of the District's system; or interfere with street mains or other parts of the water system.

8. Penalty for Violation. For the failure of the customer to comply with all or any part of this ordinance, and any ordinance, resolution or order fixing rates and charges of this District, a penalty for which has not hereafter been specifically fixed, the customer's service shall be discontinued and the water shall not be supplied such customer until he shall comply with the rule or regulation, rate or charge which he has violated, or, in the event that he cannot comply with said rule or regulation, until he shall have satisfied the District that in the future he will comply with all the rules and regulations established by ordinance of the District and with all rates and charges of this District. In addition thereto, he shall pay the District the sum of Five Dollars ($5.00) plus all costs of repairs and enforcement, for renewal of his service.

9. Ruling Final. All rulings of the Board shall be final.

10. Relief on Application. When any person, by reason of special circumstances, is of the opinion that any provision of this ordinance is unjust or inequitable as applied to his premises, he

may make written application to the Baord stating the special circumstances, citing the provision complained of, and requesting suspension or modification of that provision as applied to his premises. If such application be approved, the Board may, by resolution, suspend or modify the provision complained of, as applied to such premises, to be effective as of the date of the application and continuing during the period of the special circumstances.

11. Relief on Own Motion. The Board may, on its own motion, find that by reason of special circumstances any provision of this regulation and ordinance should be suspended or modified as applied to a particular premise and may, by resolution, order such suspension or mofidication for such premises during the period of such special circumstances, or any part thereof.

12. Effective Date and Posting. This ordinance shall take effect thirty (30) days from its passage, and at least one week before the expiration of said thirty (30) days, copies shall be posted in three public places in the District.

ARTICLE II. DEFINITIONS

1. Board means the Board of Directors of the District.

2. Cost means the cost of labor, material, transportation, supervision, engineering and all other necessary overhead expenses.

3. Cross Connection means any physical connection between the piping system from the District service and that of any other water supply that is not, or cannot be, approved as safe and potable for human consumption, whereby water from the unapproved source may be forced or drawn into the District distribution mains.

4. Distribution Mains means water lines in streets, highways, alleys, and easements used for public and private fire protection and for general distribution of water.

5. District means Olivehurst Public Utility District.

6. Owner means the person owning the fee, or the person in whose name the legal title to the property appears, by deed duly recorded in the County Recorder's office, or the person in possession of the property or buildings under claim of, or exercising acts of ownership

over same for himself, or as executor, administrator, guardian or trustee of the owner.

7. Person means any human being, individual, firm, company, partnership, association and private or public or municipal corporations, the United States of America, the State of California, districts and all political subdivisions, governmental agencies and mandatories thereof.

8. Premises means a lot or parcel of real property under one ownership except that any separate structure under one roof and where there are well defined boundaries or partitions such as fences, hedges or other restrictions preventing the common use of the property by the several tenants, shall be deemed separate premises, apartment houses, motels, office buildings and structures of like nature may be classified as single premises.

9. Private Fire Protection Service means water service and facilities for building sprinkler systems, hydrants, hose reels and other facilities installed on private property for fire protection and the water available therefor.

10. Public Fire Protection Service means the service and facilities of the entire water supply, storage and distribution system of the District, including the fire hydrants affixed thereto, and the water available for fire protection, excepting house service connections and appurtenances thereto.

11. Regular Water Service means water service and facilities rendered for normal domestic, commercial and industrial and fire protection purposes on a permanent basis, and the water available therefor, for which the general rates and regulations are applicable.

12. Limited Term Service means water service and facilities rendered for normal domestic purposes on a limited term basis not to exceed one month, and the water available therefor, for which the general rates and regulations are applicable, excluding deposit requirements, provided:

(a) application for limited term service is made;

(b) Payment in full is made for the full period of the

limited term at time of application;

(c) disconnection order is signed for specified date at time of application.

13. Service or Service Connection means the pipeline and appurtenant facilities such as the curb stop, meter and meter box, if any, all as used to extend water service from a distribution main to premises. Where services are divided at the curb or property line to serve several customers, each such branch service shall be deemed a separate service.

14. Temporary Water Service means water service and facilities rendered for construction work and other uses of limited duration, and the water available therefor.

15. Water Department means the Board of Directors of the District performing functions related to the District water service, together with authorized representatives.

16. Holiday means any day observed by the District whereby the business office is closed, and any day that banks observe as a holiday.

17. Week-end means all Saturdays and Sundays, to include the normal 24-hour day.

ARTICLE III. NOTICES

1. Notices from Customers. Notice from the customer to the District shall be given by him or his authorized representative in writing at the District's business office.

ARTICLE IV. APPLICATION FOR REGULAR WATER SERVICE WHERE NO MAIN EXTENSION REQUIRED

1. Application for Water Service. Applications for regular water service, where no main extension is required, shall be made upon a form provided by the District.

2. Undertaking of Applicant. Such application will signify the customer's willingness and intention to comply with this and other ordinances or regulations relating to the regular water service and to make payment for water service required.

3. Payment for Previous Service. An application will not be honored unless payment in full has been made for water service

previously rendered to the applicant by the District.

4. Installation of Services. Regular water services will be installed at the location desired by the applicant where requests are reasonable. Service installations will be made only to property abutting on public streets or abutting on such distribution mains as may be constructed in alleys or easements, at the convenience of the Water Department. Services installed in new subdivisions prior to the construction of streets or in advance of street improvements must be accepted by the applicant in the installed location.

5. Changes in Customer's Equipment. Customers making any material change in size, character or extent of the equipment or operation utilizing water service, or whose change in operation results in a large increase in the use of water, shall immediately give the District written notice of the nature of the change and, if necessary, amend their application.

6. Meters Required and Charges for Meters. Applications for all future services must be metered and applicants for such services shall deposit, in addition to any other required charges, a sum equivalent to the cost of the meter and installation charges. The District will own all meters installed. In addition to the above connection charges and any other charges of the District for the installation of the service, the District shall collect for each and every water service applied for hereafter, fees and charges for the purchases, and acquisition of meter boxes, couplings, fittings and water meters or other devices for measuring quantities of water, as required for the installation of a water meter and/or other devices sufficient to record the consumption of water. Such charges including a 15% handling expense, shall be the actual cost to District of purchase of such materials at the time of acceptance of the application for water service by District, also such charges shall include cost of labor and administration at the time of acceptance of the application. As soon as practicable after receipt of such fees, District shall install the meter box and fittings preparatory to installation of such meter. District shall

purchase the water meter or other water measuring devices, fittings and couplings necessary for the service for which application is made. District shall possess the right to elect to install the meter, device, fittings and couplings at the time of payment of the schedule of charges of District, but shall not be required to install such meter, fittings or couplings and may delay such installation for any period of time set by the District.

ARTICLE V. APPLICATIONS FOR REGULAR WATER SERVICE WHEN MAIN EXTENSION REQUIRED

1. Main Extensions. The following rules are established for making main extensions:

(a) Determination. Upon receipt of any application for water service or request for an application form, the Water Department shall determine whether a main extension is necessary to provide service. A main extension shall be installed in the manner provided in this Article whenever, in the judgement of the Water Department and the Board, such main extension is necessary to provide regular water service to property described in such application or request.

(b) Application. Any owner of one or more lots or parcels or subdivider of a tract of land where, in the opinion of the Water Department, one or more main extensions is required, desiring regular water service to service such property, shall make a written application therefore to the District, said application to contain the legal description of the property to be served and tract number thereof, and any additional information which may be required by the District, and be accompanied by a map showing the location of the proposed connections.

(c) Investigations. Upon receipt of the applications, the Water Department shall make an investigation and survey of the proposed extension and submit his opinion and the estimated cost thereof to the Board.

(d) Ruling. The Board shall thereupon consider such application and report and, after such consideration, reject, amend, or approve the application.

(e) District Lines. All extensions thus provided for, in accordance with these regulations, shall be and remain the property of the District.

(f) Dead-end Lines. No dead-end lines shall be permitted, except as recommended by the Water Department and approved by the Board. In cases where, subsequent to the approval of a dead-end line by the Board, another dead-end line is planned in sufficient proximity to make connection feasible and such connection is recommended by the Engineer, and approved by the Board, the dead-end lines shall be connected. In cases where circulation lines are necessary they shall be designed and installed by the Water Department as a part of the cost of the extension.

(g) Extent and Design. All main extensions shall extend to the fair property line of developed property. If additional property is developed on the same lot after installation of a main extension, the main extension shall be extended to the fair property line of the additionally developed property. All main extensions shall be subject to design approval by the Engineer and Board.

2. General. The District will provide all main extensions upon application for service and approval thereof by the Board.

3. Determination. If, in the opinion of the Board, the cost thereof is in excess of what it is prepared to advance, or it questions the economic advantage to the District of making such advance, it shall determine the cost of such extension including all engineering, inspection and other expenses attributable to the line.

4. Advance Cost. When the Board so determines, the applicant shall advance the amount of such estimate, and the line shall be installed by the District. If the amount of the advance deposit exceeds the actual cost of construction, engineering, legal,

inspection and other charges attributable to the extension, the balance shall be refunded to the property owner. If the amount of the deposit is insufficient to pay all the costs of construction, engineering, legal, inspection and other charges attributable to the extension, the property owner shall advance a sum sufficient to pay all such costs to the District prior to the acceptance of the extension by the District.

5. Refund Agreement. Refunds will be made to the property owner or owners who have paid for an extension as follows: where one cost of the extension has been deposited or paid for as per set forth in Section 4, the District shall thereafter, but not for longer than ten (10) years after the date such extension is originally connected to the District's water system, collect from any applicable water user connecting to such main extension, that fraction of the cost contributed for such extension, as approved by the District, as one-half the number of lineal feet of property owned by such water user along said extension bears to the total number of lineal fee of property held by potential water users along such extension as determined by the District at the time such extension is connected to the District's water system. Those exempted from making payment toward the fraction of the cost contributed for such extension would be those who already have service from the District's water system. Such sums as are thus actually received by the District shall be paid by the District only to the property owner or owners who originally advanced funds toward the cost of such extension. Where different property owners contributed toward the making of the extension, such sums shall be refunded to such property owners or their successors in interest pro rata according to the amounts which they severally contributed toward the cost of the extension. The District shall in no way be obligated to assure that the property owner or owners making such extension are paid the total or any costs thereof nor to initiate any action nor incur any expense to collect any sum to be paid such property owner or owners; nor shall refund be made from any revenues derived from water service.

6. Other Charges. In addition to the above connection charges and any other charges of the District for the installation of the service, the District shall collect for each and every water service applied for hereafter, fees and charges for the purchase, and acquisition of meter boxes, couplings, fittings and water meters or other devices for measuring quantities of water, as required for the installation of a water meter, and/or other devices sufficient to record the consumption of water. Such charges including a 15% handling charge shall be the actual cost to the District of purchase of such materials at the time of acceptance of the application for water service by District. As soon as practicable after receipt of such fees, District shall install the meter box and fittings preparatory to installation of such meter. District shall purchase the water meter or other water measuring devices, fittings and couplings necessary for the service for which application is made. District shall possess the right to elect to install the meter, device, fittings and couplings at the time of payment of the schedule of charges to District, but shall not be required to install such meter, fittings or couplings and may delay such installation for any period of time set by the District.

ARTICLE VI. SUBDIVISIONS

1. Application. A person desiring to provide a water system within a tract of land which he proposes to subdivide, shall make written application therefor.

2. Id. - Contents. The application shall state the number of the tract, the name of the subdivision and its location. It shall be accompanied by a copy of the tentative map, and the plans, profiles and specifications for the street work and sanitary and storm sewer work therein.

3. Investigation. Upon receiving the application, the water Department shall make an investigation and survey of the proposed subdivision and shall make its findings to the Board, including a recommendation as to the facilities required and the estimated cost of the proposed water system therefor. To assist the Water Department in making said investigation and report, the Board may

engage the services of a consulting engineer. The size, type and quality of materials shall be in accordance with the District's Water Distribution System Standards and Specifications in effect at the time of application.

4. Specifications and Construction. Location of the lines shall be specified by the Water Department and the actual construction will be done, at the expense of the subdivider in accordance with an approved subdivision agreement. Fire hydrants shall be located at intervals of 500 feet along the distribution man.

5. Subdivision, Tracts or Housing Projects - Deposit. A deposit sufficient to cover engineering costs, legal costs, District staff costs and other appropriate charges attributable to the project, which are incurred in developing and reviewing plans, specifications, subdivision agreements, administration and project inspections in accordance with the subdivision agreement shall be advanced to the District by the subdivider.

6. Adjustment. If the amount of the deposit exceeds the actual costs of engineering, legal, inspections, and District staff costs, and other appropriate charges attributable to the project, the balance shall be refunded to the subdivider. If the amount of the deposit is insufficient to pay all such costs, the subdivider shall advance a sum sufficient to pay all such costs to the District prior to the acceptance of the subdivision by the District.

7. Property of District. All facilities shall be the property of the District and shall be conveyed to the District by a proper instrument in writing prior to acceptance by the District.

8. Connections. The subdivider shall, at his cost, provide all connections to houses constructed by him, as provided herein and in the District's Water Distribution System Standards and Specifications in effect at the time of the application.

9. Costs and Expenses. All costs and expenses incurred by the District under this Article, including the cost of investigation, inspection and consulting engineers services, shall be paid to the District by the subdivider prior to approval of the application.

10. Further Requirements. In granting an application, the Board may make whatever further requirements which may appear to it to be necessary.

ARTICLE VII. GENERAL USE REGULATIONS

1. Water Use Limitations. District water shall be limited in use to domestic use including normal yard upkeep only. The use of District water for extensive irrigation is prohibited.

2. Number of Services per Premises. The applicant may apply for as many services as may be reasonably required for his premises, provided that the pipe line system from each service be independent of the others and that they not be interconnected. The cost of all services shall be borne by the applicant.

3. Supply to Separate Structures. Each house or structure for which application for water service is hereafter made which fronts on a public street or private road shall have a separate service connection.

4. Supply to Separate Lots or Parcels. Each lot or parcel shall have a separate connection to the main. In the case of a lot split, the buyer and/or seller shall install a separate service to the dominant tenement before service is granted.

5. Water Waste. No customer shall knowingly permit leaks or waste of water. Where water is wastefully or negligently used on a customer's premises, seriously affecting the general service, the District may discontinue the service if such conditions are not corrected within five (5) days after giving the customer written notice.

6. Responsibility for Equipment on Customer Premises. All facilities installed by the District on private property for the purpose of rendering water service shall remain the property of the District and may be maintained, repaired or replaced by the Water Department without consent or interference of the owner or occupant of the property. The property owner shall use reasonable care in the protection of the facilities. No payment shall be made for placing or maintaining said facilities on private property. No

persons shall place or permit the placement of any object in a manner which will interfere with the free access to a meter box or will interfere with the reading of a meter where installed.

7. Damage to Water System Facilities. The customer shall be liable for any damage to the District-owned customer water service facilities when such damage is from causes originating on the premises by an act of the customer or his tenants, agents, employees, contractors, licensees or permittees, including the breaking or destruction of locks by the customer or others on or near a meter, and any damage to a meter that may result from hot water or steam from a boiler or heater on the customer's premises. The District shall be reimbursed by the customer for any such damage promptly upon presentation of a bill.

8. Ground Wire Attachments. All persons are forbidden to attach any ground wire or wires to any plumbing which is or may be connected to a service connection or main belonging to the District; the District will hold the customer liable for any damage to its property occasioned by such ground wire attachments.

9. Control Valve on the Customer's Property. The customer shall provide a valve on his side of the service installation as close as is practicable to the street, highway, alley or easement in which the water main serving the customer's property is located, to control the flow of water to the piping on his premises. The customer shall not use the service curb stop to turn water on and off for his convenience.

10. Cross-Connections. The customer must comply with the State and Federal laws governing the separation of dual water systems or installations of back flow protective devices to protect the public water supply from the danger of cross-connections. Back flow protective devices must be installed as near the service as possible and shall be open to test and inspection by the Water Department. Plans for installation of back flow protective devices must be approved by the Water Department prior to installation.

In special circumstances, when the customer is engaged in the handling of especially dangerous or corrosive liquids or industrial

or process waters, the District may require the customer to eliminate certain plumbing or piping connections as an additional precaution and as a protection of the back flow preventive devices.

As a protection to the customer's plumbing system a suitable pressure relief valve must be installed and maintained by him, at his expense, when check valves or other protective devices are used. The relief valve shall be installed between the check valve and the water heater.

Whenever back flow protection has been found necessary on a water supply line entering a customer's premises, then any and all water supply lines from the District's mains entering such premises, buildings or structures shall be protected by an approved back flow device, regardless of the use of the additional water supply lines.

The double check valve or other approved back flow protection devices may be inspected and tested periodically for water tightness by the District. The devices shall be serviced, overhauled, or replaced whenever they are found defective and all costs of repair and maintenance shall be borne by the customer.

The service of water to any premises may be immediately discontinued by the District if any defect is found in the check valve installation or other protective devices, or if it is found that dangerous unprotected cross-connections exist. Service will not be restored until such defects are corrected.

11. Interruptions in Service. The District shall not be liable for damage which may result from an interruption in service from a cause beyond control of the Water Department. Temporary shutdowns may be made by the Water Department to make improvements and repairs. Whenever possible and as time permits, all customers affected will be notified prior to making such shutdowns. The District will not be liable for interruption, shortage or insufficiency of supply, or for any loss or damage occasioned thereby, if caused by accident, act of God, fire, strikes, riots, war or any other cause not within its control.

12. Ingress and Egress. Representatives from the Water Department shall have the right of ingress and egress to the customer's

premises at reasonable hours for any prupose reasonably connected with the furnishing of water service.

ARTICLE VIII. METERS

1. Installation - Where Required. All industrial services shall have meters installed, and applicants for such services shall deposit, in addition to any other required charges, a sum equivalent to the cost of the meter. In addition, the Water Department reserves the right to install meters on any other service where and when it deems such installation necessary.

2. Installation of Request of Customer - Deposit. A customer may request the installation of a meter at any time provided that he deposit a sum equivalent to the cost of the meter. The District will own all meters installed. After requesting and obtaining a meter, the customer may revert to a flat rate after one year of continuous meter usage. No refund will be made for meters removed.

3. Meter Installations. Meters will be installed at the curb, property line or in sidewalk basements by the District.

4. Change in Location of Meters. Meters moved for the convenience of the customer will be relocated at the customer's expense. Meters moved to protect the District's property will be moved at its expense. If the lateral distance which the customer desires to have the meter moved exceeds eight (8) feet he will be required to pay for new service at the desired location.

5. Meter Reading. Meters will be read as nearly as possible on the same day of the month.

6. Meter Tests - Deposit. All meters will be tested prior to installation and no meter will be installed which registers more than two per cent (2%) fast. If a customer desires to have the meter service to his premises tested, he shall first deposit twenty-five dollars ($25.00) for meters up to one (1) inch in size and ten dollars ($10.00) per inch or any portion thereof for each larger size meter and shall be present when the meter is tested in the meter shop of the Water Department. Should the meter register more than two percent (2%) fast, the deposit will be refunded but should the

meter register less than two percent (2%) fast, the deposit will be retained by the Water Department.

7. Adjustment for Meter Errors. If a meter tested at the request of a customer pursuant to Section 6 is found to be more than two per cent (2%) fast, the excess charges for the time service was rendered the customer requesting the test, or for a period of six (6) months, whichever shall be the lesser, shall be refunded to the customer.

8. Non-registering Meters. If a meter is found to be non-registering the charges for service shall be based on consumption as estimated by the Water Superintendent. Such estimates shall be made from previous consumption for a comparable period.

9. Other Charges. In addition to the above connection charges and any other charges of the District for the installation of the service, the District shall collect for each and every water service applied for hereafter, fees and charges for the purchase, and acquisition of meter boxes, couplings, fittings and water meters or other devices for measuring quantities of water, as required for the installation of a water meter, and/or other devices sufficient to record the consumption of water. Such charges including a 15% handling charge shall be the actual cost to the District of purchase of such materials at the time of acceptance of the application for water service by the District. As soon as practicable after receipt of such fees, District shall install the meter box and fittings preparatory to installation of such meter. District shall purchase the water meter or other water measuring devices, fittings and couplings necessary for the service for which application is made. District shall possess the right to elect to install the meter, device, fittings and couplings at the time of payment of the schedule of charges to District, but shall not be required to install such meter, fittings or couplings and may delay such installation for any period of time set by the District.

ARTICLE IX. CREDIT

1. Establishment and Maintenance. Each applicant for service

shall establish and maintain credit to the satisfaction of the Water Department before any service will be rendered.

ARTICLE X. DEPOSIT REQUIREMENTS

1. Except as hereinafter otherwise provided, upon application for water service, the applicant shall deposit, as a condition of obtaining service, a sum equal to the amount of the charges of the District, as estimated by the District staff, for providing such service, for a two-month period. In addition to the charges as estimated by the District's staff for a two month period for the services applied for, the applicant shall further pay a deposit in the amount of the discontinuance charge for the service applied for and an amount equal to the charges for a delinquent account and the amount of penalty and interest for one month from and after the date of delinquency, all at the rate set from time to time by ordinance of the District.

2. The deposit shall be used only as a credit to the account of applicant against any unpaid charges upon termination of service. Upon termination of service, or after twelve (12) consecutive months of non-delinquency service charge payments, the deposit, or the portion thereof not applied as a credit to unpaid charges, shall be refunded, without interest, to the applicant.

3. Except as hereinafter otherwise provided, this ordinance shall apply to all applications for water service made on or after the effective date hereof, including applications for reestablishing services following discontinuance or termination by the District for nonpayment of fees and charges.

4. The deposit requirement herein established shall not apply to:

(a) Applicants who pay in advance, at the time of application the estimated amount of the charges for providing the services applied for for a minimum period of six months; and

(b) applicants who have previously taken service at another address within the District and who have paid all billings, by their due dates, during the immediately preceding

twelve month period; and

(c) applicants who, at the time of application, pay in advance in full, for limited term service not to exceed one month, and executes a discontinuance of service order for a specific date.

5. Any deposit required pursuant to this ordinance shall be in addition to, and not in lieu of, any other fees and charges, and penalties thereon, established by other ordinances, rules and regulations of the District.

ARTICLE XI. BILLING

1. Service Period. The regular service period for which a charge will be made will be one (1) calendar month.

2. Opening and Closing Charges. Opening and closing charges for less than the monthly service period shall be prorated as follows:

For services connected on any day of the month other than the first day, the charge shall be prorated on a daily basis starting with the day service is rendered and extending through the remainder of the month. For services disconnected on any day of the month other than the last day of the month, the charge shall be prorated on a daily basis backwards through the first day of the month or to the day service was rendered, whichever is the shortest period of time. All months shall be considered as having 30 days.

3. Payment of Charges. Charges for water service shall be due and payable on the first day of each service period. Charges not paid by 5:00 P.M. of the last day of the service period, excluding holidays and week-ends, whereby the time will be extended until 5:00 P.M. the following work day, will be subject to a service charge of ten percent (10%) of the amount thereof. An additional penalty of one and one-half percent (1½%) per month may accrue on the first day of each month thereafter until the charges are paid. No payment of less than the previous balance as shown on the current statement will be accepted.

4. Notification of Charges. Monthly notification of charges

for a service period will be rendered by mail. Monthly notification is for the convenience of the customer and does not obligate the District in any way. The failure of a customer to receive the monthly notification does not alleviate the customer from the responsibility for payment of the charges. At the time a connection is made, the customer will be notified of the rate applicable to the connection being made and that the same is due and payable according to Section 3 hereof.

5. Bad Check Charge. A service charge, as approved by the Board of Directors, will be levied for each check returned to the District, for any reason, except a bank error.

ARTICLE XII. DISCONTINUANCE OF SERVICE

1. Disconnection for Non-Payment. Service may be discontinued for non-payment of charges on or before the twentieth day of the second unpaid month of service. At least five (5) days prior to such discontinuance, the customer will be sent a final notice informing him that discontinuance will be enforced if payment is not made within the time specified in said notice. The failure of the District to send or any such person to receive said notice shall not affect the District's power hereunder. A customer's water service may be discontinued if water service furnished at a previous location is not paid within the time herein fixed for the payment of bills. If a customer receives water service at more than one location and the bill for services at any one location is not paid within the time provided for payment, water service at all locations may be turned off. Domestic services, however, will not be turned off for non-payment of charges for other classes of service.

2. Discontinuance Charge. A discontinuance charge of ten dollars ($10.00) will be made if payment for services is not made within the time specified in the final notice sent to the customer pursuant to the provisions of Section 1 hereof, whether or not service is actually discontinued. If service is discontinued, such discontinuance charge, plus all accrued charges and panalties to date, will be made and collected prior to renewing service following discontinuance.

3. Unsafe Apparatus. Water service may be refused or discontinued to any premises where apparatus or appliances are in use which might endanger or disturb the service to other customers.

4. Cross-Connections. Water service may be refused or discontinued to any premises where there exists a cross-connection in violation of State or Federal laws.

5. Fraud or Abuse. Service may be discontinued if necessary to protect the District against fraud or abuse.

6. Non-Compliance with Regulations. Service may be discontinued for non-compliance with this or any other ordinance or regulation related to the water service.

7. Upon Vacating Premises. Customers desiring to discontinue service shall so notify the Water Department. Unless discontinuance of service is ordered the customer shall be liable for charges whether or not any water is used.

8. Service Calls for Customer's Convenience. Service calls for a customer's convenience will be performed without charge during normal working hours. Service calls for a customer's convenience which requires District personnel to work overtime will be performed for a Twelve Dollar ($12.00) service charge per service call.

9. Service Turn-ons and Turn-offs. Turn-on or turn-off of service will be made at no charge for applications for water service which are received before 4:30 P.M. Applications received after 4:30 P.M. will be turned on the following day. When District staff is required to work overtime to perform a turn-on or turn-off of service, a service charge of Twelve Dollars ($12.00) will be made for such service.

ARTICLE XIII. COLLECTION BY SUIT

1. Penalty. Charges not paid by the last day of the service period, excluding holidays and week-ends, whereby the time will be extended until 5:00 P.M. the following work day, will be subject to a service charge of ten percent (10%) of the amount thereof. An additional penalty of one and one-half percent (1½%) per month may accrue on the first day of each month thereafter until the charges are paid.

2. Suit. All unpaid rates and charges and penalties herein provided may be collected by suit.

3. Costs. Defendant shall pay all costs of suit and reasonable attorney's fees in any judgment rendered in favor of the District.

ARTICLE XIV. PUBLIC FIRE PROTECTION

1. Use of Fire Hydrants. Fire hydrants are for use by the District or by organized fire protection agencies pursuant to contract with the District. Other parties desiring to use fire hydrants for any purpose must first obtain written permission from the Water Department prior to use and shall operate the hydrant in accoreance with instructions issued by the Water Department. Unauthorized use of hydrants will be prosecuted according to law.

2. Hydrant Rental. A charge to be determined by contract between the District and organized fire protection agencies will be imposed for hydrant maintenance and water used for public fire protection.

3. Moving of Fire Hydrants. When a fire hydrant has been installed in the location specified by the proper authority, the District has fulfilled its obligation. If a property owner or other party desires a change in size, type or location of the hydrant, he shall bear all costs of such changes, without refund. Any change in the location of a fire hydrant must be approved by the proper authority.

ARTICLE XV. PRIVATE FIRE PROTECTION

1. Payment of Cost. The applicant for private fire protection service not now installed shall pay the total actual cost of installation of the service from the distribution main to the customer's premises including the cost of a detector check meter or other suitable and equivalent device, valve and meter box, said installation to become the property of the District.

2. No Connection to Other System. There shall be no connections between this fire protection system and any other water distribution system on the premises.

3. Use. There shall be no water used through the fire protectio service except to extinguish accidental fires and for testing the

fire fighting equipment.

4. Water for Fire Storage Tanks. The District assumes no responsibility for loss or damage due to lack of water or pressure and merely agrees to furnish such quantities and pressures as are available in its general distribution system. The service is subject to shutdowns and variations required by the operation of the system.

ARTICLE XVI. LIMITED TERM AND TEMPORARY SERVICE

1. Limited Term Service. Limited term service may be rendered for normal domestic purposes not to exceed one month when the applicant at the time of application, pays in advance in full for such service, and executes a disconnection of service order for a specific date. No deposit is required for such service.

2. Temporary Service. Temporary service connections shall be disconnected and terminated within six (6) months after installation unless an extension of time is granted in writing by the District.

3. Temporary Service Deposit. The applicant shall deposit, in advance, an amount equal to One Hundred Thirty Seven Dollars and Thirty Cents ($137.30) for each inch or portion thereof of service desired. Upon discontinuance of service the actual cost of installing and removing the facilities required to furnish said service, exclusive of the cost of salvageable material, shall be determined and an adjustment made as an additional charge, refund or credit. If service is supplied through a fire hydrant, the applicant will be charged in accordance with the following rate schedule:

Flat charge per connection, for both installation and removal of service facilities, including the meter	$48.45
Each additional move of facilities to another location	$13.85

4. Installation and Operation. All facilities for temporary service to the customer connection shall be made by the Water Department and shall be operated in accordance with its instructions.

5. Responsibility for Installation. The customer shall use all possible care to prevent damage to any loaned facilities of the

District which are involved in furnishing the temporary service from the time they are installed until they are removed, or until forty-eight (48) hours notice in writing has been given to the District that the contractor or other person is through with the installation. If the facilities are damaged, the cost of making repairs shall be paid by the customer.

6. Temporary Service from a Fire Hydrant. If temporary service is supplied through a fire hydrant, a permit for the use of the hydrant shall be obtained from the proper authority and the District. It is specifically prohibited to operate the valve of any fire hydrant other than by the use of a spanner wrench designed for this purpose.

7. Unauthorized use of Hydrants. Tampering with any fire hydrant for the unauthorized use of water therefrom, or for any other purpose, is a misdemeanor, punishable by law.

8. Rates. The rates for temporary service shall be established by the District at the time application for such service is made. Where a meter is used, the rates for regular service shall be increased by fifty percent (50%) for temporary service.

ARTICLE XVI. GENERAL PROVISIONS

1. Pools and Tanks. When an abnormally large quantity of water is desired for filling a swimming pool or for other purposes, arrangements must be made with the District prior to taking such water. The rate to be charged for such water shall be determined by the District in relation to the quantity of water desired.

Permission to take water in unusual quantities will be given only if it can be safely delivered through the District's facilities and if other consumers are not inconvenienced thereby.

2. Responsibility for Equipment. The customer shall, at his own risk and expense, furnish, install and keep in good safe condition all equipment that may be required for receiving, controlling, applying and utilizing water, and the District shall not be responsible for any loss or damage caused by the improper installation of such equipment, or the negligence or wrongful act of the customer

or of any of his tenants, agents, employees, contractors, licensees or permittees in installing, maintaining, operating or interfering with such equipment. The District shall not be responsible for damage to property caused by faucets, valves and other equipment that are open when water is turned on either originally or when turned on after a temporary shutdown.

President of
OLIVEHURST PUBLIC UTILITY DISTRICT

ATTEST:

Clerk & ex-officio Secretary

I hereby certify that the foregoing is a full, true and correct copy of an ordinance passed and adopted by the Board of Directors of the Olivehurst Public Utility District at a meeting thereof held on the 17th day of July, 1980, by the following vote thereof:

AYES, and in favor thereof:		Directors Brandon, Donahue, Mazon, Patty, and DeBlieck
NOES,	:	NONE
ABSTAIN,	:	NONE
ABSENT,	:	NONE

Catherine Sharp
Clerk & ex-officio Secretary

APPROVED:

PRESIDENT OF SAID BOARD