FINAL

2010 URBAN WATER MANAGEMENT PLAN UPDATE

JUNE 2011

Prepared for:

City of Santa Paula

Santa Paula, California

Prepared by:

Milner-Villa Consulting

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26 July 2011

Mr. Brian Yanez
Interim Public Works Director
City of Santa Paula
P.O. Box 569
Santa Paula, California 93061-0569

Subject: Submittal of Final Urban Water Management Plan 2010 Update
City of Santa Paula

Dear Mr. Yanez:

Milner-Villa Consulting (MVC) is pleased to submit to the City of Santa Paula (City) four (4) copies of the Final Urban Water Management Plan 2010 Update (UWMP). MVC prepared the UWMP as per City Contract No. 10-10053 dated August 9, 2010. A copy of this UWMP (and an electronic file Acrobat PDF) was submitted to the California Department of Water Resources and a copy of the electronic file Adobe PDF was submitted to the California State Library.

MVC prepared this UWMP in compliance with the State of California Urban Water Management Planning Act (California Water Code, Section 10610-10656) as directed by the Department of Water Resources. This UWMP achieves the requirements of the UWMP Act including revisions to the Act which added extensive analysis of water resources, water demands, water resource reliability, recycled water, demand management measures, impacts of climate change, and compliance with the Water Conservation Act of 2009.

We appreciate the information and efforts provided by you and your staff during preparation of this UWMP. Thank you for the opportunity to work with the City of Santa Paula on this important project. Should you have any questions or require additional information, please contact me at (805) 551-3294.

Sincerely,

Brad Milner
President
Milner-Villa Consulting

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Section 1: Introduction

This section presents a summary of the Objectives, Scope of Work, and Authorization for this report.

1.1 Objectives

The City of Santa Paula (City) is pleased to release this 2010 Update of the Urban Water Management Plan (UWMP). The City is located approximately 17 miles inland from the Pacific Ocean in central Ventura County (see Figure 1-1). The City encompasses an incorporated area of approximately 4.5 square miles (City, 2011a). Figure 1-2 displays a general map of the City. Current estimated population is 29,312.

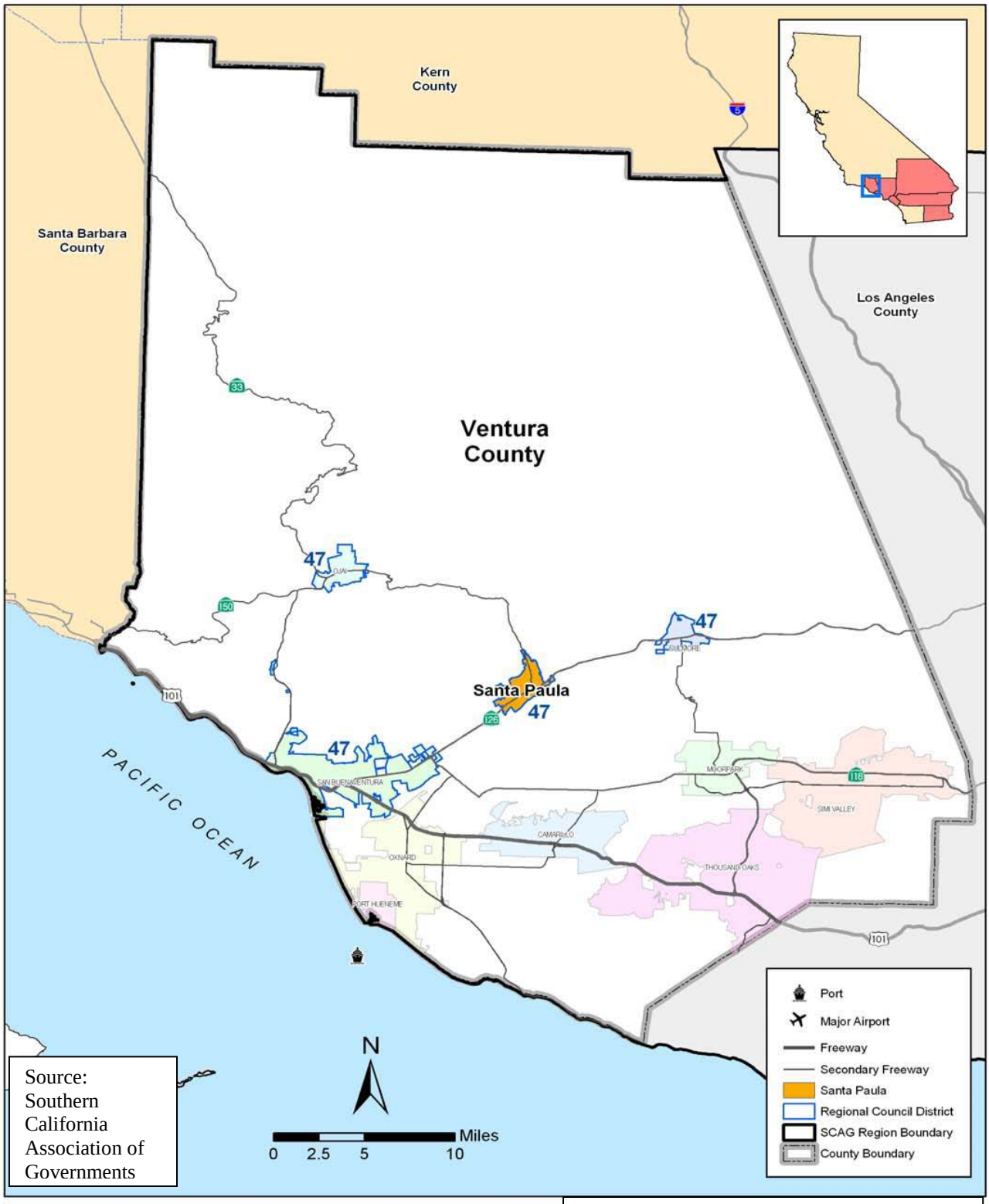
The City's UWMP was prepared in compliance with California Water Code (Section 10610-10656), which requires urban water suppliers to prepare an UWMP to promote water conservation and efficient water use. This UWMP provides planning information on the reliability and future availability of the City's water supply. This 2010 UWMP Update is a public statement of the goals, objectives, and strategies needed to maintain a reliable water supply for the City’s urban customers. It is important to understand that this UWMP should be viewed as a long-term, general planning document, rather than as policy for supply and demand management.

Primary objectives of this UWMP include the following:

- Summarize anticipated water demands over a 20-year period
- Identify and quantify water resources for existing and future demands, in normal, dry, and multiple dry years, over a 20-year period
- Clarify City strategy and action plans for advance preparation and crisis management in the event of a catastrophic interruption of water supplies
- Summarize water conservation and efficient use program.
- Retail suppliers must summarize the baseline daily per capita water use, urban water use target, interim water use target, and compliance daily per capita water use.

1.2 Authorization

The City authorized Milner-Villa Consulting (MVC) to provide consulting services related to preparation of this Report under Contract No. 10-10053 dated August 9, 2010.



Source: Southern California Association of Governments

FIGURE 1-1
VICINITY MAP

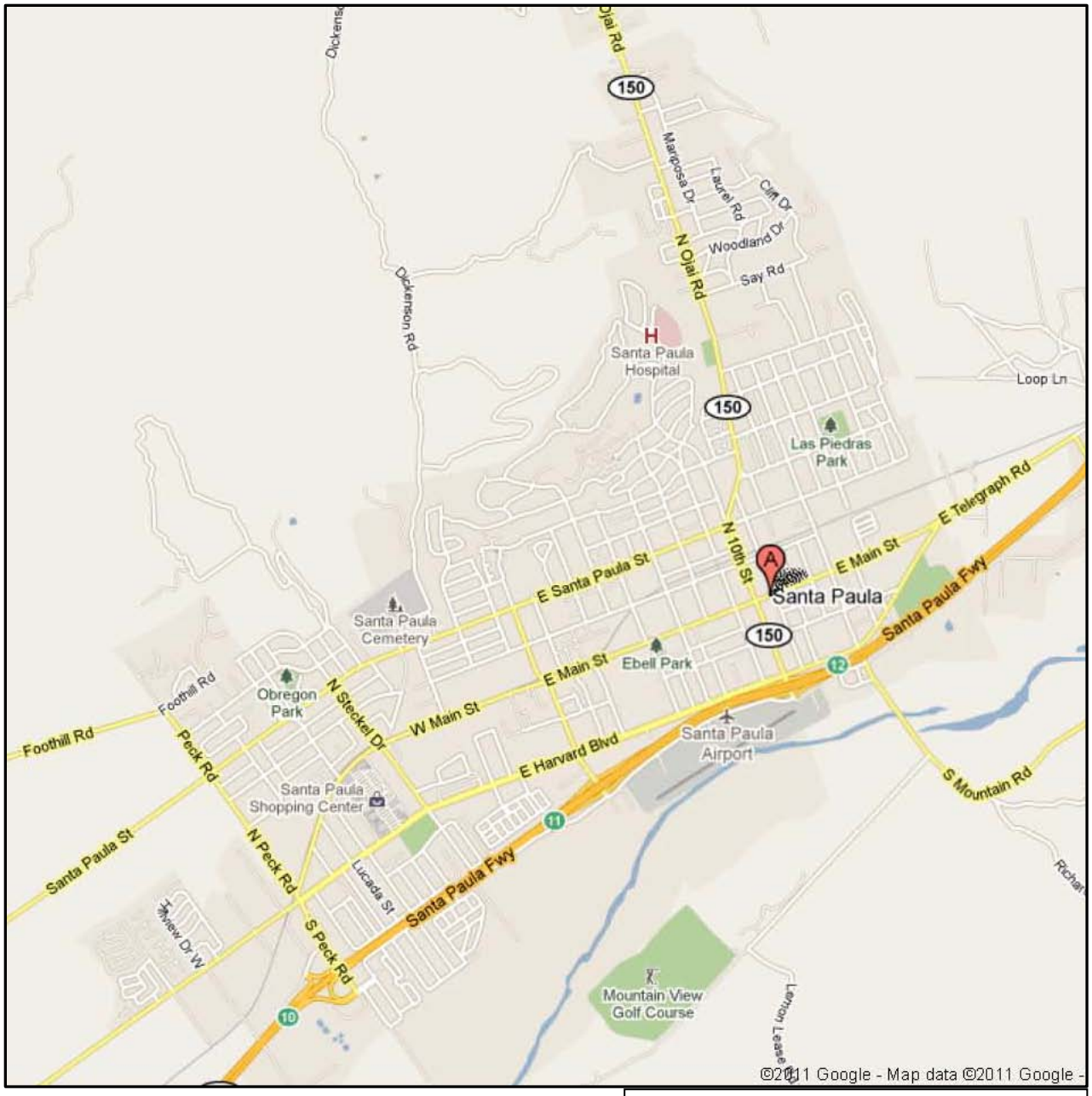


FIGURE 1-2
CITY MAP

1.3 Scope of Services

This UWMP 2010 Update is divided into five primary sections. Section 2 describes the City's water service area. Section 3 defines the City's water demands. Section 4 defines the City's water supplies. Section 5 describes the City's water reliability and water shortage contingency planning. Section 6 describes water demand management (i.e., water conservation) activities. Global climate change impacts are summarized in Section 7. References are provided in Section, and definitions for selected abbreviations and terminology are included in Appendix A.

1.4 UWMP Requirements

The City's UWMP Update includes the following:

- 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. (California Water Code, Section 10620(d)(2))
- Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments. (CWC, 10621(b))
- Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq. (CWC, 10621(c))
- Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan. (CWC, 10635(b))
- Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. (CWC, 10642)
- Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area. (CWC, 10642)
- Provide supporting documentation that the plan has been adopted as prepared or modified. (CWC, 10642)
- Provide supporting documentation as to how the water supplier plans to implement its plan. (CWC, 10643)
- Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes. (CWC, 10644(a))

- Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours. (CWC, 10645)

1.5 History of Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Management Planning Act (AB 797; Water Code, Division 6, Part 2.6, Section 10610-10656). This Urban Water Management Planning Act requires water suppliers serving more than 3,000 customers or water suppliers providing more than 3,000 AF of water annually to prepare an UWMP to promote water demand management and efficient water use. Currently, the City serves more than 3,000 customers and provides more than 3,000 AF of water per year. The Urban Water Management Planning Act also required water suppliers to develop, adopt, and file an UWMP (or update) every five years until 1990. In 1990, the Legislature deleted this sunset provision (AB 2661). Accordingly, the UWMP must be updated a minimum of once every five years on or before December 31 in the years ending in 0 and 5. A copy of the current Urban Water Management Planning Act is provided in Appendix B.

The Legislature enacted two measures that modified the Urban Water Management Planning Act in 1991. The first measure requires water suppliers to include an urban water shortage contingency analysis as part of its urban water management plan (AB 11). This measure also exempts the implementation of urban water shortage contingency plans from California Environmental Quality Act (CEQA). The second measure requires an UWMP to describe and evaluate water recycling activities, to be updated once every five years, include an estimate of projected potable and recycled water use, and to describe activities relating to water audits and incentives (AB 1869). Another provision of this bill requires agricultural water suppliers to include in their informational reports and water management plans a description of water recycling activities.

In 1993, the Legislature enacted a measure, which allows members of the California Urban Water Conservation Council (CUWCC) to submit to the state a copy of their annual report to the Council to satisfy current reporting requirements relating to urban water management plans (AB 892).

The Legislature enacted two measures in 1994. The first measure authorizes an urban water supplier to recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan (SB 1017). 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” (CUWCC, 2000) is deemed to be reasonable. The second measure requires water suppliers to give greater consideration to recycled water in their urban management plans (AB 2853).

In 1995, the Legislature enacted two additional measures. The first measure requires urban water suppliers to include, as part of their urban water management plans, a prescribed water supply and demand assessment of the reliability of their water service to their customers during normal, dry, and multiple dry water years (AB 1845). The assessment shall compare total water supply sources available to the supplier with the total projected water use over the next 20 years, in 5-year increments. It also requires the supplier to provide the water service reliability

assessment to any city or county within which it provides water within 60 days of the adoption of its urban water management plan. The second measure made the following changes to the Urban Water Management Plan Act (SB 1011):

- Revised the components required to be included in the plan.
- Required urban water suppliers to update their plans at least once every five years on or before December 31 in the years ending in 5 and 0.
- Required urban water suppliers to include a prescribed water supply and demand assessment.
- Required suppliers to encourage active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during preparation of the plan.
- Required the urban water supplier, prior to adopting the plan, to make the plan available for public inspection and hold a public hearing thereon.
- Deleted the provision requiring action alleging failure to adopt a plan to be commenced within 18 months after commencement or urban water service after January 1, 1984.
- Defined "demand management" and "recycled water," revised the definition of "plan", and deleted the definition of "conservation."
- Exempted suppliers who were implementing a conservation program from conducting a cost-benefit analysis of those conservation programs.
- Required the Department of Water Resources to submit a report to the Legislature summarizing the status of plans on or before December 31 in the years ending in 1 and 6.

In September of 2000, the Legislature approved AB 2552, which required urban water suppliers to submit their UWMPs to cities and counties where the water supplier provides water. The intent of this new requirement was to help ensure that City and county planning agencies have reliable water supply information on which to make growth decisions.

Additional changes approved in 2001 include AB 901, SB 221, SB 610, and SB 672. AB 901 required the UWMP to include information, relating to the water quality of source supplies and the manner in which the water quality affects water management strategies and supply reliability. This bill required the plan to describe plans to supplement a water source that may not be available at a consistent level of use. SB 221 prohibited a city or county from approving a residential subdivision of more than 500 units unless the city council or the board of supervisors provides written verification from the area's water service provider that a sufficient water supply is available for the development. SB 610 required additional information to be included as part of the UWMP for urban water supplies whose water supply includes groundwater. It required a city or county that determines that a development project is subject to the California Environmental Quality Act to identify any public water system that may supply water for the project and to request that system to prepare a specific water supply assessment. It required urban water suppliers to include in the UWMP a description of all water supply projects and programs that may be undertaken to meet total projected water use. This Bill required the DWR to take into consideration whether an urban water supplier has submitted an updated UWMP in

determining eligibility for funds made available pursuant to any program administered by DWR. SB 672 required urban water suppliers to describe in the UWMP water management tools and other options used by that agency to maximize resources and minimize the need to import water from other regions. A copy of the current Urban Water Management Planning Act is provided in Appendix B.

1.6 Recent Changes to Urban Water Management Planning Act

There are many new requirements, adopted by the State over the period 2005 to 2010, that must be included in the City's UWMP Update. The following items must be included:

- 20x2020 analysis and compliance with Water Conservation Act of 2009 required of retail water suppliers.
- Water supplier must give at least 60 days advance notice to any City or county within which the supplier provides water supplies to allow opportunity for consultation on the proposed plan.
- Requires plan to include water use projections for single-family and multi-family residential housing needed for lower income and affordable households.
- Conditions eligibility for a water management grant or loan by DWR, SWRCB, or California Bay-Delta Authority on compliance with water demand management measures.
- Exempts projects funded by the American Recovery and Reinvestment Act of 2009 from the conditions placed on state funding for water management to urban water suppliers regarding implementation of water conservation measures that were implemented under AB 1420.
- Water suppliers that are members of the CUWCC and comply with the amended MOU, will be in compliance with the UWMP water demand management measures.
- Clarifies that "indirect potable reuse" of recycled water should be described and quantified in the plan.
- Requires urban wholesale water suppliers to include in UWMPs an assessment of present and proposed future measures, programs, and policies to achieve water use reductions.
- Grants urban water suppliers an extension for submission of UWMPs due in 2010 to July 1, 2011.

A copy of the current Urban Water Management Planning Act is provided in Appendix B.

1.7 City Compliance with UWMP Act

The first UWMP was adopted by the Santa Paula Water Works in 1990. The City prepared the most recent UWMP in 2006. (City, 2006)

1.8 Implementation

The City implemented the following for the UWMP Update:

- The City coordinates water planning with the following: City of Santa Paula Public Works Department and Community Services Department; and County of Ventura.
- The City provided 60-day advanced notification (copy provided in Appendix C) regarding a public hearing for the UWMP Update to applicable local agencies including the following:
    - City of Santa Paula Departments
    - County of Ventura
    - In addition to city and county agencies, the City values the input of social, cultural and economic community groups in the service area and encourages them to comment on this and any future UWMP.
- Prior to the hearing, the Public Review Final UWMP Update was made available to the public and the City's website (www.ci.santa-paula.ca.us) for review and comment.
- The City adopted the UWMP at a Council Meeting on June 20, 2011. A copy of the City's resolution adopting the 2010 UWMP Update is provided in Appendix C.
- The City will submit the UWMP to DWR by July 31, 2011.
- The City's adopted UWMP will be available for public review at City Hall, 200 S. 10th Street, Santa Paula, California, during normal business hours within 30 days of submitting the UWMP to DWR. It will also be posted on the City's website at www.ci.santa-paula.ca.us.

Section 2: System Description

This section documents the City's history, climate, land use, water demands, water resources, water quality, and reliability planning.

2.1 UWMP Requirements

This section will include the following:

- Describe the water supplier service area. (CWC, 10631(a))
- Describe the climate and other demographic factors of the service area of the supplier. (CWC, 10631(a))
- Indicate the current population of the service area. Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections. (CWC, 10631(a))
- Describe other demographic factors affecting the supplier's water management planning. (CWC, 10631(a))

2.2 History and Description

The City is located approximately 17 miles inland from the Pacific Ocean in central Ventura County (see Figure 1-1, located in Section 1). The City lies within the Santa Clara River Valley, approximately 65 miles northwest of Los Angeles, 44 miles southeast of Santa Barbara, 12 miles east of the City of San Buenaventura, and approximately 9 miles west of the City of Fillmore. The City encompasses an incorporated area of 4.5 square miles (City 2011a). Figure 1-2 (located in Section 1) displays a map of the City boundaries.

Except along the Santa Clara River, terrain adjacent to the City is mountainous, with Sulphur Mountain and the Los Padres National Forest to the north and South Mountain to the south. Land topography within the City generally drops in elevation from the northeast to the southwest. The northeast corner of the City has elevations approaching 500 feet above mean sea level. Southwest areas of the City adjacent to the City limits and the Santa Clara River approach 230 feet above mean sea level. Soils in the land adjacent to the Santa Clara River consist of recent alluvial and older alluvial deposits. These soils are generally well drained and fertile.

The original community that has become known as Santa Paula was established by the Chumash Indians as the villages of Mupu and Sisa. The land was later given away as part of a Spanish land grant to Rancho Santa Paula and Saticoy in 1840. In the 1860s, the area was subdivided into small farms. Oil exploration began in the area as early as 1865 in Santa Paula leading to significant growth in the early part of the 20th century. Early settlers depended mainly on agriculture for their livelihood. Citrus trees were planted in approximately 1874. The City was founded in 1875 and incorporated on 22 April 1902.

Santa Paula is a predominantly lower- and moderate-income community. The 2000 Census reported that half of the city's households had annual incomes of less than 70 percent of the

County median income. The City also has the lowest median household income among all Ventura County cities. (City, 2008)

2.3 Climate

Santa Paula, located in Southern California, is considered a coastal area. Santa Paula experiences many days of sunshine and minimal rainfall. Average monthly maximum air temperature varies between 67 and 82 degrees Fahrenheit (see Table 2-1). Recorded daily extremes are 112 degrees Fahrenheit (June 1917) and 20 degrees Fahrenheit (January 1913). Average annual rainfall from 1894 to 2008 is 17.93 inches. (Western Regional Climate Center, 2010) Most of the annual rainfall occurs between November and April, with the months of May to September generally dry. Figure 2-1 displays the historical recorded precipitation for Santa Paula. An example of a normal water year would be 1976, with an annual precipitation of 12.91 in. A single dry year is best exemplified in 1948 which only received 3.37 in. of precipitation. The driest 3-year period occurred between 1988 and 1990, when the average precipitation was only 7.56 in. Recorded maximum annual precipitation occurred in 1978 with 38.60 inches, while recorded minimum annual precipitation occurred in 1989 with 5.02 inches.

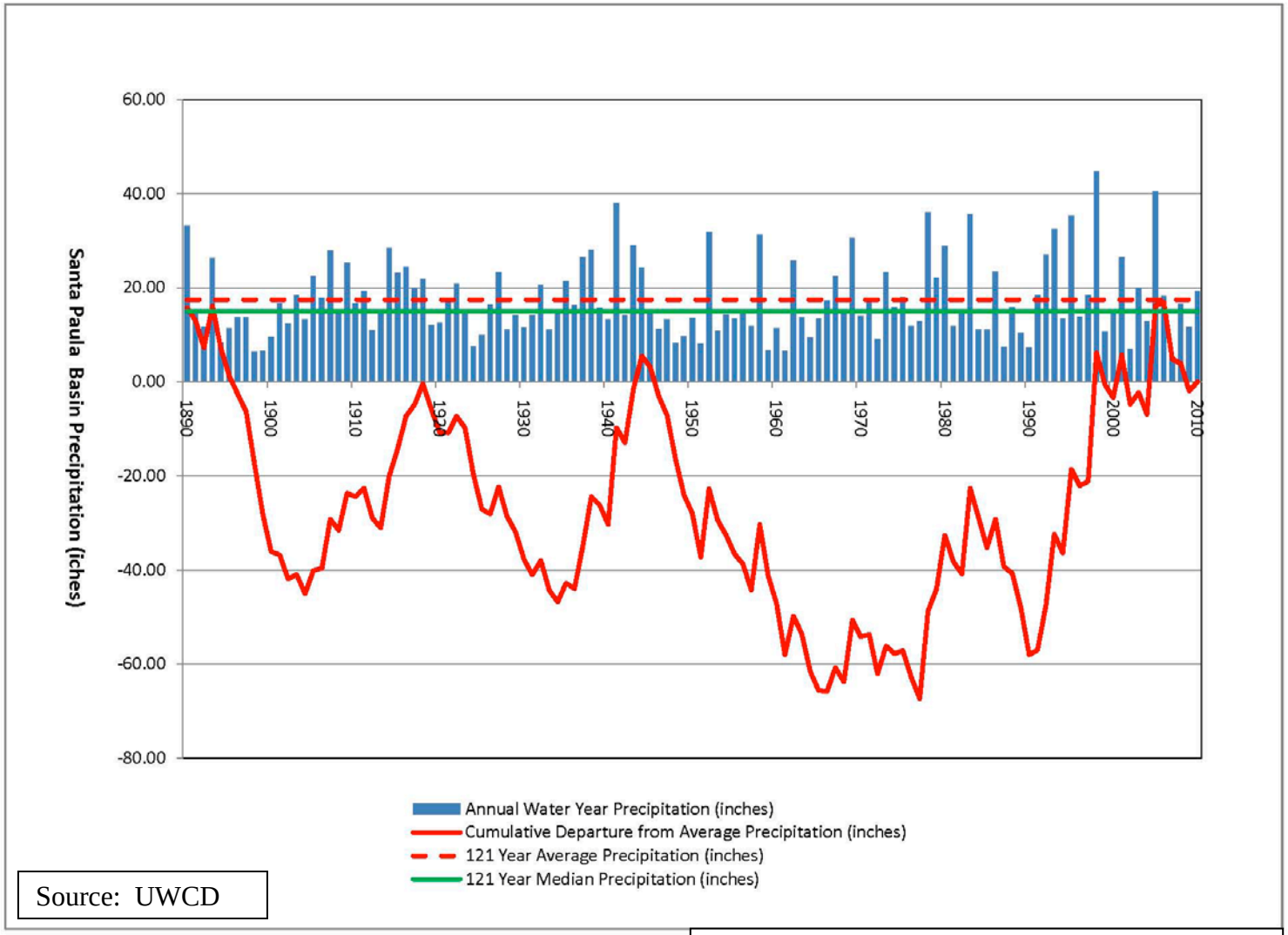
TABLE 2-1
LOCAL CLIMATE SUMMARY

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg Precip. (a)	4.29	4.19	3.06	1.13	0.33	0.04	0.01	0.05	0.23	0.51	1.68	2.42	17.93
Avg Max. High Temp. (a)	66.7	68.4	70.5	73.5	75.2	77.8	81.5	82.1	81.7	78.5	73.5	68.3	74.8
ETo (b)	1.83	2.20	3.42	4.49	5.25	5.67	5.86	5.61	4.49	3.42	2.36	1.83	46.43

Notes:
(a) Western Region Climate Center, Santa Paula, Station No. 047957, 2010.
(b) Santa Paula CIMIS, Station No. 198, 2011.

2.4 Population

Compared to most other cities in the County, Santa Paula has been a relatively stable community, experiencing modest population growth over the past 30 years. The most recent United States Census data (2010) indicated that City's population at approximately 29,321 with 3.43 persons per dwelling. The 2010 population represents a 0.25 percent annual increase over the 2000 population (see Table 2-2 for additional details). Estimated population in 2035 will be approximately 34,100. Anticipated City growth within the period 2010 to 2035 will be modest with projected annual average growth rates 0.5 percent.



Source: UWCD

FIGURE 2-1
SANTA PAULA ANNUAL PRECIPITATION

TABLE 2-2
HISTORICAL AND PROJECTED POPULATION

Year	Population [a]	Average Annual Growth Rate (%) [a]	Projected Population [b]	Average Annual Growth Rate (%) [b]	Projected Population [c]	Average Annual Growth Rate (%) [c]
1950	11,049	-	-		-	-
1960	13,279	2.0	-		-	-
1970	18,001	3.6	-		-	-
1980	20,552	1.4	-		-	-
1990	25,062	2.2	-		-	-
2000	28,598	1.4	-		-	-
2010	29,321	0.25	-		32,429	-
2015	-	-	30,061	0.5	-	-
2020	-	-	30,820	0.5	36,502	1.3
2025	-	-	31,599	0.5	-	-
2030	-	-	32,397	0.5	40,576	1.1
2035	-	-	33,215	0.5	-	-
2040	-	-	34,053	0.5	44,650	1.0

Notes:
(a) US Census.
(b) Estimate based on 2010 US Census and projected 0.5 percent annual growth rate.
(c) Ventura Council of Governments, 2008.

2.5 Land Use

The local economy is composed of agricultural, industrial, and commercial interests. Residential development is currently the single largest land use, encompassing over 37 percent of the land within the City (see Figure 2-2 for City land uses). Santa Paula currently has a housing stock totaling approximately 8,500 units. Of these, 68 percent are single-family houses or condos, 22 percent are multi-family units, and 9 percent are mobile homes and trailers. Because a significant amount of its residential growth occurred prior to 1970, over half of the housing stock in Santa Paula is over 30 years old. Commercial development comprises less than 5 percent of the City's area and industrial uses comprise approximately 6 percent (City of Santa Paula, 1998a,b). Table 2-3 summarizes the existing land use distribution within the City limits.

Agriculture has been the most important economic factor in the area. Surrounded by orange, lemon and avocado groves, Santa Paula is commonly referred to as the "Citrus Capital of the World." Figure 2-3 displays the agriculture areas and general crop types for Ventura County. The City is a major production and distribution point for citrus fruits in the United States and is also well-known for its avocado producing and processing. Major agricultural products in the area include lemons, limes, avocados, row crops, nursery stock, and other crops.

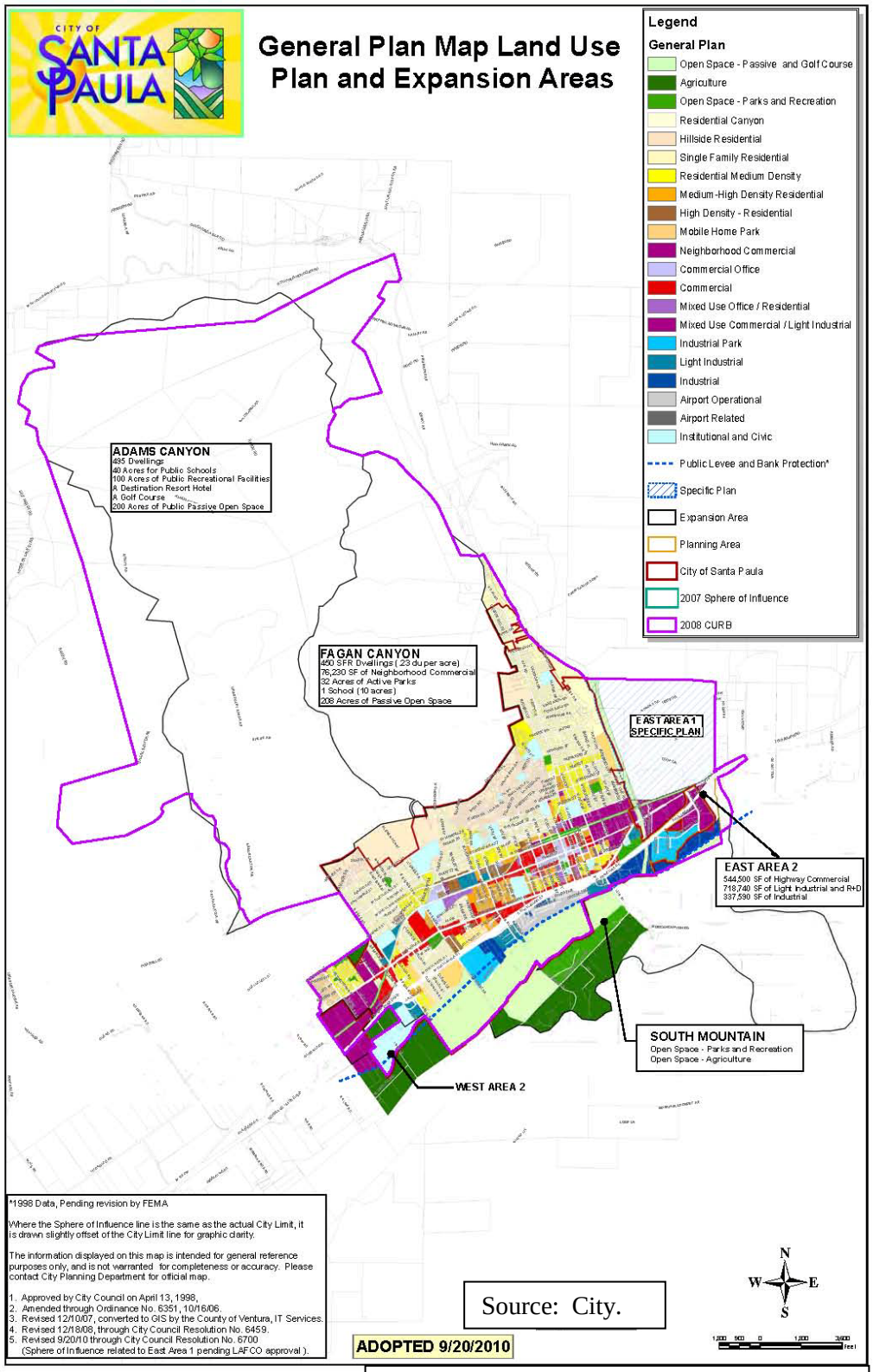


FIGURE 2-2
CITY LAND USE MAP

TABLE 2-3
EXISTING LAND USE DISTRIBUTION

Land Use	Acreage (a)	Number of Parcels (a)	Area (%) (a)
Residential			
Single-Family Residential	809	4,041 (5,632 du)[(b)]	27.8
Multi-Family Residential	165	700 (1,969 du)	5.7
Mobil Home	97	344 (824 du)	3.3
Subtotal Residential	1,071	5,085 (8,425 du)	36.8
Commercial			
General/Commercial	110	220	3.7
Commercial Office	20	63	0.7
Hotels/Motels	5	6	0.2
Subtotal Commercial	135	289	4.6
General/Industrial	132	127	4.6
Warehouse/Storage	29	12	1.0
Subtotal Industrial	161	139	5.6
Vacant	285	286	9.8
Parks and Recreation (public & private)	36	13	1.2
Agriculture	105	10	3.6
Mining	2	1	0.1
Public Facilities	273	138	9.4
Open Space	141	16	4.9
Infrastructure (privately-owned)	102	87	3.5
Other	596	77	20.5
Total	2,908	6,142	100.0

Note:
(a) City's General Plan (City, 1998a).
(b) Dwelling Units (du) obtained from Department of Finance, 1994.

2.6 Future Land Use

Future land uses were based on the City's General Plan (City, 1998a), Land Use Element (2011a), and planning documents including the environmental impact reports, water supply assessments, and planning applications for projects within the City. Table 2-4 indicates that within the City's existing limits and planning areas there is a potential for the following: 2,445 residential dwelling units (single and multi-family); 131 acres of new commercial, industrial, and institutional development; and 411 acres of parks, recreation, golf courses, and open space (City, 2011a; City, 2011b; City, 1998a,b). Additional water demands generated by these potential developments are defined in Section 3.

The City's General Plan (City, 2011a; 1998a) anticipates approval of an amendment of the City's 1978 Sphere of Influence to include six Expansion Areas, with a variety of land uses. Amending the Sphere of Influence boundary and annexing the Expansion Areas to the City requires the

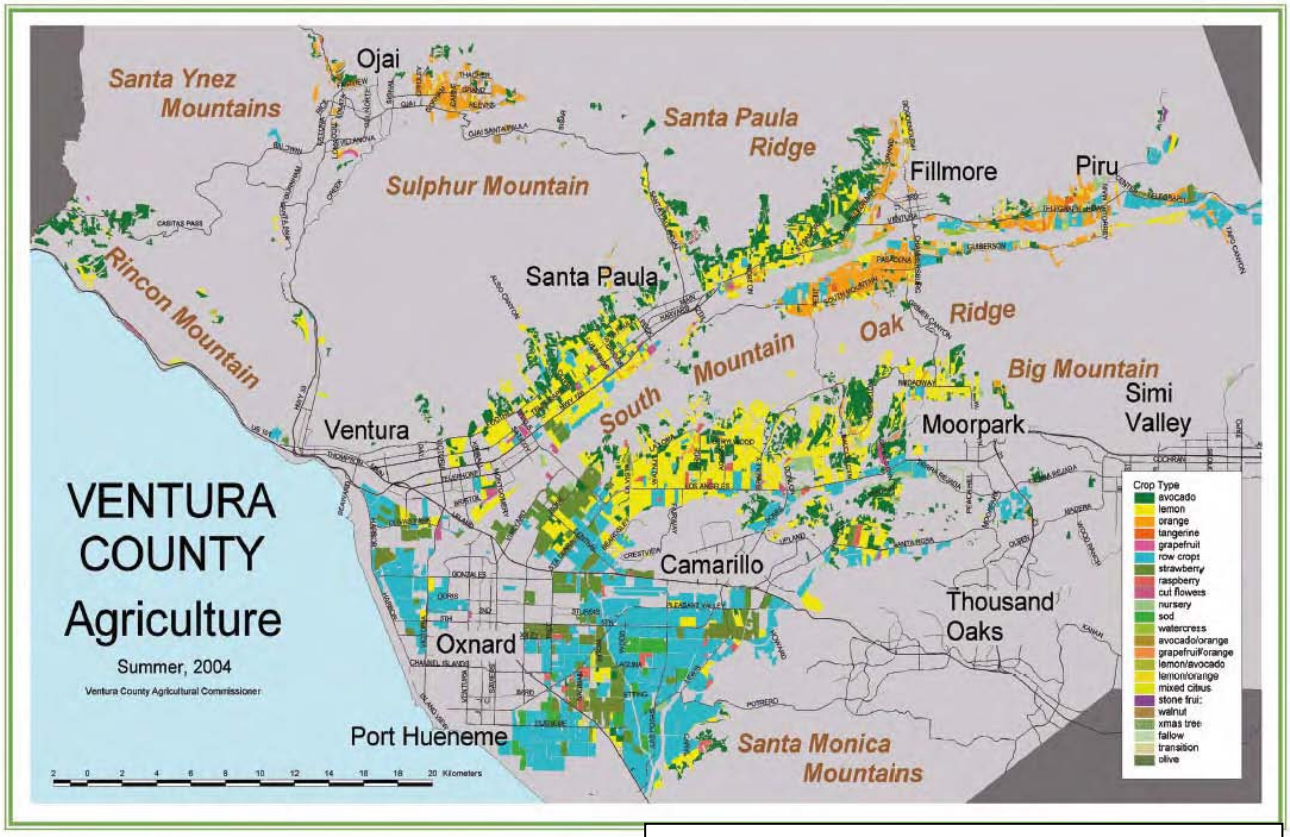


FIGURE 2-3
VENTURA COUNTY AGRICULTURE

authorization of the Local Agency Formation Commission (LAFCO). Previous LAFCO hearings approved Adams Canyon, Fagan Canyon, East Area 1, East Area 2, and West Area 2 for inclusion into the City's Sphere of Influence. South Mountain is planned to be included at a later date. Annexation of each Expansion Area will occur on a case-by-case basis after the completion of a Specific Plan and a market and fiscal evaluation. In addition, each annexation area will require environmental review in accordance with California Environmental Quality Act (CEQA). Ultimate build out of residential units will be in accordance with the City's existing Growth Management Ordinance adopted in 1985. Type and amount of development that actually occurs will depend on many factors.

Review of the City's Land Use Element of the General Plan, other planning documents, and discussions with City staff indicate that future development within the City will be uniquely different from the historical development pattern. Future water requirements for the potential expansion areas will also differ from current water demands and should be estimated using water demand rates that are reflective of future planned development.

TABLE 2-4
POTENTIAL LOCAL DEVELOPMENT AND ESTIMATED FUTURE POTABLE WATER DEMAND

Land Use	Potential Units[1,2,3,4]	Water Demand Rate [1,2,5]	Estimated Potable Water Demand (AFY) [6]
Existing Demand			**4,416**
Potential Future Potable Demand			
Potential Developments			
Residential			
Adams Canyon	495 DU	-	-
East Area 1	1,500 DU	-	-
Fagan Canyon	450 DU	-	-
Other	200 DU	-	-
Subtotal	**2,645 DU**	**0.51 AF/DU**	**1,349**
Commercial/Industrial/Institutional [6]			
Adams Canyon [7]	100,000 sqft	-	-
East Area 1 [8]	811,000 sqft	-	-
East Area 2	1,602,000 sqft	-	-
Fagan Canyon [9]	100,000 sqft	-	-
West Area 2	1,906,000 sqft	-	-
Other	1,200,000 sqft	-	-
Subtotal	**5,706,300 sqft**	**2.03 AF/acre**	**267**
Parks and Recreation [6]			
Adams Canyon [10]	200 acres	-	-
East Area 1	89 acres	-	-
Fagan Canyon	7 acres	-	-
South Mountain	115 acres	-	-
Other	0 acres	-	-
Subtotal [6]	**411 acres**	**2.2 AF/acre**	**0**
Unaccounted-for Water [11]			81
Subtotal Potential Demands:			**1,696**
Total Future Potable Demands:			**6,112**

Notes:
(1) Source: City General Plan, Land Use Element, 2011a.
(2) Source: City General Plan, 1998.
(3) East Area 1 Specific Plan, 2007.
(4) Source: personal communication (City, 2011b)
(5) Source: residential demand based on 132 gallons per capita per day (City, 2005a), and 3.43 persons per dwelling unit (US, 2010).
(6) All new community landscape areas, including golf courses, will be irrigated with recycled water. However, this water demand will be approximately 900 AFY.
(7) Includes school and destination resort hotel.
(8) Includes 2 schools, community college, and assisted living facility.
(9) Includes school.
(10) Includes golf course (Adams Canyon).
(11) Source: Assume 5 percent.

Section 3: System Demands

3.1 UWMP Requirements

This section will include the following:

- Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data. (CWC, 10608.20(e))
- *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009. (CWC, 10608.36, 10608.26(a))
- Report progress in meeting urban water use targets using the standardized form. (CWC, 10608.40)
- Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture. [past = 2005, present = 2010, and projected to be 2015, 2020, 2025, and 2030] (CWC, 10631(e)(1))
- Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types. [Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030] (CWC, 10631(k))
- Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier. (CWC, 10631.1(a))

3.2 Current Demands

3.2.1 Historical Water Demands

City water demands in 2005 were 5,046 AF. Single-family residential accounts, the largest account class, represented 46 percent of water demands (see Table 3-1).

3.2.2 Current Water Demands

Water demand is a function of several factors. Geographic location, topography, land use, demography and water system characteristics (i.e., system pressures, water quality and metering of connections) all influence water usage. Water demand characteristics within the City will therefore differ from water demands of other areas in Southern California according to these factors of influence.

The City's utility billing system has limited capability to develop water demand information that is essential for long-term planning (i.e., summarizing accounts by general land use classification, meter size, and historical records).

The City's water distribution system provides domestic water service to approximately 7,278 accounts (see Table 3-1). Total 2010 water demand within the City was 4,416 AF. Single-family residential accounts represented 87 percent of the accounts and 57 percent of the 2010 demands. Multifamily residential accounts represented 1.7 percent of the accounts and 20 percent of the demands. Commercial/Institutional accounts represented 9.7 percent of the accounts and 20 percent of the demands. Industrial accounts, landscape irrigation accounts, and "other" accounts represented the balance of the accounts and demands. According to the City's Water Consumption Study (City, 1999), single-family residential accounted for 81 percent of the water customers, which is generally consistent with the number of current residential customers. Additional details are provided in Table 3-1.

The City does not generally provide wholesale water to any other agencies, nor purchase water from any wholesale agency. However, in 2010 the City provided 39 AF to the Middleroad Mutual Water Company. The City does not use potable supplies for saline barriers, groundwater recharge, conjunctive use, raw water, or recycled water uses.

TABLE 3-1
2010 CITY ACCOUNTS AND WATER DEMAND

Customer Classification	Number of Meters	Demand (AF)
Single Family Residential	6,345	2,504
Multi-Family Residential	117	887
Commercial/Institutional	706	601
Industrial	9	44
Landscape Irrigation	11	22
Other	30	41
Agriculture Irrigation	0	0
Unmetered	0	317
Total	**7,278**	**4,416**

Source: City Water Division, 2011.

3.2.3 Per Capita Demand

Per capita water demand can be calculated via numerous methods. These methods include measured annual residential meter demands divided by estimated population, data logging of residential demands, and gross total water demands for the city divided by estimated population.

For 2010, the measured single-family and multi-family residential water demand was 3,391 AF. In 2010, the City population was 29,321. Thus, the 2010 residential water demand was approximately 103 gallons per capita per day (gpcd).

The City's Water Master Plan (2005) calculated the per capita water demand using the total water production divided by the total population. This method resulted in a residential demand of 166 gpcd. For comparison, the City's Water Consumption Study (1999) estimated the per capita water demand at approximately 176 gpd for single and multiple family residents. Both of these estimates closely correspond to the mean of 172 gpd from a national study by the American Water Works Association Research Foundation (AWWARF, 1999).

The City conducted a study (City, 2005a) that estimated per capita water demand based on sampling (data logging) of actual water demands for 12 residences for a period of two weeks in late summer. Each data logger was attached to the customer's meter continuously logging water use patterns of all water consumed. A water use survey was provided to each of the sampled customers to assist in the analysis. Conclusions of the analysis indicated that "…water use is typical of standard homes…" and the estimated City residential water demand rate was 132 gpcd for existing customers.

An additional analysis of per capita water use was conducted for compliance with the Water Conservation Act of 2009 (see Section 3.4 for details). Results of this analysis indicate that the daily per capita water use for the period 2001 to 2010 was 155 gpcd. This per capita value is significantly higher than the water demand rates from the residential 2010 water rate (103 gpcd) and City 2005 Study (132 gpcd) defined above. It should be noted that both the 2010 estimate and City 2005 Study measured only water demand for residential customers. The per capita value for the Water Conservation Act measures total water use within the City divided by the population of the City (also known as a baseline per capita rate or gross per capita rate).

Reasons for differences in water demand between methods and local communities can be numerous and complex. Differences in per capita demand are primarily attributable to variations in outdoor demands (Vickers, 2000). Other factors may include, but are not limited to, the following: parcel size, housing density, house age, condition of plumbing, use of water conservation fixtures, conservation practices, land use, climate, water rates, local ordinances, record keeping, statistical anomalies, etc.

3.2.4 Commercial Demand

Commercial water demand includes all metered water accounts classified as restaurants, businesses, commerce, trade, hotels, motels, stores, churches, offices, licensed day-care centers, governmental and municipal, and all other similar services, including reasonable landscaping. This classification does not include agriculture related demands. Average demand for commercial areas is 15.10 gallons per square foot per year or 2.03 AFY per acre developed according to the City's General Plan (City, 1998a).

3.2.5 Industrial Demand

Industrial water demand includes all metered water accounts classified as industrial including light, medium and heavy manufacturing, processing activities, and utilities. Average demand for

industrial areas is 2.49 gallons per square foot per year or 0.33 AFY per acre developed according to the City's General Plan (City, 1998a).

3.2.6 Parks and Schools Demand

Active parks and recreation includes water used by ten of the City's parks and recreation areas. The average demand rate is 2.22 AFY per acre according to the City's General Plan (City, 1998a). This estimate is based on gross acreage and considers the water used for landscape irrigation and potable demands (negligible).

Average demand rate for the City's existing schools is 1.81 AFY per acre according to the City's General Plan (City, 1998a). This estimate is based on gross acreage and considers the water used indoors and for landscape irrigation.

3.2.7 Unaccounted-For Water

In addition to the traditional demand sources, another component that significantly impacts the City's water resources is known as "unaccounted-for water." This component is typically defined as the difference between water production and water sales. These water losses can be due to authorized activities such as fire fighting and main flushing. In addition, water losses may be due to unauthorized sources such as leakage, illegal connections, theft, and inaccurate flow meters.

According to 2010 City data, unmetered water accounts for approximately 7 percent of annual demands. According to the City's Water Master Plan (City, 2005b) the unauthorized amount of unaccounted-for water within the City for the three-year period 2001 to 2003 was 6.1 percent.

This average unaccounted-for water value is fairly consistent with other utilities. Estimates from USEPA Region 9, indicate an average of 6.4 percent total unaccounted-for water. California Department of Water Resources, Office of Water Conservation uses 9.5 percent for long-range planning of municipal water production. The City should consider additional measures to reduce the unauthorized component of the unaccounted-for water. These measures may include additional water main replacement, meter replacement/exchange, water system audits, and metered use by contractors (see Section 6 for additional details).

3.2.8 Current Demands for-Low Income Households

One of the new requirements of the UWMP Act is the evaluation of demands for low income households. (CWC, 10631.1) The City has provided sufficient water to all customers to meet customer demands including water necessary for lower income single-family households and multi-family households.

3.3 Future Water Demands

Estimated future water demand is based on the City's General Plan (City, 1998a) and subsequent planning documents (see Section 2.4). Future water requirements are estimated through the year 2035 according to the future land use, population projections, and water demand characteristics. Future water demands were obtained by multiplying the anticipated units of each land use classification by the recommended water demand rates, then adding these future demands to the City's existing water demand requirements. Table 3-1 indicates that existing demand is 4,416 AFY. Potable water demands for potential developments were estimated to be a net increase of

1,697 AF (see Section 2, Table 2-4). Table 3-2 indicates that total potable water demands (existing plus potential) were estimated to be 4,840 AF in 2015 and increase to 6,116 AF by 2035. The future water demands are utilized in subsequent sections to evaluate and develop sources of water supply.

TABLE 3-2
PROJECTED CITY POTABLE WATER DEMANDS

	2015	2020	2025	2030	2035
Total Demand (AFY)	4,840	5,265	5,689	6,116	6,116

Notes: Units are in AF and rounded to nearest 1 AF.

Projected water demands in 5-year increments through 2035 are summarized in Tables 3-3 to 3-7. Demands for 2015 to 2035 were calculated based on the projected development as defined in Section 2 and Table 2-4, and distributed equally in 5-year periods from 2015 to 2030. Demands may occur within shorter or longer periods of time depending on timing of anticipated developments. Future water demand values represent the total potable water demand including anticipated future development, but do not include savings due to additional demand management measures. The projected potable water demands in Table 3-2 do not include irrigation demands for future parks, recreation areas (including school landscaped areas), community landscaping, and golf courses. These irrigation demands will be met by use of recycled water from the City's future recycled water system. Irrigation demands for future developments such as parks and recreation areas will be approximately 904 AFY by 2035. Actual demands may vary by approximately plus or minus 10 percent due to meteorological conditions.

3.3.1 Residential Demand

Future residential use within the City will have the greatest impact on future City water demand since approximately 77 percent of total annual demand within the City is due to residential customers (City, 2010). Table 2-4 (Section 2) indicates that future residential water demands will be a net increase of approximately 1,349 AFY. Tables 3-3 to 3-7 indicate that total potable residential water demands (existing plus potential) were estimated to be 3,729 AF in 2015 and increase to 4,740 AF by 2035.

As previously noted, the City conducted a study (City, 2005a) that estimated per capita water demand based on sampling (data logging) actual current water demands for 12 residences for a period of two weeks in late summer. Conclusions of the analysis indicated that the estimated residential water demand rate was 132 gpcd for existing residential customers. The study also concluded that future residential demand will be 102 gpcd within the Fagan Canyon development. This reduced per capita water demand will result from the use of high efficiency clothes washing machines, ultra low flow toilets, low flow showerheads, and evapotranspiration sensor based irrigation controllers (City, 2005a). These water conservation measures will be required for all Fagan Canyon development projects, and will be considered by the City on a case by case basis for other new developments. Thus, for purposes of this report, the City utilizes a residential demand rate of 132 gpcd or 0.5 AF per dwelling unit.

TABLE 3-3
PROJECTED 2015 POTABLE WATER DEMANDS

Water Use Sector	Metered	Unmetered	Total Volume (1)
	Volume (1)	Volume (1)	
Single Family	2,754	0	2,754
Multi Family	975	0	975
Commercial, Industrial, Institutional	712	0	712
Landscape	22	0	22
Agricultural	0	0	0
Other	41	0	41
Water Losses (2)	-	337	337
Total	**4,503**	**337**	**4,840**

Notes:
(1) Source: City; all values rounded.
(2) Projected demands based on projected development (Table 2-4) distributed equally over the period 2011 to 2030.
(3) Estimated based on 5 percent of City's total production and purchases compared to metered sales.

TABLE 3-4
PROJECTED 2020 POTABLE WATER DEMANDS

Water Use Sector	Metered	Unmetered	Total Volume (1)
	Volume (1,2)	Volume (1)	
Single Family	3,003	0	3,003
Multi Family	1,062	0	1,062
Commercial, Industrial, Institutional	779	0	779
Landscape	22	0	22
Agricultural	0	0	0
Other	41	0	41
Water Losses (2)	-	358	358
Total	**4,907**	**358**	**5,265**

Notes:
(1) Source: City; all values rounded.
(2) Projected demands based on projected development (Table 2-4) distributed equally over the period 2011 to 2030.
(3) Estimated based on 5 percent of City's total production and purchases compared to metered sales.

TABLE 3-5
PROJECTED 2025 POTABLE WATER DEMANDS

Water Use Sector	Metered	Unmetered	Total Volume (1)
	Volume (1)	Volume (1)	
Single Family	3,253	0	3,253
Multi Family	1,150	0	1,150
Commercial, Industrial, Institutional	845	0	845
Landscape	22	0	22
Agricultural	0	0	0
Other	41	0	41
Water Losses (2)	-	378	378
Total	**5,311**	**378**	**5,689**

Notes:
(1) Source: City; all values rounded.
(2) Projected demands based on projected development (Table 2-4) distributed equally over the period 2011 to 2030.
(3) Estimated based on 5 percent of City's total production and purchases compared to metered sales.

TABLE 3-6
PROJECTED 2030 POTABLE WATER DEMANDS

Water Use Sector	Metered	Unmetered	Total Volume (1)
	Volume (1)	Volume (1)	
Single Family	3,502	0	3,502
Multi Family	1,238	0	1,238
Commercial, Industrial, Institutional	912	0	912
Landscape	22	0	22
Agricultural	0	0	0
Other	41	0	41
Water Losses (2)	-	398	398
Total	**5,715**	**398**	**6,113**

Notes:
(1) Source: City; all values rounded.
(2) Projected demands based on projected development (Table 2-4) distributed equally over the period 2011 to 2030.
(3) Estimated based on 5 percent of City's total production and purchases compared to metered sales.

TABLE 3-7
PROJECTED 2035 POTABLE WATER DEMANDS

Water Use Sector	Metered	Unmetered	Total Volume (1)
	Volume (1)	Volume (1)	
Single Family	3,502	0	3,502
Multi Family	1,238	0	1,238
Commercial, Industrial, Institutional	912	0	912
Landscape	22	0	22
Agricultural	0	0	0
Other	41	0	41
Water Losses (2)	-	398	398
Total	**5,715**	**398**	**6,113**

Notes:
(1) Source: City; all values rounded.
(2) Projected demands based on projected development (Table 2-4) distributed equally over the period 2011 to 2030.
(3) Estimated based on 5 percent of City's total production and purchases compared to metered sales.

3.3.2 Commercial - Industrial -Institutional Demand

Average demand rate for future commercial areas will be 15.10 gallons per square foot per year or 2.03 AFY per acre developed according to the City's General Plan (1998a). Average demand for industrial areas is 2.49 gallons per square foot per year or 0.33 AFY per acre developed according to the City's General Plan (City, 1998a). Average demand rate for the City's existing schools is 1.81 AFY per acre according to the City's General Plan (City, 1998a). For purposes of this UWMP, the future demand for commercial, industrial, and institutional developments was estimated to be 2.03 AFY. Irrigation demands for future commercial, industrial, and institutional developments will be met by use of recycled water from the City's future recycled water system. Anticipated total water demands for future commercial, industrial, and institutional developments were estimated to be 912 AFY by 2035 (see Tables 3-3 to 3-7 for details).

3.3.3 Parks and Recreation Demand

Average demand rate for future parks and recreation areas will be 2.22 AFY per acre according to the City's General Plan (City, 1998a). Average demand rate for a golf course is approximately 3 AFY per acre (City, 1998a). Estimated total potable water demands for future parks and recreation areas will be approximately 22 AFY (see Tables 3-3 to 3-7 for details). This value is consistent with existing potable water demands, however some existing parks will be converted to use recycled water for landscape irrigation. Irrigation demands for future parks and recreation areas will be met by use of recycled water from the City's future recycled water system. Irrigation demands for future developments such as parks, recreation areas (including school landscaped areas), community landscaping, and golf courses will be approximately 904 AFY by 2035 (see Table 2-4).

3.3.4 Unmetered Water

The City should consider additional measures to reduce the unauthorized component of the unmetered (also known as unaccounted-for water). These measures including main replacement, system audits, and leak detection are summarized in Section 6.3.3. For the purpose of this UWMP,) total unmetered water was estimated to be 5 percent of total potable water demands (378 AFY) by 2035 (see Tables 3-3 to 3-7 for details). However, the City should consider alternatives to reduce this value to less than 5 percent (see Section 6).

3.3.5 Future Demands for-Low Income Households

One of the new requirements of the UWMP Act is the evaluation of demands for low income households. (CWC, 10631.1) There are approximately 843 of new low income single-family and multiple-family housing units projected to be constructed in the City through 2015 (City, 2011). This low income housing will be incorporated into future development projects identified in Table 2-4. This low income housing will generate approximately 428 AF per year of additional water demand (based on 0.4 AF per household per year) when constructed. The City has sufficient resources to accommodate this increase in water demand.

3.4 Water Conservation Act of 2009

In February 2008, Governor Arnold Schwarzenegger introduced a seven-part comprehensive plan for improving the Sacramento-San Joaquin Delta. A key component of this plan was a goal to achieve a 20 percent reduction in per capita water use statewide by the year 2020 (also known as the 20x2020 target). The Governor's inclusion of water conservation in the Delta plan emphasizes the importance of water conservation in reducing demand on the Delta and in reducing demand on the overall California water supply. In response to Schwarzenegger's call for statewide per capita savings, the DWR prepared a 20x2020 Water Conservation Plan (DWR, 2010). The Water Conservation Plan developed estimates of statewide and regional baseline per capita water use and outlined recommendations to the Governor on how a statewide per capita water use reduction plan could be implemented.

In November 2009, SBX7-7, The Water Conservation Act of 2009 (CWC, 10608-10608.44), was signed into law as part of a comprehensive water legislation package. The Water Conservation Act addresses both urban and agricultural water conservation. The urban provisions reflect the approach taken in the 20x2020 Water Conservation Plan. The legislation sets a goal of achieving a 20 percent statewide reduction in urban per capita water use and directs urban retail water suppliers to set 2020 urban water use targets. This new legislation requires urban retail water suppliers to summarize the calculation of this water use target in the UWMP.

3.4.1 Baseline Water Use

Water suppliers must define a 10- year base period (or 15-year) (also known as baseline) for water use that will be used to develop their target levels of per capita water use. Water suppliers must also calculate water use for a 5-year baseline period, and use that value to determine a minimum required reduction in water use by 2020. The longer baseline period applies to a water supplier that meets at least 10 percent of its 2008 measured-retail water demand through recycled water. Methodology 3: Base Daily Per Capita Water Use describes the calculations.

3.4.2 Water Use Targets

An urban retail water supplier, as defined above, must set a 2020 water use target and a 2015 interim target using one of four methods. (CWC, 10608.20(a)(1)) The 2020 water use target will be calculated using one of the following four methods:

- Method 1: Eighty percent of the water supplier's baseline per capita water use
- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscaped area water use; and CII uses
- Method 3: Ninety-five percent of the applicable state hydrologic region target as stated in the 20x2020 Water Conservation Plan
- Method 4: Urban water use target is calculated by estimating the baseline per capita use and subtracting total water savings (savings from metering, indoor residential, commercial, industrial, institutional, landscape, and water loss).

The target may need to be adjusted further to achieve a minimum reduction in water use regardless of the target method (this is explained in Methodology 3). The Water Code directs that water suppliers must compare their actual water use in 2020 with their calculated targets to assess compliance. In addition, water suppliers will report interim compliance in 2015 as compared to an interim target (generally halfway between the baseline water use and the 2020 target level). The years 2015 and 2020 are referred to in the methodologies as compliance years. All baseline, target, and compliance-year water use estimates must be calculated and reported in gallons per capita per day (GPCD). Water suppliers have some flexibility in setting and revising water use targets:

A water supplier may set its water use target and comply individually, or as part of a regional alliance (see Methodology 9: Regional Compliance).

A water supplier may revise its water use target in its 2015 or 2020 urban water management plan or in an amended plan.

A water supplier may change the method it uses to set its water use target and report it in a 2010 amended plan or in its 2015 urban water management plan. Urban water suppliers are not permitted to change target methods after they have submitted their 2015 UWMP.

3.4.3 Data Reporting

DWR will collect data pertaining to urban water use targets through three documents: (1) through the individual supplier UWMP; (2) through the regional UWMP; and (3) through regional alliance reports.

Water suppliers that comply individually must report the following data in their UWMP (applicable UWMP dates are included in parentheses).

- Baseline Gross Water Use and Service Area Population (2010, 2015, 2020)
- Individual 2020 Urban Water Use Target (2010, 2015, 2020) and Interim 2015 Urban Water Use Target (2010)

- Compliance Year Gross Water Use (2015 and 2020) and Service Area Population (2010, 2015, 2020)
- Adjustments to Gross Water Use in the compliance year (2015, 2020)
- Water suppliers who choose Target Method 2 also must provide Landscaped Area Water Use and Baseline CII Water Use data (2010, 2015, and 2020).
- Water Suppliers who choose Target Method 4 must provide the components of calculation as required by Target Method 4.

3.4.4 City Compliance

Compliance with the California Water Conservation Act of 2009 includes the following:

- Gross water use 10 year average (2001-2010) of 5,076 acre-feet
- Population 10 year average (2001-2010) of 29,190
- Baseline per capita use 10 year average (2001-2010) of 155 gpcd
- Hydrologic region (South Coast) target of 149 gpcd
- Hydrologic region (South Coast) 95 percent target of 142 gpcd
- City interim 2015 water use target of 152 gpcd
- City 2020 water use target of 142 gpcd.

Section 4: System Supplies

4.1 UWMP Requirements

This section will include the following:

- Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030. (CWC, 10631(b))
- Indicate whether groundwater is an existing or planned source of water available to the supplier. (CWC, 10631(b))
- Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization. (CWC, 10631(b)(1))
- Describe the groundwater basin. Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree. Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. (CWC, 10631(b)(2))
- For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. (CWC, 10631(b)(2))
- Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years (CWC, 10631(b)(3))
- Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped. [Provide projections for 2015, 2020, 2025, and 2030] (CWC,10631(b)(4))
- Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis. 10631(d)
- Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project. (CWC, 10631(h))
- Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater. (CWC, 10631(i))
- Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area. (CWC, 10633)

- Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal. (CWC, 10633(a))
- Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project. (CWC, 10633(b))
- Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use. (CWC, 10633(c))
- Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses. (CWC, 10633(d))
- 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. (CWC, 10633(e))
- Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year. (CWC,10633(f))
- Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use. (CWC, 10633(g))

4.2 Existing Water Resources

4.2.1 Historical

Santa Paula Creek remained a major source of potable water supply for the service area until wells were drilled into the Santa Paula Groundwater Basin (Basin) to augment the supply from Santa Paula Creek. In 1996, the City completed purchase of the water system from the Santa Paula Water Works. Currently the Santa Paula Groundwater Basin is the City’s sole source of water supply. The following sections briefly describe the geology, adjudication, groundwater production, water quality, and future production of the Santa Paula Groundwater Basin.

4.2.2 Geology

The Santa Paula Groundwater Basin is located along the Santa Clara River, between Saticoy and the City. The Santa Clara River originates in the San Gabriel Mountains and flows westward more than 80 miles to the Pacific Ocean. Santa Clara River flows are typically of short duration but can be of high intensity following prolonged storm events. The Santa Paula Basin is one of a series of interconnected ground water basins underlying the Santa Clara River Valley.

Santa Clara River Valley groundwater basins, in order from east to west, are as follows: Acton Valley Groundwater, Eastern Groundwater Basin, Piru Groundwater Basin, Fillmore

Groundwater Basin, and Santa Paula Groundwater Basin (UWCD/CLWA, 1996). Figure 4-1 displays the local groundwater basins including the Santa Paula Basin. Each of these basins has distinct boundaries and hydrology. However each basin is interconnected to the next via subsurface or surface flows. The Santa Paula Groundwater Basin lies directly east of the Mound Groundwater Basin and Montalvo Groundwater Basin. Similar to the basins to the east, each of these 2 basins are interconnected with the Santa Paula Groundwater Basin. The Oxnard Forebay Basin and Oxnard Plain Basin lie to the south.

Source: UWCD.

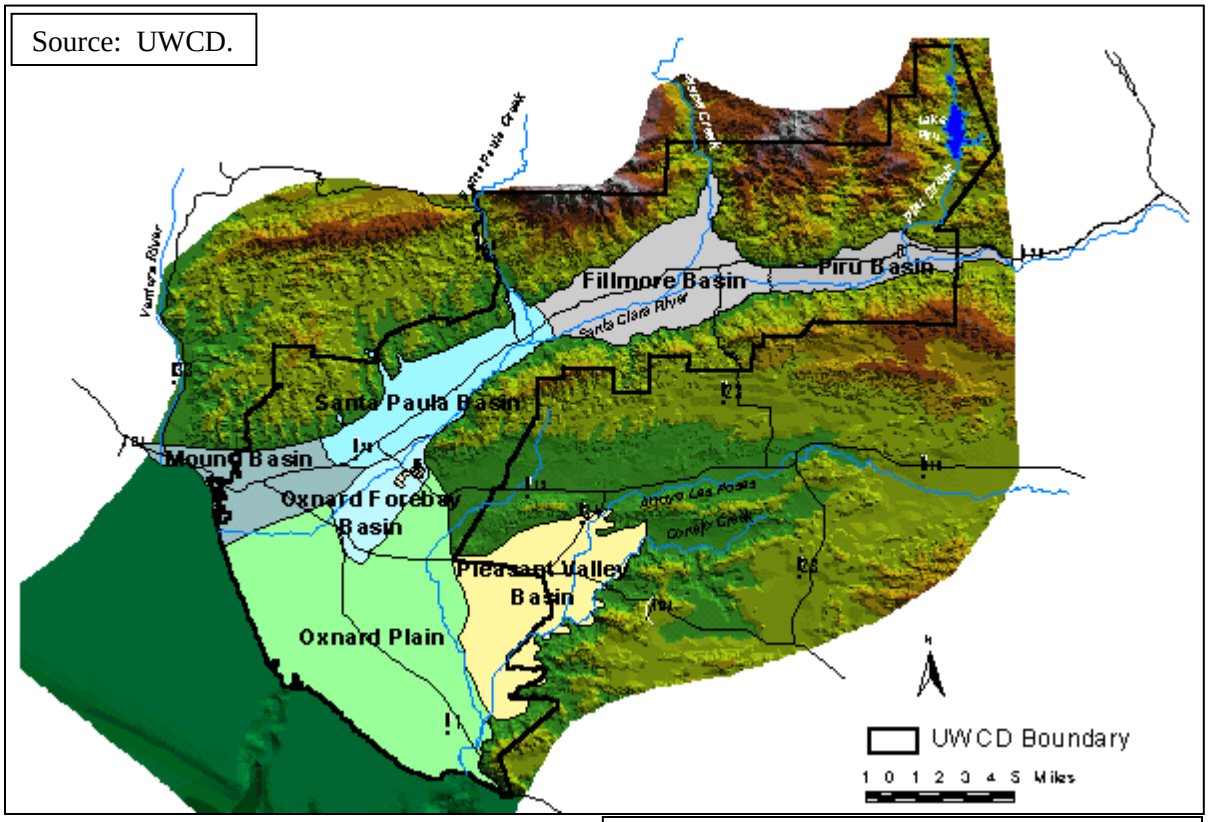


FIGURE 4-1
LOCAL GROUNDWATER BASINS

The Santa Paula Groundwater Basin is formed between the Sulphur Mountain foothills on the north and South Mountain on the south. The Santa Paula Groundwater Basin is approximately 10 miles in length, varies from 2 to 3.5 miles in width, and has a surface area of approximately 13,700 acres. The deepest part of the Santa Paula Groundwater Basin is approximately 4,000 feet, and approximately 4,900,000 AF of water are contained in storage. Existing well depths vary to a maximum depth of approximately 1,600 feet (UWCD/CLWA, 1996). Water in the Santa Paula Groundwater Basin flows primarily in a westerly direction. The Santa Paula Groundwater Basin is recharged by percolation from the following: Santa Clara River, Santa Paula Creek and other minor tributaries, subsurface inflow from the Fillmore Basin, precipitation and local runoff, and agricultural/landscape return flows (UWCD/CLWA, 1996). Recharge from the Santa Clara River is limited to reaches north of the Oak Ridge fault along a two-mile stretch

near the City of Santa Paula. Where the river flows south of the Oak Ridge fault, it overlies impermeable Santa Barbara formation and recharge cannot occur (see Figure 4-2). Location of the modern river channel severely restricts the amount of recharge the basin can receive in any one year. (UWCD, 2001)

Sediments of the Santa Paula Basin have been warped into a syncline that is oriented in a northeast-southwest direction along the center of the basin. The Santa Paula Groundwater Basin contains two distinct fresh-water aquifer systems. Upper strata consist of relatively shallow, unconfined alluvial deposits associated generally with the Santa Clara River floodplain and its tributaries (UWCD/CLWA, 1996). Lower strata are comprised of deeper, confined deposits associated with the Pleistocene San Pedro Formation. Relatively impermeable Pliocene and older sediments underlie these water-bearing deposits. Groundwater pumped from the eastern and central portions of the Santa Paula Groundwater Basin is considered to come from primarily unconfined aquifers. However, a combination of overlying fine-grained alluvial fan sediments and interlayering of sediments in the San Pedro Formation produce confining conditions in the western portion of the Santa Paula Groundwater Basin.

To the east, the Santa Paula Groundwater Basin is considered to be in hydraulic connection with the Fillmore Groundwater Basin (UWCD/CLWA, 1996). Faults and geologic anomalies limit the underflow into the Mound and Montalvo Groundwater Basins to the west. However, water does leave the western boundary of the Santa Paula Groundwater Basin as rising groundwater into the Santa Clara River near Saticoy.

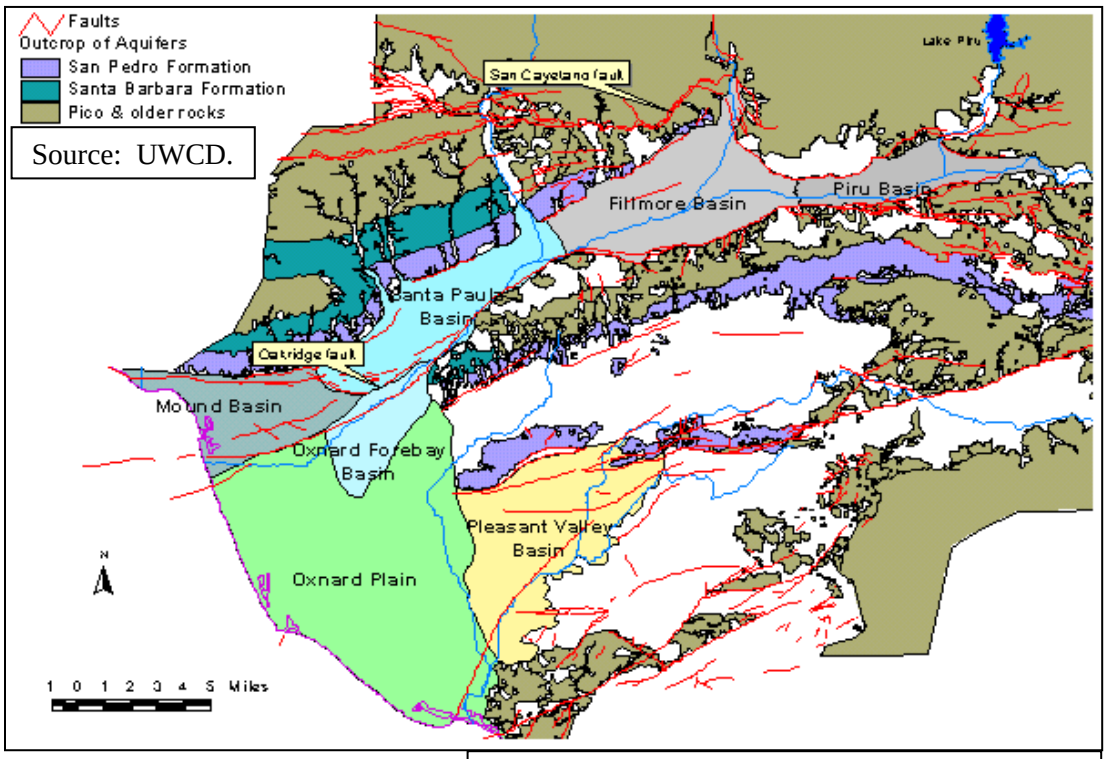


FIGURE 4-2
SURFACE GEOLOGY AND FAULTS OF LOCAL GROUNDWATER BASINS

4.2.3 Water Levels

The Santa Paula Groundwater Basin maintains relatively stable groundwater levels. Depth to groundwater varies from 30 to 200 feet, depending on the specific location within the basin and hydrogeologic conditions (Montgomery Watson, 1993). Historically, water levels have fluctuated approximately 25 to 50 feet with complete recovery possible in no more than a few years. Between 1986 and February 1991 the groundwater level dropped 25 feet, most likely due to increased reliance on groundwater during a prolonged drought. Water levels recovered by as much as 20 feet after significant precipitation in March 1991.

In 2010, the UWCD released the Draft 2009 Santa Paula Basin Draft Annual Report (UWCD, 2010). In the 2009 Annual Report, UWCD indicates that they were monitoring 64 wells in the Santa Paula Basin. According to UWCD, the majority of well data analyzed indicated a groundwater level decline over the 1998 to 2005 hydrologic base period and the hydrologic base period currently underway from 2005 to "To Be Determined". A groundwater pumping trends analysis conducted by United indicated no significant changes in pumping from 1980 to 2009 at selected distances from the Santa Clara River and at 500 foot and 2000 foot radii from the study wells. However, further analysis needs to be completed to determine if the groundwater decline is short-term or long-term, potential causes of the decline, and potential impacts of the decline.

4.2.4 Adjudication of the Santa Paula Groundwater Basin

Water availability is complicated by the fact that the actual safe yield of the Santa Paula Groundwater Basin is not known. Disagreement over the issue between the United Water Conservation District (UWCD) and the water users, including the City and the City of San Buenaventura (Ventura), led to the adjudication of the Santa Paula Groundwater Basin. The Stipulated Judgment filed 7 March 1996 in Ventura County Superior Court (California, 1996; 2010) represents the beginning of a program of basin management, including the regulation of pumping, which is aimed at meeting the reasonable water supply needs of the parties, including protection for historic users, without harm to the Santa Paula Groundwater Basin. A copy of the Amended and Restated Judgment (2010)is provided in Appendix D.

The Judgment is not a determination of water rights. However, the Judgment allocates the use of groundwater in the Santa Paula Groundwater Basin between the City of Ventura and the Santa Paula Basin Pumpers Association (SPBPA), which is a consortium of water users in the Santa Paula area, including the City and farming interests. UWCD is also a party to the Judgment. Although UWCD does not produce water from the Santa Paula Groundwater Basin, the Basin is located within its boundaries and UWCD is authorized to engage in groundwater management and replenishment activities to commence actions to protect water supplies which are of common benefit to the lands within UWCD or its inhabitants.

Currently, members of SPBPA have a cumulative allocation to pump on average 27,515 AFY. The groundwater allocation by party is shown in Table 4-1. Per the terms of the Judgment (California, 2010), the City's current allocation is 5,483.3 AFY. In 1998 the City transferred 673 AFY to Canyon Irrigation Company. Amounts of allocations could be adjusted if the terms of the Judgment are modified, or if the City acquires additional water rights from areas subject to development, and other users within SPBPA (California, 1996; City of Santa Paula, 1998a,b; California, 2010).

TABLE 4-1
SANTA PAULA GROUNDWATER BASIN WATER ALLOCATIONS

Water User	Allocation (AFY)[a]
Santa Paula Basin Pumpers Association	
City of Santa Paula[b]	5,483
Canyon Irrigation Company	673
Farmers Irrigation Company	9,913
Limoneria	3,611
Alta Mutual Water Company	758
All Other SPBPA Users	7,077
Subtotal SPBPA	27,515
City of San Buenaventura	3,000
Unallocated Reserve	2,985
Total	33,500

Notes:
Source: (California, 2010)
(a) All values rounded to nearest AF.
(b) The City's current allocation is 5,483 AFY (California, 2010).

The City of San Buenaventura has an allocation to pump on average 3,000 AFY under a Class II Emergency. A long-term drought situation affecting surface water supplies would be considered a Class II Emergency. In addition, the Judgment also provides for an unallocated reserve of 3,000 AFY.

4.2.5 Groundwater Extraction

While there have been periodic declines in water levels within the Santa Paula Groundwater Basin, members of the SPBPA agree that the Santa Paula Groundwater Basin is not in a state of overdraft. The parties agreed that the "assumed initial yield" of the basin is 33,500 acre-feet per year (AFY). Under the terms of the Judgment, a 7-year study period (1996 to 2003) formed the basis for determining actual safe yield. After 7 years, water use data was analyzed to refine the assumed initial yield of 33,500 AFY. United Water Conservation District prepared a report (UWCD, 2003) on the status of the Santa Paula Basin. The UWCD Report concluded that the average groundwater production over the period 1983 to 1995 was 26,000 AF. According to the Report, no overdraft was observed at the documented production rates over the period 1983 to 1995. The Report also identified that over the period 1997 to 2003 parties to the Judgment had cumulatively produced 42,111 AF less than their combined total allocation for this period. Yield of the Santa Paula Groundwater Basin appeared to be no less than 26,000 AFY (UWCD, 2003). However, the Report did not recommended a change in the Santa Paula Groundwater Basin yield.

Water production for the period 2000 to 2010 is presented in Table 4-2. According to City Water Division staff, total water produced in 2010 was 4,455 acre-feet (AF). City water production in 2005 was 5,046 AF (more than 591 compared to 2010). The highest annual water demand for the period 2000 to 2010 was recorded in 2002 with 5,359 AF produced.

TABLE 4-2
WATER PRODUCTION 2000 TO 2010

Year	Groundwater Production from City Wells (AF)
2000	5,254
2001	4,952
2002	5,359
2003	5,096
2004	5,208
2005	5,047
2006	5,143
2007	5,347
2008	5,290
2009	4,902
2010	4,455

Source: City's Water Division.

The City's current groundwater supply includes production from five active wells. Domestic water is pumped from Well Nos. 1-B, 11, 12, 13, and 14. Table 4-3 summarizes the City's groundwater resources by well including current status, well capacity, and 2010 production. Figures 4-3 and 4-4 display photos of Well 12 and Well 14, respectively. City wells vary in depth from 350 to 700 feet with casing diameters from 12 to 18 inches. Well capacity ranges from 1,232 to 3,219 gallons per minute. All of the City wells are equipped with multi-stage vertical pumps. Depth to groundwater varies from approximately 50 to 160 feet. Well Nos. 12 and 14 produced 81 percent of the water for the City in 2010.

TABLE 4-3
CITY GROUNDWATER RESOURCES

Well No.	Status	Capacity (gpm) (1)	Production 2010 (AF) (2)
1-B	Active	1,288	114.9
11	Active	1,232	393.2
12	Active	1,448	1,768.8
13	Active	1,932	353.3
14	Active	3,219	1,825.3
Total			4,455.5

Notes:
Source: City's Water Division, 2010.
(1) Based on SCE 2010 pump test.
(2) Units are in AF and rounded to nearest 0.1 AF.

The City no longer operates Wells Nos. 2, 8, and 9 due to a history of elevated nitrate levels in water extracted from these sources. These wells were sold to a agricultural enterprise.

FIGURE 4-3
CITY WELL No. 12 TREATMENT PLANT

FIGURE 4-4
CITY WELL No. 14

Construction of the City's Centralized Water Conditioning Facility and Well No. 14 pumping plant was completed in 2000. The Centralized Water Conditioning Facility was designed to remove manganese and iron from up to 10 million gallons of water per day from Wells No. 11, 13 and 14, and future Well No. 15. Well No. 14 is anticipated to contribute an added 4.5 million gallons of water per day to the system. This added production capacity will help the City's water system to meet peak water use demands in hot summer weather. Both facilities are housed in a new building located along Main Street. Well No. 1-B was recently rehabilitated. Annual production from existing and planned wells will be limited by the City's current groundwater allocation (5,412 AFY) in the Santa Paula Basin.

The City transferred ownership of Well No. 2 to Thermal Belt Irrigation Company in 2001 because of frequent high nitrate levels that limited its use for domestic water supply. Well Nos. 8 and 9 have been transferred to the Canyon Irrigation Company. Well Nos. 8 and 9 were transferred per the terms of the Lease and Agreement regarding the Canyon Irrigation System, along with 673 AFY of pumping rights from the Santa Paula Groundwater Basin. Well No. 6 was destroyed by the City.

4.2.6 Surface Water from Santa Paula Creek

Diversion of Santa Paula Creek water into open ditches, first accomplished locally in 1869, constituted the original source of supply for the City. Santa Paula Creek remained the major source of supply for the service area until approximately 1923 (SPWW, 1995) at which point deep wells were drilled to provide water from the Santa Paula Groundwater Basin to augment the supply from Santa Paula Creek.

The Santa Paula Creek has been and remains a valuable source of water for the City. The Creek has a drainage area of approximately 40 square miles (SPWW, 1995). The City owned the rights to the first 12 cubic feet per second (5,386 gallons per minute) of flow within the Santa Paula Creek (SPWW, 1993).

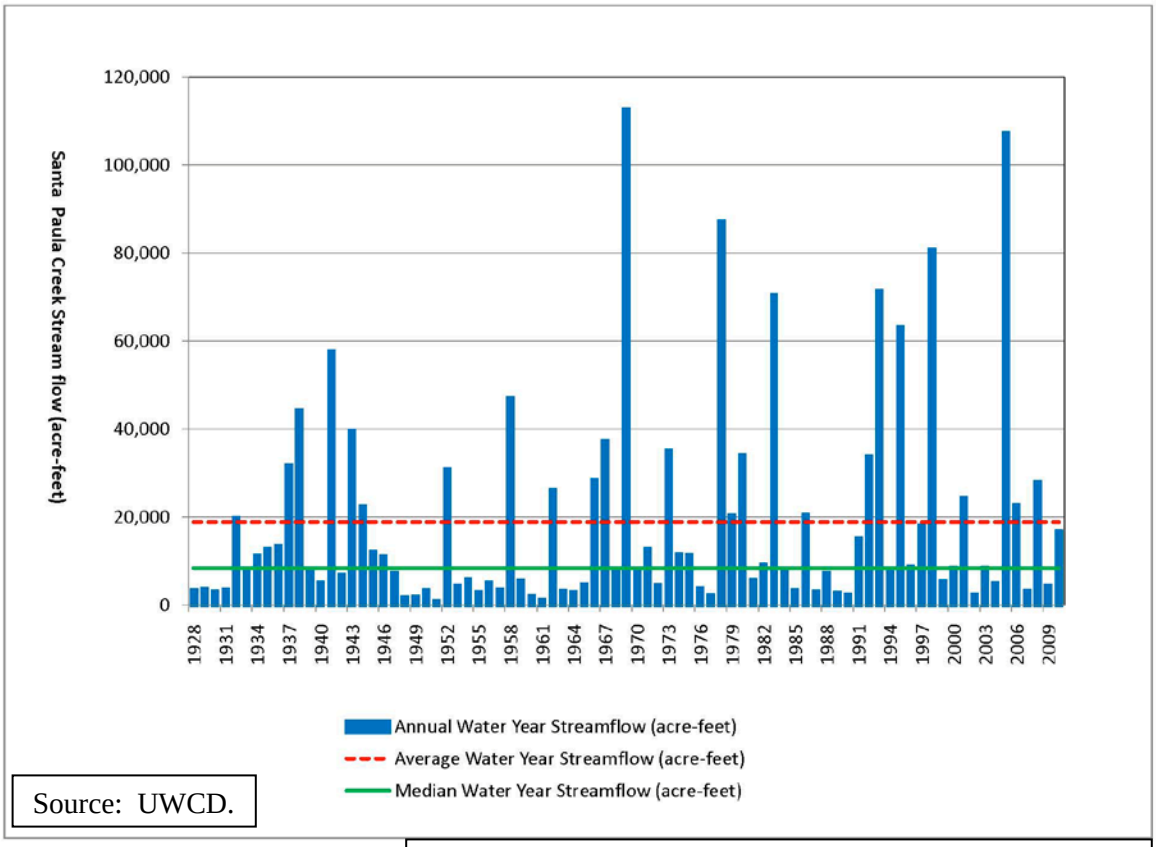
Santa Paula Creek facilities are located off the east side of Highway 150 approximately 3.5 miles north of Highway 126. Water is taken from Santa Paula Creek through a concrete diversion dam (headworks) structure near Mud Creek (City of Santa Paula, 1995). The diversion is approximately 60 feet long with a crest width of 7 feet. Crest of the diversion is flush with the upstream stream bed and rises 22 feet above the water level in the downstream pool. Water is diverted to a 27 inch concrete pipe and flows by gravity into the 500,000 gallon Canyon Reservoir. From the Canyon Reservoir water either flows by gravity or is pumped by each irrigation customer.

On 17 February 1998, the City entered into a lease and agreement with the Canyon Irrigation Company concerning the operation, maintenance, and capacity rights of the Canyon Irrigation System and associated surface and groundwater rights. Per the terms of the agreement (City, 1998c), the City transferred: (1) its obligation to provide irrigation water service to the Canyon Irrigation System customers; (2) its financial obligation of implementing system maintenance and capital facilities replacement and repairs; (3) all real property and appurtenant facilities necessary for operation of the system; and (4) groundwater rights to the Santa Paula Basin of 673 AF. Additionally, the City leased the full capacity of the Canyon Irrigation System and the exclusive right to divert surface water sources flowing in the Santa Paula Creek to the Canyon Irrigation Company. In accordance with the lease and agreement, the City will purchase an

annual average of 500 AFY of surface water from Santa Paula Creek, (or, at the option of the Canyon Irrigation Company, water from other sources, which is surplus to the irrigation needs of its members), for a total of no less than 5,000 AF over a 10 year period commencing 17 February 1998. During the subsequent 20 year period, the City has the right to continue to purchase an average of 500 AFY of surplus water supplies. If available, the City may also purchase additional surplus water supplies beyond the 500 AFY mentioned previously from the Canyon Irrigation Company throughout the next 30 years.

Santa Paula Creek water had been used for all or a portion of the City's domestic water supply through 1971 (SPWW, 1993). However, in accordance with the Surface Water Treatment Rule, surface water from Santa Paula Creek must be treated via an approved treatment facility prior to entering the City's domestic water system. This is to ensure adequate removal of possible microbiological pathogens including *Cryptosporidium* and *Giardia*. At this time, there is no such treatment facility within the City. The City currently wheels the 500 AFY of surface water from Santa Paula Creek to Farmers Irrigation Company, which uses the surface water in lieu of pumped groundwater, and the City gains 500 AFY groundwater pumping credits in the Santa Paula Basin.

The Santa Paula Basin 2003 Annual Report (UWCD, 2004) indicates that the Santa Paula Creek averages 18,929 AFY with a median of 8,410 AFY at the United States Geological Society gauging station located approximately 2 miles downstream of the confluence of Sisar Creek and Santa Paula Creek. Figure 4-5 displays the recorded annual streamflows for Santa Paula Creek. The UWCD Report indicates that the maximum recorded flow at the gauging station was 112,000 AF (1969) and a minimum recorded flow of 993 AF (1951).



Source: UWCD.

FIGURE 4-5
SANTA PAULA CREEK HISTORICAL FLOW

4.3 Water Quality of Existing Water Resources

4.3.1 Santa Paula Groundwater Basin

In July 1995, Richard Slade & Associates conducted a hydrogeologic assessment of the Santa Paula Groundwater Basin. Based on an examination of historical water quality records, it concluded that groundwater from the basin is of a calcium-magnesium-sulfate character. Principal problems affecting groundwater development in the basin are the presence of elevated concentrations of manganese, iron, sulfate, and total dissolved solids (TDS).

Federal and state law requires each community water system to provide its customers with an annual report on the quality of the water served. According to the City's 2009 Annual Water Quality Report (copy provided in Appendix E) the City potable water supplies met all DPH primary drinking water quality standards for the 2009 calendar year. However, over the last 10 years a few parameters including nitrate, manganese, sulfate, and TDS periodically did not meet primary or secondary standards. Over the last 10 years, nitrate was the only parameter that exceeded primary (health related) water quality standards. Nitrate exceeded the MCL, 45.0 mg/l, in 1996. Recent monitoring indicates that nitrate values were consistently below the primary

standard. This nitrate reduction may be attributed to the fact that the City does not utilize water from Wells Nos. 2, 8, and 9 that had a history of elevated nitrate levels.

Secondary standards, or non-health related standards, were periodically exceeded for manganese and TDS. The secondary standard for manganese was exceeded in 1996, 1997, and 1998. The MCL for manganese is 0.05 mg/l (for wells with high manganese treated with sequestering agent). "High" levels of manganese found in the City's wells ranged from 0.29 mg/l to 0.33 mg/l during this period. The "average" levels (weighted according to the City's wells contribution to total production) of manganese found in the City's wells ranged from 0.06 mg/l to 0.09 mg/l during the same period. In addition, secondary standard for TDS, 1,000 mg/l, was exceeded in 1996. A proposed primary sulfate standard of 500 mg/l was also exceeded in 1996. Although the recorded levels for these parameters were within the state standard for 1997 and 1998, the levels tend to be high.

The City's Centralized Water Conditioning Facility currently provides centralized treatment for three of the City's domestic water wells, specifically Well Nos. 11, 13, and 14. The facility treats domestic water for the removal of manganese and iron, constituents that are known to cause aesthetic water quality problems. Well No. 12 has an onsite manganese and iron removal system. The City is considering pumping groundwater produced from Well No. 1-B to the Centralized Water Conditioning Facility for manganese removal. These treatment systems are anticipated to continue to reduce the manganese and iron concentrations to levels below or within the secondary standard limits.

4.3.2 Santa Paula Creek

Santa Paula Creek shows increasing mineralization as flow decreases. But even at low flows, the water quality is comparatively good, with low concentrations of TDS, sulfate, and boron (Department of Water Resources, 1989). The "Update of the Santa Paula Groundwater Basin Plan for Piru, Sespe and Santa Paula Hydrologic Areas," prepared by the Department of Water Resources in 1989 discussed the historical surface water quality of Santa Paula Creek. That report indicated that TDS concentrations usually range between 200 and 800 mg/l; sulfate concentrations between 130 and 265 mg/l; and boron concentrations between 0.2 and 0.4 mg/l. At the end of prolonged dry periods, quality is generally reduced with TDS concentrations greater than 1,100 mg/l and historically as high as about 2,200 mg/l. These reduced quality flows have been attributed, in part, to irrigation return flows upstream of the sampling point.

More recent water quality sampling performed by the UWCD from 1997 to the present indicated similar water quality results. TDS concentrations average approximately 650 mg/l, sulfate concentrations averaged 265 mg/l; and boron averaged 0.2 mg/l.

4.4 Future Water Resources

There are several options that the City may consider for meeting future water demands including: long-term transfer of water rights; short-term transfer of water rights; State Water Project (SWP) water; use of recycled water (see also Section 4); and supporting water demand management programs (see Section 6). Implemented over time, these programs are expected to provide the City with sufficient supplies to meet future water demands. The following sections summarize future water supply programs that could be used to increase the City's potable water supplies.

4.4.1 Groundwater Allocation Transfers from Developed Properties

In accordance with City Municipal Code Section 52.021 (*Water Resource In-Lieu Fee - Ordinance No. 1058)*, land owners or developers are required to transfer their groundwater rights to the City as a condition of project approval. A copy of the Ordinance is included in Appendix F. The intent of the Ordinance is to ensure new urban land users provide sufficient water resources for their needs without taxing the existing users. If the associated water rights are not sufficient to serve the proposed development's anticipated water use (as determined by the City) or if the water rights are held by another entity who can not or will not dedicate those rights to the City, the developer must purchase additional water rights and dedicate them to the City or pay a Water Resource In-Lieu Fee to the City. This Ordinance applies to water rights within City limits as well as parcels outside City limits who must receive service from the City Water Enterprise.

The City identified 1,925 AFY of potential groundwater allocations that could be transferred to the City from overlying landowners within the City General Plan boundary (City, 2005a). One property includes a reserve of 110 AFY for agricultural uses. Thus, the maximum potential net groundwater transfer is 1,815 AFY. See Table 4-4 for a summary of existing and potential water resources. These transfers will occur in phases during the next 20 years as development occurs within the City. Transfers of allocations will need to be reported to the Technical Advisory Committee in accordance with the Judgment. The SPBPA will then transfer the applicable number of memberships (allocations) when transfers are between association members. A membership is equal to 1 AFY of groundwater allocation.

For the purposes of this report, it is anticipated that the City will acquire through allocation transfers 454 AFY by 2015, 908 AFY by 2020, 1,362 AFY by 2025, and 1,815 AFY by 2030.

TABLE 4-4
EXISTING AND POTENTIAL CITY WATER RESOURCES AND DEMANDS (AFY)

Supplies	2010	2015	2020	2025	2030	2035
Existing Supplies						
City Wells(1)	5,483	5,483	5,483	5,483	5,483	5,483
Santa Paula Creek(2)	500	500	500	500	500	500
Subtotal	5,983	5,983	5,983	5,983	5,983	5,983
Potential Supplies						
Groundwater Allocation Transfers(3)	0	454	908	1,362	1,816	1,816
Purchased Groundwater Allocations(4)	0	200	300	400	497	497
SWP(5)	0	0	0	0	0	0
Recycled Water(6)	0	400	800	1,200	1,622	1,622
Subtotal	0	1,054	2,008	2,962	3,935	3,935
Total Potential Supplies	5,983	7,037	7,991	8,945	9,918	9,918
Total Estimated Potable Demands(7)	4,416	4,840	5,265	5,689	6,113	6,113
Difference (Supply – Demand)	1,567	2,197	2,726	3,256	3,805	3,805

Notes:
All values rounded to the nearest 1 AF.
(1) The City's current allocation is 5,483 AFY (California, 2011).
(2) The City currently wheels the 500 AFY of surface water from Santa Paula Creek to Farmers Irrigation Company, which uses the surface water in lieu of pumped groundwater, and the City gains 500 AFY groundwater pumping credits in the Santa Paula Basin.
(3) Total of 1,815 AFY allocation transfers achieved over 4 equal 5-year periods (approximately 454 AFY per 5-year period).
(4) The City anticipates purchasing groundwater allocations. It is anticipated that approximately 200 AFY could be developed by 2015, 300 AFY by 2020, 400 AFY by 2025, and 497 by 2030.
(5) The City has rights to 2,198 AFY. However, actual delivery may be only 60 percent of water rights (DWR, 2010) in an average year, 7 percent in a single dry year, and 34 percent in multiple dry years. For the purposes of this UWMP, the City does not anticipate receiving SWP water in the near future.
(6) The City anticipates initiating a recycled water program by 2015. It is anticipated that approximately 400 AFY could be developed by 2015, 800 AFY by 2020, 1,200 AFY by 2025, and 1,622 by 2030.
(7) City will achieve buildout by 2030, thus the 2035 demands are equal to the 2030 demands.

4.4.2 Purchased Groundwater Allocations

In 2005, it was determined that there were 497 AFY of potentially available groundwater allocations held by others within the Santa Paula Groundwater Basin boundary that were not being utilized (City, 2005a). See Table 4-4 for a summary of existing and potential water resources. The allocation owners were contacted regarding selling the allocations. Some of the current allocation owners have not stipulated to the Judgment. The current allocation owners would have to stipulate to the Judgment before their allocations could be sold and transferred to the City. Transfers of allocations will need to be reported to the Technical Advisory Committee in accordance with the Judgment. The SPBPA will then transfer the applicable number of

memberships (allocations) when transfers are between association members. The City has the option to independently pursue the acquisition of groundwater allocations at any time in the future.

For the purposes of this report, it is anticipated that the City will purchase 200 AFY by 2015, 300 AFY by 2020, 400 AFY by 2025, and 497 AFY by 2030.

4.4.3 State Water Project Water

The SWP's California Aqueduct is owned and operated by DWR (see Figure 4-6). The County of Ventura contracted for 20,000 AFY of SWP water with 5,000 AFY of that amount sub-contracted to the UWCD. The UWCD has designated 2,198 AFY of SWP water for use by the City (City, 2005a). The City has discussed a contract with UWCD to ensure that 2,198 AFY is reserved for the City.

Delivery of the SWP water is highly variable. According to the Department of Water Resources, the SWP currently able to deliver an average of 60 percent of all entitlements (DWR, 2010) during a normal water year. However, in a single dry year (worst case scenario) the DWR can deliver an average of only 7 percent (DWR, 2010). In a multiple dry year sequence, the DWR can deliver an average of 34 percent. (DWR, 2010)

DWR estimates it will be able to deliver 80 percent of requested SWP water in 2011. In 2010, the SWP delivered 50 percent of a requested 4,172,126 acre-feet, up from a record-low initial projection of 5 percent due to lingering effects of the 2007 to 2009 drought. Deliveries were 60 percent of requests in 2007, 35 percent in 2008, and 40 percent in 2009. In 2006, the DWR delivered 100 percent of allocations, however this is difficult for DWR to achieve even in wet years due to pumping restrictions to protect threatened and endangered fish.

Two potential uses for this water include groundwater basin recharge or Santa Clara River base flow replacement. Preliminary estimates indicate that approximately 220 AFY (10 percent) of additional groundwater capacity would be available if SWP water were used for groundwater recharge (City, 2005a). See Table 4-4 for a summary of existing and potential water resources. However, the direct benefit to the Santa Paula Groundwater Basin from SWP water release and recharge has not been fully quantified. Data from ongoing Santa Paula Groundwater Basin modeling by UWCD may determine more specific results of groundwater recharge (City, 2005a). Additionally, due to local hydrogeologic conditions, it may be necessary to construct a diversion/extraction/recharge project to produce maximum benefits for the Santa Paula Groundwater Basin above 220 AFY (City, 2005a).

Source: CA DWR.

FIGURE 4-6
STATE WATER PROJECT FACILITIES

Utilizing the SWP water to increase the base flow in the Santa Clara River may result in additional groundwater for surface water wheeling similar to the Agreement the City currently has with the Canyon Irrigation Company (City, 2005a). Releasing SWP water in the Santa Clara River as a portion of the base flow would allow additional treated recycled water to be directed into the City's future recycled water distribution system for reuse (City, 2005a). Releasing SWP water into the Santa Clara River would also support existing critical habitat and downstream water users. Any use of the SWP water would require the City to enter into an agreement with UWCD and be reviewed by the Fox Canyon Groundwater Management Agency and the SPBPA Technical Advisory Committee.

It was anticipated that only incidental recharge would occur from release of SWP water from Lake Piru (UWCD facility). A conservative estimate indicated that approximately 220 AFY (10 percent of the City's 2,198 AFY) would be available to the City for wheeling as noted above (City, 2005a).

For planning purposes, the City does not anticipate directly receiving SWP water in the near future. However, the City may trade, transfer, and/or sell a portion of the SWP water rights to augment existing supplies. Additional details regarding reliability of the SWP water are provided in Section 5.

4.5 Water Quality of Future Water Resources

It is anticipated that City potable water supplies will continue to meet all DHS primary drinking water quality standards. Manganese, iron, sulfate, chloride, and total dissolved solids will continue to be the potential issues affecting groundwater development in the basin. The City's water treatment facilities will treat known constituents to levels below or within the secondary standard limits. It is anticipated that the City's water supplies and reliability will not be affected by water quality issues based on known information.

The City's only known potential significant water quality contamination issue is the leaking underground fuel tank, located at 566 West Main Street, owned by Chevron Products Company. This site is within 1,000 feet of the City's Steckel Well Field (Well Nos.11, 13 and 14). The site has been under remediation with pump and treat equipment for many years, and it was thought that the contamination was confined to the site. Within the past two years, a shallow plume of contaminated groundwater was detected. The City and Chevron Products Company are currently investigating the issue. Consultants have performed hydrogeologic evaluation with water sampling and analyses, and the parties are guardedly optimistic that the contamination is only in the shallow, perched groundwater, and not threatening to the City's wells. City staff is not aware of any contaminated sites that might affect Well 1B or Well 12.

4.6 Recycled Water

Construction of the new City Water Recycling Facility (WRF) was completed early 2010. The City WRF produces water that meets California Title 22 regulations for recycled water. Capacity of the City WRF is 4.2 MGD (4,704 AFY). (City, 2004b) At present, recycled water is not available within the City of Santa Paula area. Estimated recycled water urban demand within the City (and adjacent areas) will be approximately 1,622 AFY. (City, 2005a) For the purposes of this report, it is anticipated that the City will develop a recycled water program by 2015. It is anticipated that 400 AFY will be developed by 2015, 800 AFY by 2020, 1,200 AFY by 2025, and 1,622 AFY by 2030. Additional details provided below.

4.6.1.1 Wastewater Facilities

In 1939 the City's wastewater treatment plant project provided one of the first full "secondary" wastewater treatment plants in California and the entire nation. The level of wastewater treatment afforded through the Santa Paula plant in 1939 was not mandated on a nation-wide basis until passage of the Federal Clean Water Act in 1972. In fact, the level of wastewater treatment provided by the City's 1939 facilities was adequate to meet State and Federal disposal requirements into the 1980's.

The City's wastewater system includes over 50 miles of sewer lines and the new WRF. The primary sources of wastewater are domestic including residential, schools, commercial, light industry, heavy industry, and hotels. No actual flow measurements exist for these customer classes. However, approximately 60 to 85 percent of the per capita consumption of water becomes wastewater, with the lower percentages applicable to the semi-arid region of the southwestern United States (Metcalf & Eddy, 1991). The estimated amount of City potable water that becomes wastewater is 47 percent based on 2010 City data. Estimated 2010 City wastewater generation rate is 58 gallons per capita per day (City).

Currently, flow to the WRF is approximately 1.7 MGD. (City data). The new WRF has a membrane bioreactor (MBR) with submerged microfiltration in the activated sludge process. Disinfection will include high intensity ultraviolet system and sodium hypochlorite. Wastewater is treated to a tertiary level.

4.6.1.2 Historic Wastewater Flows

Average daily flow rates for the City WRF during the period from 2000 through 2010 are summarized in Table 4-5. The average daily flow in 2005 was 2.35 MGD, while the flow in 2010 declined to 1.71 MGD. Average daily flow per capita increased from 78 gallons per capita per day (gpcd) in 2000 to an estimated 85 gpcd in 2005 (representing an 8 percent increase in per capita wastewater discharged). However, the average flow per capita dropped to approximately 58 gpcd in 2010 (representing a decrease of 32 percent). This decrease in per capita wastewater discharge may be due to a number of factors including but not limited to increased City rates for water and wastewater service.

It is important to consider seasonal wastewater flows as compared to average daily flows when developing a recycled water system. Recycled water demands (primarily for irrigation) typically peak in the summer months and are minimal in the winter months, while wastewater generated has the opposite trend (higher in winter and lower in summer due to inflows due to precipitation

and rising groundwater) thus potentially generating excess recycled water during the winter months. As a result, the supply of recycled water available during the winter months may exceed summer supplies. Therefore, additional uses (i.e., groundwater recharge, storage, discharge options, etc.) of the recycled water must be identified for periods of low recycled water demand.

4.6.1.3 Projected Wastewater Flows

Projected flows for the City WRF to the year 2035 are depicted in Table 4-5. Projections were developed based on future population estimates identified Table 2-2 and an estimated wastewater flow of 85 gallons per capita (City, 2005c). Average daily wastewater flow in the year 2030 is estimated to be 2.82 MGD or 3,158 AFY.

TABLE 4-5
HISTORICAL AND PROJECTED AVERAGE DAILY WASTEWATER FLOWS

Year	Historical Daily Flow(1) (MGD)	Estimated Wastewater Per Capita (gpcd)(2)	Population	Projected Daily Flow (MGD)(3)
2000	2.23	78	28,598	--
2005	2.35	80	-	--
2010	1.71	58	29,321	--
2015	--	--	30,061	2.55
2020	--	--	30,820	2.62
2025	--	--	31,599	2.69
2030	--	--	32,397	2.75
2035(4)	--	--	33,215	2.82

Notes:
All values rounded to nearest 0.01million gallons.
(1) Sources: City.
(2) Daily total wastewater volume divided by City population.
(3) Projected average daily flows were obtained by multiplying the estimated population by the estimated wastewater flow per capita at 85 gpcd (City, 2005c).
(4) Based on 2030 projected daily flow.

4.6.1.4 Treated Effluent Quality

Effluent from the City WRF meets the requirements for recycled water. However, the treated effluent contains average chloride levels of approximately 148 milligrams per liter (mg/L) and average total dissolved solids (TDS) of 1,188 mg/L. Because the groundwater in the Santa Paula Groundwater Basin is beneficially used for domestic supply and other purposes, recycled water cannot contain trace constituents and other substances in excess of the limits set forth in the current edition of the State Drinking Water Standards (State of California, Title 22).

4.6.1.5 Existing Uses of Recycled Water

For many years, portions of the Santa Paula treated wastewater have been recycled for beneficial reuse, notably for irrigation of on-site landscaping at the SPWRF. It has been the intent of the City to look for opportunities to increase the beneficial reuse of their highly treated wastewater as part of a planned program of water reclamation and consistent with overall city water resources planning. Currently recycled water is not currently available to the Santa Paula area.

4.6.1.6 Potential Uses of Recycled Water

Construction of the new City Water Recycling Facility (WRF) was completed early 2010. The City WRF produces water that meets California Title 22 regulations. Capacity of the City WRF is 4.2 MGD. (City) Total estimated recycled water urban demand within the City will be approximately 1,622 AFY (City, 2005a) which is entirely within anticipated new developments. At present, recycled water will not be provided to existing potable water irrigation systems due to the complexities associated with converting to recycled water use. Therefore, estimates for recycled water supply and demand are considered to be conservative.

For the purposes of this report, it is anticipated that the City will develop a recycled water program by 2015. Potential future recycled water demand for the period 2015 to 2035 is provided in Table 4-6. It is anticipated that 400 AFY will be developed by 2015, 800 AFY by 2020, 1,200 AFY by 2025, and 1,622 AFY by 2030.

TABLE 4-6
POTENTIAL RECYCLED WATER DEMAND 2005 to 2035

Potential Use	2005 (AF)	2010 (AF)(1)	2015 (AF)(1)	2020 (AF)(1)	2025 (AF)(1)	2030 (AF)(1)	2035 (AF)(1)
Landscape Irrigation(2)	0	0	400	800	1,200	1,622	1,622
Groundwater Recharge	0	(3)	(3)	(3)	(3)	(3)	(3)
Agricultural Irrigation	0	(3)	(3)	(3)	(3)	(3)	(3)
Other	0	(3)	(3)	(3)	(3)	(3)	(3)
Total	0	0	400	800	1,200	1,622	1,622

Note:
(1) All values rounded to the nearest 1 AF.
(2) Source: (City, 2005a).
(3) Undetermined.

These demands could be fully met with recycled water from the new WRF. Additional recycled water demands may be generated due to but not limited to groundwater recharge, agricultural irrigation, and commercial/industrial recycled water use. It is recommended that the City prepare an updated recycled water master plan to evaluate potential users, demands, recharge feasibility, and economic feasibility within the City water service area. It is anticipated that the City would gradually develop a recycled water system to meet the objectives of identified recycled water demands.

The Stipulated Judgment does not preclude the recharge of the Santa Paula Groundwater Basin, and indeed includes provisions for potential recharge. According to the Stipulated Judgment, such storage would require approval of the Technical Advisory Committee, must not adversely impact the water quality of the Santa Paula Groundwater Basin, and must not cause injury to any vested rights. In the event the storage of water causes the Santa Paula Groundwater Basin to spill, the first water lost to the Santa Paula Groundwater Basin is deemed to be the stored water. Furthermore, title is retained to water stored underground, and stored water (minus losses) may be pumped in addition to the approved pumping allocations, provided no injury is caused to any intervener or party to the Judgment. In other words, if the City recharged 1,000 AFY to the

basin, they would be entitled to pump an additional 1,000 AFY above and beyond their stipulated allocation. The necessary infrastructure to implement this option is not currently in place. At a minimum, construction of a pump station and approximately 4 to 5 miles of pipeline would be necessary to transport the recycled water to recharge basins.

4.6.1.7 Regulatory Requirements for Use of Recycled Water

This section provides a brief summary of the regulatory requirements for recycled water use within the City. These regulations apply to use of recycled water for landscape irrigation, agricultural and commercial/industrial users, and groundwater recharge. The use of recycled water for nonpotable purposes is governed by regulations promulgated by the California Department of Public Health (DPH), Division of Drinking Water and Environmental Health. These regulations have been developed to ensure protection of public health, and as such provide water quality criteria only for coliform bacteria and turbidity. Other water quality constituents that may impact irrigation (e.g., plant growth, such as chloride and TDS) are not directly addressed in the regulations. The main criteria under the DPH regulations that will need to be addressed include: level of treatment to achieve tertiary quality (filtration and disinfection), minimum distance to domestic wells, and cross connection requirements between recycled water systems and potable systems.

The use of recycled water for nonpotable purposes will require a permit from the Los Angeles Regional Water Quality Control Board (LARWQCB) with input and concurrence by DPH. In some counties the Environmental Health Department also takes an active role in monitoring and commenting on a project and is a county-by-county decision. It is recommended that the City prepare a recycled water feasibility study for the first phase of the recycled water system. It is anticipated that the City would gradually develop a recycled water system to meet the objectives of identified recycled water demands.

Section 5: Water Supply Reliability and Water Shortage Contingency Planning

5.1 UWMP Requirements

This section will include the following:

- Describe water management tools and options to maximize resources and minimize the need to import water from other regions. (CWC, 10620(f))
- Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years. (CWC, 10631(c)(1))
- 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. (CWC, 10631(c)(2))
- Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage. (CWC, 10632(a))
- Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply. (CWC, 10632(b))
- Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster. (CWC, 10632(c))
- Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning. (CWC, 10632(d))
- Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply. (CWC, 10632(e))
- Indicated penalties or charges for excessive use, where applicable. (CWC, 10632(f))
- Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments. (CWC, 10632(g))
- Provide a draft water shortage contingency resolution or ordinance. (CWC, 10632(h))
- Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis. (CWC, 10632(i))

- Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability. [For years 2010, 2015, 2020, 2025, and 2030] (CWC, 10634)
- Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier. (CWC, 10635(a))

5.2 Reliability Planning

The Urban Water Management Planning Act requires urban water suppliers to assess water supply reliability and vulnerability to seasonal and climatic shortage. Reliability is a measure of a water service system's anticipated success in managing water shortages. This assessment must include a comparison of the total projected water demand with the supply available for the following conditions: (1) normal/average water year, (2) single dry water year, and (3) three consecutive dry years.

Costs of demand management or supply augmentation options to reduce the frequency and severity of shortages are now high enough that city planners must look more carefully at the costs of unreliability to make the best possible estimate of the net benefit of taking specific actions, hence the term "reliability planning." To plan for long-term water supply reliability, planners examine an increasingly wide array of supply augmentation and demand reduction options to determine the best courses of action for meeting water service needs. Such options are generally evaluated using the water service reliability planning approach. Reliability planning requires information about the following: (1) expected frequency and severity of shortages; (2) how additional water management measures are likely to affect the frequency and severity of shortages; (3) how available contingency measures can reduce the impact of shortages when they occur.

In compliance with the Urban Water Management Planning Act an assessment was developed to determine the City's water supply reliability. This assessment includes a comparison of the total projected water demand with the water supplies available for the following conditions: (1) normal/average water year, (2) single dry water year, and (3) three consecutive dry years. Results for the assessment for each of these three conditions are described below. In addition, the City is required to assess water supply and demands over the next 20 years in 5-year increments.

5.2.1 Current 2010 Assessment

The City's current and future water supplies and current and future water demands were summarized in Table 5-1. For the average/normal year assessment (2010) the City had 5,912 AF of supply available via groundwater and surface water allocations. This assessment indicates that the City currently has a net surplus of 1,496AFY. Table 5-1 summarizes the reliability assessment of current water supplies and demands. For the single dry year assessment the City

had a net surplus of 1,567 AFY. The years 2011 to 2013 were used for the three consecutive dry years assessment. This assessment indicates that the City would have net surplus of 1,567 AFY in 2011 to 2013. See Table 5-1 for additional details. Thus, no deficit was observed during the assessment of current supplies and demands.

TABLE 5-1
WATER SUPPLY RELIABILITY AND DEMAND COMPARISON – 2010

Supplies	Average/ Normal (AFY)	Single Dry Year (AFY)	Multiple Dry Years (AFY)		
			Year 1	Year 2	Year 3
Existing Supplies[(1)]					
City Wells	5,483	5,483	5,483	5,483	5,483
Santa Paula Creek	500	500	500	500	500
Subtotal	5,983	5,983	5,983	5,983	5,983
Potential Supplies[(2)]					
Groundwater Allocation Transfers	0	0	0	0	0
Purchased Groundwater Allocations	0	0	0	0	0
SWP	0	0	0	0	0
Recycled Water	0	0	0	0	0
Subtotal	0	0	0	0	0
Total Supplies	**5,983**	**5,983**	**5,983**	**5,983**	**5,983**
Total Estimated Potable Demands[(b)]	**4,416**	**4,416**	**4,416**	**4,416**	**4,416**
Difference (supply - demand)	**1,567**	**1,567**	**1,567**	**1,567**	**1,567**

Notes:
All values rounded to the nearest acre foot.
(1) Source: see Table 4-4.
(2) Source: see Table 3-3.

5.2.2 Assessments for Years 2015 to 2035

The City is required to assess water supply and demands over the next 20 years in 5-year increments. Conservative assumptions were utilized concerning future water demands. This assessment assumed no demand reduction due to water conservation programs although these programs may yield significant demand savings. Conservative assumptions were also utilized concerning availability of future supplies. No decrease in availability of groundwater supplies is anticipated through the year 2035. Future supply programs (i.e., purchase/transfer of groundwater allocation credits, SWP water, recycled water) are anticipated to be developed starting in 2010, and fully developed by 2025, to address future demands (see Section 4 for details). However, the City anticipates that groundwater extractions from the Santa Paula Groundwater Basin will be the primary source of supply to meet future demands.

5.2.2.1 Results of 2015 Analysis

Year 2010 supplies and demands were used for the average/normal year and single dry year calculations. Years 2011 to 2013 supplies and demands were used for the multiple dry years calculations. Estimated supply surplus will be 2,197 AF for average year calculations, single dry year calculations, and multiple dry year calculations. Details of the assessments are provided in Table 5-2.

TABLE 5-2
WATER SUPPLY RELIABILITY AND DEMAND COMPARISON – 2015

Supplies	Average/ Normal (AFY)	Single Dry Year (AFY)	Multiple Dry Years (AFY)		
			Year 1	Year 2	Year 3
Existing Supplies (1)					
City Wells	5,483	5,483	5,483	5,483	5,483
Santa Paula Creek	500	500	500	500	500
Subtotal	5,983	5,983	5,983	5,983	5,983
Potential Supplies (1)					
Groundwater Allocation Transfers	454	454	454	454	454
Purchased Groundwater Allocations	200	200	200	200	200
SWP	0	0	0	0	0
Recycled Water	400	400	400	400	400
Subtotal	1,054	1,054	1,054	1,054	1,054
Total Supplies	**7,037**	**7,037**	**7,037**	**7,037**	**7,037**
Total Estimated Potable Demands (2)	**4,840**	**4,840**	**4,840**	**4,840**	**4,840**
Difference (supply - demand)	**2,197**	**2,197**	**2,197**	**2,197**	**2,197**

Notes:
All values rounded to the nearest acre foot.
(1) Source: see Table 4-4.
(2) Source: see Table 3-3.

5.2.2.2 Results of 2020 Analysis

Year 2020 supplies and demands were used for the average/normal year and single dry year calculations. Years 2020 to 2022 supplies and demands were used for the multiple dry years calculations. Estimated supply surplus will be 2,726 AF for average year calculations, single dry year calculations, and multiple dry year calculations. Details of the assessments are provided in Table 5-3.

TABLE 5-3
WATER SUPPLY RELIABILITY AND DEMAND COMPARISON – 2020

Supplies	Average/ Normal (AFY)	Single Dry Year (AFY)	Multiple Dry Years (AFY)		
			Year 1	Year 2	Year 3
Existing Supplies (1)					
City Wells	5,483	5,483	5,483	5,483	5,483
Santa Paula Creek	500	500	500	500	500
Subtotal	5,983	5,983	5,983	5,983	5,983
Potential Supplies (12)					
Groundwater Allocation Transfers	908	908	908	908	908
Purchased Groundwater Allocations	300	300	300	300	300
SWP	0	0	0	0	0
Recycled Water	800	800	800	800	800
Subtotal	2,008	2,008	2,008	2,008	2,008
Total Supplies	**7,991**	**7,991**	**7,991**	**7,991**	**7,991**
Total Estimated Potable Demands (2)	**5,265**	**5,265**	**5,265**	**5,265**	**5,265**
Difference (supply - demand)	**2,726**	**2,726**	**2,726**	**2,726**	**2,726**

Notes:
All values rounded to the nearest acre foot.
(1) Source: see Table 4-4.
(2) Source: see Table 3-4.

5.2.2.3 Results of 2025 Analysis

Year 2025 supplies and demands was used for the average/normal year and single dry year calculations. Years 2025 to 2027 supplies and demands were used for the multiple dry years calculations. Estimated supply surplus will be 3,256 AF for average year calculations, single dry year calculations, and multiple dry year calculations. Details of the assessments are provided in Table 5-4.

TABLE 5-4
WATER SUPPLY RELIABILITY AND DEMAND COMPARISON – 2025

Supplies	Average/ Normal (AFY)	Single Dry Year (AFY)	Multiple Dry Years (AFY)		
			Year 1	Year 2	Year 3
Existing Supplies (1)					
City Wells	5,483	5,483	5,483	5,483	5,483
Santa Paula Creek	500	500	500	500	500
Subtotal	5,983	5,983	5,983	5,983	5,983
Potential Supplies (1)					
Groundwater Allocation Transfers	1,362	1,362	1,362	1,362	1,362
Purchased Groundwater Allocations	400	400	400	400	400
SWP	0	0	0	0	0
Recycled Water	1,200	1,200	1,200	1,200	1,200
Subtotal	2,962	2,962	2,962	2,962	2,962
Total Supplies	**8,945**	**8,945**	**8,945**	**8,945**	**8,945**
Total Estimated Potable Demands (2)	**5,689**	**5,689**	**5,689**	**5,689**	**5,689**
Difference (supply - demand)	**3,256**	**3,256**	**3,256**	**3,256**	**3,256**

Notes:
All values rounded to the nearest acre foot.
(1) Source: see Table 4-4.
(2) Source: see Table 3-5.

5.2.2.4 Results of 2030 Analysis

Year 2030 supplies and demands were used for the average/normal year and single dry year calculations. Years 2030 to 2032 supplies and demands were used for the multiple dry year calculations. Estimated supply surplus will be 3,805 AF for average year calculations, single dry year calculations, and multiple dry year calculations. Details of the assessments are provided in Table 5-5.

TABLE 5-5
WATER SUPPLY RELIABILITY AND DEMAND COMPARISON – 2030

Supplies	Average/ Normal (AFY)	Single Dry Year (AFY)	Multiple Dry Years (AFY)		
			Year 1	Year 2	Year 3
Existing Supplies (1)					
City Wells	5,483	5,483	5,483	5,483	5,483
Santa Paula Creek	500	500	500	500	500
Subtotal	5,983	5,983	5,983	5,983	5,983
Potential Supplies (1)					
Groundwater Allocation Transfers	1,816	1,816	1,816	1,816	1,816
Purchased Groundwater Allocations	497	497	497	497	497
SWP	0	0	0	0	0
Recycled Water	1,622	1,622	1,622	1,622	1,622
Subtotal	3,935	3,935	3,935	3,935	3,935
Total Supplies	**9,918**	**9,918**	**9,918**	**9,918**	**9,918**
Total Estimated Potable Demands (2,3)	**6,113**	**6,113**	**6,113**	**6,113**	**6,113**
Difference (supply - demand)	**3,805**	**3,805**	**3,805**	**3,805**	**3,805**

Notes:
All values rounded to the nearest acre foot.
(1) Source: see Table 4-4.
(2) Source: see Table 3-6.
(3) The City anticipates buildout by 2030. Estimated 2035 demands based on 2030 demands.

5.2.2.5 Results of 2035 Analysis

Year 2035 supplies and demands were used for the average/normal year and single dry year calculations. Years 2035 to 2037 supplies and demands were used for the multiple dry year calculations. Estimated supply surplus will be 3,805 AF for average year calculations, single dry year calculations, and multiple dry year calculations. Details of the assessments are provided in Table 5-6.

TABLE 5-6
WATER SUPPLY RELIABILITY AND DEMAND COMPARISON – 2035

Supplies	Average/ Normal (AFY)	Single Dry Year (AFY)	Multiple Dry Years (AFY)		
			Year 1	Year 2	Year 3
Existing Supplies (1)					
City Wells	5,483	5,483	5,483	5,483	5,483
Santa Paula Creek	500	500	500	500	500
Subtotal	5,983	5,983	5,983	5,983	5,983
Potential Supplies (1)					
Groundwater Allocation Transfers	1,816	1,816	1,816	1,816	1,816
Purchased Groundwater Allocations	497	497	497	497	497
SWP	0	0	0	0	0
Recycled Water	1,622	1,622	1,622	1,622	1,622
Subtotal	3,935	3,935	3,935	3,935	3,935
Total Supplies	**9,918**	**9,918**	**9,918**	**9,918**	**9,918**
Total Estimated Potable Demands (2,3)	**6,113**	**6,113**	**6,113**	**6,113**	**6,113**
Difference (supply - demand)	**3,805**	**3,805**	**3,805**	**3,805**	**3,805**

Notes:
All values rounded to the nearest acre foot.
(1) Source: see Table 4-4.
(2) Source: see Table 3-7.
(3) The City anticipates buildout by 2030. Estimated 2035 demands based on 2030 demands.

5.3 Water Shortage Contingency Planning

The City has several options for meeting future water demands including increased deliveries of local groundwater, increased deliveries of imported water, evaluating recycled water, and supporting water demand management programs. This has allowed the City, to date, to meet demands in spite of the prior drought conditions. Water shortages can be triggered by a hydrologic limitation in supply (i.e., a prolonged period of below normal precipitation and runoff), limitations or failure of supply and treatment infrastructure, or both. Hydrologic or drought limitations tend to develop and abate more slowly, whereas infrastructure failure tends to happen quickly and relatively unpredictably.

Drought periods going back to 1929 have caused pumping levels to decrease, however there never has been a necessity to cause mandatory restrictions of water use. More efficient use of

water was encouraged during the 1976 to 1977 period. An even greater awareness of water conservation occurred during the 1987 to 1992 drought. This increased awareness resulted in more efficient use of water.

Additional supply reductions could be caused by regional power outage, terrorist activity, earthquake, tsunami or other significant meteorological event. The City prepared an Emergency Response Plan (2004) which provides details of emergency responses for numerous significant events that may affect the City's water system.

Existing and proposed programs to restrict water demands are described below.

5.3.1.1 Reductions Required by Stipulated Judgment

According to the Stipulated Judgment dated March 1996 (California, 1996; California 2010) if it is found that the safe yield of the Santa Paula Groundwater Basin is less than the total pumping allocations, then the pumping allocations shall be reduced. The Judgment specified that reductions in pumping will be required in the order of priority specified below:

- Stage 1 - All uses in excess of the pumping allocations will be cut back to the approved allocations.
- Stage 2 - Cumulative pumping allocation of the Santa Paula Basin Pumpers Association (SPBPA) will be reduced by 500 AF annually. This reduction will reflect reasonable conservation that can be achieved. The SPBPA will determine how a reduction in its cumulative allocation will be implemented.
- Stage 3 - Pumping allocation of the City of San Buenaventura shall be reduced to 1,141 AF per year. This allocation reflects the City of San Buenaventura's historical maximum annual production prior to the Judgment.
- Stage 4 - The remaining pumping allocations of all parties to the Judgment will be further reduced simultaneously. The SPBPA will reduce their total annual allocations by 2,000 AF. The City of San Buenaventura will reduce their total annual allocations by 500 AF.
- Stage 5 - The City of San Buenaventura will cease pumping from the Santa Paula Groundwater Basin.
- Stage 6 - The remaining pumping allocations of the SPBPA will be reduced by the amount required to bring production into balance with the revised safe yield of the Santa Paula Groundwater Basin.

5.3.2 Mandatory Prohibitions on Water Wasting

Water "waste" can be defined as any excessive, unnecessary or unwarranted use of water, including but not limited to, any use that causes unnecessary run-off beyond the boundaries of any property as served by its meter and any failure to repair as soon as reasonably possible any leak or rupture in any water pipes, faucets, valves, plumbing fixtures or other water service appliances.

5.3.2.1 Santa Paula Water Works

Previously, the Santa Paula Water Works (SPWW) regulatory language included a provision to discontinue service for waste of water. Rule No. 11B(3) reads as follows: "Where negligent or wasteful use of water exists on a customer's premises, the utility may discontinue service if such practices are not remedied within five days after it has given the customer written notice to such effect." In addition, SPWW had a Voluntary Water Conservation Plan in its tariffs (Rule 14.2).

5.3.2.2 County of Ventura

All cities and water purveyors within the County of Ventura were requested to adopt, by March 31, 1991, drought water conservation plans and regulations consistent with the use restrictions listed below. (Note: Each of the following restrictions has certain exemptions where appropriate.)

- Lawn watering and landscape irrigation with potable water is only permitted between the hours of 4 p.m. to 6 a.m.
- Irrigation with recycled water permitted on any day at any time
- Washing of buildings, facilities, equipment, autos, trucks, trailers, boats, airplane and other types of mobile equipment is prohibited
- Water shall not be used to wash down sidewalks, driveways, parking areas, tennis courts, patios, or other paved areas
- Water shall not be allowed to run off landscaped areas onto streets or sidewalks due to poorly maintained sprinklers or excessive watering
- Filling and refilling of pools and spas should only be permitted between the hours of 6 p.m. and 6 a.m.
- Using recycled water in ponds, fountains, artificial lakes should be encouraged
- Flushing of water mains will not be permitted
- Restaurants shall not serve water to their customers unless specifically requested
- Leaks should be repaired as soon as discovered and shall not be allowed to continue for more than 48 hours

5.3.2.3 City Ordinance

City Code Section 52.038 states, “No person shall lawfully or neglectfully waste water in any manner whatsoever. Continued wasting of water after mailing of [City] notice by registered mail to the customer of record at the mailing address of record by the [City] Director may result in discontinued water service.” This Code is a beneficial tool to curb misuse and waste of potable water within the City. The provisions of the Code can be utilized during periods of normal water supply and supply deficiency. Violation of this Code is subject to City penalties. A copy of this City Code is included in Appendix G.

5.3.3 Proposed Water Demand Reduction Program

It is recommended that the City establish a water demand reduction program for worst-case planning purposes. Many variations of demand reduction programs exist, however it is recommended that the City establish a simple three stage water demand reduction program. Stage 1 would impose a voluntary 15 percent water demand reduction goal, Stage 2 would impose an additional 15 percent mandatory reduction goal (total of 30 percent), and Stage 3 would impose an additional 20 percent mandatory reduction goal, for an overall reduction in water demand of 50 percent. Each stage would be implemented as needed based on actual or anticipated supply reductions. It is recommended that the City prepare and adopt a water demand reduction program. Proposed specific water demand reduction measures and triggering mechanisms for each stage are presented below.

5.3.3.1 Stage 1: 15 Percent Voluntary Reduction – Supply Watch

Stage 1 would be implemented when 5 to 15 percent reduction in water production capacity (or supplies) occurs or is anticipated. This reduction could be due to fire, earthquake, system failures, water quality contamination, or other event. All restrictions during Stage 1 are voluntary. The goal for Stage 1 is 15 percent reduction in water demand. Measures to be implemented during this stage include but are not limited to the following:

- City to communicate to the customers through press releases, brochures, mail-outs, and/or water bills the need to voluntarily conserve water and the many ways possible to conserve without affecting their overall lifestyles.
- Water customers requested to voluntarily limit the irrigation of landscaped areas.
- Water customers requested to voluntary limit non-essential water use. Non-essential water used defined as follows:
    - Use of water to wash any motor vehicle, motorbike, airplane, or other vehicle.
    - Use of water to wash down sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas.
    - Use of water to wash down buildings or structures for purposes other than immediate fire protection.
    - Flushing gutters or permitting water to run or accumulate in any gutter or street.
    - Use of water to fill, refill, or add to any outdoor or indoor swimming pools, or Jacuzzi-type pools.
    - Use of water in a fountain or pond for aesthetic or scenic purposes except where necessary to support aquatic life.
    - Failure to repair a controllable leak within a reasonable period after having been given notice directing the repair of such leak.

- Fiscal Impacts: Additional expenses for water conservation measures may be needed. A 15 percent reduction in metered sales would result in a reduction of $472,028 in annual revenue (City, 2003). This revenue reduction may be overcome by implementing a temporary rate structure that encourages water rationing while maintaining revenues. It is recommended that the City evaluate this issue further.

5.3.3.2 Stage 2: 30 Percent Mandatory Reduction – Supply Warning

Stage 2 would be implemented when a 15 to 30 percent reduction in water production capacity occurs or is anticipated. This reduction could be due to fire, earthquake, system failures, water quality contamination, or other event. All restrictions in Stage 2 are mandatory. The goal for Stage 2 is 30 percent reduction in water demand. Measures to be implemented during this stage include but are not limited to the following:

- Continue to maintain Stage 1 measures, however they become mandatory in Stage 2.
- City to mail information to water customers regarding the importance of significant water use reductions.
- Implement a 30 percent decrease in water allocation based on a yearly average for metered services. For those users who exceed their allocation, impose a 25 percent penalty for the excess volume. Charge an additional $25 “excess user” fee and install a flow restrictor for repeat offenders of excessive use.
- Enforce the non-essential water use discussed in Stage 1 and assess a $25 fee to offenders.
- Irrigation shall be by means of hand-held hoses, hand-held buckets, soaker hoses, or drip irrigation only. The use if hose-end sprinklers or permanently installed automatic sprinkler systems are prohibited at all times.
- Prohibit watering landscape between 10 a.m. to 4 p.m.
- All restaurants are prohibited from serving water to patrons except upon request of the patron.
- Appoint a Water Conservation Coordinator. This can be an individual already working for the City with related duties.
- Fiscal Impacts: Utilize additional revenues received from excessive use and repeat offenders to partially fund conservation program. A 30 percent reduction in metered sales would result in a reduction of $944,056 in annual revenue (City, 2003). This revenue reduction may be overcome by implementing a temporary rate structure that encourages water rationing while maintaining revenues. It is recommended that the City evaluate this issue further.

5.3.3.3 Stage 3: 50 Percent Mandatory Reduction – Supply Emergency

Stage 3 would be implemented when a 30 to 50 percent reduction in water production capacity occurs or is anticipated. This reduction could be due to fire, earthquake, system failures, water quality contamination, or other event. The goal for this stage is 50 percent reduction in water demand. Measures to be implemented during this stage include but are not limited to the following:

- Perform an evaluation of Stage 2 water conservation measures and implement those not completed. Public Works Director to report to the City Council as appropriate.
- Implement a 50 percent decrease in water allocations for metered water services and charge a $50 "excess user" fee for repeat offenders.
- Prohibit watering landscape between 8 a.m. to 6 p.m.
- All water use not required for health and safety is prohibited.
- Fiscal Impacts: Continue to provide appropriations for established measures and programs. Utilize additional revenues received from excessive use and repeat offenders to fund additional measures if necessary. A 50 percent reduction in metered sales would result in a reduction of $1,573,427 in annual revenue (City, 2003). This revenue reduction may be overcome by implementing a temporary rate structure that encourages water rationing while maintaining revenues. It is recommended that the City evaluate this issue further.

5.3.4 Proposed City Ordinance

It is recommended that the City establish a water demand reduction program for worst-case planning purposes. It is recommended that the City also create a rate structure to be implemented in the event of a declared water shortage. This rate structure would encourage water conservation while maintaining revenue levels. Three water demand reduction stages would be established with an overall reduction in water demand of 50 percent. Each stage would be implemented as needed based on actual or anticipated reductions in the City's water supplies. It would be the responsibility of the City's Public Works Director to monitor water supplies and demands on a daily basis. This would allow the City to determine the effects of reductions on water production within the system. If evidence of a shortage exists, the Public Works Director would determine the extent of the severity and recommend the applicable stage. The Public Works Director would notify the City Council of the water supply situation, and the Council would be responsible for ratifying the proposed measures. The water shortage restriction program and water rationing rate structure would be adopted by the City Council as a new City ordinance. A public hearing (City Council Meeting) would be necessary to discuss the measures with the general public.

Section 6: Demand Management Measures

6.1 UWMP Requirements

This section will include the following:

- Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided. [(1) Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules] (CWC, 10631(f))
- Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP. (CWC, 10631(f)(3))
- Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand. (CWC, 10631(f)(4))
- Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work. (CWC, 10631(g))
- Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU. [Signers of the MOU that submit the annual reports are deemed compliant] (CWC, 10631(j))

6.2 Introduction

The Urban Water Management Planning Act requires that the UWMP include a description of current and anticipated demand management measures. “Demand management,” as applied to water conservation, refers to the use of measures, practices, or incentives implemented by water utilities to permanently reduce the level or change the pattern of demand for a utility service. As described in Section 2, the Santa Paula Water Works (SPWW), operated the City’s water system until 1996. All demand management programs organized by either the City or SPWW are considered to be relevant. No distinction has been made as to the initial coordinator of demand management measures within the City.

The California Urban Water Conservation Council (CUWCC) was formed in 1991 and is composed of 150 urban water suppliers and 20 environmental organizations. A primary objective of the CUWCC is to encourage implementation of reasonable water demand management measures in urban areas. The City is not a signatory to the CUWCC document titled, Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) and is therefore not a member of the CUWCC. However, the CUWCC MOU includes a list of 14 best management practices (BMPs) for demand management. The City considers these BMPs as “baseline” demand management measures. For the purpose of responding to the Urban Water Management Planning Act, the City will address the demand management measures contained in the MOU (CUWCC, 2000). The City should further consider becoming a signatory to the CUWCC MOU.

6.3 Historical Demand Management Efforts

The City has actively pursued water demand management. There have been and continue to be many programs implemented by the City, SPWW, and the County of Ventura. Some of these programs are large turf irrigation audits, retrofit kits for residential customers, water audits, and water reclamation.

These programs included reducing routine hydrant flushing program, contracted to have all large meters tested every three years or less, reduced system pressures to 50 psi where possible, and repaired all leaks immediately, regardless of size. In addition, field employees received special training in detection of leaks and signs of unauthorized use of water. They were also instructed to notify customers who were observed to be wasting water.

6.4 Demand Management Program

The following section summarizes the status of each of the 14 CUWCC demand management measures, which they term as "best management practices" (BMPs). In addition, descriptions of the City's demand management measures, not included in the MOU, are also provided below. Also, the City does not qualify for any exemptions of the BMPS due to household income. According to the United States 2000 Census, City median household income was $41,651, while median household income for California was $47,493. In order to qualify, the City median household income would need to be 80 percent ($37,994) of the median household income for California.

6.4.1 BMP 1.1.1 Water Conservation Coordinator

Water Conservation Coordinator may provide the following: reviewing and analyzing water use on a City-wide basis; preparation and dissemination of public information materials; providing follow-up and response to inquiries or complaints; coordinating water conservation programs; compiling and verifying data; coordinate requests for speakers on water topics; and participation in local, regional, and state organizations that promote water conservation. These activities result in high consumer awareness of water use practices.

Currently, numerous staff within the Public Works Department implement the City's water conservation related activities, however these roles are not clearly defined. The Public Works Superintendent acting as a Water Conservation Coordinator may receive assistance from the Landscape Division, Public Works Department, Community Development Department, and the Planning Department to accomplish and administer all water conservation measures for the City.

The City needs to clearly define the role(s) and tasks for staffing the demand management measures. In addition, the City should consider allocating additional staff resources to assist the Public Works Superintendent with implementation of the City's routine demand management measures and coordination of City water restrictions during a drought. Many of these activities could be administered by a dedicated Water Conservation Coordinator to oversee and coordinate the City's conservation programs, and improve the effectiveness of the City's conservation efforts. The City previously maintained a full-time position for water conservation related tasks.

It is recommended that the City budget for and hire a part-time Water Conservation Coordinator responsible for preparation, implementation, and management of the City's demand management

measures. The City should consider allocating additional staff resources to assist the Water Conservation Coordinator with implementation of the City's routine demand management measures. Estimated cost for this program is $50,000 per year for the period 2011 to 2015. At the present time, the City does not have funding to enhance this program.

Water savings due to a water conservation coordinator would be difficult to estimate. A water conservation coordinator can influence water savings from specific demand management measures for example residential retrofit, high-efficiency washing machines, and ultra-low flow toilets. For the purposes of this report water savings due a water conservation coordinator are not quantified (CUWCC, 2005). The City will maintain a part-time water conservation coordinator for the 2006 to 2010 period. The City will provide the water conservation coordinator with the necessary resources to implement cost-effective BMPs.

6.4.2 BMP 1.1.2 Water Waste Prevention

The City has an existing water waste ordinance. City Code Section 52.038 states, "No person shall lawfully or neglectfully waste water in any manner whatsoever. Continued wasting of water after mailing of [City] notice by registered mail to the customer of record at the mailing address of record by the [City] Director may result in discontinued water service." This Code is a beneficial tool to curb misuse and waste of potable water within the City. The provisions of the Code can be utilized during periods of normal water supply and supply deficiency. Violation of this Code is subject to City penalties. A copy of this City Code is included in Appendix G. In addition, the City has a brine-discharging water softener ban ordinance. A copy of this City Code is included in Appendix H.

It is recommended that the City maintain the existing water waste ordinance and water softener ban ordinances. It is recommended that the City enforce the water waste prohibition. It is recommended that the City assess amending the existing water waste ordinance to include additional measures such as prohibiting gutter flooding, single pass cooling systems in new connections, non-recirculating systems in all new conveyor car wash and commercial laundry systems, and non-recycling decorative water fountains (CCWUA, 2005). The City could include a water softener check in the proposed residential water audit program. City information programs should encourage replacement of low-efficiency and/or brine discharging water softeners with more efficient models. The City will continue to enforce the existing water waste and brine-discharging water softener ban ordinances. No additional costs are anticipated for the existing water waste and water softener ban ordinances at this time. No additional water savings or methods to measure savings are anticipated since the City has existing water waste and water softener ban ordinances. The City could include a water softener check in the proposed residential water audit program.

6.4.3 BMP 1.1.3 Wholesale Agency Assistance Programs

Although the City is not a wholesaler, nor purchases water from wholesalers, it does participate in regional programs. The City has participated in planning and programs concerning water demand management issues and urban water management in Ventura County and the State of California. Additional benefits of participation include enhanced water resource flexibility in the event of operational disruption, extended drought, or other emergency. Selected examples of regional participation include the following organizations:

- Association of Water Agencies of Ventura County
- Channel Counties Water Utilities Association
- United Water Conservation District

It is recommended that the City continue to participate in these organizations to reinforce relationships with other member agencies to enhance water resource flexibility and proper response to operational disruption, extended drought, or other emergency. It is recommended that the City continue to participate in these organizations during the period 2011 to 2015. The City anticipates this program will cost approximately $0 over the 2011 to 2015 period since the City is not a wholesaler. No additional water savings or methods to measure savings are anticipated since the City is not a wholesaler.

6.4.4 BMP 1.2 Water Loss Control

Main Replacement Program

The City has aggressively pursued a water main replacement program. Over the last 5 years the City has replaced approximately 13,000 lineal feet of transmission and distribution pipelines. Many of the older water mains were comprised of steel and subject to corrosion and leaking. When a leak is first noticed, the pipeline is inspected and is promptly repaired. The City records the location of the leak. The City replaces the pipeline when it is evident, either from the number of leaks or the pipeline inspection, that a pipeline is badly deteriorated. This program provides the basis for replacement of the mains that are subject to corrosion. This program reduces the likelihood of steady but unnoticed unaccounted-for water loss, and also costly street repairs through unexpected water main breaks. Although many older pipes are still in operation today, they are prone to break and have provided service well beyond their intended design life. At the present time, the City does not anticipate funding a replacement program. However, the main replacement program will be primarily a capital improvement program. Thus, the main replacement costs will be paid via operations and maintenance.

System Water Audit

The distribution system water audits compare the total amount of water produced from wells to the total water demand as determined by meter readings (water sold). The difference between water production and water sold represents the unaccounted-for water. According to 2010 City data, unmetered water accounts for approximately 7 percent of annual demands. The three-year average unauthorized unaccounted-for water loss was 6.1 percent for the period 2001 to 2003 (City, 2005b). The City should prepare an annual water system audit of estimated water demands and water purchases. If total annual production is greater than total annual demand by 10 percent or more, then the City would conduct a more detailed distribution system water audit and leak detection program to determine sources of unaccounted-for water. The City should consider additional measures to reduce the unauthorized component of the unaccounted-for water.

System Leak Detection

Surveillance of the water system to detect leaks is a routine operation. The City recognizes the urgency of repairing leaks and so responds to any leak in an expedient manner. Since 1985, the

City has maintained records of all leaks reported including location, the type and size of pipes involved, work performed and estimated duration of leak and the amount of water loss. The City should consider conducting a system leak detection every 2 to 3 years which includes the use of specialized equipment to detect underground leaks in water distribution mains. Also, the City should conduct a system leak detection if the annual system water audit determines that total annual water production is greater than total annual demand by 10 percent or more. Cost for a leak detection test is approximately $50,000. This program has helped pinpoint leaks in distribution mains before they increase in size and potentially cause extensive street damage. Information gained from the Leak Detection Program is used to assist staff in rating and ranking competing Main Replacement projects. Information is beneficial in ascertaining total unaccounted-for water losses throughout the system.

In addition, the City should consider modifying the customer billing system so that high or unusual water bills are automatically identified monthly. The City could conduct a brief investigation of possible leaks in consumer piping or meters. This would benefit the City's customers by quickly identifying possible leaks so repairs can be made.

Meter Testing and Replacement Program

Water production meters are checked once each year for accuracy. Large customer meters (1.5 inches or more) are checked at least every five years to determine if they are registering correctly. All large meters are tested by the City approximately once every five years or less. This program identifies large meters that are not registering accurately. The City is also currently replacing old and dysfunctional large meter installations. If a meter is found to be inaccurate, it is immediately repaired or replaced. This program has been found to increase revenue and as a consequence reduce consumption. This program monitors the age of all small meters (under 1.5 inches). Small meters are replaced approximately once every 10 years. This has a direct effect on reducing the unaccounted for water. Approximately 95 percent of the small meters within the City have been replaced.

The City actively evaluates existing meters known to be malfunctioning or damaged to ensure that the quantity of water delivered to residences and businesses is properly accounted for. Many meters are replaced with new and improved meters, while others are recalibrated and reinstalled. These meters represent a broad spectrum of residential, commercial, and industrial water users. There are two primary benefits of maintaining the accuracy of water meters: (1) minimizes the amount of unaccounted for water and revenue lost for malfunctioning meters, and (2) customers receive an accurate bill for water used and a means to review water consumption.

Valve Exercising

The City has a valve exercising program which calls for the operation and inspection of all valves over a two-year interval. Regular identification and exercising of the valves enables the City to make emergency shut-downs due to leaks in a timely manner.

Automated Meter Reading

The City should consider installing new meters with automated meter reading (AMR) capability for all accounts. AMR meters have several advantages. Field information is gathered and sorted immediately, reducing the necessity of rereading meters. New AMR meters eliminate lengthy

data entry procedures by City staff and reduce data entry error. Meters with AMR also produces a more precise recording of the water meter register, providing the customer with a recording to the nearest 0.1 cubic foot of water. These new AMR meters would also reduce unaccounted-for water due to leaking meters and meters that under-report the customer usage, although the exact amount is undetermined. This program would decrease City staff resource requirements for meter reading. Once the meters are installed, an AMR meter system would be expected to significantly reduce the amount of City staff hours necessary to hand read meters by up to 95 percent. Staff resources normally allocated for meter reading could be used to support additional water programs including demand management programs.

Integration of AMR technology could be implemented by the City as part of a meter exchange and installation program that includes a goal of a minimum of 5 percent per year (approximately 350 meters per year). The meter exchange program could start with single-family housing with older meters. All existing conventional meters could be replaced with AMR meters. In addition, City Planning should require that all new accounts be equipped with AMR meters (with manual dials too). Funding for this program could be provided by capital improvement program (replacement meters), planning fees (new meters), or a future water conservation fee on new services.

Main Flushing Program

The City's Main Flushing Program is a significant component of the preventative maintenance program. Flushing provides benefits to both water quality and water quantity throughout the water distribution system. Flushing removes loose material accumulations from the water mains, reducing the potential for bacteriological problems in the distribution system. During recent drought years, the City reduced or discontinued the flushing program due to improvements in water quality and conservation concerns. The City intends to continue a limited flushing program optimizing location and frequency to provide the greatest benefit to system operation and water quality.

Hydrant Extractions

The City should stop all unapproved users and water extractions from the potable water system. The City implemented an approval process for extraction of potable water from the City's distribution system via a meter/check valve assembly. All requests for water extractions are submitted to the Customer Service Division, then to the Water Superintendent. All water extractions should be conducted with a City provided meter and a double check valve assembly. It is recommended that the Water Superintendent maintain a log of the approved water extractions and volume of water used including distribution flushing.

System Pressure Management

Pressure management has been shown to be a water conserving practice. Pressure reduction has the potential to provide the following water conservation benefits: reduces water lost when turning water fixtures on and off, reduces leakage from faulty fixtures or fixtures that have not been fully closed, and may reduce over-watering of landscaped areas. As new pipelines are connected to the distribution system, they are checked to determine the system pressure. In some instances, pressure reduction valves are installed on the water mains.

Pressure reduction valves in water mains decrease the pressure in the downstream area and preclude the need for individual pressure reduction. Pressure in the distribution system and at each of the City well sites is routinely monitored. Pressure reduction in water mains serves the same purpose and, in addition, reduces leakage in the water mains and water service lines to the customer. A 5 to 7 percent savings in water used by customers could be realized by maintaining the pressure at or below 60 psi. This may translate to lower water rates in the future.

Summary

It is recommended that the City continue with the water main replacement program. It is recommended that the City continue with the distribution system related measures including system water audits, system leak detection, meter testing and replacement, valve exercising, main flushing, and system pressure management. Each of these measures provides benefits to the City due to operation, maintenance, and/or reduction of unaccounted-for water. It is recommended that the City prepare an annual water system audit of estimated water production and water demand. If production is greater than demands by 10 percent or more, then the City would conduct a more detailed distribution system water audit and leak detection program. It is recommended that the City conduct leak detection surveys of the entire distribution system once every 2 to 3 years.

The City should consider modifying the customer billing system so that high or unusual water bills are automatically identified monthly. It is recommended that the City continue with the existing large meter, small meter, and valve maintenance programs. The City should consider installation of AMR water meters on all existing conventional metered accounts. The City should consider a goal of installing a minimum of 350 (5 percent of the water accounts) AMR meters per year. It is recommended that the City continue to conduct a main flushing program. It is recommended that the City continue to monitor the extraction of potable water from the distribution system. It is recommended that the Water Superintendent maintain a log of the approved water extractions and volume of water used. It is recommended that the City maintain distribution system pressure at 50 to 60 psi as applicable.

Currently, the City has postponed funding of this program due to severe budget constraints. It is recommended that the City consider funding this program for the period 2011 to 2015 due to potential water savings and enhanced operation and maintenance of the distribution system. Total water savings for all measures in BMP 1.3 will be approximately 50 AFY for the period 2011 to 2035. Effectiveness of this DMM is measured through the reduction in number of leaks detected and unaccounted for water losses in comparison to past years. City will conduct system audits and leak detection studies in accordance with industry standards. The City will maintain records of system audits and leak detection studies for a minimum of 10 years.

6.4.5 BMP 1.4 Retail Conservation Pricing

Historically, the City has maintained uniform block rates, where the cost per unit of water remains constant with quantity used for all accounts. Currently, customers are charged a monthly meter fee and a volumetric rate for actual water used. Residential customers (5/8 inch meter) are charged $19.96 per month (2010-2011) for the meter fee. The commodity rate for all customers is $1.76 per 100 cubic feet (HCF). Residential customers are charged $77.21 per

month (2011) plus $0.58/HCF (based on monthly water demand) for wastewater service. See Appendix I for a copy of the City's current water fees and charges.

Conservation rates (i.e., increasing block, inverted block, tiered block) may provide the City with many benefits. Conservation rates could be applied to all metered single-family residential, multi-family residential, commercial, and industrial accounts. However, a conservation rate structure is only effective for metered accounts. A conservation rate structure is similar to utility rate structures in place for electricity and natural gas. In a conservation block rate structure, the unit price increases with each successive block, resulting in an increase in the incremental and the average cost of water with increased customer usage. For conservation block rate structures, the block (quantity) shift points are generally based upon the unique demand characteristics of each user class and are focused on user demand points to enhance water usage awareness. A conservation block rate tends to decrease water usage, (i.e., promote water conservation), due to the economic disincentive to waste water. Conservation pricing may also include seasonal rates and/or excess-use surcharges to reduce peak demands during summer periods. Conservation rates implemented by local water purveyors have been successful in reducing water demands. Local cities with or that have considered conservation block rates include the City of Camarillo, Las Virgenes Municipal Water District, City of Oxnard, City of Santa Barbara, City of San Buenaventura, and City of Santa Monica.

It is recommended that the City assess the current rate structure to determine benefits and costs for conservation rates for all single-family residential, multi-family residential, commercial, and industrial accounts. The City has the legal authority to evaluate and set rates for its customers. This conservation rate structure would be useful during normal water supply and supply deficiency conditions. Conservation pricing may also include seasonal rates and/or excess-use surcharges to reduce peak demands during summer periods. It is recommended that the City consider adding customer classification to each account. This will allow the City to track usage by customer type. A rate study to assess benefits to costs for a conservation rate could be completed within three to six months. Once a revised water rate structure is implemented, there should be no additional cost to the City.

Water savings due to conservation pricing would be difficult to estimate. Water savings can result from specific demand management measures for example residential retrofit, high-efficiency washing machines, and ultra-low flow toilets. For the purposes of this report water savings due to rate programs are not quantified (CUWCC, 2005). If the City approved a new conservation water rate structure, City staff could document annual water and wastewater revenue derived from commodity charges by user class for each reporting period.

6.4.6 BMP 2.1 Public Information Programs

The City recognizes the continued need for a public information program to maintain and increase the public's awareness of water and the need to use it wisely. Public information is used to promote the water conservation ethic and inform the public of the benefits derived from conserving a valuable resource. Providing current water conservation information is a key part of the City's program activities. The on-going programs have proven successful and are well received by customers. Continued educational programs are especially important during non-drought periods. The City will continue to participate in various special events, sponsor

activities, and prepare materials that promote awareness of demand management and water conservation issues. Several of these events, activities, and materials are described below.

The City prepares an Annual Consumer Confidence Report (CCR) that is designed to inform customers about the quality of water and services provided by the Water Division. The City also expanded its Annual Water Quality Report to Customers to include water conservation elements. A copy of the current CCR is provided in Appendix E. In addition, the City has prepared news releases, water bill inserts, announcements, and brochures to convey a water conservation message. The City also provides copies of brochures from other agencies regarding "Sustainable Landscaping," "Watershed Protection Tips for Residents," and "Stormwater Best Management Practices for Homeowners." These materials are distributed to residents and available at special events and all public offices including, City Hall and Public Works office. The City also published articles in the local newspaper, which keeps customers informed of activities such as system improvement programs and new projects, and also contains conservation suggestions. The City could distribute preprinted materials available for purchase from American Water Works Association or other water agencies. Materials should be available in English and Spanish also. Examples of public information are provided in Appendix J. The City Public Works Department is interested in creating an internet web page for water related information and materials.

Historically, the City included the consumption information for the same month last year on the customer's bills. This is an effective tool for customers to monitor their own monthly water use and the effectiveness of household water conservation measures. Customers see their most recent usage and are able to compare current usage to past usage. These bills were also reviewed by the City to identify potential water loss problems.

May is "Water Awareness Month." In addition, the USEPA declared August "Water Efficiency Month." These events are an excellent opportunity to communicate with customers the importance of water conservation. The City could distribute preprinted materials available for free or purchase from sources such as American Water Works Association, USEPA, or other water agencies. Materials should be available in English and Spanish also. Examples of public information are provided in Appendix J.

City staff will be available to make presentations to community groups, schools, public service clubs, Chambers of Commerce, and national organizations. Staff will be available to discuss the impact of short-term and long-term water supply issues. Bilingual speakers will be available for English and Spanish audiences also.

Significant water conservation is achieved by modifying exterior water use on lawns and landscaping. Lawn watering tips are distributed through the Residential Water Audit Program, Fixture Retrofit Program, and the Annual Consumer Confidence Report. The City could distribute preprinted materials available for purchase from American Water Works Association or other water agencies. Materials should be available in English and Spanish also.

It is recommended that the City continue to support the public information program. The City should continue to include water conservation related material in the Annual Consumer Confidence Report and in customers' water bills. The City will distribute a conservation based

newsletter to all customers each year during the 2011 to 2015 period. The City anticipates conducting one public service announcement during the 2011 to 2015 period.

Water savings due to public information programs are extremely difficult to estimate. Water savings can result from specific demand management measures for example residential retrofit, high-efficiency washing machines, and ultra-low flow toilets. For the purposes of this report water savings due to public information programs are not quantified (CUWCC, 2005). The City will document the types of water conservation related information provided to customers throughout the year.

Currently, the City has postponed funding of this program due to severe budget constraints. It is recommended that the City consider funding this program for the period 2011 to 2015. The City will consider distribute one conservation based newsletter to all customers each year during the 2011 to 2015 period. Estimated additional costs for the conservation newsletter and public service announcement will be $5,000 per year. Funding for this program could be provided by planning fees or a future water conservation fee on new services.

6.4.7 BMP 2.2 School Education Programs

Primary focus of the school education programs is to educate children on water resource issues, water use, and conservation. The program educates school children about where water comes from, how it is used, and ways to conserve water. School education programs help future water users realize that water in southern California is a precious commodity that cannot be taken for granted. Historically, the City has been active in water education through the local school district, however the City has not recently staffed or funded these programs. Historically, the City assisted educational class for grades Kindergarten to 3rd, grades 4th to 6th , and grades 7th to 8th. The City has provide materials and speakers for each class. Education materials have achieved the State, district, and school education requirements. Estimated costs for the classes, education materials, and speakers were approximately $5,000 per year.

The City also sponsored the “Small Change Theater,” a play for children with water conservation themes, to the area schools. This program was very successful, resulting in children taking home the message of efficient water use. In addition, water conservation themed materials have been supplied to individual teachers for use in classroom activities. Primary focus of the various materials and classes is to educate children on water resource issues, water use, and conservation. Materials and classes should meet State and local education requirements and be available in English and Spanish languages also. Examples of these materials are provided in Appendix J. The City also participates in the local school's science fairs with respect to water conservation projects. The City could provide tours of the City’s water facilities.

Water savings due to school information programs are extremely difficult to estimate. Water savings can result from specific demand management measures for example residential retrofit, high-efficiency washing machines, and ultra-low flow toilets. For the purposes of this report water savings due to school information programs are not quantified (CUWCC, 2005). The City will document the types of water conservation related information provided to schools and teachers throughout the year including annual budget for these programs. The City will track the number of classes held, students involved, and teacher workshops each year.

Currently, the City has postponed funding of this program due to severe budget constraints. It is recommended that the City consider funding this program for the period 2011 to 2015. The City should consider budgeting for and implement school education programs which promote water conservation, including providing educational materials and tours of the City's water facilities. Funding for this program could be provided by planning fees or a future water conservation fee on new services.

6.4.8 BMP 3.1 Residential Assistance Program

Survey Programs

Budget constraints and resources limited implementation of this program in recent years. Residential water surveys can be mailed to customers to conduct a self-audit and return the questionnaire to the City for tabulation. The survey could be added to the City's website for easy access by all customers. Formal audits can be conducted by trained City employees and are generally at the request of a homeowner. However, the City may also invite, via direct mail (also email and web page), all single-family customers to participate in the survey. Homes built before 1980 can be targeted for this program, since they were constructed prior to revisions in plumbing codes requiring water conserving plumbing fixtures in new construction. The City may conduct focused annual water use audits of the new residential customers.

An interior water audit generally includes the following elements:

- Identify types of water usage
- Estimate the amount of water used for each device or fixture
- Recommend fixture repair options if necessary
- Identify alternative water usage device or fixture possibilities
- Instruct customer on proper installation and use of plumbing retrofit kits
- Inform customer on how to read their own water meter
- Inform and educate residents to use and conserve water efficiently

Estimated current average residential water demand is approximately 135 gallons per capita per day (City, 2005a). Interior water savings achieved as the result of common water audits is difficult to predict, however savings of 10 to 30 percent have been reported (Deoreo, 2001; Bruvold, 1993; Nelson, 1992). A moderate degree of lifestyle change may be required to achieve maximum water savings. However, the installation of the plumbing retrofit kit will result in substantial water savings without a significant change in behavior. Audits for older single-family homes tend to produce more savings, while newer multi-family homes tend to produce less savings per housing unit. In addition, customers benefit from reduced energy utility bills due to less hot water used. If the City implemented an audit program in conjunction with a retrofit kit (see Section 6.3.2), average savings of approximately 20 to 30 gpd per customer (residential interior) could be achieved (CUWCC, 2003; Bruvold, 1993; Nelson, 1992).

Plumbing Retrofit

Over the years approximately 3,000 conservation kits have been distributed free of charge to City customers. These kits may consist of a device to displace water in the toilet tank, a low flow showerhead, flow restrictor for the sink, dye tablet to locate leaks in the toilet, hose washers, hose repair kit, and outdoor hose sprayer.

The plumbing retrofit program may benefit existing customers by reducing their water consumption with little change in lifestyle. Water savings resulting from retrofit fixtures depends on many factors including age of existing model, model of new fixture, participation rate, number of units installed per household, number of residents per household, and acceptance by customer. Installation of retrofit fixtures in older single-family homes tends to produce more savings, while newer multi-family homes tend to produce less savings per housing unit. For the purposes of this document, calculations of conservative water savings are based on the City average of 3.43 residents per household.

Savings due to installation of a low-flow showerhead (2.75 gpm) over non-conserving (5 to 8 gpm) showerheads ranges from 39 to 90 gallons per household per day (generally one showerhead per household, one 5-minute shower per person per day). (Deoreo, 2001; Maddaus, 1987) Savings due to installation of a low-flow faucet aerator/restrictor (2.2 gpm) over non-conserving aerator (5 gpm) is approximately 38 to 96 gallons per household per day (based on 1 unit per dwelling, 2 to 5 uses per person per day and 2 minutes each). (Deoreo, 2001; Maddaus, 1987) Savings resulting from installation of tank displacement bag/dams over a non-conserving (5.5 gallon) toilet is approximately 11.9 gallons per toilet per day (generally one toilet per household). (Maddaus, 1987) Savings resulting from reduction in leakage, mainly toilets and dripping faucets, is approximately 15 gpd (Deoreo, 2001). Toilet replacement with ultra-low flush toilets is generally not included in a retrofit program. Toilet replacement is summarized in Section 6.2.14. A conservative estimate of interior water savings achieved due to retrofit with only the showerhead and faucet restrictor for single-family and multi-family homes ranges from approximately 48 to 114 gpd per housing unit (Deoreo, 2001; Bruvold, 1993; Nelson, 1992; Maddaus, 1987).

Significant water savings may be generated due to combining measures such as water audits, fixture leakage reduction, and installation of retrofit kits. A formal household water audit implemented in conjunction with a retrofit kit would produce estimated water savings of approximately 50 gpd per household (CUWCC, 2003; Bruvold, 1993; Nelson, 1992).

Water Resource In-Lieu Fee

The City's *Water Resource In-Lieu Fee (City Ordinance No. 1058)* requires land owners or developers to transfer their groundwater rights to the City as a condition of project approval (see also Section 3.8.1). The intent of the Ordinance is to ensure new urban land users provide sufficient water resources for their needs without taxing the existing users. A copy of the Ordinance is included in Appendix F. In summary, the water rights associated with agricultural land proposed for urban land development would be transferred to the City. If the associated water rights are not sufficient to serve the proposed development's anticipated water use (as determined by the City) or if the water rights are held by another entity who can not or will not dedicate those rights to the City, the developer must purchase additional water rights and dedicate them to the City or pay a Water Resource In-Lieu Fee to the City. This Ordinance applies to water rights within City limits as well as parcels outside City limits who must receive service from the City's Water Enterprise.

Summary

It is recommended that the City resume implementation of the residential interior audit program for the 2011 to 2015 period. The City could mail surveys to all residential customers starting in 2011 with follow up surveys in 2012 and 2014. The survey could request data on water use and discuss ways to conserve water including suggestions for installation of water conserving fixtures. In addition, the survey will also offer a formal audit by City staff by appointment to check for leaks, showerhead flow-rates, toilet flow rates, irrigation schedules and timers, and a general review of outdoor irrigation. The City may conduct focused annual water use audits of the new residential customers.

It is recommended that the City resume implementation of the Fixture Retrofit Program starting with an initial program of 100 kits per year. Additional kits could be added if requested by the public. It is recommended that the City distribute a minimum of 100 residential retrofit kits per year. This would require distribution of approximately nine kits per month. These kits could be distributed in conjunction with the residential interior audit and/or residential exterior audit

It is recommended that the City implement the Water Resource In-Lieu Fee Program. City Planning Department would be instrumental in implementing this Program.

Surveys could be mailed to all customers with a conservative 25 percent rate of response anticipated. For purposes of projecting water savings, a conservative value of 50 gpd per residence (6 AFY) is assumed for the retrofit program when combined with the residential interior survey. In addition, customers may benefit from reduced energy utility bills due to less hot water used.

The City could measure method effectiveness though staff reviews of the surveyed customers' water use records, and comparison to historic use for one year after the interior survey. If the reduction in water use is not in line with BMP water savings estimates, staff will flag the customer's account and offer a follow up survey.

Currently, the City has no funding for this program due to severe budget constraints. The City should consider budgeting for and implement the residential interior audit and plumbing retrofit programs for the period 2011 to 2015. City planning fees (examples include new water meter fees, CEQA mitigation fee, and water conservation fee) could be used to fund this water demand management program.

6.4.9 BMP 3.2 Landscape Water Survey

Exterior residential water audits may include one of two types - routine and detailed. A routine exterior water audit generally includes the following elements:

- Estimate the size of landscaped area
- Assess in-ground irrigation systems for leaks and broken sprinklers
- Measure precipitation rate of irrigation system
- Evaluate automatic control settings
- Develop suggested irrigation schedules
- Provide customer with public education materials.

Examples of public education materials titles include, “Sustainable Plants for Ventura County,” “Low Water Using Plants,” “For Your Xeriscape Garden, (Low Water Using Plants),” “Ground Covers for Your Xeriscape Garden,” “Making Your Garden Grow,” “Drought Survival Guide for Home and Garden.”

Detailed exterior audits include all of the elements of the routine audit in addition to irrigation uniformity audits and soil assessments. Average exterior water savings achieved as the result of routine water audits for single-family residential is approximately 6 gpd per housing unit (Bruvold, 1993; Nelson, 1992). However, water savings ranging from 10 to 50 gallons per day may be generated via detailed exterior audits (CUWCC, 2000; Hawn, 1997).

It is recommended that the City resume implementation of the residential exterior audit program for the 2011 to 2015 period. The City could mail surveys to all residential customers starting in 2011 with follow up surveys in 2012 and 2014. The survey could request data on external water use and discuss ways to conserve water including suggestions for modification of landscape irrigation methods and schedules. In addition, the survey could offer a formal audit by City staff by appointment to check for irrigation system leaks, irrigation schedules, and a general review of outdoor irrigation. The City may conduct focused annual water use audits of the new residential customers.

Currently, the City has no funding for this program due to severe budget constraints. The City should consider budgeting for and implement the residential exterior audit program for the period 2011 to 2015. City planning fees (examples include new water meter fees, CEQA mitigation fee, and water conservation fee) could be used to fund this water demand management program.

6.4.10 BMP 3.3 High Efficiency Clothes Washing Machine Financial Incentive Programs

On average, washing machines use approximately 22 percent of the interior water demand for an average single family home (AWWA, 1999). New washers generally use less water and energy compared to older appliances. Federal standards are pending which may require clothes washers manufactured after 2004 to be 22 percent more energy efficient, while those manufactured after 2007 must be 35 percent more energy efficient. Some of the new high-efficiency models use up to 52 percent less water and up to 63 percent less energy per load compared to older less efficient models (Vickers, 2001). Water and energy savings vary with the new models, however the CUWCC (2005) estimates water savings of approximately 5,100 gallons per new high-efficiency washing machine. Total savings for water, wastewater, and energy were estimated to be $43 to $106 per year (CUWCC, 2003). High efficiency models cost from $600 to $1,100 (compared to $300 to $700 for conventional units) which may reduce the rate of participation. Examples of customers that would derive maximum benefit from this program include multifamily residential units and laundromats with multiple washing machines per location.

As an example, the Metropolitan Water District, in partnership with member agencies, offer rebates which normally range between $85 and $150. Rebates are based on the projected combined water and energy savings. Examples of other agencies which have cosponsored programs with MWD include Los Angeles Department of Water and Power, San Diego County Water Authority, and Southern California Edison.

The City has held discussions with developers regarding potentially requiring high-efficiency washing machines in future developments. At present, the City anticipates 300 new high-efficiency washing machines to be purchased and installed per year (2011 to 2015) within new single-family residence constructed. The City may conduct focused annual water use audits of the new residential customers including the new high-efficiency washing machines. The City may consider additional incentive programs to encourage existing residential customers to purchase high-efficiency washing machines. It is recommended that the City require developers to purchase and install high-efficiency washing machines within each new single-family residence constructed. The City could include a follow-up residential survey regarding residential conservation measures one year after the houses are built.

The CUWCC (2005) estimates that annual water savings is 5,100 gallons per replacement of conventional low-efficiency washing machine with a new high-efficiency washing machine. Thus, the City estimates that water savings will be approximately 5 AF per year from 2011 to 2015. The City may need to confirm installation of the high-efficiency washing machines during building inspection. The City may conduct focused annual water use audits of the new residential customers including the new high-efficiency washing machines.

Currently, the City has no funding for this program due to severe budget constraints. It is recommended that the City consider funding this program for the period 2011 to 2015. The City should consider budgeting for and implement additional incentive programs to encourage existing residential customers to purchase high-efficiency washing machines. It is recommended that the City require developers to purchase and install high-efficiency washing machines within each new single-family residence constructed.

6.4.11 BMP 3.4 WaterSense Specification Toilets

WaterSense Specification toilets (WSST) (also known as ultra-low flush toilets - ULFT) commonly use approximately 1.6 gallons or less per flush. However, some types use as little as 0.5 gallons per flush. This program will provide one of the most significant water savings programs. An added benefit is the reduction of water demand on the City system, thus delaying or eliminating capital improvements. Higher savings are found in high-density housing and commercial/industrial settings. Savings also persist over the entire lifespan of the toilet (approximately 25 years). Water conserved in WSST replacement programs have been shown to be 1.9 to 5.4 gallons of water savings per flush per toilet which equates to 12 to 45 gallons per replacement per day. For the purposes of this report estimated savings is 40 gallons per toilet per day for single-family units and 50 gpd for multi-family units.

Alternative methods for promoting toilet replacement include: (1) implementing a retrofit on resale ordinance where homes are required to retrofit to low flow fixtures upon a resale, and (2) direct distribution programs. Retrofit on resale ordinances is inexpensive from the City's perspective since costs are shifted to the home seller/purchaser. These ordinances tend to be unpopular with the real estate community and home sellers, since it may impede a sale due to timing and may require replacing floor coverings around the toilet. Communities in California which have a retrofit on resale ordinance include the Monterey Peninsula Water Management District, North Marin Water District, City of San Diego, City of San Francisco, and City of Santa Monica (DWR website). Direct distribution programs consist of providing a WSST (1.6 gal/flush or less) in exchange for a customer provided toilet (generally 3.5 to 7 gal/flush). This

alternative is generally effective but may have an increased administrative cost due to the need for staffing the distribution center and also for disposal of the retired toilets.

It should be recognized that natural replacement (approximately 3 to 4 percent per year) will eventually replace all of the older, high water use models with 1.6 gal/flush toilet models as required by the revised plumbing code. However, this would likely take more than 25 years to complete. WSST incentive programs accelerate the water savings and as such can help defer or eliminate other capital investment needs.

Recent proposed federal legislation intending to repeal the low-flow plumbing standards, in part due to anecdotal complaints of poor performance of WSSTs, was defeated when proposal supporters could not produce customer complaints and opponents showed empirical data indicating consumer satisfaction was high.

City planning fees (examples include new water meter fees, CEQA mitigation fee, and water conservation fee) could be used to fund water demand management programs like an WSST program. The City could directly purchase the WSST and conduct exchange programs (similar to City of Oxnard) or use a rebate type program (similar to City of Port Hueneme). A WSST program could be funded until all high flow toilets are replaced in the City.

The City could directly purchase the WSST and conduct exchange programs (similar to City of Oxnard) or use a rebate type program (similar to City of Port Hueneme). A WSST program should be funded until all high-flow toilets are replaced in the City. It is recommended that the City approve a new retrofit on resale ordinance where existing homeowners are required to retrofit to low-flow fixtures prior to resale.

Estimated savings is 40 gallons per toilet per day for single-family units and 50 gpd for multi-family units. A conservative estimate of the total water conserved in the proposed WSST replacement program is 10 AF for 2010. To measure effectiveness, the City could calculate annual WSST replacement program water savings to confirm the savings are within 10 percent of calculated water savings (CUWCC, 2005) methodology and water savings estimates.

Currently, the City has no funding for this program due to severe budget constraints. The City should consider budgeting for and implement additional incentive programs for WSST replacement program for the period 2011 to 2015. City planning fees (examples include new water meter fees, CEQA mitigation fee, and water conservation fee) could be used to fund water demand management programs like an WSST program.

6.4.12 BMP 4 Commercial-Industrial-Institutional

Objective of this program is to encourage the replacement of fixtures commonly found at commercial, institutional (i.e., government and schools), and industrial (CII) sites having the greatest potential water savings. This program targets sites with the largest water savings potential by marketing directly to their owners and corporate headquarters. Examples of CII programs include process water audits, fixture retrofits (WSST, faucets, etc.), coin operated washing machine replacement, and cooling tower improvements.

The City should consider identifying and ranking CII accounts according to water use. This would involve collecting information from the City's billing system. However, first the City could add customer classification to the billing information for each account. This would allow the City to track usage by customer type. The City could then prepare and distribute surveys to each identified CII account. The CII Water-Use Survey could be sent to approximately 600 customers in 2011 with follow-up surveys in 2012 and 2014. The surveys could be followed by monitoring water usage over the next year to track results. The surveys could include public information regarding water conservation and fixture retrofit programs including WSST replacement. The City could offer WSST toilet replacements.

Estimated water savings is 1 percent per year (total of 5 percent). (CUWCC, 2005) Additional water savings may result when combined with other measures such as site audits (landscape irrigation, internal water uses, and cooling tower) and ultra-low flush toilet retrofit programs. The City's initial CII program does not include site audits. Surveys could be mailed to all CII customers with a conservative 25 percent rate of response anticipated. For the purposes of this report, it is anticipated that CII customers could save an average of 100 gallons per month per account (21 AFY) over the period 2006 to 2010 as the result of the survey and fixture replacement program. For the purposes of this report, it is anticipated that CII customers will save an average of 37 gpd per WSST replacement (6 AFY) over the period 2011 to 2015.

Currently, the City has no funding for this program due to severe budget constraints. The City should consider budgeting for and implement additional incentive programs for CII customers. City planning fees (examples include new water meter fees, CEQA mitigation fee, and water conservation fee) could be used to fund water demand management programs like the CII program.

6.4.13 BMP 5 Landscape

The objective of landscape water use audits is to gather sufficient field data and implement a demand management action plan. This program could provide owners of large landscaped areas (commonly defined as 2 acres or more) with information to enable them to perform timely equipment maintenance and to apply accurate irrigation amounts throughout the year. A landscape water audit generally includes the following elements:

- Estimate size of landscaped area
- Define soil characteristics
- Assess in-ground irrigation systems for leaks and broken sprinklers
- Measure irrigation system uniformity rate
- Evaluate automatic control settings
- Develop suggested irrigation schedules
- Provide customer with public education materials.

Prior to the audits, the City should identify accounts with dedicated irrigation meters and estimate landscape irrigation budgets. These budgets will be discussed with the customers. Recommend dedicated irrigation meters to large accounts without such meters. City staff could conduct follow-up visits to each customer included in the landscape water use audit program. Track findings between audit and follow-up.

Benefits from audits include water and cost savings, as well as landscape health and appearance. Significant reduction in water demand, estimates range from 15 to 50, can be achieved by modifying exterior vegetation and irrigation practices on landscaping (Hawn, 1997; DWR, 1989; CUWCC, 2003; Texas, 2004). In addition, educational materials regarding external landscaping care can be provided.

Landscape Water Use Audit – City Facilities

Objective of the landscape audits is to gather sufficient field data and implement a demand management action plan. City staff strive to apply only the proper amount of water that is required to maintain the landscaped area in a healthy condition. City staff evaluates the irrigation system of City managed landscape areas including the irrigation controllers, pipes, and sprinklers. This evaluation reduces water wastage. City staff also make adjustments in the irrigation schedules to achieve proper irrigation efficiency. The City could replace all manual irrigation controllers with automatic irrigation controllers capable of automatic shut off when a sudden pressure loss occurs due to a broken system. The City could install soil moisture sensors for all automatic irrigation controllers. The City could require annual landscape water audits and efficient irrigation for governmental properties with landscaped areas of one acre or more.

Landscape Review Process for New Development

All projects must be landscaped according to the City Code Section 156.706 and Guidelines for Preparation of Landscape and Irrigation Plans (Landscape Guidelines). A copy of the City Code and Landscape Guidelines is provided in Appendix K. The City Planning Commission currently reviews the landscaping plans of new developments to ensure that the developers achieve the objectives of conserving water by the use of drought tolerant plants and installation of water saving irrigation systems. Proposed projects must meet City Code for general landscaping, parking areas, medians, visual blinds, plant materials, and irrigation design. The City may consider requiring irrigation meters for all commercial and/or industrial accounts or if the lot is above a minimum size.

Summary

It is recommended that the City prepare and implement a landscape water use audit program for owners of large landscaped areas. It is recommended that the City continue to implement the landscape review process for new developments. The City may consider requiring irrigation meters for all commercial and/or industrial accounts or if the lot is above a minimum size. It is recommended that the City prepare and implement an annual irrigation audit program for City managed landscape areas.

For the purposes of this report landscape audits may result in a conservative value of 15 percent reduction in water demand for landscape uses by surveyed accounts. Approximately 125 gallons of water per day per large landscape account surveyed (Texas, 2004) could be saved due to the audits.

Prior to the audits, the City may identify accounts with dedicated irrigation meters and estimate landscape irrigation budgets. These budgets may be discussed with the customers, including the recommendation for dedicated irrigation meters to large accounts without such meters. City staff may conduct follow-up visits for each customer included in the landscape water use audit

program approximately one year after original audit. City staff may track findings between audit and follow-up.

Currently, the City has postponed funding of this program due to severe budget constraints. It is recommended that the City consider funding this program for the period 2011 to 2015. The City should consider budgeting for and implement large landscape audit programs which promote water conservation, including providing educational materials to customers. Funding for this program could be provided by planning fees or a future water conservation fee on new services.

Section 7: Climate Change

7.1 UWMP Requirements

California Department of Water Resources suggests that urban water suppliers consider in the UWMP potential water supply and water demand effects related to climate change.

7.2 Introduction

Current climate change projections suggest that California will continue to enjoy a Mediterranean climate with the typical seasonal pattern of relatively cool and wet winters and hot, dry summers. However, climate patterns are different now and may continue to change at an accelerated pace. Increases in global emissions of greenhouse gases are leading to serious consequences for California including, but not limited to, the following: higher air and water temperatures, rising sea levels, increased droughts and floods, decreased amount and duration of snow pack, and extreme variability in weather patterns. (CA DWR, 2009; CA NRA, 2009) These changes are anticipated to intensify over the 20-year planning horizon of this UWMP. Even if all emissions of greenhouse gases ceased today, some of these developments would be unavoidable because of the increase in greenhouse gases recorded over the last 100 years and the fact that the climate system changes slowly. (PPIC, 2011) Many of these climate changes would affect the availability, volume, and quality of California water resources.

7.3 Potential Impacts of Climate Change

Potential impacts to state and local water resources and water demands includes the following:

7.3.1 Precipitation

Rainfall variability is expected to increase, leading to more frequent droughts and floods, runoff from snowpack may be earlier and less predictable, and precipitation may fall as more rain and less snow. Computer models differ in determining where and how much rain and snowfall patterns may change under different emissions scenarios. However, the models are nearly unanimous in predicting a 12 to 35 percent decrease in northern California precipitation levels by mid-century (relative to average precipitation for 1960-1990). (CA NRA, 2009) California DWR estimates that Sierra Nevada snowpack may be reduced by 25 to 40 percent by 2050 (relative to average snowpack for mid 20th century). (CA NRA, 2009) However, average air temperature increases of 6 to 11 degrees Fahrenheit could trigger intensification of the of the El Nino Southern Oscillation (ENSO) cycles over the Pacific Ocean. (CA RNA, 2009) Intensification of the ENSO cycles could mean stormier wet years and even drier (or extended periods of) drought years. These ENSO cycles may lead to more severe coastal storms during the winter months and more erosion and coastal flooding. (CA RNA, 2009)

7.3.2 Air Temperature

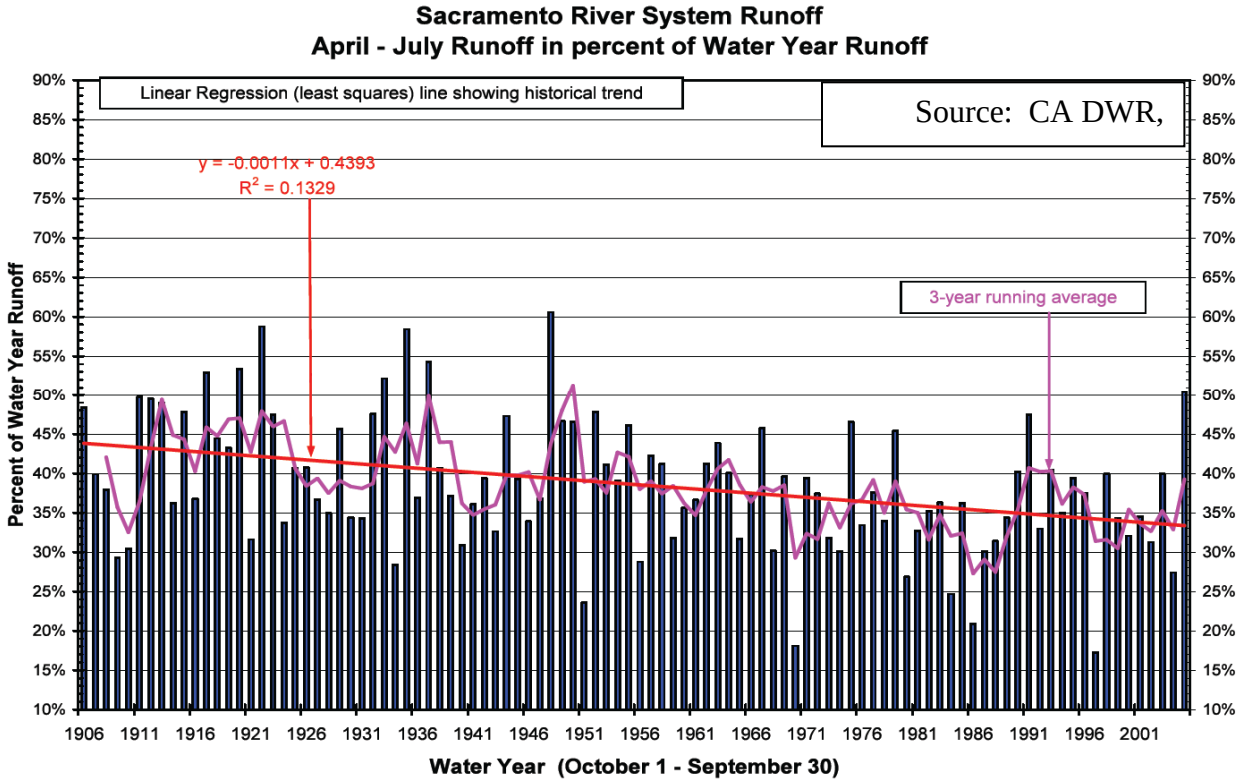
Air temperatures in California are anticipated to increase by 2 to 9 degrees Fahrenheit by the year 2100. (CA NRA, 2009) Higher air temperatures may result in more rain and less snow, diminishing the reserves of water held in the Sierra Nevada snowpack. (CA NRA, 2009) Higher air temperatures may increase evaporation rates from reservoirs by 15 to 37 percent. (CA NRA, 2009) Regions that rely heavily upon surface water could be particularly affected as runoff

becomes more variable and extended droughts occur more frequently. Change in air temperature may further stress the state's forests, making them more vulnerable to pests, disease, fire, and changes in species composition. Higher air temperatures may also increase evapotranspiration rates and external water demands for agriculture and landscaping, both significant sources of water demand in Ventura County.

7.3.3 Runoff

Spring runoff from snowpack is occurring earlier now than it did in the first part of the 20th century. This change in runoff could affect availability of spring and summer snowmelt from mountain areas, including State Water Project water from the Sacramento Delta and local rivers and streams. As an example, Figure 7-1 indicates the change in timing of seasonal runoff on the Sacramento River. The amount of April to July runoff (as a percent of total runoff) on the Sacramento River has decreased from nearly 45 percent to under 35 percent over the period 1906 to 2005 resulting in a loss of approximately 1.5 million AF of water (during April to July). (CA DWR, 2011) Changes is runoff timing may force water agencies to adapt to more runoff earlier in the water year which affects water storage for potable and irrigation demands, hydroelectric power production, and lake recreation, etc. Total annual exports from the Delta for State and Federal contractors may also decrease by 20 to 25 percent by the year 2100. (CCCC, 2009) Also, changes in runoff patterns may impact ground water recharge in California especially those areas prone to ground water overdraft including Ventura County.

FIGURE 7-1



7.3.4 Sea Level

Sea levels have risen by as much as 7 inches along the California coast over the last century. (CA NRA, 2009) According to some estimates, sea level is projected to rise an additional 2 to 5 feet by 2100. (PPIC, 2011; Pacific Institute, 2009; CA RNA, 2009; CAT, 2008) These sea level increases could significantly impact infrastructure within coastal areas and affect quantity and timing of State Water Project water exports from the Sacramento Delta. Affects of sea level rise in the Delta would be two-fold: (1) problems with weak levees protecting the low-lying land, many already below sea level; and (2) increased salinity intrusion from the ocean which could degrade fresh water transfer supplies pumped at the southern edge of the Delta or require more fresh water releases to repel ocean salinity. Estimated costs of 100-year flooding on coastal areas (4.6 feet) could reach $100 billion (2000 dollars) for replacement value of buildings and contents. (Pacific Institute, 2009) In addition, sea level rise poses threats to fragile Sacramento Delta levees, which are extremely important for the State Water Project water supply. Changes in sea level may also impact areas prone to sea water intrusion, such as Ventura County, further impacting water quantity and quality of available groundwater.

7.3.5 Flooding

Diminishing mountain snowpack reduces water storage and may increase the risk of flooding in many areas of California including Ventura County. There is some variance in the literature about whether climate change will impact the frequency and intensity of storm events in California over the next 100 years. However, as noted previously, average air temperature increases of 6 to 11 degrees Fahrenheit could trigger intensification of the of the El Nino cycles

over the Pacific Ocean which may lead to stormier wet years, extended periods of drought years, more severe coastal storms during the winter months, and more erosion and coastal flooding. (CA RNA, 2009)

7.4 Mitigation and Adaptation

Responding to climate change generally takes two forms: mitigation and adaptation. Mitigation is taking steps to reduce human contribution to the causes of climate change by reducing green house gases (GHG) emissions. Adaptation is the process of responding to the effects of climate change by modifying our systems and behaviors to function in a warmer climate. (CA DWR, 2011)

In the water sector, climate change mitigation is generally achieved by reducing energy use, becoming more efficient with energy use, and/or substituting renewable energy sources in place of fossil fuel based energy sources. Because water requires energy to move, treat, use, and discharge, water conservation is also energy conservation. As each water supplier implements DMM/BMPs and determines its water
conservation targets, it can also calculate conserved energy and GHGs not-emitted as a side benefit. Once a water supplier has calculated the water conserved by a BMP, it is straightforward to convert that volume to conserved energy, and GHGs not-emitted. Additionally, water suppliers may want to reconsider DMMs that conserve water but do so at a significant increase in GHG emissions. (CA DWR, 2011)

Climate change means more than hotter days. Continued warming of the climate system has considerable impact on the operation of most water districts. Snow in the Sierra Nevada provides 65 percent of California's water supply. Predictions indicate that by 2050 the Sierra snowpack will be significantly reduced. Much of the lost snow will fall as rain, which flows quickly down the mountains during winter and cannot be stored in our current water system for use during California's hot, dry summers. The climate is also expected to become more variable, bringing more droughts and floods. Water agencies will have to adapt to new, more variable conditions. (CA DWR, 2011)

Principles of climate change adaptation include the following:

- The more mitigation we do now, the less adaptation we may have to do in the future, because climate impacts could be less severe.
- Mitigation is much less expensive than adaptation.
- Mitigation should happen globally.
- Adaptation must happen locally.
- Adaptation strategies should be implemented according to future conditions, regular assessment and recalibration.
- Some adaptation strategies have benefits that can be realized today.

7.5 Local Strategies

As climate change continues to unfold in the coming decades, water agencies, may need to mitigate and adapt to new strategies, which may require reevaluating existing agency missions, policies, regulations, facilities, funding priorities, and other responsibilities. Examples of City mitigation and adaptation strategies include, but not limited to, the following:

- Prepare long-term facility and sustainability master plan. The City should prepare a long-term projection (such as 50-year) of facility improvements including City specific elements for climate change adaptation.
- Increase ground water recharge. The City should support ground water recharge programs utilizing surface water diversions and recycled water.
- Promote use of recycled water. The City should adopt policies that promote the use of recycled water for appropriate and cost-effective uses including but not limited to ground water recharge and ground water injection.
- Promote water use efficiency. The City should aggressively support implementation of urban and agricultural best management practices.
- Increase investments in infrastructure. The City should aggressively invest in new City infrastructure that supports adaptation strategies (such as ground water recharge, and recycled water) and existing principal facilities susceptible to impacts of climate change.

Notwithstanding the above strategies for dealing with climate change, the reality is that current environmental regulations place a very high priority on releasing additional water for fish and the environment. There will be great reluctance by regulators to acknowledge that changes to the earth's climate may alter the ranges of sensitive species. To attempt to maintain artificial ranges that may no longer be viable, regulators will likely require even more water to be released to the environment. With powerful laws like the Endangered Species Act to support such reactions, there will be more competition for scarce water supplies between people and the environment. Resolving this conflict will be one of the biggest challenges confronting future water managers.

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APPENDICES

A	Definitions for Selected Abbreviations and Terminology
B	Urban Water Management Planning Act
C	Notice of UWMP Hearing and Adoption Resolution
D	Amended and Restated Judgment - United Water Conservation District vs. City of San Buenaventura
E	2010 Annual Consumer Confidence Report
F	City Ordinance No. 1058 - Water Resource In-Lieu Fee
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I	City of Santa Paula Water Rates
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Appendix A

Definitions of Selected Abbreviations and Terminology

APPENDIX A

DEFINITIONS FOR SELECTED ACRONYMS AND TERMINOLOGY

Provided below are definitions of selected acronyms and terms used throughout this document.

acre-foot (AF). The amount of water needed to cover an acre one foot deep (325,900 gallons). An acre-foot can support the annual indoor and outdoor needs of between one and two households per year, and, on average, 3 acre-feet are needed to irrigate 1 acre of farmland; enough to cover a football field 1 foot deep.

AFY. Acre-feet per year.

appropriation. The right to withdraw water from its source.

aquifer. A geologic formation of sand, rock and gravel through which water can pass and which can store, transmit and yield significant quantities of water to wells and springs.

audit (end-use). A systematic accounting of water uses by end users (residential, commercial, or industrial), often used to identify potential areas for water reduction, conservation, or efficiency improvement.

audit (system). A systematic accounting of water throughout the production, transmission, and distribution facilities of the system.

available supply. The maximum amount of reliable water supply, including surface water, groundwater, and purchases under secure contracts.

average-day demand. A water system's average daily use based on total annual water production (total annual gallons or cubic feet divided by 365); multiple years can be used to account for yearly variations.

avoided cost. The savings associated with undertaking a given activity (such as demand management) instead of an alternative means of achieving the same results (such as adding supply); can be used to establish the least-cost means of achieving a specified goal. Can be measured in terms of incremental cost.

AWWA. American Water Works Association

baseline. An established value or trend used for comparison when conditions are altered, as in the introduction of water conservation measures.

beneficial use. A use of water resources that benefits people or nature. State law may define beneficial use.

benefit-cost analysis. A comparison of total benefits to total costs, usually expressed in monetary terms, used to measure efficiency and evaluate alternatives. See also cost-effectiveness and avoided-cost.

BAT. Best available technology

best management practice (BMP). A measure or activity that is beneficial, empirically proven, cost-effective, and widely accepted in the professional community.

block. A quantity of water for which a price per unit of water (or billing rate) is established.

budget (water-use). An accounting of total water use or projected water use for a given location or activity.

cfs. Cubic feet per second

City. City of Santa Paula

capital facilities. Physical facilities used in the production, transmission, and distribution of water.

commodity charge. See variable charge.

community water system. According to the SDWA, a drinking water conveyance system serving at least 15 service connections used by year-round residents of the area served by the system or regularly serving at least 25 year-round residents.

conservation (water). Any beneficial reduction in water losses, waste, or use.

conservation pricing. Water rate structures that help achieve beneficial reductions in water usage. See nonpromotional rates.

consumptive use. Use that permanently withdraws water from its source.

cost-effectiveness. A comparison of costs required for achieving the same benefit by different means. Costs are usually expressed in dollars, but benefits can be expressed in another unit (such as a quantity of water). See net benefits.

customer class. A group of customers (residential, commercial, industrial, wholesale, and so on) defined by similar costs of service or patterns of water usage.

decreasing-block (or declining-block) rate. A pricing structure for which the dollar amount charged per unit of water (such as dollars per gallon) decreases with the amount water usage.

District. United Water Conservation District.

DMM. Demand management measure

DSM. Demand side management

demand forecast. A projection of future demand that can be made on a systemwide or customer-class basis.

demand management. Measures, practices, or incentives deployed by water utilities to permanently reduce the level or change the pattern of demand for a utility service.

demographic. Having to do with population or socioeconomic conditions.

DPH. State of California Department of Public Health.

DWR. State of California Department of Water Resources.

discount rate. A percentage that is used to adjust a forecast of expenditures to account for the time value of money or opportunity costs; it can be based on the utility's cost of capital.

distribution facilities. Pipes, treatment, storage and other facilities used to distribute drinking water to end-users.

drought. A sustained period of inadequate or subnormal precipitation that can lead to water supply shortages, as well as increased water usage.

end use. Fixtures, appliances, and activities that use water.

end user. Residential, commercial, industrial, governmental, or institutional water consumer.

escalation rate. A percentage that is used to adjust a forecast of expenditures to account for the increasing value of a good or service over time (apart from the discount rate and inflationary effects).

evapotranspiration. Water losses from the surface of soils and plants.

fixed charge. The portion of a water bill that does not vary with water usage.

fixed costs. Costs associated with water services that do not vary with the amount of water produced or sold.

gpcd. Gallons per capita per day

gpd. Gallons per day

gpf. Gallons per flush

gpm. Gallons per minute

graywater. Reuse, generally without treatment, of domestic type wastewater for toilet flushing, garden irrigation and other nonpotable uses. Excludes water from toilets, kitchen sinks, dishwashers, or water used for washing diapers.

groundwater. Water that occurs beneath the land surface and fills partially or wholly pore spaces of the alluvium, soil or rock formation in which it is situated. Does not include water produced with oil in the production of oil and gas or in a bona fide mining operation.

groundwater basin. A groundwater reservoir defined by all the overlying land surface and the underlying aquifers that contain water stored in the reservoir. Boundaries of successively deeper aquifers may differ and make it difficult to define the limits of the basin.

groundwater overdraft. The condition of a groundwater basin in which the amount of water withdrawn by pumping exceeds the amount of water that recharges the basin over a period of years during which water supply conditions approximate average.

groundwater recharge. The action of increasing groundwater storage by natural conditions or by human activity.

groundwater table. The upper surface of the zone of saturation (all pores of subsoil filled with water), except where the surface if formed by an impermeable body.

imported water. Water that has originated from one hydrologic region and is transferred to another hydrologic region.

increasing-block (or inclining-block) rate. A pricing structure for which the dollar amount charged per unit of water (such as dollars per gallon) increases with the amount water usage.

incremental cost. The additional cost associated with adding an increment of capacity.

instream flow. River and stream waters that maintain stream quality, aquatic life, and recreational opportunities.

integrated resource planning. An open and participatory planning process emphasizing least-cost principles and a balanced consideration of supply and demand management options for meeting water needs.

investor-owned utility. A private utility owned by investors and typically regulated by a state public utility commission.

irrigation scheduling. An automated method for optimizing outdoor water use by matching the watering schedule to plant needs.

large-volume user. A water customer, usually industrial or wholesale, whose usage is substantial relative to other users; large-volume users may present unique peaking or other demand characteristics.

leak detection. Methods for identifying water leakage in pipes and fittings.

life span. The expected useful life of a supply-side or demand-side project, measure, or practice. (The life span may not be identical to useful life for tax purposes.)

load management. Methods for managing levels and patterns of usage in order to optimize system resources and facilities.

losses (water). Metered source water less revenue-producing water and authorized unmetered water uses.

low water-use landscaping. Use of plant materials that are appropriate to an area's climate and growing conditions (usually native and adaptive plants). See also xeriscape.

market penetration. The extent to which an activity or measure is actually implemented compared to all potential uses or markets.

marginal-cost pricing. A method of rate design where prices reflect the costs associated with producing the next increment of supply.

master metering. A large meter at a point of distribution to multiple uses or users that could be further submetered. Includes metered wholesale sales.

maximum-day demand. Total production for the water system on its highest day of production during a year.

MOU. Memorandum of understanding

meter. An instrument for measuring and recording water volume.

MWDSC. Metropolitan Water District of Southern California, Los Angeles, California.

MGD. Million gallons per day

mixed-use meter. A meter measuring water use for more than one type of end use (such as indoor and outdoor use).

needle peaks. Persistent levels of peak demand that drive the capacity needs of a water system despite reductions in average demand.

net benefits. The numerical difference between total benefits and total costs, both of which must be expressed in the same unit (usually dollars). See cost-effectiveness.

net present value. The present value of benefits less the present value of costs.

nominal dollars. Forecast dollars that are not adjusted for inflation.

nonaccount water. Metered source water less metered water sales.

nonconsumptive use. Water withdrawn and returned to the source.

nonpromotional rates. Rates that do not encourage additional consumption by water users.

nonresidential customer. A commercial or industrial utility customer.

normalization. Adjustment of a variable to a "normal" level based on averaging over an accepted period of time; used in forecasting.

opportunity cost. The value of a foregone opportunity that cannot be pursued because resources are taken up by a chosen activity.

peak demand. The highest point of total water usage experienced by a system, measured on an hourly and on a daily basis.

per-capita use. Total use divided by the total population served.

per-capita residential use. Residential use divided by the total population served.

precipitation rate (sprinkling). The surface application rate for landscape watering, usually expressed in inches per hour.

present value. Future expenditures expressed in current dollars by adjusting for a discount rate that accounts for financing costs.

pressure regulator. A post-meter device used to limit water pressure.

price elasticity of demand. A measure of the responsiveness of water usage to changes in price; measured by the percentage change in usage divided by the percentage change in price.

primary treatment. Removing solids and floating matter from wastewater using screening, skimming and sedimentation (settling by gravity).

rationing. Mandatory water-use restrictions sometimes used under drought or other emergency conditions.

raw water. Untreated water.

real dollars. Forecast dollars that are adjusted for inflation.

recycled water. Wastewater that becomes suitable for a specific beneficial use as a result of treatment. Legislation in 1991 legally equates the term recycled water to reclaimed water.

retrofit. Replacement of parts in an existing plumbing fixture or water-using appliance in order to improve its operational efficiency.

revenue-producing water. Water metered and sold.

reuse (water). Beneficial use of treated wastewater.

Safe Drinking Water Act (SDWA). Federal drinking water quality legislation administered by the U.S. Environmental Protection Agency (EPA) through state primacy agencies; amended in 1996.

safe yield. The maximum reliable amount that can be withdrawn from a source without compromising quality or quantity, as defined by hydrological studies; can be based on acceptable withdrawals during a critical supply period or drought with a specific probability of occurrence.

SPWRF. City of Santa Paula Water Reclamation Facility

seasonal rate. A pricing structure for which the dollar amount charged per unit of water (such as dollars per gallon) varies by season of use; higher rates usually are charged in the season of peak demand.

secondary treatment. The biological portion of wastewater treatment which uses the activated sludge process to further clean wastewater after primary treatment. Generally, a level of treatment that produces 85 percent removal efficiencies for biological oxygen demand and suspended solids. Usually carried out through the use of trickling filters or by the activated sludge process.

sensitivity analysis. An analysis of alternative results based on variations in assumptions; a "what if" analysis.

service territory. The geographic area served by a water utility.

source-of-supply. Facilities used to extract and/or store raw water prior to transmission and distribution.

source meter. A meter used to record water withdrawn from a surface water or groundwater source, or purchased from a wholesale supplier.

sq. ft. Square feet (also sqft)

State Revolving Fund (SRF). State loan funds for water utilities established under the Safe Drinking Water Act.

supply management. Measures deployed by the utility that improve the efficiency of production, transmission, and distribution facilities.

submetering. Metering for units comprising a larger service connection, such as apartments in a multifamily building.

surcharge. A special charge on a water bill used to send customers a specific pricing signal and recover costs associated with a particular activity.

system (water). A series of interconnected conveyance facilities owned and operated by a drinking water supplier; some utilities operate multiple water systems.

take-or-pay. A contract provision obligating a purchaser to pay for a commodity whether or not delivery is taken.

tariff. The schedule of a utility's rates and charges.

tertiary treatment. The treatment of waste water beyond the secondary or biological stage. Normally implies the removal of nutrients, such as phosphorous and nitrogen, and a high percentage of suspended solids.

toilet tank displacement device. A plastic bag or dam installed in a toilet tank to reduce flush volume. Considered effective only for fixtures using more than 3.5 gallons per flush.

toilet flapper. Valve in the toilet tank that controls flushing.

transfers (water). Exchange of water among willing buyers and sellers.

transmission facilities. Pipes used to transport raw or treated water to distribution facilities.

treated water. Water treated to meet drinking water standards.

ultra-low-flush toilet (ULFT). A toilet that uses not more than 1.6 gallons per flush.

unaccounted-for water. The amount of nonaccount water less known or estimated losses and leaks.

uniform rate. A pricing structure for which the dollar amount charged per unit of water (such as dollars per gallon) does not vary with the amount of water usage.

USEPA. United States Environmental Protection Agency

UWCD. United Water Conservation District, Santa Paula, California

universal metering. Metering of all water-service connections.

unmetered water. Water delivered but not measured for accounting and billing purposes.

user class. See customer class.

variable charge. The portion of a water bill that varies with water usage; also known as a commodity charge.

variable cost. Costs associated with water service that vary with the amount of water produced or sold.

water right. A property right or legal claim to withdraw/divert a specified amount of water in a specified time frame for a beneficial use.

wastewater. Water that has been previously used by a municipality, industry, or agriculture and has suffered a loss of quality as a result.

waste water treatment plant (WWTP). A municipal or public service district which provides treatment of collected waste water.

watershed. A regional land area, defined by topography, soil, and drainage characteristics, within which raw waters collect and replenish supplies.

weather-adjusted. Water demand, revenues, or other variables adjusted to a "normal" weather year; also known as weather normalization.

wholesale water. Water purchased or sold for resale purposes.

xeriscape. Landscaping that involves seven principles: proper planning and design; soil analysis and improvement; practical turf areas; appropriate plant selection; efficient irrigation; mulching; and appropriate maintenance.

Appendix B

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 C

Notice of UWMP Hearing and Adoption Resolution

CITY OF SANTA PAULA
MEMORANDUM

To: Honorable Mayor and Members of the City Council
City of Santa Paula Executive Management

From: Brian Yanez, Interim Public Works Director

Subject: **Noticing for Urban Water Management Plan 2010 Update**

Date: April 4, 2011

Notice is hereby given that a public hearing will be held before the City Council of the City of Santa Paula at its regular Council Meeting on June 6, 2011 at 6:30 pm. This City Council Meeting will include, without limitation, discussion on the matter of the City's Urban Water Management Plan 2010 Update.

This notification satisfies requirements of the California Water Code Section 10621(b). The City Council Meeting will satisfy requirements of California Water Code section 10642. Public notification will be posted 10 days before the public hearing. All interested persons are invited to attend, participate, and be heard. The City's Urban Water Management Plan 2010 Update will be available for review before the Council Meeting.

Cc: Gerhardt Hubner, County of Ventura Watershed Protection District
Michael Solomon, United Water Conservation District
Frank Brommenschenkel, Santa Paula Pumpers Association
Harold, Edwards Limoneira Company

NOTICE OF PUBLIC HEARING

Notice is hereby given that on Monday, June 20, 2011, commencing at 6:30 p.m. in the City Hall Council Chambers, 970 E. Ventura Street, the City Council will hold a public hearing on the proposed adoption of the Urban Water Management Plan 2010 Update (UWMP).

California Water Code §§ 10610 to 10656 requires water suppliers to prepare an UWMP to promote water demand management and efficient use in their service areas at least every five (5) years. The UWMP addresses projected water supply and demand over a twenty (20) year period in five (5) year increments. It identifies and quantifies adequate water supplies, including recycled water, for existing and future demands in normal, dry, and drought years, and also lays out a water conservation program to encourage the efficient use of the City's water resources.

All interested persons are invited to be present and be heard at said meeting. Anyone who seeks to challenge the decisions of the City Council in court, with respect to these matters, may be limited to raising only those issues raised at the public hearing described in this notice, or in written correspondence delivered to the City at, or prior to, the public hearing.

A copy of the Urban Water Management Plan 2010 Update will be available for public review in the Office of the City Clerk of Santa Paula located in City Hall at 970 Ventura Street, Santa Paula, California, ten (10) days prior to the hearing.

To be published in the Santa Paula Times on
June 8, 15, 2011.
Publication No. 11-170

RESOLUTION NO. 6748

A RESOLUTION ADOPTING THE URBAN WATER MANAGEMENT PLAN FOR 2010

The City Council of the city of Santa Paula does resolve as follows:

SECTION 1: The City Council finds and declares as follows:

A. California Water Code §§ 10610 to 10656 require water suppliers to prepare an Urban Water Management Plan (UWMP) to promote water demand management and efficient use in their service areas;

B. The city of Santa Paula is the Water Supplier for citizens and businesses of the city of Santa Paula and is required to update, adopt, and submit its UMWP to the California Department of Water Resources at least every five (5) years;

C. The UWMP addresses projected water supply and demand over a twenty (20) year period in five (5) year increments. It identifies and quantifies adequate water supplies, including recycled water, for existing and future demands in normal, dry, and drought years, and also lays out a water conservation program to encourage the efficient use of the City's water resources.

SECTION 2: Pursuant to Water Code §§ 10610 to 10656, the City Council adopts the 2010 Urban Water Management Plan that is attached to this Resolution as Exhibit "A," and incorporated by reference. A copy of the UWMP was available for public review in the City Clerk's office since June 8, 2011.

SECTION 3: The City Clerk is directed to certify the adoption of this Resolution.

SECTION 4: This Resolution will become effective immediately upon adoption.

PASSED AND ADOPTED this 20th day of June, 2011.

Fred W. Robinson, Mayor

ATTEST:

Judy Rice, City Clerk

APPROVED AS TO FORM:

Karl H. Berger, City Attorney

APPROVED AS TO CONTENT:

Jaime M. Fontes, City Manager

Appendix D

Amended and Restated Judgment - United Water Conservation District vs. City of San Buenaventura

RUSSELL M. MCGLOTHLIN (State Bar No. 208826)
BROWNSTEIN HYATT FARBER SCHRECK, LLP
21 East Carrillo Street
Santa Barbara, CA 93101
Telephone: (805) 963-7000
Facsimile: (805) 965-4333

Special Counsel for Santa Paula Basin Pumpers Association

VENTURA
SUPERIOR COURT
FILED
SEP 10 2010
MICHAEL D. PLANET
EXECUTIVE OFFICER and CLERK
BY: JESSICA BROWN, Deputy

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF VENTURA

UNITED WATER CONSERVATION DISTRICT, Plaintiff, vs. CITY OF SAN BUENAVENTURA and DOES 1 through 1,000, inclusive, Defendant. LIMONEIRA COMPANY, ALTA MUTUAL WATER CO., et al., Intervenors, CITY OF SAN BUENAVENTURA, Cross-Complainant, - vs - LIMONEIRA COMPANY, ALTA MUTUAL WATER CO., et al., Cross-Defendants.	CASE NO. CV115611 Assigned for All Purposes to the Hon. Vincent O'Neill Department 40 **AMENDED AND RESTATED JUDGMENT** **(Amended and Restated Judgment Entered August 24, 2010; Original Judgment Entered March 7, 1996)**

BROWNSTEIN HYATT FARBER SCHRECK, LLP
21 East Carrillo Street
Santa Barbara, CA 93101

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RECITALS

(a) Complaint. On or about April 9, 1991, the United Water Conservation District (sometimes "District") filed its Petition for Writ of Mandate and Complaint against the City of San Buenaventura (sometimes "City"). The pleadings alleged a violation of the California Environmental Quality Act with respect to the proposed construction by the City of a new well or wells in the Santa Paula Basin (sometimes "Basin"), the expansion of an existing water conditioning facility, and increased extractions from the City's Saticoy wells. The Complaint further alleged that the Santa Paula Basin was in a condition of overdraft or threatened overdraft, and that the City's proposed production of water therefrom, together with the pumping of others from the Basin, would exceed the safe yield thereof. In its First Amended Petition for Writ of Mandate and Complaint, the District alleged on information and belief that there was no surplus or temporary surplus available in the Basin for appropriation by the City.

(b) Complaint in Intervention. By stipulation and order filed June 18, 1991, pumpers from the Santa Paula Basin were allowed to intervene. By stipulation and order filed February 20, 1996, plaintiffs in intervention were allowed to file a first amended complaint in intervention naming the following Santa Paula Basin pumpers as plaintiff intervenors: Limoneira Company, Alta Mutual Water Company, Inc., Aliso Vista Ranch, Associated Concrete Products, Inc., Farmers Irrigation Company, Inc., Hampton Canyon Ranch, Leavens Ranches, John McConica II, John McGrath & Sons, Nichols Associates, Petty & Petty, Robert L. Pinkerton & Sons, Rancho Attilio, Rancho Filoso, J. M. Sharp Company, Southern Pacific Milling, Thermal Belt Mutual Water Company, Inc., Walking Beam Ranches, We 5 Properties, Randall Axell as Trustee of the Dorothy E. Axell Trust, Basso Properties, Billiwhack Ranch, Frank R. Brucker as Trustee of the Frank R. Brucker Trust, Casa De Oro Ranch, Nola Clow as Trustee of the Monte Clow Estate, Gladys Daily Coffman, Paul R. and Irene Cummings & Sons, Flying-D Ranch, Evergreen Ranch AKA San

Miguel Products, J. J. & H. H. Finch, Galbreaith Brothers, Inc., Gooding Ranch (John F. Gooding), Eva Gregory as Trustee of the Gregory Family Trust, Elizabeth Broome Grether, Ann B. Priske, John S. Broome Jr. as Trustee of the John S. Broome Jr. Trust, Hadley-Williams Partnership, Regents of the University of California, Headley Property Corporation, La Mesa Partnership #1, Fred Malzacher, John R. McConica et al., John R. McConica II et al., Alice C. Newsom as Trustee of the Newsom Family Trust, Nutwood Farms, Roger Orr as Trustee of the Orr Family Trust Panamerican Seed, Pear Blossom Town & Country Market, Inc., Wesley Pinkerton Estate; W. B. Pinkerton Limited Partnership, W. J. Pinkerton Estate Ranch #1 & #2, R. F. Robertson as Trustee of the Robertson Family Trust, Santa Paula Basin Pumpers Association, City of Santa Paula, Saticoy Foods Corp., Frank Silva, John Shores Family Partnership, Shozi Brothers, Tri-Leaf Nursery (Bruce Arikawa), Tucker Ranch, William Wallace, James W. Williams III. Intervenors sought an adjudication of water rights in the Santa Paula Basin.

(c) Answers and Cross-Complaint. On or about September 27, 1991, the City of San Buenaventura answered the first amended pleadings of the District and the Complaint in Intervention, and filed a cross-complaint against Intervenors, alleging that the Santa Paula Basin was not then in a condition of overdraft, that surplus or temporary surplus water was available for appropriation, and seeking a declaration of water rights. Subsequently, answers were filed to the City's Cross-Complaint.

(d) Parties. The plaintiff United Water Conservation District is a public agency duly organized and operating under the provisions of Division 21 of the Water Code of the State of California, Sections 74000 through 76501. The defendant City of San Buenaventura is a charter city of the State of California, situated in the County of Ventura, California. Intervenors all pump water from the Santa Paula Basin and include individuals, trusts, partnerships, corporations, mutual water companies, and the City of Santa Paula, a general law city. Intervenors are all members of the

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Santa Barbara, CA 93101

Santa Paula Basin Pumpers Association (sometimes "Association"), and hereinafter are referred to under those names. The Association and all of its members shall be included within the meaning of a "party" as used in this Judgment, and all motions on behalf of the Intervenors shall be made by and through the Association, unless an Intervenor makes a request to the Association to bring such a motion and the Association refuses, and provided that this provision shall not be used to involve the City or United in the internal affairs of the Association and its members. Any person producing groundwater from the Basin and not a party to the Judgment is referred to herein as a "nonparty".

(e) Settlement Negotiations. All of the parties have an interest in the Santa Paula Basin, and in the proper management and protection of both the quantity and quality of this important groundwater supply. The Basin is a significant water resource in the County of Ventura. Members of the Santa Paula Basin Pumpers Association and the City of San Buenaventura exercise rights to pump water from the Basin for reasonable and beneficial uses. The United Water Conservation District does not produce water from the Basin, but the Basin is located within its boundaries and the District is authorized to engage in groundwater management activities and to commence actions to protect the water supplies which are of common benefit to the lands within the District or its inhabitants. Recognizing the need to work together in order to achieve proper basin management and the protection of all uses against overdraft, the parties have joined in extensive technical studies and settlement negotiations. Much engineering, hydrologic and geologic data not previously known have been collected and analyzed by the United Water Conservation District, and verified by the parties. Included therein are estimates of recent pumping from the Basin. The results of these efforts provide the foundation for this Judgment, although all parties recognize that more data and knowledge based upon continued experience and studies are needed. Such data are included in the Engineering Appendix, and made a part hereof.

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(f) Assumed Initial Yield. Until modified by the full agreement of the Technical Advisory Committee or by Court order, the parties have agreed that the assumed initial yield of the Basin shall be considered to be 33,500 acre-feet annually, which corresponds to the maximum amount of recent pumping. This amount, however, does not necessarily represent the safe yield of the Basin on a long term basis. United believes that the additional monitoring and studies called for in Section 4 will show that the safe yield of the Basin is less than this amount. The Association and the City do not necessarily agree with United in this regard. This Judgment represents the beginning of a program of Basin management, including the regulation of pumping, which is aimed at meeting the reasonable water supply needs of the parties, including protection for historic users, without harm to the Basin. The Judgment is not a determination of water rights, but represents a complete physical solution under Article X, Section 2 of the California Constitution. All pre-existing water rights to groundwater within the Basin held or claimed by any party are hereby settled and defined in terms of the pumping allocations and obligations provided under this Judgment. The respective allocations for each party are expressly set forth in Section 3, subject to modification as provided herein. Any rights to surface water held by the parties are not affected by this Judgment, including but not limited to those rights held by the City of Santa Paula which were the subject of Santa Paula Water Works, et al. v. Julia Peralta (1896) 113 Cal. 38.

(g) Entry of Judgment and Post-Judgment Amendments. The Judgment set forth herein was initially entered by this Court on March 7, 1996. By stipulation and post-Judgment order entered by the Court on August 24, 2010, the Judgment was amended to refine the adopted physical solution to render it better suited for current and future Basin management objectives. The amendments also allow the intervention and joinder of the following persons as parties to this action: The Canine Adoption and Rescue League; Kenneth M. and Joy C. Chapman Family Trust; Joel and Carmen Chavez; George and Rebecca Dabney Trust; Elias and Guadalupe Garcia; Esther

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B. Martinez; Richard T. and Ruth L. Ray; Charles W. Rogers, Jason C. and Aaron W. Rogers; Santa Paula Airport Association, LTD; the Yoon Family Trust; and Wade N. Zimmerman III and Patricia P. Zimmerman 1994 Trust.

DECREE

IT IS HEREBY ORDERED, ADJUDGED AND DECREED:

1. Santa Paula Basin. The boundaries and other relevant features of the Santa Paula Basin are shown upon a map attached hereto as Exhibit "A" and made a part hereof. The Santa Paula Basin is a groundwater basin approximately ten miles in length, extending from an area east of the City of Santa Paula to the Saticoy area on the west. The width of the Basin varies from 2. to 3.5 miles, and the surface area of the Basin contains approximately 13,000 acres. The Basin is traversed along its southerly boundary by the Santa Clara River which is a principal source of replenishment to the Basin. The Basin is also recharged by percolation from Santa Paula Creek and other minor tributaries, from subsurface inflow from the Fillmore Basin, from precipitation, and from return flows from applied water. The Basin contains two distinct aquifer systems. One consists of relatively shallow, unconfined alluvial deposits associated generally with the floodplain of the Santa Clara River. The other is comprised of deeper, confined aquifer systems within the San Pedro Formation. The deepest part of the Basin is approximately 4,000 feet, and approximately 4,900,000 acre-feet of water are contained in storage. Well depths of existing wells vary to a maximum depth of approximately 1000 feet. While there have been periodic declines in water levels within the Basin, the City and the Association agree that the Basin is not currently in a state of overdraft. The groundwater within the Basin, and any extractions thereof, are subject to the Judgment. The parties will operate the Basin and monitor groundwater extractions in conformance with the provisions of the Judgment so as to avoid overdraft and minimize potential adverse impacts. Within the meaning

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of this Judgment, the term Basin does not include surface water as it may exist from time to time in Santa Paula Creek or in the Santa Clara River.

2. Wells Pumping from Basin. The current allocation, party name, and well numbers for the pumping allocations set forth in Paragraph 3(a) are described in Exhibit "B," attached hereto and made a part hereof.

3. Pumping Allocations. Unless and until modified by this Court, the following pumping allocations shall apply:

(a) Members of the Santa Paula Basin Pumpers Association shall have a cumulative allocation to pump on average annually the quantity of acre-feet set forth as the cumulative IPA in Exhibit "B." The cumulative allocation shall be held in trust by the Association for the benefit of the members of the Association, and distributed among the members of the Association as Individual Party Allocation as set forth in Exhibit "B." Each year hereafter, United Water Conservation District shall update Exhibit "B" to reflect any changes in ownership of Individual Party Allocation pursuant to Section 11 and include the revised Exhibit "B" as an attachment to its annual report on the Basin prepared pursuant to the requirements of Section 4. No production may be made by any party pursuant to their Individual Party Allocation unless the party is a member of the Association in good standing. Under no circumstances shall the production by any member of the Association exceed its designated Individual Party Allocation set forth in Exhibit "B," as calculated on a seven-year moving average as provided in Paragraph 3(g), and subject to the provisions of Paragraphs 5(b) and 5(d).

(b) The Technical Advisory Committee shall monitor and annually report the individual and cumulative groundwater production from the Basin. Any party may initiate legal proceedings to compel the joinder of any nonparty that is producing or seeks to produce groundwater from the Basin, and this Judgment shall not be construed to otherwise limit any remedy to which any party

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may be entitled to in accordance with law. Should the Association seek to join any person that is not a party to this Judgment that has produced, or seeks to produce, groundwater from the Basin, the City and United shall provide all reasonable cooperation and assistance to the Association in its effort to join that person as a party to the Judgment.

(c) Water produced pursuant to this allocation shall be applied to reasonable and beneficial uses within the Basin, except for lands located outside of the Basin which are presently supplied with Basin water. Such lands are described in Exhibit "C," attached hereto and made a part hereof. No additional exports shall be allowed. Groundwater supplied to the customers of the City of Santa Paula is not an "export" within the meaning of the Judgment.

(d) To the extent that the City of San Buenaventura pumps water from the Basin at the request of Alta Mutual Water Company for delivery to the Company's customers, such amounts of water shall be charged against the allocation attributable to Alta Mutual Water Company and not against the City's allocation. The City of San Buenaventura shall report annually to the Association the amount of all water delivered from the Basin on behalf of the Alta Mutual Water Company.

(e) The Court finds that production of groundwater by any party of less than five (5) acre-feet per year is not likely to be detrimental to the Santa Paula Basin or cause injury to any interest related to the Basin. Accordingly, a *de minimus* pumping allocation of five (5) acre-feet per year is established per well per parcel. Production pursuant to a *de minimus* pumping allocation shall be distinguished and accounted for separately from Individual Party Allocation, provided that a Party possessing an Individual Party Allocation of less than five (5) acre-feet may produce up to five (5) acre-feet, in which case the difference between five (5) acre-feet and the Party's Individual Party Allocation shall constitute *de minimus* pumping allocation. Further, in the event a landowner that is not a party to this action seeks to pump groundwater from the Basin as a *de minimus* pumper, such landowner shall be required to intervene in the Judgment, and become a member of the

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Association, and shall thereafter be granted a *de minimus* pumping allocation of five (5) acre-feet. A listing of all Parties producing groundwater from the Basin pursuant to a *de minimus* pumping allocation shall be set forth in Exhibit "B." Provided further, any Party may petition the Court pursuant to the Court's reserved jurisdiction set forth in Section 18 to request that the Court interpret, amend or eliminate this Paragraph 3(e) respecting *de minimus* pumping, or to issue any other order, necessary to address alleged injury to the Basin or any party, or any abuse of the *de minimus* pumping allocation afforded by this Paragraph 3(e).

(f) The City of San Buenaventura shall have an allocation to pump on average 3,000 acre-feet annually for distribution in its municipal water supply system, and for reasonable and beneficial uses by its customers. The City's present production is from a well known as Saticoy 2, and in the future its allocation may be pumped in whole or in part from an additional well proposed to be drilled, known as Saticoy 3, the proposed site of which is in the west end of the Basin approximately 1000 yards from Saticoy 2.

(g) The cumulative Individual Party Allocations provided for in Paragraph 3(a), and specifically set forth in Exhibit "B," which are held in trust by the Association, and the City's allocation in Paragraph 3(f), shall be based on calendar years and shall be averaged over seven years commencing on January 1st of each year. Therefore, the parties are not limited to their respective allocations in any single year, but may produce seven times their average annual allocations over the seven-year period. The applicable seven year period shall be the immediately preceding seven calendar years. In the event reductions in allocations are required pursuant to Section 6, the reductions shall be implemented prospectively so that any portion of a party's unused allocation accrued during the immediately preceding seven year period is not lost or forfeited. Pumping within these allocations may occur from present wells, from replacement wells, or from new wells.

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(h) Upon review of the Technical Advisory Committee, the Association and the City may agree in writing to permit extractions from the Basin in addition to the pumping allocations set forth in this Section 3, either in view of hydrologic conditions in the Basin, or to meet specific individual needs, or as part of a program to determine whether surplus water exists, and if so, to what extent.

4. Basin Monitoring and Studies. A Technical Advisory Committee shall be formed with equal representation from the United Water Conservation District, the City of San Buenaventura, and the Santa Paula Basin Pumpers Association. Appointments to the Technical Advisory Committee shall be in the discretion of the respective parties, but at least one representative of each party shall have technical qualifications appropriate to the tasks of the Technical Advisory Committee. To the extent possible, the Technical Advisory Committee shall work by consensus. Disputes may be resolved on motion to the Court brought by any of the parties, or through independent arbitration, provided that an effort is first made to resolve the matter in accordance with the provisions of Paragraph 18(d). The Technical Advisory Committee shall monitor conditions in the Basin, including but not necessarily limited to verification of future pumping amounts, measurements of groundwater levels, estimates of inflow to and outflow from the Basin, increases and decreases in groundwater storage, and analyses of groundwater quality. In addition, the Technical Advisory Committee shall undertake or cause to be made studies which may: assist in determining the amount of water which can be taken from the Basin without causing overdraft; assist in determining whether surplus or temporary surplus water exists, and if so, to what extent; identify additional replenishment sources for the Basin; develop programs for the conjunctive use and operation of the Basin; and provide such other information as may be useful in developing a management plan for operation of the Basin. The Technical Advisory Committee shall also consider and attempt to agree upon the safe yield of the Basin. The United Water

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Conservation District shall have the primary responsibility for collecting, collating and verifying the data required under the monitoring program, and shall present the results thereof in annual reports to the Technical Advisory Committee.

5. Future Pumping. Any party, or the Technical Advisory Committee if it is in full agreement, may seek to have the Court review the assumed initial yield agreed to in Paragraph (f) of the Recitals above, and the pumping allocations provided in Paragraphs 3(a) and 3(f), and to determine the safe yield of the Basin. If no such review is sought, these pumping allocations shall remain in effect until further order of the Court.

(a) Any party or the Technical Advisory Committee seeking such a review and determination shall file with the Court as part of its motion a written report including its recommendation and the data in support thereof. The report may recommend that the assumed initial yield of 33,500 acre-feet annually be adjusted either upward or downward, or otherwise modified. The Court shall conduct a hearing on the recommendation. The parties' Stipulation to use an assumed initial yield of 33,500 acre-feet annually for the first seven years shall have no bearing on any party's right to seek a safe yield determination that is either greater or less.

(b) If the Court finds that the safe yield of the Basin is greater than 30,500 acre-feet annually, or that temporary surplus may exist under certain conditions, the City of San Buenaventura and the Santa Paula Basin Pumping Association may both apply to increase their respective pumping allocations, and the Court relying upon established principles of water law, shall determine how the additional water shall be allocated.

(c) If the Court finds that the safe yield of the Basin is less than the total pumping allocations provided in Paragraphs 3 (a) and 3(f), then the pumping allocations of the parties shall be reduced in accordance with Section 6, unless the Court finds that certain practical measures may be taken that will prevent harm to the Basin or to existing users.

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(d) If either the Technical Advisory Committee or any party recommends a more flexible management plan for the operation of the Basin, the Court shall have authority after a noticed hearing to modify the pumping allocations of the parties, provided that any such modifications will promote the more efficient use of the groundwater supply, will not result in overdraft or harm to the existing users, and will not modify the priorities identified in Section 6.

6. Overdraft. Upon motion and hearing as provided in Paragraph 5(a), if the Court finds that the safe yield of the Basin is less than the total pumping allocations provided in Paragraphs 3 (a) and 3(f), reductions in pumping shall be required in the following order of priority:

(a) Stage 1. The cumulative pumping allocation of the Santa Paula Basin Pumpers Association set forth in Paragraph 3(a) shall be reduced by 500 acre-feet annually, such reduction reflecting reasonable conservation that can be achieved.

(b) Stage 2. The pumping allocation of the City of San Buenaventura set forth in Paragraph 3(f) shall be reduced to 1,141 acre-feet annually to reflect the City's annual historical maximum production prior to commencement of this action.

(c) Stage 3. The remaining pumping allocations of the parties shall be further reduced simultaneously as follows: (i) the Santa Paula Basin Pumpers Association's cumulative annual allocation set forth in Paragraph 3(a), as reduced to reflect any allocation acquired by the City of San Buenaventura from Association members pursuant to Section 11, or otherwise, shall be reduced by 2,000 acre-feet, and (ii) the City of San Buenaventura's allocation set forth in Paragraph 3(f) shall be reduced to 641 acre-feet annually.

(d) Stage 4. The remaining pumping allocations of the parties shall be further reduced simultaneously as follows: (i) the Santa Paula Basin Pumpers Association's cumulative annual allocation set forth in Paragraph 3(a), as reduced to reflect any allocation acquired by the City of San Buenaventura from Association members pursuant to Section 11, or otherwise, shall be reduced

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by 120 acre-feet, and (ii) the City of San Buenaventura's allocation set forth in Paragraph 3(f) shall be reduced to 481 acre-feet annually.

(e) Stage 5. The City of San Buenaventura's allocation set forth in Paragraph 3(f) shall be reduced to zero.

(f) Stage 6. The, remaining pumping allocation of the Santa Paula Basin Pumpers Association set forth in Paragraph 3(a) shall be reduced by whatever amount is required to bring production into balance with the safe yield of the Basin.

(g) The cumulative Individual Party Allocation acquired by the City pursuant to Section 11 below, or otherwise, shall be reduced pursuant to Paragraph 6(h) below. The timing of the Stage 1 through 6 reductions above shall be determined by the Court, allowing sufficient time between stages to determine whether any further cutbacks are necessary. The Technical Advisory Committee shall attempt to develop a trigger, perhaps based upon water levels, to determine when overdraft is deemed to commence and reductions in pumping are required. In the event the Technical Advisory Committee is unable to agree upon such a trigger, the issue of the commencement of overdraft, and required reductions in pumping, shall remain within the jurisdiction of the Court, to be decided upon motion of any party.

(h) When reductions are in effect for the Association as set forth in this Section 6 (i.e., the cumulative authorized production by the members of the Association pursuant to this Section 6 is less than the annual quantity of acre-feet set forth as the cumulative Individual Party Allocation in Exhibit "B") then: (i) the reductions required of the Association shall be distributed proportionately among all Association members, with each member required to assume the same percentage reduction to their respective Individual Party Allocation (except for those members producing no more than the *de minimus* pumping allocation set forth in Paragraph 3(e) above); and (ii) the cumulative total of any allocation acquired by the City of San Buenaventura from Association

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members pursuant to Section 11, or otherwise, since the issuance of this Judgment, shall be reduced proportionately by the same percentage reduction then required by the members of the Association.

7. Emergency Pumping. Notwithstanding the provisions of Paragraphs 3(f), 5(c) and Section 6, and in addition to the amounts available thereunder, the City of San Buenaventura shall have the right, under the conditions hereinafter set forth, to pump water from the Basin during an emergency in order to reasonably supply public needs. Before this Section 7 applies, the City shall first meet its needs from any supplies that are reasonably available from City sources other than the Basin. The rights under this Section 7 shall apply only so long as an emergency exists.

(a) An emergency causing a water shortage may result from a sudden and unexpected occurrence such as fire, flood, earthquake, contamination, systems failure, or extraordinary peak demand, hereinafter referred to as a Class I Emergency. An emergency may also result from a long-term drought situation affecting especially the City's surface water supplies, hereinafter referred to as a Class II Emergency.

(b) The City shall have the right to pump up to 300 acre-feet annually under a Class I Emergency provided that it gives prompt notice to the parties and the Technical Advisory Committee. Such notice shall include a description of the emergency, an explanation of the unavailability of other non-Basin supplies, the expected duration of the emergency, and an estimate of the amount of water required. Any party by motion may challenge the City's pumping under this emergency provision, and if successful, the amount of water pumped under the claim of emergency shall be charged against the City's pumping allocation. The City may pump more than 300 acre-feet annually under a Class I Emergency with the full approval of the Technical Advisory Committee or by order of Court. The City shall not be required to give more than 72 hours notice of any motion seeking Court approval for additional emergency pumping.

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(c) The City shall be required to obtain full approval of the Technical Advisory Committee or the Court prior to any emergency pumping under a Class II Emergency. As a prerequisite to any such approval, the City must have in force drought conservation measures at least as stringent as those required in Resolution No. 90-16 adopted February 26, 1990, and in Ordinance No. 90-3 adopted March 20, 1990, as amended. There shall be no limit on the amount of water used for such Class II Emergency, provided: that the City render annual reports to the Court and parties concerning its past and projected use of emergency water; that the City mitigate all adverse impacts upon Intervenors, or any of them, caused by the City's emergency pumping; and provided that if the Intervenors, or any of them, should be required to reduce their respective Individual Party Allocations in order to allow the City to pump emergency water under this Paragraph 7(c), the City shall pay the actual damages suffered by such Intervenors. Any such damages shall be determined by the Court under its continuing jurisdiction, and no claim under Government Code, Sections 900 et seq. shall be required.

8. Local Well Interference. The City's Saticoy 2 well is located in close proximity to two wells identified as 2N 22W 02 K02 and 2N 22W 02 K08 (Wittenberg-Livingston Inc.), and is about 400 feet away from Alta Mutual Water Co. Well No. 9, and about 2,600 feet away from the Grether Well 35Q-02. The City of San Buenaventura's proposed Saticoy 3 well is proposed to be drilled in the same locality, and would be about 1,800 feet away from the Grether Well. In the event that production from either or both of these City wells causes unreasonable interference with production from any of the wells herein identified, the City shall mitigate such impacts. Mitigation may include, but shall not be limited to, scheduling pumping so as to avoid interference, paying the cost of lowering the bowls in or deepening the affected wells, or producing water from City wells for use by the owners of such affected wells at costs the owners might otherwise have incurred. Any water produced from the Basin by the City for the benefit of such owners shall be charged

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against the Individual Party Allocation possessed by the party to which the City delivers substitute water. Nothing herein shall preclude any party from seeking relief against any other party for unreasonable well interference.

9. Association Enforcement of Individual Party Allocations. The Association shall monitor and enforce compliance with the production limitations inherent in its members' Individual Party Allocations set forth in Exhibit "B" subject to accounting pursuant to the seven-year moving average set forth in Paragraph 3(g) above. The Association may petition this Court to enforce compliance with the production limitations inherent in its each member's Individual Party Allocation, and to seek all appropriate declaratory and injunctive relief regarding the same. The Court may allow the Association its reasonable costs for such court petition, including attorney's fees.

10. Association Assessments. The Association may levy assessments upon each party possessing an Individual Party Allocation from time to time and as necessary to meet the Association's current and anticipated expenses to fulfill its activities in relation to the Basin and as the trustee for the Individual Party Allocations set forth in Paragraph 3(a) and Exhibit "B." Such assessments shall be levied in amounts proportionate to each party's Individual Party Allocation in relation to the total of all Individual Party Allocation set forth in Exhibit "B." Each assessment shall be due on or before thirty (30) days after written notice of the levy of assessment from the Association, and payment of the assessment shall be the obligation of the party identified by the Association as the beneficiary of the Individual Party Allocation at the time written notice of the levy of assessment is made. Any delinquent assessment shall be subject to a 5% penalty plus interest of 0.5% per month on the amount of the delinquency. The Association may petition this Court to collect such delinquent assessments and/or seek injunctive relief against the delinquent

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party. The Court may allow the Association its reasonable costs for such court petition, including attorney's fees.

11. Transfers. Transfers of Individual Party Allocations shall be governed by this Section 11. Subject to the requirements and restrictions of Paragraphs 11(a) through 11(j) herein, any party may transfer all or a portion of its Individual Party Allocation as set forth in Exhibit "B," or as subsequently determined by the Court, to any other party, on an annual or permanent basis, together with or separately from the parcel of land upon which its Individual Party Allocation is produced.

(a) De Minimus Allocations May Not Be Transferred. A party that obtained a *de minimus* allocation pursuant to Paragraph 3(e) above (i.e., an allocation not based in historical production prior to the entry of the original Judgment in 1996) may not transfer any of said *de minimus* allocation.

(b) Automatic Transfers with Land Conveyances; Notice to the Association and Technical Advisory Committee. With respect to a conveyance of a fee interest to a parcel of land that includes a well listed in Exhibit "B" to the Judgment, and to the extent an Individual Party Allocation then exists for the benefit of such parcel, the associated Individual Party Allocation shall automatically transfer to the successor unless the deed, or comparable instrument, conveying such parcel expressly excludes the Individual Party Allocation from the conveyance and provides that the Individual Party Allocation is retained by the conveying entity. Within thirty (30) days of the conveyance of such parcel, the successor in interest to such parcel shall provide written notice to the Association and the Technical Advisory Committee of the transfer of the parcel, and the transfer of the Individual Party Allocation, if applicable.

(c) Transfers of Individual Party Allocations without Land Conveyance. Individual Party Allocations may be permanently transferred without or separately from a conveyance of the

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parcel containing the well listed in Exhibit "B" to the Judgment that is associated with the prior use of the Individual Party Allocation. However, to ensure that all persons acquiring a future interest in such well parcel are provided constructive notice of the prior transfer of the Individual Party Allocation, such independent transfers of Individual Party Allocation shall only be deemed effective upon the recording of a water rights deed against the well parcel with the Ventura County Recorder in a form substantially similar to the example provided in Exhibit "D," and subsequent delivery of a copy of the recorded water rights deed to the Association and the Technical Advisory Committee.

(d) Permanent Transfer of Full Individual Party Allocation. If a party's full allocation is permanently transferred separately from a conveyance of a fee interest to a parcel of land that includes a well and allocation listed in Exhibit "B" to the Judgment as permitted by Paragraph 11(c), the recipient transferee shall take all steps necessary to ensure destruction of any water supply wells (in accordance with County of Ventura well destruction standards) located on the transferring party's parcel containing the well listed in Exhibit "B" to the Judgment that is associated with the prior use of the Individual Party Allocation. Further, the water rights deed required by Paragraph 11(b) shall include a covenant prohibiting the future extraction of groundwater from the parcel, unless Individual Party Allocation is acquired for the benefit of that parcel through subsequent transfer.

(e) Terms of the Judgment Apply. Any transfer shall be subject to all provisions of the Judgment, and any transferee or successor in interest not a party to the action shall be required to intervene and join as a party in order for the transfer to be effective.

(f) Prior Written Notice to the Technical Advisory Committee Required. An Individual Party Allocation may be temporarily transferred on an annual or permanent basis, but such transfers shall only be deemed effective upon provision of written notice to the Association and the Technical Advisory Committee. Annual transfers shall become effective immediately upon notice to the

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Technical Advisory Committee. For all other transfers except with respect to transfers in conjunction with a conveyance of a fee interest to a parcel of land that includes a well and allocation listed in Exhibit "B" to the Judgment, any party proposing to transfer an Individual Party Allocation pursuant to this Section 11, shall provide thirty (30)-day advance written notification to the Technical Advisory Committee, and specifically to the designated representative of each member of the Technical Advisory Committee. The proposed transfer shall become effective 30 days after the original written notification if neither the TAC nor any of its members request an additional 30-day review period as provided below. The TAC or any one of its members may request an additional 30 days for review of the proposed transfer to evaluate potential injury to the Basin or any party as a result of the proposed transfer. The proposed transfer shall become effective at the end of this additional 30-day period unless any party files a petition with the Court pursuant to Section 18 challenging the transfer based upon alleged injury to the Basin or any party.

(g) Permanent Transfers within the City of San Buenaventura's Sphere of Influence. Except with respect to annual transfers, any party who seeks to transfer its Individual Party Allocation from property that is located within the City of San Buenaventura's sphere of influence shall also provide the City with thirty (30)-day prior written notification in order to enable the City to inform the party of any applicable ordinance or regulation that may affect the property should the party seek to develop the property or to annex the property to the City. The notice required by this paragraph may be the same notice provided to the City pursuant to paragraph 11(f) above, and the thirty (30) day period provided for in this paragraph shall run concurrently with the initial thirty (30) day notice period set forth in paragraph 11(f) above.

(h) Record Keeping. The Technical Advisory Committee, in conjunction with the Association, shall maintain a current list of: (i) all Individual Party Allocations set forth in Exhibit "B," including the well number from which each Individual Party Allocation is produced, and (ii)

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the City of San Buenaventura's allocation set forth in Paragraph 3(f), together with the quantity of annual and seven-year average production by each party.

12. Storage of Water. Artificially recharged water may be stored within the Basin's available storage space provided that the following conditions are satisfied:

(a) The water to be stored is imported, or is reclaimed or native water that would otherwise waste to the ocean or would not replenish the Basin under natural conditions.

(b) The storage program is approved in advance by the full agreement of the Technical Advisory Committee.

(c) The storage program will not adversely impact the water quality of the Basin.

(d) The storage program will not cause injury to any vested rights.

(e) In the event the storage of water causes the Basin to spill (i.e., discharge out of the Basin or cause the Basin to reject natural recharge), the first water lost from the Basin shall be deemed to be the stored water; and title to water stored underground pursuant to this Section 12 shall be retained by the storing party, and the stored water less losses may be pumped in addition to the pumping allocations, provided no injury is caused to any Intervenor or party.

13. Forfeiture. It is in the interest of sound Basin management that no party be encouraged to take or use more water than is actually required. Failure to produce all of the water to which a party is entitled under this Judgment shall not, in and of itself, be deemed to constitute an abandonment or forfeiture of such party's right, either in whole or in part. Abandonment, forfeiture or extinction of any pumping allocation or right decreed herein shall occur only upon written election filed by the party, or upon motion filed by any party or the Technical Advisory Committee, and after hearing thereon. in either case, such loss of right shall be expressly confirmed by order of this Court.

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14. Inter-Basin Litigation. In the event of future litigation between any party to this action and water users or water rights holders in basins contiguous or adjacent to the Basin, the parties hereto shall exercise good faith cooperation to preserve and protect their collective pumping allocations settled and determined under this Judgment.

15. Injunction. The parties and each of them, and their agents, successors and assigns, are enjoined from extracting any more water from the Santa Paula Basin than is permitted under this Judgment, and from otherwise violating the terms hereof.

16. CEQA Dismissal. The causes of action brought by the United Water Conservation District alleging violations of the California Environmental Quality Act are hereby dismissed.

17. Costs and Attorney Fees. Each party shall bear its own costs and attorney fees.

18. Continuing Jurisdiction. Full jurisdiction, power and authority are retained and reserved by the Court for the purpose of enabling the Court, upon motion of any party and after hearing thereon:

(a) to make such further or supplemental orders or directions as may be necessary or appropriate for the interpretation, enforcement or carrying out of this Judgment;

(b) to determine any dispute between or among the parties concerning the Judgment; and

(c) to modify, amend or amplify any of the provisions of this Judgment whenever in the Court's opinion a substantial change in circumstances, or experience under the Judgment, or the results of new data and studies, justify or require such modification, including modification of the safe yield of the Basin and the pumping allocations, as provided in Section 5.

(d) Other than for transfers, as provided for in Section 11, prior to any party or the Technical Advisory Committee filing a motion for judicial review or dispute resolution under this Judgment, the party shall provide written notice of its intention, together with a brief summary of the basis for the request, to United, the City and the Association. Upon receipt of such request and

BROWNSTEIN HYATT FARBER SCHRECK, LLP
21 East Carrillo Street
Santa Barbara, CA 93101

within 30 days from the date of the notice, United, the City and the Association shall meet to attempt promptly to resolve the dispute without resort to judicial action. This provision shall not apply in the event of an emergency, either Class I or Class II.

Dated: August 24, 2010

Hon. ~~Vincent O'Neil~~ Glen M. Reiser
Judge of the Superior Court

BROWNSTEIN HYATT FARBER SCHRECK, LLP
21 East Carrillo Street
Santa Barbara, CA 93101

Exhibit C-1-a

BOUNDARY OF SANTA PAULA GROUNDWATER BASIN SETTLEMENT

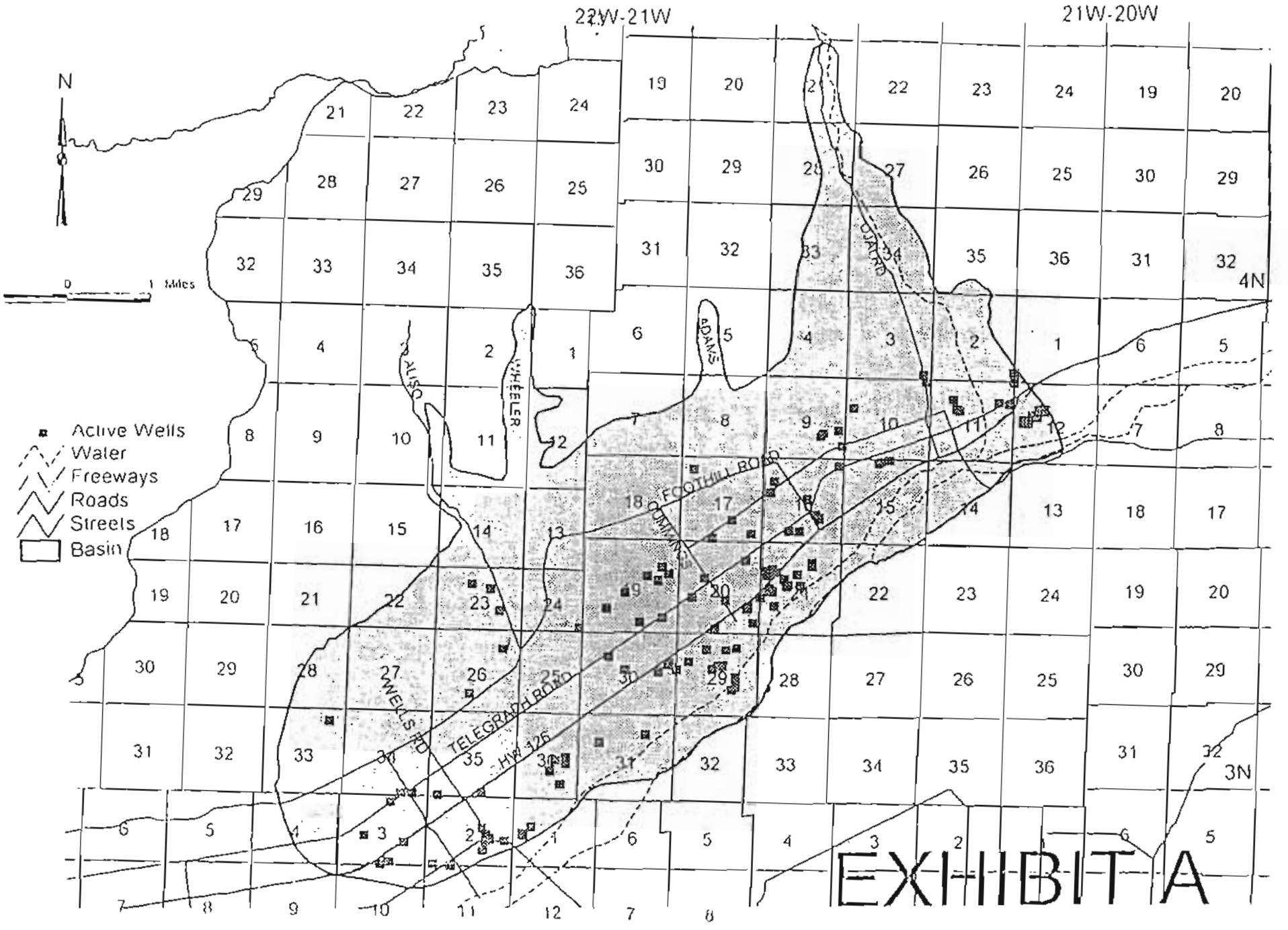


EXHIBIT A

Exhibit C-1-b

EXHIBIT "B"

Table "A" Santa Paula Groundwater Basin Individual Party Allocations

7/2/2010

Acre Feet	Party Name	Well Number	Predecessor	Acre Feet	Successor	Acre Feet	Contact Person	Default SPBPA Dues
0.0	ABC Rubarb Farms	03N/21W-16P01			Bender Reality Ltd	31.1		
1.8	Aliso Vista Ranch	03N/22W-23Q01					Ron Hendren	
0.0	Alsono, Andrew	03N/21W-21M01			Minero Gilberto	1.1		
758.1	Alta Mutual Water Company, Inc.	02N/22W-02K07					Roger Orr	
2.9	Arambula, Pedro	03N/21W-21E02	Wallace, William	2.9			Pedro Arambula	
0.0	Associated Concrete Products,	3N/21W-29K03 D			Utility Vault	5.8		
0.0	Axell, Randall as Trustee of the Dorthey E. Axell Trust	3N/21W16P02, 3N/21W16P03			Bender Reality Ltd	362.3		
43.4	Basso Properties	03N/21W-09J01					James L. Basso	
31.1	Bender Farms	03N/21W-16P01	ABC Rhubarb Farms	31.1			Ilan Bender	
507.1	Bender Reality LTD	3N/21W16P02, 3N/21W16P03	Axell, Randall as Trustee of the Dorothy E. Axell Trust	362.3			Ilan Bender	
		03N/21W-17R01	La Mesa Partnership #1	144.8				
100.8	Billiwhack Ranch	03N/22W-23F02			OBA Family Trust dtd 12-22-92	7.9	C. E. Held	
					Held. Family Trust dtd 1-16-03	7.9		
					Held, Joann	44.8		
0.0	Birky, Angie E. Trustee	3N/21W-10E01	Pear Blossom Town & Country Market, Inc.	33.1	Wolfang Van Cmielewski, Wolfang	33.1		
0.0	Brucker, Frank R. as Trustee of the Frank R. Brucker Trust	03N/21W-29E1, 3N/21W-29C3			Brucker Family Trust	121.8		
176.5	Brucker Family Trust	3N/21W-19Q1	New Allocation, 2010	54.7			Michael Brucker	
		03N/21W-29E1, 3N/21W-29C3	Frank R. Brucker as Trustee of the Frank R. Brucker Trust	121.8				
1.1	Canine Adoption and Rescue	03N/21W-29B02	Lassich, Madeline	1.1			Sharon Clark	
673.0	Canyon Irrigation Company	03N/21W-11F03, 3N/21W-11E3, 3N/21W-11F4	Santa Paula, City of	673.0			Peter T. Fallini	
99.3	Casa De Oro Ranch	03N/21W-20F01					Jerry Friedrich	
50.7	Castaneda, Albert and Mary	03N/21W-19L01	Eva Gregory as Trustee of the Gregory Family Trust	50.7			Albert Castaneda	
97.0	Coffman, Laura K. McAvoy, Successor Trustee of the Gladys Daily Coffman Trust dated June	03N/22W-35N01					Laura K McAvoy	
5,483.3	City of Santa Paula	03N/21W-21B03	John R. McConica II et al.	70.8			Public Works Director	
		3N/21W-9R5, 03N/21W-11J02, 03N/21W-15C06, 03N/21W-16A02, 3N/21W-16A3			Canyon Irrigation Company	673.0		
93.6	Clow, Nola as Trustee of the Monte Clow Estate	3N/21W20J04	New Allocation, 2010	60.0			Roger Clow	
		03N/21W-20A02						
0.0	Conklin, Patricia	03N/21W-21D02			Zimmerman, Wade & Patricia B	2.7		

EXHIBIT "B"

Table "A" Santa Paula Groundwater Basin Individual Party Allocations

7/2/2010

Acre Feet	Party Name	Well Number	Predecessor	Acre Feet	Successor	Acre Feet	Contact Person	Default SPBPA Dues
172.2	County of Ventura, General Services Agency	03N/21W-29E01, 03N/21W-30H08, 3N/21W-30H02					Paul S. Grossgold	
131.0	County of Ventura, General Services Agency	02N/22W-02G01					Paul S. Grossgold	
0.0	Cummings, Paul R. and Irene & Sons	03N/21W-19L01			Jamie L. Santana Family Trust	50.7		
282.3	Campbell Dan	03N/21W-19R01	Evergreen Ranch AKA San Miguel Products	282.3			Peter T. Fallini	$20,622
9.6	Dabney, George & Rebecca Trust Inter Vivos	3N/22W-26B1	New Allocation, 2010	9.6				
321.2	Dickenson, D&P Dickenson Family Revocable Trust, Louise Dickenson, Bruce E. Dickenson, Virginia Dickenson, Reed and	03N/21W-10M01	Flying-D Ranch	321.2			Bruce Dickenson	
0 9	Dominguez, G.	03N/21W-12E07						
0.0	Evergreen Ranch AKA San Miguel Products	03N/21W-19R01			Campbell, Dan	282 3		
9,913.2	Farmers Irrigation Company, Inc.		Southern California Edison Co	9.5			Peter T. Fallini	
		03N/21W-09R04, 03N/21W-12E04, 03N/21W-12E08, 03N/21W-12F03, 03N/21W-16K01, 03N/21W-16K02, 03N/21W-16K03, 03N/21W-19H07, 3N/21W-19G4, 3N/21W-12F6						
		03N/21W-15C02, 03N/21W-15C04	Thermal Belt Mutual Water Company	497.3				
201.4	Finch, J.J. & H.H.	03N/22W-34Q02					Jim Finch	
0.0	Galbreaith Brothers, Inc.	03N/21W-17Q01			Jamie L. Santana Family Trust	78 4		
9.6	Garcia, Elias & Guaelupe	3N/22W-26B1	New Allocation, 2010	9.6				
42.8	Gilbert, Patricia L., Trustee of the Gilbert Family Survivor's	03N/21W-16E01	La Mesa Partnership #1	42.8			Patricia L. Gilbert	
101.8	Gooding Ranch (John F.	03N/21W-09K02					John F Gooding	
0.0	Gregory, Eva as Trustee of the Gregory Family Trust				Jamie L. Santana Family Trust	50.7		
97.6	Grether, Elizabeth Broome, Ann B. Priske, John S. Broome Jr. as Trustee of the John S. Broome	03N/22W-35Q02					John S. Broome	
129.2	Hadley-Williams Partnership	02N/22W-03E01					James W. Williams	
21.9	Hampton Canyon Ranch	03N/21W-19A02					Robert G. Leslie	

EXHIBIT "B"

Table "A" Santa Paula Groundwater Basin Individual Party Allocations

7/2/2010

Acre Feet	Party Name	Well Number	Predecessor	Acre Feet	Successor	Acre Feet	Contact Person	Default SPBPA Dues
7.9	Held, Family Trust dtd 1-16-03	03N/22W-23F02	Billiwhack Ranch	11 9			Joann Held	
44.8	Held, Joann	03N/22W-23F02	Billiwhack Ranch	40 8			Joann Held	
0.0	Juanamaria Land Company	02N/22W-03E01	City of San Buenaventura	220.0				
37.5	Kimura, Albert	03N/21W-11H03						
0.0	Kimura, Tama	03N/21W-11H01			The McGaelic Group	55.9		
0.0	La Mesa Partnership #1	3N/21W-17R01			Twyford	101.2		
					Bender Reality LTD	144 8		
					McGaelic Group	180.7		
0.0	Lassich, Madeline	03N/21W-29B02			Canine Adoption and Rescue League	1.1		
297.0	Leavens Ranches	03N/22W-24R01, 2N/22W-3F2					Leslie Leavens-Crowe	
3,611.2	Limoneira Company	03N/21W-01N02, 03N/21W-02Q01, 03N/21W-02R02, 03N/21W-19G02, 03N/21W-30F01, 03N/21W-30H04, 03N/21W-31E03, 3N/21W-31L2					Harold Edwards	
		03N/21W-11A01	Newsom, Alice C. as Trustee of the Newsom Family Trust	138.1				
		See Limoneira	Wittenberg-Livingston Inc.*	300.0	Rancho Attilio			
6.0	Little Clara Ranch LLC	3N22W34E01	Wittenberg-Livingston Inc.*	3.0	Rancho Attilio		Rob Brokaw	
		3N22W34E01	Southern California Edison Co	3.0				
36.3	Malzacher, Fred H. & Elaine C., Trustees of the Fred H. Malzacher and Elaine C.		New Allocation, 2010	33.1			Fred H Malzacher	
		03N/21W-21G03	Malzacher, Fred	3.2				
34.3	Martinez, Esther	3N21W-29G02	New Allocation, 2010	34.3				
24.7	McConica, John II	2N/22W-3Q1					John McConica	
	McConica, John R. et al.	3N/21W21B3			City of San Buenaventura	5.8	John McConica	
	McConica, John R. II et al.	03N/21W-21B03			City of Santa Paula	70.8		
180.7	McGaelic Group	03N/21W-17R01	Tama Kimura	55.9			Beverly C Gutierrez	
101.9	McGrath, John & Sons	03N/21W-21E05, 3N/21W-21E11,					Tim McGrath	
0.0	Newsom, Alice C. as Trustee of the Newsom Family Trust	03N/21W-11A01			Limoneira Company	138 1		
46.7	Nichols Associates	03N/22W-36H01, 03N/22W-36H02					Ron Nichols	
126.4	Nutwood Farms	03N/22W-36J01, 3N/22W-36J3					Samuel C Myer	
7.9	OBA Family Trust dtd 12-22-92	03N/22W-23F02	Billiwhack Ranch	7.9			Ron Oba	

EXHIBIT "B"

Table "A" Santa Paula Groundwater Basin Individual Party Allocations

7/2/2010

Acre Feet	Party Name	Well Number	Predecessor	Acre Feet	Successor	Acre Feet	Contact Person	Default SPBPA Dues
193.9	Orr, Roger as Trustee of the Orr Family Trust	03N/21W-20J03, 3N/21W-20J2					Roger Orr	
38.6	Ortiz Trust - Joseph & Sons	03N/21W-30E01	Tri-Leaf Nursery (Bruce Arikawa)	8.8			Joe Ortiz	
		3N/21W-30E2, 3N/21W-20H1	New Allocation, 2010	29.8				
410.3	Panamerican Seed, aka Ball Horticultural	03N/21W-20K01, 03N/21W-20M01, 03N/21W-20P02, 3N/21W-20F4	Panamerican Seed	410.3			Richard W. Brandon	
	Pear Blossom Town & Country Market, Inc.	03N/21W-10E01, 3N/21W-10E2			Angie E Birky Trustee	33.1		
116.0	Petry Ranch LP	03N/22W-36K04, 3N/22W-36K6	Petry & Petty	116.0			Don E. Petty Jr.	
62.1	Pinkerton, Dan C. and Susan V. Pinkerton, Co-Trustees of the	03N/21W-17P02	Robert L. Pinkerson & Sons	62.1			Dan Pinkerton	
39.1	Pinkerton, Arlene	3N21W17Q01	Pinkerton, W. B. Limited Partnership	39.1				
61.9	Pinkerton, Murray	03N/21W-21E01	Pinkerton, Wesley Estate	61.9				
0.0	Pinkerton, W. B. Limited	3N21W17Q01			Pinkerton, Arlene	39.1	Arlene Pinkerton	
291.2	Pinkerton, W. J. Estate Ranch #1 & #2	03N/21W-16E02, 3N/21W-29B4					Robert C. Pinkerton	
0.0	Pinkerton, Wesley Estate	03N/21W-21E01			Pinkerton, Murray	61.9	Murray Pinkerton	
0.0	Rancho Attilio	2N/22W-2Q01			Wittenberg-Livingston, Inc.	327.8		
					Vanoni, David or Mary - Mary Vanoni	8.0		
119.6	Rancho Filoso, LLC	03N/21W-09K03, 3N/21W-9K4					Anita Tate	
0.1	Ray, Richard T and Ruth L.	03N/22W026P01	Ray, Richard	0.1			Richard Ray	
23.1	Regents of the University of	3N/22W-34R1					Doug Peters	
763.5	Riverbank Citrus, LLC	3N/22W-36K7, 3N/22W-36Q1	Headley Property Corporation	763.5			Rhett L. Searcy	
0.0	R.F Robertson as Trustee of the Robertson Family Trust	03N/21W-17Q01			Santana Jamie. L. Family Trust	39.1		
168.2	Santana, Jamie, L. Family Trust	03N/21W-19L01	Cummings, Paul R. and Irene & Sons	50.7			Jamie Santana	
		03N/21W-17Q01	R.F. Robertson as Trustee of the Robertson Family Trust	39.1				
		03N/21W-17Q01	Galbreaith Brothers, Inc.	78.4				
134.0	Saticoy Foods Corp	03N/21W-30H03, 3N/21W-30H6, 3N/21W-30H9					Jerry Hensley	
167.3	Sharp, J. M. Company	03N/21W-19M01					Greg Patterson	
126.7	Shores, John Family Partnership	03N/21W-20J04, 3N/21W-20R2					Tim McGrath	
66.2	Shozi Ventura, LLC	02N/22W-03B01	Shozi Brothers	66.2			Dennis Schozi	
108.6	Silva, Frank	02N/22W-01M03, 02N/22W-01M04						$7 924

EXHIBIT "B"

Table "A" Santa Paula Groundwater Basin Individual Party Allocations

7/2/2010

Acre Feet	Party Name	Well Number	Predecessor	Acre Feet	Successor	Acre Feet	Contact Person	Default SPBPA Dues
0.0	Southern California Edison Co.	3N/22W-27M02 D			Farmers Irrigation Company, Inc.	9.5		
					Little Clara Ranch LLC	3.0		
55.9	The McGaelic Group	03N/21W-11H01					Beverly C Gutierrez	
107.5	The Nature Conservency	3N/21W29K1, 03N/21W-29K02	Southern Pacific Milling	107.5			Rich Hadley	
0.0	Thermal Belt Mutual Water Company, Inc.	03N/21W-15C02, 03N/21W-15C04			Farmers Irrigation Company, Inc.	497.3		
0.0	Tri-Leaf Nursery (Bruce Arikawa)	3N/21W-30E01			Ortiz Trust - Joseph & Sons	8.8		
68.0	Tucker Ranch	02N/22W-03K02, 2N/22W-3K3					Kathleen Gisler	
101.2	Twyford Plant Laboratories, Inc	03N/21W-17R01	La Mesa Partnership #1	101.2				
5.8	Utility Vault	3N/21W-29K03 D	Associated Concrete Products, Inc.	5.8			Linda Gerardy	
8.0	Vanoni, David and Mary	02N/22W-02Q01	Rancho Attilio	8.0			David Vanoni	
13.0	Walking Beam Ranches	03N/21W-19G03					Ralph B. Bush	
0.0	Wallace, William	3N/21W-21E01			Arambula, Pedro	2.9		
9.8	We 5 Properties	02N/22W-02J03					Charles Vanoni	
27.6	Williams, James W. III	03N/22W-23G01					James W Williams	
24.8	Wittenberg-Livingston Inc.*	02N/22W-02Q01	Rancho Attilio	327.8	Limoneira Company	300.0	Fran Gitsham	
					Little Clara Ranch LLC	3.0		
33.1	Wolfang Van Cmielewski, Wolfang	03N/21W-10E01, 3N/21W-10E2	Birky, Angie E. Trustee	33.1			Wolfang Van Chmielewski	
31.0	Yoon Family Trust, (Soo Han Yoon)	2N/22W-3L01	New Allocation, 2010	31.0				
20.8	Zimmerman, Wade N. III and	3N/21W-21E08	New Allocation, 2010	18.1				
	Patricia P. Zimmerman Trust	03N/21W-21D02	Conklin, Patricia	2.7			Wade Zimmerman	
27,514.6	**Total Santa Paula Groundwater Basin IPA**		**New Allocation, 2010**	**280.2**			**Total Default SPBPA Dues**	**$28,646**

* The Santa Paula Basin Pumpers Association and City of San Buenaventura are in the process of clarifying successions and allocations concerning the IPA originally allocated to Rancho Attillio, which was subsequently acquired by Wittenberg-Livingston Inc., and thereafter apportioned and transferred in part to the Limoneira Company, Little Clara Ranch, LLC, and David and Mary Vanoni.

Former Individual Party Allocation Aquired by City of San Buenaventura

Acre Feet	Party Name	Well Number	Predecessor					
220.0	City of San Buenaventura	02N/22W-03E01	Juanamaria Land Company					
220.0	**Total IPA Aquired by City of San Buenaventura**							

EXHIBIT "B"

Table "C" - Non-Stipulating Pumpers

2002-08 Average AFY Production	Name	Well Number	Contact Person	Contact Notes
3.1	Davis, Linda Trust	3N21W21E04	Linda Davis	After several phone conversations - not interested in signing, as of 6-3-10 phone no longer in service
0	Dominguez, G.	03N/21W-12E07		Have never been able to talk with this property owner
1.0	Garman, William	02N/22W-02N04	William Garman	Has continually said he is not interested
22.7	Grant Family Ranches, LLC	3N22W3E01	David Grant	Long conversations on the options/opportunities, but in the end he was not interesed
1.1	Minero, Gilbert	03N/21W-21M01	Minero Gilbert	Talked with family several times but in the end they were not interested
3.7	Sanchez, Martin	3N/21W-21E6	Martin Sanches	Talked with family several times but in the end they were not interested
3.3	Sullivan, Russell J.	3N21W21L1	Russell Sullivan	Talked with CPA for several months but in the end they said not interested
0	Ventura Unified School District	02N/22W-03P01	Joseph Richards	City of Buenaventura pursuing
2	Vint, Thomas H.	03N/21W-21E03	Thomas Vint	Apeared interested in getting information regarding the Adjudication but in the end he was not interested.
6.0	Westerdale Trust	03N/21W-21G01	Westerdale	City of Santa Paula pursuing
42.9	**Total Average AFY Production (Average 2002-2008)**			

EXHIBIT "B"

Table "B" - De Minimus Producers

(Production Not to Exceed 5 AFY)

Party Name	Well Number	Contact Person
Chapman, Kenneth	3N/21W21F1	Ken Chapman
Chavez, Joel and Carmen	3N/21W21E07	Joel Chavez
Rogers, Charles W., Jason C. Rogers, and Aaron W. Rogers	2N/22W-1M2	Chuck Rogers
Santa Paula Airport Association	3N21W14D01	Rowena Mason

Exhibit C-1-c

LAND OUTSIDE OF SANTA PAULA BASIN
RECEIVING WATER FROM THE BASIN

1. Alta Mutual Water Company, Inc. serves properties outside of the Basin, which are as follows:

    - Lloyd Partnership, Sexton Canyon, Parcel Nos. 128-0-060-125 and 140
    - Nichols and Associates, West of Kimball Avenue, Parcel No. 088-0-040-110 and 130
    - Bird of Paradise Ranch, Parcel Nos. 065-0-150-170 and 066-0-150-180
    - Browkaw Nursery, West of Brown Barranca, Parcel Nos. 128-0-060-125 and 140
    - Cherrie, Gene & Marty, West of Kimball Avenue, Parcel Nos. 085-0-010-165, 175 and 195
    - R.H. Smith Family Partnership, North of Foothill/East of Wells Road, Parcel No. 064-0-120-015, 055, 045 and 064-0-280-060.

2 Farmers Irrigation Company, Inc. serves the Limco Del Mar Ranch, Inc. and the Daniel M. Campbell properties near Hill Road in Ventura. Assessor parcel numbers are as follows:

    - Limco Del Mar Ranch, Inc., 085-0-010-150
    - Daniel M. Campbell, portion South of Telegraph Road, adjacent to the Limco Del Mar Ranch, Inc., 083-0-040-295
    - Smith, RH Family Partnership, ~~Alsio Canyon, (Alta~~ Also Mutual Water Company, from Farmers Irrigation Company) several parcels: 035-0-270-095, 105, 115; 064-0-050-035, 085; 064-0-061-075 and 064-0-063-055.
    - Calvary Chapel Farmers, Inc in Adams Canyon has a Northern parcel with the number of 038-0-010-115.

EXHIBIT "C"

Exhibit C-1-d

NO TAX DUE Space above this line for Recorders use APN: _ _ _-_ _ _-_ _ _

WATER RIGHTS GRANT DEED

[COMPLETE NAME OF GRANTOR], as Grantor herein, for valuable consideration, the receipt of which is hereby acknowledged, does hereby grant to:

[COMPLETE NAME OF GRANTEE], and its successors or assigns, as Grantee herein, all that certain real property in the County of Ventura, State of California, described as:

> _____ acre-feet of Individual Party Allocation as adjudicated to the Santa Paula Basin Pumpers Association to be held in trust for the benefit of Grantor *[or Grantor's predecessor, name predecessor]* in the Judgment entered in the case, *United Water Conservation District v. City of San Buenaventura*, Ventura County Superior Court, 1996, Case No. 115611 ("Adjudication"). The _____ acre-feet of Individual Party Allocation, which is the subject of this Deed, together with the attendant rights, powers and privileges pertaining thereto, are hereafter referred to as the "Water Rights."

The Water Rights originally developed from the historic extraction of groundwater from a well located upon that certain real property described with particularity in the attached Exhibit "A" ("Property"), which is presently referred to as Assessor Parcel Number _ _ _-_ _ _- _ _ _by the Ventura County Recorder. Within five (5) days of the execution of this Water Rights Grant Deed, Grantor shall record this Water Rights Grant Deed with the Ventura County Recorder to provide notice of the conveyance of the Water Rights as provided herein.

Grantor

Date: _____ __, 20__

_____
[Print Name]

Grantee

Date: _____ __, 20__

_____
[Print Name]

Exhibit A

Legal Description of Land Upon Which the Water Rights Originated

STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

On _____ before me, _____,
Notary Public, personally appeared_____who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (Seal)

RUSSELL M. MCGLOTHLIN (State Bar No. 208826)
AARON E. BAKER (State Bar No. 261973)
BROWNSTEIN HYATT FARBER SCHRECK, LLP
21 East Carrillo Street
Santa Barbara, CA 93101
Telephone: (805) 963-7000
Facsimile: (805) 965-4333

Attorneys for Defendant
SANTA PAULA BASIN PUMPERS ASSOCIATION

VENTURA SUPERIOR COURT
FILED
SEP 10 2010
MICHAEL D. PLANET
Executive Officer and Clerk
BY: JESSICA BROWN, Deputy

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF VENTURA

UNITED WATER CONSERVATION DISTRICT, Plaintiff, vs. CITY OF SAN BUENAVENTURA and DOES 1 through 1,000 Inclusive, Defendant.	Case No. CV115611 Assigned for All Purposes to the Honorable ~~Vincent O'Neill~~ Department 40 **[~~PROPOSED~~] ORDER AMENDING AND RESTATING JUDGMENT**
LIMONEIRA COMPANY, ALTA MUTUAL WATER CO., et al., Intervenors, CITY OF SAN BUENAVENTURA, Cross-Complainant, vs. LIMONEIRA COMPANY, ALTA MUTUAL WATER CO., et al., Cross-Defendants.	Date: Tuesday, August 24, 2010 Time: 8:30 AM

Pursuant to Section 17 of the Judgment herein, the Notice of Motion and Motion to Amend and Restate Judgment ("Motion"), was heard on August 24, 2010 by this Court. Counsel of record for the City of San Buena Ventura, United Water Conservation District, and the Santa Paula Basin

BROWNSTEIN HYATT FARBER SCHRECK, LLP
21 East Carrillo Street
Santa Barbara, CA 93101

Pumpers Association appeared, and proof being made to the satisfaction of the Court and good cause appearing,

THE COURT FINDS that:

1. The Motion seeks an order of this Court to amend the Judgment in this action (the "Judgment") in a form and manner similar to the amendments identified within the interlineated version of the Judgment attached hereto as Exhibit "1" (the "Amendments"). The Amendments will refine the physical solution embodied within the Judgment to facilitate optimal, efficient, and comprehensive management of the Santa Paula Basin ("Basin") for the reasons that follow.

2. The Amendments reflect the joinder of virtually all well owners that were previously not parties to the Judgment, and grants to each of them a production allocation that is based upon the quantity of their respective historical groundwater production from the Basin. The joinder of these well owners as parties to the Judgment, subject to its terms, reduces the uncertainty caused by groundwater production by non-party well owners, and renders the Judgment a more comprehensive physical solution to protect the Basin as a perpetual source of water for overlying landowners and the public.

3. The Amendments provide for an equitable distribution between the members of Santa Paula Basin Pumpers Association and the City of Ventura of any future reductions in groundwater production necessary for the protection of the Basin.

4. The Amendments establish a *de minimus* pumping allocation of five acre-feet, which will facilitate the efficient management of small groundwater producers without causing a material adverse impact to the Basin.

5. The Amendments clarify the rules for transfer and succession of production allocations under the Judgment, facilitating efficient transfers of production allocation and transparent record keeping.

6. The Amendments also add text to clarify and refine certain of the Judgment's provisions to remove potential ambiguities, facilitate efficient Basin management, better protect the Basin's water resources, and promote the rights and interests of all parties to the Judgment.

///

BROWNSTEIN HYATT FARBER SCHRECK, LLP
21 East Carrillo Street
Santa Barbara, CA 93101

IT IS HEREBY ORDERED that the Court, having considered the Motion, the papers filed in support thereto, and with good cause appearing therefore, hereby grants the Motion thereby adopting the Amendments as indicated in Exhibit "A" to this Order.

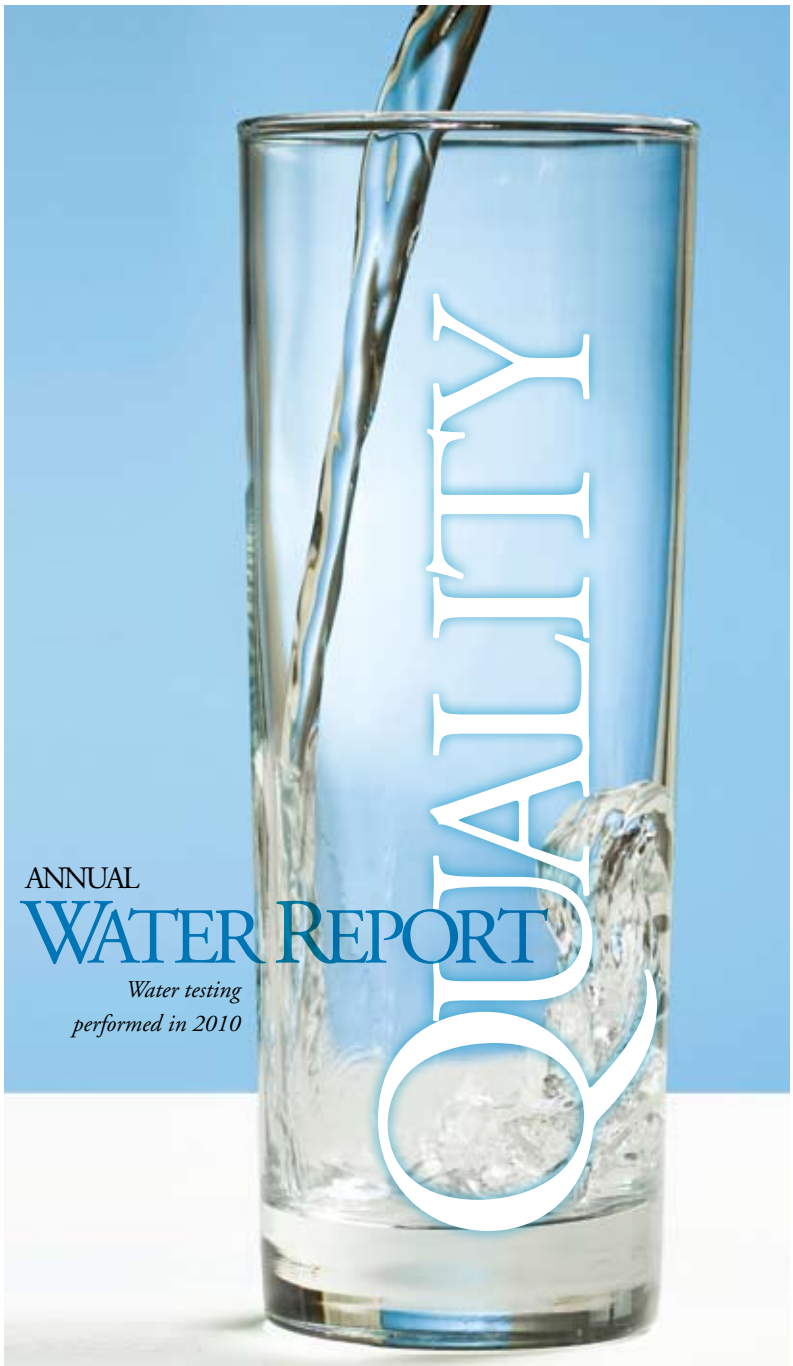
Date: August 23, 2010

Honorable ~~Vincent J. O'Neill~~ Jr. Glen Reiser
Ventura County Superior Court Judge

BROWNSTEIN HYATT FARBER SCHRECK, LLP
21 East Carrillo Street
Santa Barbara, CA 93101

Appendix E

2010 Annual Consumer Confidence Report



ANNUAL

WATER REPORT

Water testing performed in 2010

QUALITY

Presented By

CITY OF SANTA PAULA

PWS ID#: 5610011

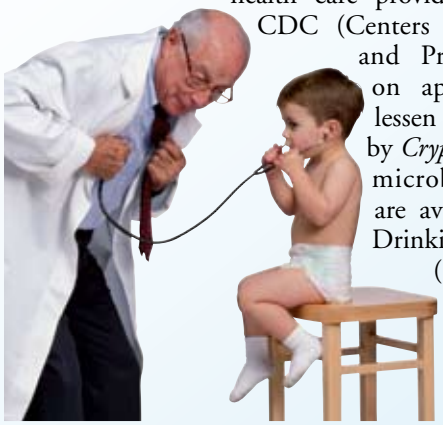
Quality First

Once again we are proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2010. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all of our water users. Thank you for allowing us to continue providing you and your family with high-quality drinking water.

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions or concerns, we are always available to assist you.

Important Health Information

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



Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent, according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Furthermore, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to $1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at www.nrdc.org/water/drinking/bw/exesum.asp.

Information on the Internet

The U.S. EPA Office of Water (www.epa.gov/watrhome) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation, and public health. Also, the Division of Drinking Water and Environmental Management has a Web site (www.dhs.ca.gov/ps/ddwem/technical/dwp/dwpindex.htm) that provides complete and current information on water issues in California, including valuable information about our watershed.

Community Participation

The City of Santa Paula Water System is managed as an enterprise function by the City of Santa Paula. The Water Operation and Water Distribution Divisions of the Public Works Department conduct operations. Comments about the water system can be forwarded to the City Council, which meets on the first and third Monday evenings of each month at 6:30 p.m., in the City Council Chambers, 970 Ventura Street, Santa Paula, California.

Where Does My Water Come From?

The City of Santa Paula's source of water is 100 percent groundwater, pumped from the Santa Paula Basin. The basin is made up of hundreds of feet of sands and gravels deposited in the Santa Clara Valley and the mouth of the Santa Paula Canyon, which contains millions of gallons of water between the sand and gravel particles. The Santa Paula Basin extends from the Hallock Drive area on the east to the Wells Road area on the west.

The City of Santa Paula owns and operates five deep wells: Well 1-B, Well 11, Well 12, Well 13, and Well 14. With these five wells, the water system can produce up to 10.6 million gallons of potable water per day.

The City operates two water conditioning facilities, the Well 12 Water Conditioning Facility and the Steckel Water Conditioning Facility. Both facilities remove iron and manganese from the water. Although neither Iron nor Manganese is a health concern, water containing high levels of Iron will look rusty and stain fixtures and laundry. Similarly, water with high levels of Manganese will contain black particles that may stain laundry and fixtures and plug appliance screens. The Well 12 Water Conditioning Facility treats water produced by Well 12. The Steckel Water Conditioning Facility treats water produced from Wells 11, 13, and 14.

Questions?

For more information about this report, or for any questions relating to your drinking water, please call Sam Hutton, Chief Water Operator, at (805) 933-4282.

Lead and 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. We are responsible for providing high-quality drinking water, but we 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 or at www.epa.gov/safewater/lead.

Missed Deadline

This Consumer Confidence Report is due to be delivered to water customers annually by July 1. Although the U.S. Postal Service accepted delivery of our 2009 report on June 22, 2010, it was not delivered until after July 1, 2010.

Substances That Could Be in Water

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.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the California Department of Public Health (CDPH) 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. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

Contaminants that may be present in source water include:

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

Inorganic Contaminants, such as salts and metals, that can be naturally occurring or can result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and which can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems;

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

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Source Water Assessment

The City of Santa Paula's source water assessment was completed in September 2002, with the assistance of the California Department of Public Health (CDPH). Our source is considered most vulnerable to the following activities not associated with any detected contaminants: Sewer collection systems, wells - agricultural/irrigation, NPDES/WDR permitted discharges, automotive-body shops, machine shops, metal plating/finishing/fabricating, historic gas stations and underground storage tanks - confirmed leaking tanks.

A copy of the complete assessment may be viewed at either the CDPH Drinking Water Field Operations Branch, 1180 Eugenia Place, Suite 200, Carpenteria, CA 93013, or at the City of Santa Paula, Public Works Water Division, 180 South Palm Avenue, Santa Paula, CA 93060. You may request that a summary of the assessment be sent to you by contacting Kurt Souza, District Engineer, (805) 566-1326.

Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in our water. The state requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppm)	2010	1	0.6	0.0009	ND–0.02	No	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic (ppb)	2010	10	0.004	0.7	ND–3.0	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppm)	2010	1	2	0.0227	0.0201–0.0279	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Cadmium (ppb)	2010	5	0.04	0.3	ND–0.6	No	Internal corrosion of galvanized pipes; erosion of natural deposits; discharge from electroplating and industrial chemical factories, and metal refineries; runoff from waste batteries and paints
Chlorine (ppm)	2010	[4.0 (as Cl2)]	[4 (as Cl2)]	0.88	0.06–1.89	No	Drinking water disinfectant added for treatment
Chromium (ppb)	2010	50	(100)	0.8	ND–2.0	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	2010	2.0	1	0.5	0.4–0.6	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	2010	15	(0)	5.9	2.7–7.0	No	Erosion of natural deposits
Haloacetic Acids [HAAs] (ppb)	2010	60	NA	0.8	ND–2.0	No	By-product of drinking water disinfection
Nickel (ppb)	2010	100	12	0.9	ND–6.0	No	Erosion of natural deposits; discharge from metal factories
Nitrate [as nitrate] (ppm)	2010	45	45	8.5	1.1–24.2	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Radium 226 (pCi/L)	2010	5	0.05	0.1	ND–0.3	No	Erosion of natural deposits
Selenium (ppb)	2010	50	(50)	9.4	ND–16	No	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)
TTHMs [Total Trihalomethanes](ppb)	2010	80	NA	9.6	5.0–13.4	No	By-product of drinking water disinfection
Uranium (pCi/L)	2010	20	0.43	5.3	ND–7.3	No	Erosion of natural deposits

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG (MCLG)	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2010	1.3	0.3	0.37	0/34	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2010	15	0.2	2.4	0/34	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	AMOUNT DETECTED	RANGE LOW-HIGH	EXCEEDANCE	TYPICAL SOURCE
Chloride (ppm)	2010	500	NS	42.7	40–45	No	Runoff/leaching from natural deposits; seawater influence
Color (Units)	2010	15	NS	3.3	ND–8.0	No	Naturally-occurring organic materials
Iron (ppb)	2010	300	NS	36.9	ND–240	No	Leaching from natural deposits; industrial wastes
Manganese (ppb)	2010	50	NS	258.1	140–380	Yes[1]	Leaching from natural deposits
Specific Conductance (µS/cm)	2010	1600	NS	1306	1160–1410	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2010	500	NS	439.7	350–460	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2010	1000	NS	941.3	800–1000	Yes[1]	Runoff/leaching from natural deposits
Turbidity (NTU)	2010	5	NS	1.0	ND–2.2	No	Soil runoff

UNREGULATED AND OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Boron (ppb)	2010	531.8	400–600
Calcium (ppm)	2010	149	131–172
Hardness [as CaCO3] (grains/gal)	2010	31.7	27.1–35.2
Hardness [as CaCO3] (ppm)	2010	541.6	463–602
Magnesium (ppm)	2010	41.2	33.0–46.0
Potassium (ppm)	2010	4.1	3.0–5.0
Sodium (ppm)	2010	95.5	88.0–103.0
Total Alkalinity (ppm)	2010	233.5	210–270
Vanadium (ppb)	2010	2.0	ND–3.0

[1] Manganese and total dissolved solids were detected in Santa Paula's source water supply at levels exceeding the established state secondary MCLs (SMCLs), which are set to protect against unpleasant aesthetic effects such as color, taste, odor, and staining of plumbing fixtures (for example, tubs or sinks) or clothing during laundering. There are no adverse health effects expected with these exceedances. In 2010, 97.4 percent of the water served was treated at our two iron and manganese removal facilities prior to delivery. The remaining 2.6 percent was from well 1-B and was used to meet peak demands during summer months.

Definitions

AL (Regulatory Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

µS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.

grains/gal (grains per gallon): Grains of compound per gallon of water.

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

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

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NS: No standard

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

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

PHG (Public Health Goal): 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 EPA.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

Appendix F

City Ordinance No. 1058 - Water Resource In-Lieu Fee

ORDINANCE NO.1058

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SANTA PAULA MODIFYING CHAPTER 52, WATER, OF THE SANTA PAULA MUNICIPAL CODE

The City Council of the City of Santa Paula does hereby ordain as follows:

Section 1. Section 52.020 of the Santa Paula Municipal Code shall be revised to read as follows:

52.020 WATER CAPITAL FACILITIES FEE

(A) The owner or developer of property within the Service Territory requesting a new Service Connection or an increase in the size of an existing Service Connection shall pay a Water Capital Facilities Fee. The fee shall be paid at the earliest of the issuance of construction permit, certificate of occupancy or installation or modification of the Service Connection. The fee for an increase in the size of a Service Connection shall be the difference between the fee for the new size and the fee for the existing size.

(B) The Water Capital Facilities Fee schedule shall be established by resolution of the City Council.

(C) The Water Capital Facilities Fee shall be in addition to all other fees and charges required by this Chapter.

(D) Specific improvements necessary to adequately supply water services to a Service Connection may be required by the Director in lieu of or in addition to the Water Capital Facilities Fee.

Section 2. 52.021, shall be added to the Santa Paula Municipal Code to read as follows:

52.021 WATER RIGHTS DEDICATION AND WATER RESOURCE IN-LIEU FEE

(A) *Purpose*

As Santa Paula grows and develops, agricultural land uses are likely to be converted to urban land uses. The water rights that are now used by that agriculture would then be needed to serve the

new urban land uses. This section provides a mechanism by which those agricultural water rights will be dedicated to municipal use, or alternatively a fee paid in lieu of the dedication of those rights when the available rights either are not sufficient to meet the needs of the new land use, or the owner or developer cannot or will not dedicate the required water rights to meet the needs of the new land use. The purpose of the fee is to provide funds for projects to develop or acquire additional water rights or water resources to mitigate the added water demand caused by the land development. This section also includes a provision for the sharing of water rights for new or existing agriculture located on the remaining portion of any parcel of land that is being developed to assure that existing agriculture located on the parcel is not needlessly or prematurely destroyed due to a lack of water, or that viable new agriculture proposed to be located on the remaining portion of the parcel is not prohibited due to a lack of water.

(B) *Definitions*

For the purpose of this section, "water right" shall mean any right held on or after March 7, 1996 to pump ground water pursuant to the judgment in the case of United Water Conservation District vs. City of San Buenaventura (Case No. 115611), or such other water rights that may be available for permanent transfer.

For the purposes of this section "projected demand for water" shall mean the estimated annual quantity of water required to serve the proposed annexation, development or Water Service Connection, as determined by the Director, including an allowance of twenty five percent (25%) for potential future increases in the quantity of water required.

(C) *Dedication of Water Rights Within City Limits*

1. The owner or developer of any parcel of land, located within or being annexed to the City of Santa Paula, shall dedicate all transferable and exercisable water rights attached to said parcel to the City of Santa Paula upon any of the following events:

   (a) Annexation of said parcel to the City of Santa Paula.

   (b) The granting of any development entitlement by the City of Santa Paula for any land use, other than agriculture, upon said parcel.

(c) The construction or enlargement of any Service Connection to said parcel from the City of Santa Paula Water Enterprise.

(2) In the event that any water rights attached to said parcel have been sold or transferred to anyone other than the City of Santa Paula on or after March 7, 1996, the owner or developer of said parcel shall, to the extent feasible, obtain at his or her sole expense, equivalent water rights and dedicate said rights to the City of Santa Paula.

(3) In the event that the water rights serve more land than the land or parcel to be annexed, developed or to receive a Water Service Connection, the water rights to be dedicated shall be determined by proration on the basis of the historical water usage of the various lands or parcels served. If it is not feasible to prorate the water rights on the basis of historical water usage, than the proration shall be made on the basis of the irrigated land areas of the various lands or parcels served.

(4) In the event that the water rights are held by an association, water company or agency on behalf of the property owner or developer and said association, water company or agency cannot or will not dedicate the required water rights to the City, the owner or developer of said parcel shall, to the extent feasible, obtain at his or her sole expense equivalent water rights and dedicate said rights to the City of Santa Paula.

(5) In the event that the dedicated water rights are not sufficient to meet the projected demand for water, including the demand for water needed to serve any remaining agriculture as provided in subsection (C)(7) below, by said parcel or in the event that there are no water rights attached to said parcel, or in the event that it is not feasible to obtain equivalent water rights as required by subsections (C)(2) or (C)(4) above, the owner or developer shall pay a Water Resource In-Lieu Fee, as established in subsection (E) below, to the City of Santa Paula based upon that portion of the projected demand for water that is not met by the dedicated water rights.

(6) In the event that the dedicated water rights exceed the projected demand for water by said parcel, a credit shall be issued against the various fees and charges due to the City under this chapter. The credit shall be equal to the Water Resources In-Lieu Fee, as established in subsection (E) herein applicable to that portion of the dedicated water rights in excess of the projected demand for water.

(7) In the event that the dedicated water rights are needed to continue to serve agriculture remaining on any undeveloped or residual portion of the land or parcel, including any new agricultural development proposed on said land or parcel, the City shall enter into an agreement with the property owner or developer for the shared use of the dedicated water rights, provided the water is to be used only on said land or parcel and provided the quantity of water to be used and the type of agriculture to be served is reasonable and appropriate.

(8) In the event that the dedicated water rights are needed to serve agriculture remaining on said land on an interim basis until said land is converted to non-agricultural use, the City may enter into an agreement with the property owner or developer for the shared use of the dedicated water rights until such time as the agricultural use is terminated.

(9) In the event that the dedicated water rights are needed to supply water to a proposed non-potable water distribution system intended to supply water for irrigation purposes to public or private landscaping on said land, the City may enter into an agreement with the property owner or developer for the shared use of the dedicated water rights.

(D) *Dedication of Water Rights Outside City Limits*

(1) The owner of or developer of any parcel of land located outside the limits of the City of Santa Paula shall dedicate sufficient water rights to the City of Santa Paula to meet the projected demand for water of any new or enlarged Service Connection constructed to said parcel from the City of Santa Paula Water Enterprise.

(2) In the event that the water rights are held by an association, water company or agency on behalf of the property owner or developer and said association, water company or agency cannot or will not dedicate the required water rights to the City, the owner or developer of said parcel shall, to the

extent feasible, obtain at his or her sole expense equivalent water rights and dedicate said rights to the City of Santa Paula.

(3) In the event that the water rights attached to said parcel are not sufficient for said dedication and that said water rights have been sold or transferred to anyone other than the City of Santa Paula on or after March 7, 1996, the owner or developer of said parcel shall, to the extent feasible, obtain at his or her sole expense, equivalent water rights and dedicate said rights to the City of Santa Paula.

(4) In the event that the dedicated water rights are not sufficient to meet the projected demand for water by said parcel, or in the event that there are no water rights attached to said parcel, the owner or developer shall pay a Water Resource In-Lieu Fee, as established in subsection (E) below, to the City of Santa Paula based upon that portion of the water demand that is not met by the dedicated water rights.

(E) *Water Resource In-Lieu Fee Imposed*

The City Council may establish a schedule of Water Resource In-Lieu Fees by resolution. The fees shall be imposed in accordance with this section. The proceeds of the fees shall be retained in a separate account and shall be used for capital projects, including associated engineering, environmental review, legal and administrative costs, that will generate additional water resources or water rights for use by the Water Enterprise. Those projects may include, but are not limited to, the purchase of water rights, construction of projects to import State water or other water, construction of projects to increase groundwater recharge, construction of projects to use reclaimed water in-lieu of existing water demand. The projected water demand and the amount of the resulting fee shall be calculated by the Director, using factors contained in the resolution. The Water Resource In-Lieu Fee shall be in addition to all other fees and charges required by this chapter.

In the event that a fee resolution has not been adopted, the Director shall collect a deposit of $2,000 per acre-foot of estimated annual water demand in excess of the water rights dedicated to the City. The deposit shall be applied to the fee upon adoption of the resolution. Any deposited amount in excess of the adopted fee shall be refunded to the person who paid the deposit.

Section 3. The following subsection shall be added to Section 52.026 of the Santa Paula Municipal Code:

(F) *Oversize services.*

(1) An oversize Service Connection may be approved by the Director for any residence on an agricultural property for which a larger service is needed to support agricultural operations occurring on an infrequent basis, not including agricultural irrigation, or for any residence located in an area which is subject to the threat of wildfires, for which a fire service standpipe is required by the local Fire Department or for other similar uses requiring high flows for short or infrequent periods of time, as approved by the Director.

(2) The monthly fees and charges for an oversize Service Connection shall be determined by the Director on the basis of an equivalent meter size. In making that determination, the Director may consider the size and use of the property and the buildings thereon, the prior year's water consumption, if any, and any other relevant factors. The equivalent meter size shall be reviewed annually and revised as found necessary by the Director. Any charges for installation of the service or for the installation of a new or replacement meter shall be based upon the actual size of the service or meter. The Water Capital Facilities Fee and the Water Resource In-Lieu Fee shall be based upon the equivalent meter size determined and the use of the property at the time the service is installed.

(3) High precision water meters shall be used on all oversize Service Connections. Any additional costs above that of an ordinary meter of the equivalent meter size, as determined in (B) above, shall be the responsibility of the Customer.

(4) Oversize Service Connections shall be limited to water services with an actual water meter size of 1 ½ inches or two inches. After the first year of service, the equivalent meter size to be used to determine monthly fees and charges as described in (2) above shall be determined on the basis of the prior twelve (12) month's consumption as shown in the following table:

Average Monthly Consumption (HCF/Month)	Equivalent Meter Size (Inches)
0 – 40	¾
> 40 – 70	1
>70 – 160	1 ½

Section 4: Repeal of any provision of the Santa Paula Municipal Code, or any other city resolution or ordinance herein will not affect any penalty, forfeiture, or liability incurred before, or preclude prosecution and imposition of penalties for any violation occurring before this Ordinance's effective date. Any such repealed part will remain in full force and effect for sustaining action or prosecuting violations occurring before the effective date of this ordinance.

Section 5. If any part of this Ordinance or its application is deemed invalid by a court of competent jurisdiction, the city council intends that such invalidity will not affect the effectiveness of the remaining provisions or applications and, to this end, the provisions of this ordinance are severable.

Section 6. The City Clerk is directed to certify the passage and adoption of this Ordinance; cause it to be entered into the City of Santa Paula's book of original ordinances; make a note of the passage and adoption in the records of this meeting; and, within fifteen (15) days after the passage and adoption of this Ordinance, cause it to be published or posted in accordance with California law.

Section 7. This Ordinance will take effect on the 31st day following its final passage and adoption.

PASSED, APPROVED ADOPTED this 18 day of February ,2003.

John Procter, Mayor

ATTEST:

Steven J. Salas, City Clerk

CITY OF SANTA PAULA INCORPORATED APRIL 22, 1902 VENTURA CO. CAL.

Approved as to form:

Philip H. Romney, City Attorney

Approved as to content:

Wally Bobkiewicz, City Manager

CITY OF SANTA PAULA)

COUNTY OF VENTURA)§
STATE OF CALIFORNIA)

I, Steven J. Salas, City Clerk of the City of Santa Paula, California do hereby certify that the above and foregoing Ordinance No. 1058 was duly passed and adopted by the City Council of the City of Santa Paula at a regular meeting thereof held on the 02/18/2003 by the following vote:

AYES: Councilmembers Cook, Krause, Luna
Vice Mayor Aguirre, Mayor Procter.
NOES: None.

ABSENT: None.

ABSTAIN: None.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City this 18 day of February, 2003.

STEVEN J. SALAS, City Clerk

Appendix G

City Code Section 52.038 – Water Waste

CHAPTER 52: WATER

Section

Water Utility and Revenue Fund

52.001 Utility created
52.002 Management of system
52.003 Fees
52.004 [Reserved]
52.005 Water Fund

Water Utility Services

52.015 Definitions
52.016 Rates and charges
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52.020 Water capital facilities fee
52.021 [Reserved]
52.022 [Reserved]
52.023 [Reserved]
52.024 [Reserved]
52.025 [Reserved]
52.026 Service connections and meters
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52.032 Testing meters
52.033 Turning on and using water
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52.035 Conditions of service
52.036 Supplying of water by customers
52.037 Emergency shutoffs
* 52.038 Water waste
52.039 Shutting off water
52.040 Covering meter boxes
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52.043 Unauthorized use of water
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Groundwater Conservation

52.055 Purpose
52.056 Definitions
52.057 Permit required
52.058 Application for permit
52.059 Permit requirements and expiration
52.060 Time to complete permitted work and satisfy permit requirements
52.061 Guarantee of permitted work
52.062 License and registration required of persons performing work
52.063 Suspension or termination of permit
52.064 Standards
52.065 Log of well
52.066 Well inspection report
52.067 Corrective actions
52.068 Destruction of abandoned wells
52.069 Certificate of exemption
52.070 Fees
52.071 Inspection
52.072 Abatement

* 52.999 Penalty

Statutory reference:

Municipal water systems, see Cal. Gov't Code §§ 38730 et seq.

WATER UTILITY AND REVENUE FUND

§ 52.001 UTILITY CREATED.

A water utility is hereby created as a city enterprise and utility to operate, maintain, and fund the city's water system. The purpose of this utility is

§ 52.037 EMERGENCY SHUTOFFS.

Customers shall install an appropriate shutoff inside of property lines at a location accessible in case of emergency. If the city is required to shutoff the water for an on-property leak due to the failure to use, lack of, or inoperability of the emergency shutoffs, then charges as described in § 52.033 of this subchapter shall apply to each trip to the property.
(Ord. 993, passed 12-18-95)

§ 52.038 WATER WASTE.

No person shall lawfully or neglectfully waste water in any manner whatsoever. Continued wasting of water after mailing of notice by registered mail to the customer of record at the mailing address of record by the Director may result in discontinued water service.
(Ord. 993, passed 12-18-95) Penalty, see § 52.999

§ 52.039 SHUTTING OFF WATER.

The city may at any time order the water shutoff from any premises connected with the city mains without notice for repairs, extensions or other necessary purposes.
(Ord. 993, passed 12-18-95)

§ 52.040 COVERING METER BOXES.

No person shall place upon or about any fire hydrant, gate-valve, manhole, stopcock, meter or meter box connected with the water pipes of the system of waterworks of the city, any object, materials, debris, or structure of any kind so as to prevent free access to the same at all times. Upon notice by the city, the owner or person responsible for the placement of such material shall immediately remove same.
(Ord. 993, passed 12-18-95) Penalty, see § 52.999

§ 52.041 LEAKS IN PLUMBING.

Customers shall be required to pay for all water lost through failure to keep plumbing in repair, and the Public Works Department shall not be required to adjust excessive statements incurred by customer in such a way.
(Ord. 993, passed 12-18-95)

§ 52.042 FIRE HYDRANTS.

Fire hydrants are provided for the purposes of extinguishing fires and accessing and flushing the water system. Fire hydrants are to be opened and used only by the city or the Fire Department of the city, or by such persons as may be authorized by the Director in accordance with § 52.018 of this subchapter.
(Ord. 993, passed 12-18-95)

§ 52.043 UNAUTHORIZED USE OF WATER.

No person shall use water from any service, fire hydrant, automatic fire service, blow-off valve, or any other public works facility without first obtaining permission of the city. Any unauthorized use of water shall be charged at the rates described in § 52.018.
(Ord. 993, passed 12-18-95) Penalty, see § 52.999

§ 52.044 CROSS-CONNECTION CONTROL.

(A) *Guidelines.* Cross-connection control guidelines shall be maintained by the city and shall list the situations requiring backflow prevention devices and the appropriate types of approved backflow prevention devices in conformance with Cal. Code of Regs. Title 17, §§ 7601 et seq.

(B) *Right of examination.* The department, its employees, agents or authorized representatives shall have the right to enter all property in the presence of the owner or the owner's agent for the purpose of examining the plumbing and plumbing connections to determine the existence of actual or potential cross-connections.

contamination of groundwater and would not create a hazard to health or safety, the director shall issue such a certificate of exemption. A certificate of exemption shall expire three years after issuance and may be terminated by the director at any time prior to expiration upon a determination that destruction of the well is necessary to prevent pollution or contamination of groundwater or to avoid a hazard to health or safety. Successive certificates of exemption may be issued with respect to a well in the same manner as the original certificate.
('81 Code, § 8.40.150) (Ord. 945, passed - -91)

§ 52.070 FEES.

The City Council may, by resolution, establish fees for the processing of any application for approval as a registered inspector, for registration with the department pursuant to § 52.062, or for a permit, extension of a permit, or certificate of exemption pursuant to this subchapter. The payment of such fee, if any, established by such resolution shall accompany the application to which it pertains. If the application is withdrawn before issuance of the permit, the department shall compute the cost to the city of processing the application up to that point in accordance with the city's standard cost accounting procedures and, if such cost is less than the amount of the fee paid, the difference shall be refunded to the applicant.
('81 Code, § 8.40.160) (Ord. 945, passed - -91)

§ 52.071 INSPECTION.

The director and his or her city inspectors may, at any and all reasonable times, enter any and all places, property, enclosures and structures for the purpose of making examinations and investigations to determine whether any provision of this subchapter is being violated. The director may require that any work for which a permit is required by this subchapter be completed in stages and that work completed for any stage be inspected prior to any further work. Registered inspectors must inspect drilling and sealing operations for engineering test holes and monitoring wells if required by permit conditions.
('81 Code, § 8.40.170) (Ord. 945, passed - -91)

§ 52.072 ABATEMENT.

If any corrective action required by an order issued pursuant to § 52.067 is not taken in full compliance with such order, the director may cause the corrective action to be taken by the city and all persons required by § 52.067 to take such corrective action shall be jointly and severally liable to the city for the cost of such action. In cases where the public health and safety require emergency corrective action, the director may cause the emergency corrective action to be taken by the city without a prior order or notice and all persons who own or possess the well shall be jointly and severally liable to the city for the cost of such action.
('81 Code, § 8.40.190) (Ord. 945, passed - -91)

§ 52.999 PENALTY.

(A) Any person who violates any provision of this chapter for which no penalty is otherwise provided shall be subject to the penalty provided in § 10.99.

(B) Any person who violates any provision of §§ 52.055 through 52.073 of this chapter shall be guilty of a misdemeanor and punished according to § 10.99, and shall be guilty of a separate offense for each and every day or portion thereof during which such violation is committed, continued or permitted, and shall be subject to the same punishment for each such separate offense as for the original offense. Notwithstanding the foregoing, where the prosecuting attorney has determined that such action would be in the best interests of justice, the prosecuting attorney may specify in the accusatory pleading that the violation shall be an infraction and the violation shall then be prosecuted as an infraction. The provisions of this division are in addition to and independent of any other sanctions which are or may be imposed under this chapter or any other provision of law. ('81 Code, § 8.40.180) (Ord. 945, passed - -91)

Appendix H

Water Softener Ban Ordinance

§ 51.167 APPLICABILITY OF CERTAIN SECTIONS TO SOFT-WATER ESTABLISHMENTS AND WATER SOFTENERS.

The regeneration of ion exchange softeners in commercial soft-water service establishments and the addition of ion exchange softeners in commercial soft-water service establishments and the addition of ion exchange materials to water softeners is included in the operations limited by this chapter.
(Ord. 1093, passed 2-17-04) Penalty, see § 51.999

§ 51.169 PERMIT TO INSTALL OR ALTER APPARATUS.

(A) Any person desiring to install, enlarge or replace any water-treating apparatus of the kind described above, or to regenerate ion exchange water softeners in a commercial establishment, or to add ion exchange materials to any water softener, must submit to the Director a letter describing the intended installation or alteration and describing the arrangements which will serve to prevent improper discharge of the wastewater.

(B) No person must install, replace or enlarge a water-treating apparatus of the kind described above nor may he operate a unit if installed after April 16, 1958, nor may he regenerate an ion exchange water softener in a commercial establishment nor may he add ion exchange materials to any water softeners, unless he has a permit issued by the Director prescribing the approval and satisfactory arrangements for disposal of the wastewaters.

(C) The apparatus may be operated only so long as the method of wastewater disposal is as approved by the Director.

(D) Alteration in the method of disposal may be made only after communication to the Director and receipt of the permit as in the first instance.
(Ord. 1093, passed 2-17-04) Penalty, see § 51.999

Appendix I

City of Santa Paula Water Rates

PUBLIC WORKS DEPARTMENT FEE SCHEDULE

(Based upon Resolution No. 5462, Adopted November 19, 2001)
(Based upon City Ordinance No. 1042, Adopted September 17, 2001)
(Based upon City Ordinance No. 1084, Adopted January 5, 2004)
(Based upon City Ordinance No. 1138, Adopted July 5, 2005)
(Based upon Council Resolution No. 6333, passed 08/07/2006)
(Based upon Council Resolution No. 6393, passed 09/17/2007)
(Based upon Council Approval of "Discretionary User Charges", passed June 16, 2008)

Part I: Permits

A. Public Works Permit for construction of public and certain private street, improvements or encroachments:

1. Permit issuance fee .....$ 175.00
   encroachment permit for any curb, gutter & sidewalk (includes two inspections)
2. Additional construction observation fee…..$ 56.00 per inspection
3. Annual Encroachment Permit……...$ 750.00 ($20 per subsequent permit)

B. Oversize/Overweight Vehicle Permit for movement of such vehicles on city street

1. Annual permit.....$ 90.00
2. Daily permit.....$ 16.00

C. Annual Discharge Permit for monitoring of certain discharges to the sewers, streets, or storm drain system, including one inspection:

1. Significant Industrial Discharger.....…...$ 1680.00
2. Other waste discharger…….$ 175.00
   plus actual costs for laboratory services, additional inspections and/or consultant costs.

D. Pay Phone Permit Application Fee for the review of pay phone installations:

1. Initial permit (first year)……..$ 150.00
2. Annual Renewal Fees……...$ 75.00

Part II: Plan and Map Checking

A. Plan Check Fee (Initial Submittal to Planning Dept.) for public improvements and/or certain private improvements:

Single Dwelling Unit…….$ 150.00
Commercial (per unit)……..$ 300.00
Multi-Family/Multi-Use…….$ 300.00
Greater than 5,000 square feet…….$ 1,000.00 deposit

B. Construction Plan Check for public improvements and/or certain private improvements:

1. Over ½ hour.....Actual cost for all personnel and consultant costs.

2. Deposits:

Single Dwelling Unit.....$ 600.00
Commercial (per unit) .....$ 1,540.00
Multi-Family/Multi-Use.....$ 2,520.00
Greater than Five Dwelling Units.....$ 7,000.00

	COUNTY	CITY
Lot Line Adjustment / Lot Merger.....	$ 1,500.00	$ 400.00
Parcel Map.....	$ 3,000.00	$ 1,000.00
Tract Map…….....	$ 6,000.00	$ 2,500.00

C. <u>Subdivision Map Approval Fee</u> for review and approval of Parcel Maps and Final Maps and related agreements and documents:

1. Map and agreement review and approval.....$ 1,155.00 plus $ 25.00 per lot
2. Revision to approved map or agreements..... Actual costs, of all personnel, City Attorney, and consultant costs, deposit determined by City Engineer.
3. Subdivision construction time extension.....$ 175.00
4. Ventura County Surveyor…….. Actual costs as submitted by the County of Ventura

Part III: <u>Other Engineering Services</u>

A. <u>Dedications, Abandonments and Improvement Agreements</u> for public streets and other public property:

1. Dedication other than by subdivision map……Actual cost of all personnel and consultant costs, deposit determined by City Engineer
2. Abandonment……...Actual cost of all personnel and consultant costs, deposit determined by City Engineer
3. Deferred Improvement Agreement……Actual cost of all personnel and consultant costs, deposit determined by City Engineer
4. Release of Deferred Improvement Agreement…...Actual cost of all personnel and consultant costs, deposit determined by City Engineer

B. <u>Studies and Investigations</u> for any purpose:

1. Design study.....Actual cost for all personnel and consultant costs, deposit determined by City Engineer
2. Hydrant flow test (Water Use Permit).....$ 56.00
3. Encroachment Permit for Inspection, Personnel, & Water Costs……..$ 315.00

C. <u>Copies of Printed Material</u> - Current File Records:

Up to and including 8 1/2" x 11":

1. Minimum $ 4.00 charge for ten or fewer pages;
2. $ 0.15 per page for each page over ten (10) copies; plus
3. Applicable postage if mailed, $ 5.00 minimum.

Greater than 8 1/2" x 11" up to and including 2' x 3':

1. $ 3.00 per page; plus

2. Applicable postage if mailed, $ 5.00 minimum.

Greater than 2' x 3':

1. $ 5.00 per page; plus
2. Applicable postage if mailed, $ 5.00 minimum.

Geographic Information Systems(GIS) Documents:

1. $ 25.00 for 2' x 3' map of streets, street names, city limits, and parcels.
2. $ 100.00 per hour for more complex maps or other information.

Part IV: General Field Services

A. Street Banners for installation of downtown over-street banner or street light pole banners:

1. Over-street banner.....$ 280.00 per request
2. Street light pole banners.....$ 280.00 per request up to five pairs of banners.
3. Additional pairs of banners.....$ 120.00 each

B. Special Curb Markings for installation of handicapped parking zones, passenger loading zones or freight loading zones, not intended for use by the general public.

1. Curb marking.....$ 245.00 per location

C. Damage to City Property for repair of damage done to city property by any private party:

1. Damage repair.....Actual costs for all materials, personnel or contractors involved.

Part V: Utility Services

1. Water

A. Water Meter Installation for various size meters at existing service locations:

1. 5/8" to 2" meter size.....$ 160.00 plus meter
2. 3" and larger meter size..... $ 250.00 plus meter

B. Water Meter Cost (Badger Radio-read Meters)

1. ¾ inch meter…….$ 218.36
2. 1 inch meter……..$ 257.18
3. 1 ½ inch meter……..$ 512.32
4. 2 inch meter……..$ 646.92
5. 3 inch meter or larger……..as quoted by supplier

C. Water Service Installation for various size new domestic water and fire services:

1. Any size service.....Actual cost for all materials and, personnel involved, charged against deposit. All charges are on a time and material basis.

D. <u>Hydrant Installation</u> for new fire hydrants:

1. Any hydrant.....Actual costs for all materials and personnel involved, charged against deposit.
2. Deposits……..Actual deposit costs to be determined by City Engineer

E. <u>Meter or Hydrant Relocation</u> for any water meter or fire hydrant

1. Any meter or hydrant.....Actual costs for all materials and personnel involved, charged against deposit.

Actual deposit costs to be determined by City Engineer

F. <u>Water Meter Test</u> for any meter at customers request:

1. Any meter.....$ 350.00
2. Refund $ 350.00 if meter is found to be running fast (overcharging the customer).

G. <u>Temporary Water Service</u> for installation and use of a fire hydrant meter:

1. Deposit for water usage.....$ 1000.00
2. Meter installation (including later removal).....$ 200.00
3. Move meter to another location.....$ 50.00
4. Water usage.....$ 35.00 plus regular general service and usage charges, $ 100.00 minimum per month.
5. Unauthorized relocation of meter.....$ 100.00 investigation fee
6. Unauthorized use of water.....$ 100.00 investigation fee plus estimated general service and usage charges.

H. <u>Emergency Call Out</u> for water or other emergencies, after regular working hours:

1. Call out.....Actual costs for all materials and personnel involved if the emergency is the customers responsibility.

I. <u>Water Charges</u>

1. Monthly water service meter charges:

Meter Size	General Service	Irrigation Service	Fire Service
5/8”	$ 17.82	$ 17.82	$ 25.55
3/4”	26.76	26.76	25.55
1”	45.01	45.01	25.55
1 1/2”	90.01	77.30	25.55
2”	142.32	77.30	25.55
3”	309.55	184.16	25.55
4”	446.42	619.56	25.55
6”	891.61	977.65	51.88
8”	1,425.59	n/a	82.71
10”	2,049.60	n/a	n/a
12”	2,939.99	n/a	n/a

2. Water quantity charges - All water delivered:

General metered usage - $ 1.76 per 100 cubic feet(HCF).

J. Water Connection Fees (Capital Facility Fees)

Detached Dwelling Units (Fee/Unit)	$ 4,660.00
Attached Dwelling Units (Fee/Unit)	$ 4,833.00
Mobile Home Units, in Parks (Fee/Unit)	$ 3,244.00
Commercial Lodging Units (Fee/Unit)	$ 2,632.00
Commercial/Office Uses (Fee/S.F.)	$ 0.381
Industrial, etc. Uses (Fee/S.F.)	$ 0.381

K. Water In-Lieu Fees

Single Family Residence – Less than 1 acre	$ 3,994.00/unit
Single/Multi Family Residence – Greater than 1 acre	$ 5,000.00/unit
Commercial/Industrial	$ .288/sq. ft.
Parkland/Landscape	$ 11,000/acre ft.

2. Sewer Charges

Residential Sewer Service Fees:

Monthly charge per dwelling	$ 42.68

Restaurant Sewer Service Fees:

Charge per 100 cu. ft. of water used	$ 7.50
Minimum monthly charge	$ 45.78

Industrial Sewer Service Fees:

Charge per 100 cu. ft. of water used	$ 4.74
Minimum monthly charge	$ 45.78

Commercial and all other Sewer Service Fees:

Charge per 100 cu. ft. of water used	$ 4.74
Minimum monthly charge	$ 45.78

New Sewer Connection Fees:

Charge per residential dwelling unit	$ 3,858.76
Charge per EDU nonresidentialsewer capacity needed	$ 3,858.76

(one Equivalent Dwelling Unit or EDU is equal to 252 gallons per day of anticipated sewer usage)

3. Refuse Charges

Service Description:

TS1	$ 27.50
TM1	$ 27.50
TC1 (Commercial)	$ 27.50
TSR Single Family Residential - 2 carts, No yard waste cart, each additional unit	$ 24.27
Downtown Business District (CBD) Weekly Recycling Pickup	$ 24.27

Waste Roll Off Service (per pick up):

Roll Off Fee

Includes delivery & pickup*	$ 160.00
Extra pick up, dump, and return	$ 142.00
Daily rental (after 1st week)	$ 2.00/day

* Roll Off rental includes a one-week rental and one time dump. Fee does not include dump costs.

Tonnage Fee ($/ton)

Solid Waste/Yard Waste ($/ton)	$ 40.00
Asphalt and Concrete (per load)	$ 100.00

Contaminated Loads

Additional charges if Roll-Off is found to be contaminated:

Oil	$ 2.00/gal
Paint	$ 4.00/gal
Antifreeze	$ 2.00/gal
Fluorescent Bulbs	$ 1.00 per
Car Tire Disposal (per tire)	$ 5.00
Car Tire & Rim	$ 15.00
Truck Tire Disposal (per tire)	$ 30.00
E-waste (computers, electronics, etc…)	$ 15.00
Televisions (per television)	$ 15.00

Special Services

Hard to Handle Items (after free one-time annual pickup) (appliances, furniture, etc…)	$ 25.00
Delivery of yard waste/trash (Truck load – <=1 ton truck to 600 S. Palm)	$ 20.00
Delivery of yard waste/trash (Truck load – >1 ton truck to 600 S. Palm)	$ 35.00
Delivery of Large Appliances/Furniture (to 600 S. Palm)	$ 20.00 per item

Water

Table 1. General Service Rate Increase Four Years

Fixed Charge:		2009-10	2010-11	2011-12	2012-13	Note
5/8"	Meter	$ 17.82	$ 19.96	$ 22.35	$ 24.57	(1)
3/4"	Meter	26.76	29.97	33.56	36.89	(1)
1"	Meter	45.01	50.41	56.46	62.07	(1)
1-1/2"	Meter	90.01	100.82	112.91	124.12	(1)
2"	Meter	142.32	159.40	178.52	196.23	(1)
3"	Meter	309.55	346.69	388.29	426.81	(1)
4"	Meter	446.42	499.99	559.99	615.54	(1)
6"	Meter	891.61	998.60	1,118.44	1,229.38	(1)
8"	Meter	1,425.59	1,596.66	1,788.26	1,965.66	(1)
10"	Meter	2,049.60	2,295.55	2,571.02	2,826.06	(1)
12"	Meter	$ 2,939.99	$ 3,292.79	$ 3,687.92	$ 4,053.76	(1)
	Year to Year Increase	12%	12%	12%	9.92%	
Variable Charge:						
All meter sizes		$ 1.76	$ 1.97	$ 2.21	$ 2.43	(2)

Table 2. Irrigation Service Rate Increase Four Years

Fixed Charge:		2009-10	2010-11	2011-12	2012-13	Note
5/8"	Meter	$ 17.82	$ 19.96	$ 22.35	$ 24.57	(1)
3/4"	Meter	26.76	29.97	33.56	36.89	(1)
1"	Meter	45.01	50.41	56.46	62.07	(1)
1-1/2"	Meter	77.30	86.58	96.97	106.58	(1)
2"	Meter	77.30	86.58	96.97	106.58	(1)
3"	Meter	184.16	206.26	231.01	253.93	(1)
4"	Meter	619.56	693.91	777.18	854.27	(1)
6"	Meter	977.65	1,094.97	1,226.36	1,348.02	(1)
8"	Meter	n/a	n/a	n/a	n/a	(1)
10"	Meter	n/a	n/a	n/a	n/a	(1)
12"	Meter	n/a	n/a	n/a	n/a	(1)
	Year to Year Increase	12%	12%	12%	9.92%	
Variable Charge:						
All meter sizes		$ 1.76	$ 1.97	$ 2.21	$ 2.43	(2)

Table 3. Fire Service Rate Increase Four Years

Fixed Charge:		2009-10	2010-11	2011-12	2012-13	Note
5/8"	Meter	$ 25.55	$ 28.62	$ 32.05	$ 35.23	(1)
3/4"	Meter	$ 25.55	28.62	32.05	35.23	(1)
1"	Meter	$ 25.55	28.62	32.05	35.23	(1)
1-1/2"	Meter	$ 25.55	28.62	32.05	35.23	(1)
2"	Meter	$ 25.55	28.62	32.05	35.23	(1)
3"	Meter	$ 25.55	28.62	32.05	35.23	(1)
4"	Meter	$ 25.55	28.62	32.05	35.23	(1)
6"	Meter	51.88	58.11	65.08	71.53	(1)
8"	Meter	82.71	92.64	103.75	114.04	(1)
10"	Meter	n/a	n/a	n/a	n/a	(1)
12"	Meter	n/a	n/a	n/a	n/a	(1)
	Year to Year Increase	12%	12%	12%	9.92%	
Variable Charge:						
All meter sizes		$ 1.76	$ 1.97	$ 2.21	$ 2.43	(2)

(1) Per metered month

(2) Per hundred cubic feet (hcf) of metered water consumption

Sewer

Table 1. Sewer Rates	Existing Rates Since Jun 06	FY 2009-10 Increase Effective September 1, 2009	FY 2010-11 2010	FY 2011-12 2011	FY 2012-13 2012	FY 2013-14 2013	FY 2014-15 2014	FY 2015-16 2015
Residential								
Plus Per Hundred Cubic Feet (hcf) charge based on water consumption	$42.68	$59.39	$77.21	$77.21	$77.21	$77.21	$77.21	$77.21
				$0.58	$1.12	$1.47	$1.75	$1.75
Commercial, Standard Strength								
Plus Per Hundred Cubic Feet (hcf) charge based on water consumption	$4.74	$5.65	$7.34	$7.89	$8.40	$8.74	$9.00	$9.00
Minimum Bill	$45.78	$59.39	$77.21	$77.21	$77.21	$77.21	$77.21	$77.21
Commercial, High Strength								
Plus Per Hundred Cubic Feet (hcf) charge based on water consumption	$7.50	$7.25	$9.42	$10.13	$10.79	$11.22	$11.56	$11.56
Minimum Bill	$45.78	$59.39	$77.21	$77.21	$77.21	$77.21	$77.21	$77.21

Exhibit "A"

Table 1. General Service Water Rate Increase-

Fixed Charge:		2009-10
5/8"	Meter	$ 17.82
3/4"	Meter	26.76
1"	Meter	45.01
1-1/2"	Meter	90.01
2"	Meter	142.32
3"	Meter	309.55
4"	Meter	446.42
6"	Meter	891.61
8"	Meter	1,425.59
10"	Meter	2,049.60
12"	Meter	$ 2,939.99
Variable Charge:	Year to Year increase	12%
All meter sizes		$ 1.76

Table 2. Irrigation Service Rate Increase

Fixed Charge:		2009-10
5/8"	Meter	$ 17.82
3/4"	Meter	26.76
1"	Meter	45.01
1-1/2"	Meter	77.30
2"	Meter	77.30
3"	Meter	184.16
4"	Meter	619.56
6"	Meter	977.65
8"	Meter	n/a
10"	Meter	n/a
12"	Meter	n/a
Variable Charge:	Year to Year increase	12%
All meter sizes		$ 1.76

Table 3. Fire Service Rate Increase

Fixed Charge:		2009-10
5/8"	Meter	$ 25.55
3/4"	Meter	$ 25.55
1"	Meter	$ 25.55
1-1/2"	Meter	$ 25.55
2"	Meter	$ 25.55
3"	Meter	$ 25.55
4"	Meter	$ 25.55
6"	Meter	51.88
8"	Meter	82.71
10"	Meter	n/a
12"	Meter	n/a
Variable Charge:	Year to Year increase	12%
All meter sizes		$ 1.76

(1) Per metered month

(2) Per hundred cubic feet (hcf) of metered water consumption

Exhibit "A"

Table 1. Sewer Rates	Existing Rates Since Jun 06	FY 2009-10 Increase Effective September 1, 2009
Residential	$42.68	$59.39
Plus Per Hundred Cubic Feet (hcf) charge based on water consumption		
Commercial, Standard Strength		
Plus Per Hundred Cubic Feet (hcf) charge based on water consumption	$4.74	$5.65
Minimum Bill	$45.78	$59.39
Commercial, High Strength		
Plus Per Hundred Cubic Feet (hcf) charge based on water consumption	$7.50	$7.25
Minimum Bill	$45.78	$59.39

Appendix J

Examples of Public Education Materials

Using Water Efficiently:
Ideas for Residences

Efficient water use can have major environmental, public health, and economic benefits by helping to improve water quality, maintain aquatic ecosystems, and protect drinking water resources. Efficient use of water, through behavioral, operational, or equipment changes, if practiced broadly can help mitigate the effects of drought. Efficiency measures can also save the homeowner money on their water and energy bills. This list of measures is not meant to be comprehensive, but rather a starting point. Other sources of information on water efficiency are available through EPA's web site (www.epa.gov/owm/water-efficiency/index.htm), and innumerable other sources, some of which may be accessed through the EPA web site, or through WaterWiser, The Water Efficiency Clearinghouse (www.waterwiser.org).

Bathroom — where over half of all water use inside a house takes place:

- Do not let the water run while shaving or brushing teeth.
- Take short showers instead of tub baths. Turn off the water while soaping or shampooing.
- If you must use a tub, close the drain before turning on the water and fill the tub only half full. Bathe small children together.
- Never use your toilet as a waste basket.

Kitchen and Laundry — simple practices that save a lot of water:

- Keep drinking water in the refrigerator instead of letting the faucet run until the water is cool.
- Wash fruits and vegetables in a basin. Use a vegetable brush.
- Do not use water to defrost frozen foods; thaw in the refrigerator overnight.
- Scrape, rather than rinse, dishes before loading into the dishwasher; wash only full loads.
- Add food wastes to your compost pile instead of using the garbage disposal.
- Wash only full loads of laundry or use the appropriate water level or load size selection on the washing machine.

Equipment — homes with high-efficiency plumbing fixtures and appliances save about 30% of indoor water use and yield substantial savings on water, sewer, and energy bills:

- Consider purchasing high-efficiency toilets, or place a plastic container filled with water in the tank of your conventional toilet. Be sure it does not interfere with operation of the toilet's flush mechanisms.
- Install low-flow faucet aerators and showerheads.
- Consider purchasing a high efficiency washing machine which can save over 50% in laundry water and energy use.
- Repair all leaks. A leaky toilet can waste 200 gallons per day. To detect leaks in the toilet, add food coloring to the tank water. If the colored water appears in the bowl, the toilet is leaking. Toilet repair advice is available at <www.toiletology.com/index.shtml>.

Landscape Irrigation — depending on climate, up to 75% of a home's total water use during the growing season is for outdoor purposes (During drought conditions outdoor watering restrictions may be imposed, so some of the following tips will not apply.):

- Detect and repair all leaks in irrigation system.
- Use properly treated wastewater for irrigation where available.
- Water the lawn or garden during the coolest part of the day (early morning is best). Do not water on windy days.
- Water trees and shrubs, which have deep root systems, longer and less frequently than shallow-rooted plants that require smaller amounts of water more often. Check with the local extension service for advice on watering needs in your area.
- Set sprinklers to water the lawn or garden only – not the street or sidewalk.
- Use soaker hoses or trickle irrigation systems for trees and shrubs.
- Install moisture sensors on sprinkler systems.
- Use mulch around shrubs and garden plants to reduce evaporation from the soil surface and cut down on weed growth.
- Remove thatch and aerate turf to encourage movement of water to the root zone.
- Raise your lawn mower cutting height – longer grass blades help shade each other, reduce evaporation, and inhibit weed growth.
- Minimize or eliminate fertilizing, which promotes new growth needing additional watering.
- When outdoor use of city or well water is restricted during a drought, use the water from the air conditioning condenser, dehumidifier, bath, or sink on plants or the garden. Don't use water that contains bleach, automatic-dishwashing detergent or fabric softener.

Other Outdoor Uses:

- Sweep driveways, sidewalks and steps rather than hosing off.
- Wash the car with water from a bucket, or consider using a commercial car wash that recycles water.
- When using a hose, control the flow with an automatic shut-off nozzle.
- Avoid purchasing recreational water toys which require a constant stream of water.
- Consider purchasing a new water-saving swimming pool filter.
- Use a pool cover to reduce evaporation when pool is not being used.
- Do not install or use ornamental water features unless they recycle the water. Use signs to show the public that water is recycled. Do not operate during a drought.

EPA

United States Environmental Protection Agency
Office of Water (4204M)
EPA832-F-99-082
www.epa.gov/owm/water-efficiency/index.htm

Usando el Agua Eficientemente:

Ideas para las Residencias

El uso eficiente del agua puede tener beneficios significativos para el medio ambiente, la salud pública y la economía por medio de ayudar a mejorar la calidad del agua, mantener los ecosistemas acuáticos y proteger las fuentes de agua potable. El uso eficiente del agua, mediante cambios de comportamiento de los usuarios, cambios operacionales, o cambios de equipo, pueden ayudar a mitigar los efectos de las sequías si lo practican ampliamente. Estas medidas eficientes pueden también significar un ahorro en los costos del agua y la energía eléctrica para el propietario de la vivienda. Esta lista de medidas no es comprensible, si no solamente es un punto de partida. Otras fuentes de información sobre el uso eficiente del agua están disponibles a través de la página Web de la EPA (www.epa.gov/owm/water-efficiency/index.htm), y de innumerables otras fuentes informativas, de las cuales algunas son accesibles por medio de la página Web de la EPA o mediante WaterWiser, El Centro de Intercambio de Información Sobre el Uso Eficiente del Agua (WaterWiser, The Water Efficiency Clearinghouse, www.waterwiser.org).

Cuarto de Baño – donde ocurre más de la mitad del consumo de agua dentro de una casa:

- No deje correr el agua mientras se afeite o se cepille los dientes.
- Tome una ducha por periodos cortos en vez de tomar baños de tina. Cierre la llave del agua mientras se enjabone o se lave la cabeza.
- Si tiene que usar la tina, cierre el desagüe antes de abrir la llave del agua y llene la tina sólo hasta la mitad. Bañe a los niños pequeños juntos.
- Nunca use el inodoro para disponer la basura.

Cocina y Lavandería – prácticas simples que ahorran bastante agua:

- Mantenga el agua de beber dentro del refrigerador en vez de dejar la llave abierta hasta que salga agua fría.
- Lave las frutas y verduras en un lavadero de platos. Use un cepillo para las verduras.
- No use agua para descongelar los alimentos congelados; déjelos en el refrigerador durante la noche.
- Limpie los platos, en vez de enjuagarlos, antes de meterlos en la lavadora de platos; use la lavadora de platos solamente cuando esté lleno.
- Añada los desperdicios de comida al composte en vez de usar el triturador.
- Lave solamente grandes cantidades de ropa sucia, o seleccione el ciclo en la lavadora que use al nivel apropiado de agua o que esté programado para la cantidad de ropa que desee lavar.

Equipo – las residencias con instalaciones de plomería y electrodomésticos de alta eficiencia, conservan casi el 30% del agua que se usa dentro de la casa y rinden ahorros substanciales en los costos del agua, el alcantarillado y la energía eléctrica:

- Considere la compra de inodoros de alta eficiencia, o coloque un recipiente de plástico lleno de agua dentro del tanque de su inodoro convencional. Asegúrese de que no interfiera con la operación de los mecanismos del flujo de agua del inodoro.
- Instale en las llaves aereadores para el bajo flujo, y llaves especiales con el mismo propósito en las regaderas.
- Considere la compra de una lavadora de ropa de alta eficiencia, la cual puede ahorrar más del 50% del agua y la electricidad que se use para lavar.
- Repare todas las fugas. Un inodoro con fugas puede gastar hasta 200 galones de agua por día. Para detectar las fugas en el inodoro, agregue al agua del tanque colorante de comestibles. Si el agua con color aparece en la taza del inodoro, éste tiene una fuga. Consejos para la reparación de inodoros están disponibles en la página Web www.toiletology.com/index.shtml.

Riego de Jardines – dependiendo del clima, hasta el 75% del consumo total de agua de una residencia durante la temporada del crecimiento de la vegetación se usa en el exterior de la casa. (Durante condiciones de sequía, puede haber restricciones en el riego de los exteriores, entonces puede que algunos de los siguientes consejos no sean aplicables):

- Detecte y repare todas las fugas en el sistema de riego para jardines.
- Use para regar el agua residual que ha sido tratada de manera apropiada, donde esté disponible.
- Riegue el césped o el jardín durante la parte más fresca del día (temprano por la mañana es mejor). No riegue en días de mucho viento.
- Riegue los árboles y arbustos que tienen las raíces son profundas, por periodos más largos y con menos frecuencia que las plantas con raíces un poco más profundas que requieran pequeñas cantidades de agua con mayor frecuencia. Consulte con el Servicio de Extensión Agrícola Local para recomendaciones sobre las necesidades de riego en su área.
- Ajuste los rociadores para que rieguen solamente el césped o el jardín–no la calle o la banqueta.
- Use mangueras de remojo o sistemas de riego por goteo para árboles y arbustos.
- Instale sensores de humedad en los sistemas de riego.
- Utilice una cubierta retenedora de humedad alrededor de los arbustos y las plantas de jardín para reducir la evaporación en la superficie de la tierra y reducir el crecimiento de la maleza.
- Remueva los desechos de paja y deje airear el césped para estimular el movimiento de agua hacia la zona de raíces.
- Alce la altura del corte de su máquina cortadera de césped—las hojas del césped más largas ayudan a darse sombra las unas a las otras, a reducir la evaporación, y a impedir el crecimiento de la maleza.
- Minimice o elimine el uso de fertilizante, el cual promueve el nuevo crecimiento que requiera de un riego adicional.
- Cuando el uso del agua de la ciudad o del agua de pozo esté restringida durante una sequía, use el agua del condensador del aire acondicionado o del deshumidificador, o baño o del lavadero de platos para regar las plantas del jardín. No use agua que contenga cloro, detergente de la lavadora de platos, o suavizador de ropa.

Otros Usos Exteriores:

- Barra los caminos de entrada para los vehículos, las banquetas y los escalones, en vez de lavarlos con la manguera.
- Lave los vehículos con agua en una cubeta, o considere usar un sitio de lavado de carros comercial que recicle el agua.
- Cuando use una manguera, controle el flujo con una boquilla que se cierre automáticamente.
- Evite comprar juguetes de recreo de agua que requieran un flujo constante de agua.
- Considere la compra de un filtro nuevo para conservar el agua de la piscina.
- Use una cubierta para la piscina para reducir la evaporación cuando no esté en uso.
- No instale, ni use accesorios ornamentales de agua a menos que reciclen el agua. Use rótulos para enseñar al público que el agua está siendo reciclada. No opere estos accesorios durante una sequía.

EPA

Agencia de Protección Ambiental de losEstados Unidos
Oficina de Agua (4204M)
EPA832-F-99-095
www.epa.gov/owm/water-efficiency/index.htm

Water Conservation

In addition to water supply management measures, Calleguas is committed to reducing water demand. The District is actively involved in a number of water conservation programs designed not only to educate local water users of the need to conserve, but to provide a means to do so. With the ever increasing demand for safe and reliable drinking water, Calleguas continues to institute a variety of programs which will conserve our most vital resource.

HARDWARE RETROFIT PROGRAMS

(click here for more info)

Ultra-Low-Flush Toilets (ULFTs) -- The program most widely used is the distribution program. Program are executed with the participation of Calleguas purveyors and a community based organization (CBO), typically a high school organization such as an athletic team or booster club, or a seniors group. This program involves the CBO directly as the marketers of the program, as well as the organizers of the distribution. A monetary contribution is made to the participating CBO at the end of the program based upon the number of ULFTs distributed, usually $15 per retrofit.

Low-Flow Showerheads -- Calleguas continues to support its purveyors with the distribution of low-flow showerheads. Calleguas purchases the showerheads from Metropolitan, or a manufacturer, and makes them available to the purveyors for distribution to their customers directly or through a ULFT program.

COMMERCIAL, INDUSTRIAL & INSTITUTIONAL PROGRAMS

Calleguas, through its purveyors, has identified many of the larger water users in the commercial, industrial, institutional (CII) sector. Contact has been made with some of organizations and water surveys have been offered at no cost to the customer. The Best Management Practices (BMPs) that Calleguas strives to comply with calls for the top 20% of CII users to be targeted. Larger users have been offered more comprehensive surveys in order to identify conservation methods that can be implemented in the most cost effective manner.

LANDSCAPE IRRIGATION PROGRAM

Calleguas has started a pilot program that uses moisture sensors in order to control landscape clocks on large landscaped areas. Over a period of one year, water usage on two

similar areas, one with moisture sensors and one without, will be evaluated to assess potential savings.

SCHOOL EDUCATION

Calleguas, in conjunction with the Metropolitan Water District of Southern California, offers classroom materials to teachers throughout our service area. These programs include:

Elementary Programs

Inservice
Some of the programs that Metropoltian provides require teachers to participate in an inservice or workshop. This inservice allows the teacher to become familiar with the materials and terminology used in the program. These workshops are provided by Metropolitan staff.

Kindergarten through 3rd Grade -- *All About Water*
All About Water is a book that contains water activities and experiments involving water conservation, water quality, water distribution, the water cycle, and fresh and salt water.

4th Grade -- *Admiral Splash*
This program teaches about the water cycle, the history of southern California's water supply, the distribution system, water uses and water conservation.

5th Grade -- *Waterways*
Waterways is a recent addition to Metropolitan's education programs that addresses the history of water in the United States.

6th Grade -- *California Smith, Water Investigator*
This program informs students about water supply and distribution in California, contemporary water issues, and water conservation.

The H2O Shows
Three different assembly programs are offered: 1) for Grades K-2, a flannel board presentation of the water cycle, a water cycle song and a discussion about water conservation; 2) for Grades 3-4, a slide presentation of the use of California's water resources by early Native Americans to the present day, a water conservation game, the Water Tap Rap and a film; and, 3) for Grades 5-6, a slide presentation of how water is imported from the Colorado River to Metropolitan's service area, a water conservation game, the Water Tap Rap and a film.

Secondary Programs

Grades 9-12 -- *Water Highways*
This unit is designed primarily for biology and environmental science courses. The student assesses the positive and negative impacts of California's State Water Project upon fisheries, wildlife, the land, the economy, and the people.

Grades 7-12 -- *Water Quality*
Developed for physical science, chemistry and biology classes, the unit involves hands-on activities. The student, as a water quality lab technician, analyzes four water samples,

detects any problems, identifies potential causes, and proposes solutions.

Grades 9-12 -- *Water Politics*
This program is designed for government, economics and environmental science classes. This unit consists of case studies relating to contemporary water issues. Through critical thinking and role playing, students will investigate the role of federal, state and local governments, water agencies, and interest groups (business, agricultural, environmental) in making water management decisions. There is also a "Water Forum" that is held in which the students are given scenarios and need to address the issues and offer solutions before a panel of water industry experts. This program has been revised and is now being offered as the primary High School program.

Grades 9-12 -- *Water Trade-Offs*
Designed for economics classes, the unit involves a cost/benefit analysis of a proposed trade-off between two water agencies. Participating students are introduced to basic fundamentals of economics in a "real world" framework.

For further information on the District's conservation programs, please call (805) 526-9323.

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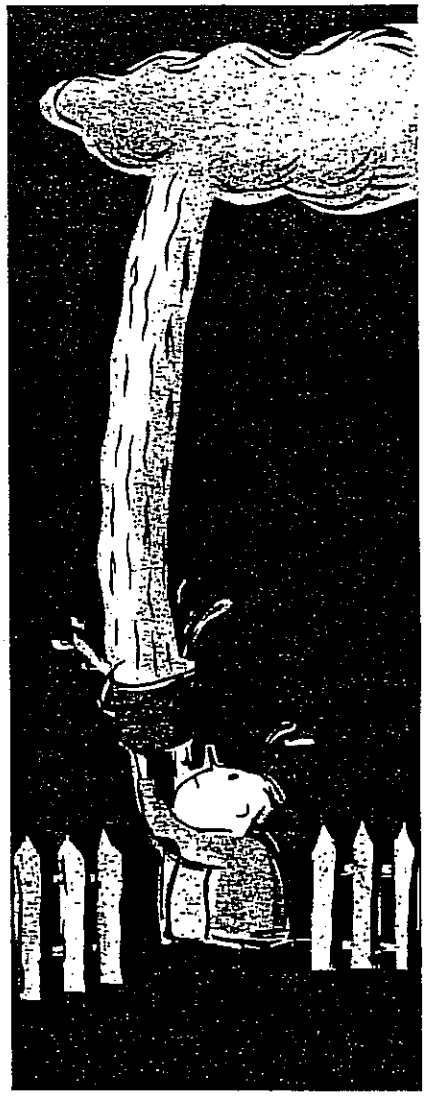


THE

Top Ten Tips

FOR

Saving Water

(AND A BUNCH MORE)

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
P.O. Box 54153
Los Angeles, California 90054-0153

Drought! It isn't predictable. That's a science whose time has not yet come. About the best scientists can do is look at what's happened in the past and calculate the odds of future rainfall.

Wise water use, however, must be a way of life in Southern California — not just during times of drought. As population figures climb, future water supplies are by no means dependable.

The average Southern California home uses 384 gallons of water daily, indoors and out. The average apartment or condominium uses 256 gallons daily. An individual uses between 100 and 140 gallons of water each day.

We can't predict the weather. But we can do many things to stretch the supplies we have. So drought or not, please don't waste water. Follow the tips in this brochure and save hundreds of gallons each month. Remember we're living in a semiarid desert.

Ten ways that will save the most

1. Water your lawn only when it needs it. Step on your grass. If it springs back when you lift your foot, it doesn't need water. So set your sprinklers for more days in between watering. Saves 750 to 1,500 gallons a month. Better yet, especially in times of drought, water with a hose.

2. Fix leaky faucets and plumbing joints. Saves 20 gallons a day for every leak stopped.

3. Don't run the hose while washing your car. Use a bucket of water and a quick hose rinse at the end. Saves 150 gallons each time. For a two-car family that's up to 1,200 gallons a month.

4. Install water-saving shower heads or flow restrictors. Saves 500 to 800 gallons a month.

5. Run only full loads in the washing machine and dishwasher. Saves 300 to 800 gallons a month.

6. Shorten your showers. Even a one- or two-minute reduction can save up to 700 gallons a month.

7. Use a broom instead of a hose to clean driveways and sidewalks. Saves 150 gallons or more each time. At once a week, that's more than 600 gallons a month.

8. Don't use your toilet as an ashtray or wastebasket. Saves 400 to 600 gallons a month.

9. Capture tap water. While you wait for hot water to come down the pipes, catch the flow in a watering can to use later on house plants or your garden. Saves 200 to 300 gallons a month.

10. Don't water the sidewalks, driveway or gutter. Adjust your sprinklers so that water lands on your lawn or garden where it belongs — and only there. Saves 500 gallons a month.

DON'T LET YOUR WATER USE GET THE BEST OF YOU.

26. And, finally, replace high-water-using trees and plants with less thirsty ones. But do this only in non-drought years. Even drought-resistant plantings take extra water to get them going. That'll save 750 to 1,500 gallons a month.

Water Used For Common Activities

Brushing teeth
3 gallons a day

•

Shower
40 gallons every 10 minutes

•

Bath
20 gallons

•

Toilet
28 gallons a day per person

•

Clotheswasher
45 gallons per load

•

Cooking
5 gallons a day

•

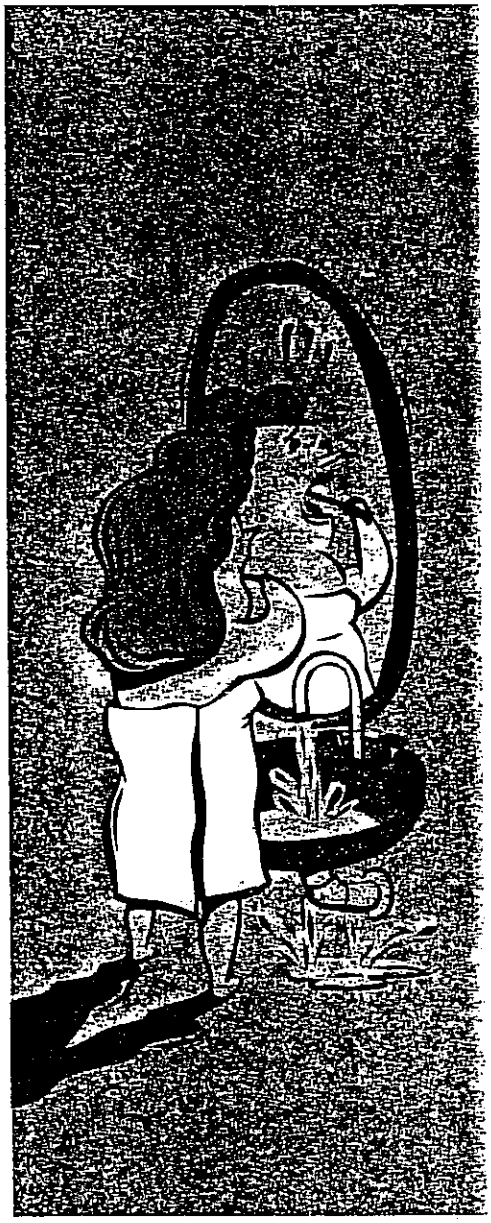
Dishwasher
15 gallons per load

•

Hosing driveway
150 gallons

•

Washing car
150 gallons



Brush up on water conservation.

WHEN IT'S WILLING, LET NATURE DO THE JOB.

15. Water during the cool parts of the day. Early morning is better than dusk since it helps prevent the growth of fungus. Saves 300 gallons a month.

16. Don't water the lawn on windy days. There's too much evaporation. Can waste up to 300 gallons in one watering.

17. Cut down watering on cool and overcast days and don't water in the rain. Adjust or deactivate automatic sprinklers. Can save up to 300 gallons each time.

18. Set lawn mower blades one notch higher. Longer grass means less evaporation. Saves 500 to 1,500 gallons each month.

19. Have an evaporative air conditioner? Direct the water drain line to a flower bed, tree base or lawn.

20. If municipal ordinances don't prohibit it, drive your car onto a lawn to wash it. Rinse water can help water the grass.

21. Tell your children not to play with the garden hose. Saves 10 gallons a minute.

22. If you allow your children to play in the sprinklers, make sure it's only when you're watering the yard — if it's not too cool at that time of day.

23. When taking your car to a car wash — and during a drought that's a particularly good idea — be sure it's one of the many that recycles its wash water.

24. If you're working around the yard, clean up with waterless hand cleaner rather than washing under a steady stream of water. Saves seven to 10 gallons each time.

25. If you don't want water, turn the empty water glass upside down in a restaurant. Not only will you save the water you don't drink, you'll also save the water used to wash the glass. Collectively saves millions of gallons a year.

And to make every gallon saved count. . . 26 more ways

In the Bathroom. . .

1. Put a plastic bottle or a plastic bag weighted with pebbles and filled with water in your toilet tank. Displacing water in this manner allows you to use less water with each flush. Saves 5 to 10 gallons a day. That's up to 300 gallons a month, even more for large families . Better yet, for even greater savings, replace your water-guzzling five-to-seven-gallon-a-flush toilet with a three-and-a-half-gallon, low-flush or one-and-a-half-gallon, ultra-low-flush model.

2. Take baths instead of showers. A partially filled tub uses less water than all but the shortest showers. Saves 15 to 20 gallons each time.

3. If you're taking a shower, don't waste cold water while waiting for hot water to reach the shower head. Catch that water in a container to use on your outside plants or to flush your toilet. Saves 200 to 300 gallons a month.

4. Check toilet for leaks. Put dye tablets or food coloring into the tank. If color appears in the bowl without flushing, there's a leak that should be repaired. Saves 400 gallons a month.

5. Turn off the water while brushing your teeth. Saves three gallons each day.

6. Turn off the water while shaving. Fill the bottom of the sink with a few inches of water to rinse your razor. Saves three gallons each day.

In the Kitchen and Laundry...

7. If you wash dishes by hand — and during a drought that's the best way — don't leave the water running for rinsing. If you have two sinks, fill one with rinse water. If you only have one sink, use a spray device or short blasts instead of letting the water run. Saves 200 to 500 gallons a month.

8. When washing dishes by hand, use the least amount of detergent possible. This minimizes rinse water needed. Saves 50 to 150 gallons a month.

9. Keep a bottle of drinking water in the refrigerator. This beats the wasteful habit of running tap water to cool it for drinking. Saves 200 to 300 gallons a month.

10. Don't defrost frozen foods with running water. Either plan ahead by placing frozen items in the refrigerator overnight or defrost them in the microwave. Saves 50 to 150 gallons a month.

11. Don't let the faucet run while you clean vegetables. Rinse them in a filled sink or pan. Saves 150 to 250 gallons a month.

12. Use the garbage disposal less and the garbage can more. Saves 50 to 150 gallons a month.

Indoor savings based on a family of two adults and one child.

And Outside...

13. Put a layer of mulch around trees and plants. Chunks of bark, peat moss or gravel slows down evaporation. Saves 750 to 1,500 gallons a month.

14. If you have a pool, use a pool cover to cut down on evaporation. It will also keep your pool cleaner and reduce the need to add chemicals. Saves 1,000 gallons a month.

PROTECT WATER QUALITY

Although water agencies do an excellent job of delivering water that is safe to drink, many of our water supplies are threatened by contaminants. These can pose a health risk to humans and animals, and can harm ecosystems. You can help protect the quality of your local water supply in the following ways:

AROUND THE HOUSE

Properly use and store all toxic products, including cleaners, solvents, and paints. Take unwanted household hazardous materials and containers to a local collection site for disposal.

IN THE GARDEN

Use pesticides, herbicides, and fertilizers carefully and sparingly in accordance with labels. Dispose of at a hazardous waste collection center. Use a broom rather than a hose to clean up garden clippings, and deposit them in a garbage can or compost pile.

YOUR VEHICLES

Take used motor oil and antifreeze to a gas station with a recycling center, or to a hazardous waste collection center. Have your vehicle inspected and maintained regularly to reduce leakage of oil, antifreeze, and other fluids.

EASY WAYS TO SAVE WATER

Take these steps to help save water and money!

USE LESS

Be aware of the amount of water you use, and look for ways to use less. For instance, fill sinks with water instead of letting water run when you wash, shave, do dishes, etc.

REPAIR LEAKING FAUCETS

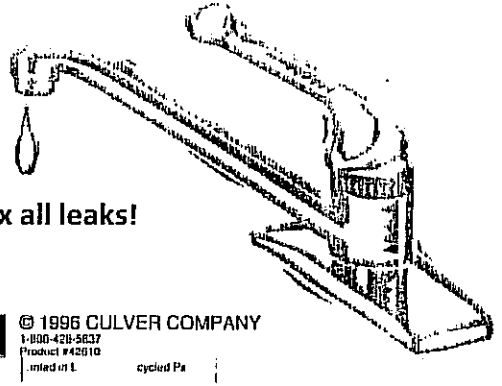
A leaking faucet can waste more than 3,820 gallons of water a year. Check each tap in the house, and replace worn washers or valve seats.

INSTALL WATER-SAVING DEVICES

Use low-flow showerheads, faucet aerators, or flow restrictors. For older toilets, install a toilet dam or place a weighted plastic jug in your tank.

SAVE OUTDOORS

Water your lawn only when it needs it. Landscape with plants that require little water.



Fix all leaks!

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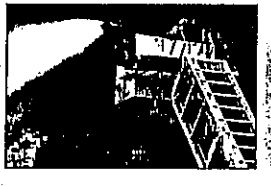
1-800-428-5837
Product #42610
...nted in L... ...cycled Pa...

WATER

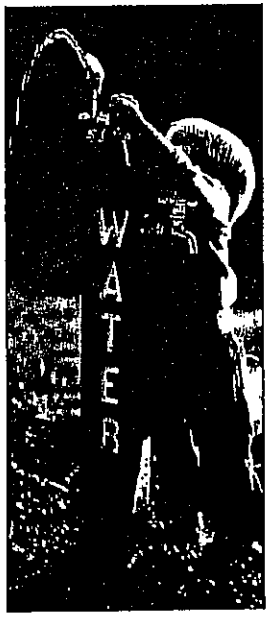


A Vital Resource

WATER—A PRECIOUS RESOURCE

Protecting the quality of our water is essential to the preservation of life on earth. Even where water is plentiful, it may be threatened with pollutants. Help protect the quality of your water by learning more about how water gets to you, and how you can ensure its safety for generations to come.

WATER IS ESSENTIAL TO LIFE



- Water makes up most of our blood, lubricates the joints in arms and legs, helps us digest the food we eat, and rids our bodies of waste.
- We use it to grow food, provide power, control fires, and to heat and cool our homes and offices.
- We use it for recreation, such as fishing and swimming, and to beautify our environments.

Because water is a basic building block in the cycle of life, it is critical that all of us understand the importance of conserving and protecting our water supply.

NATURE'S WATER CYCLE

The hydrologic cycle is nature's way of moving water to and from the earth. Since water is cleaned in this process, it is important that we do not upset the balance in order to keep life on earth livable.

THE HYDROLOGIC CYCLE

Condensation

Water vapor condenses from a gas to a liquid, forming clouds that give us rain or snow.

Evaporation

The sun heats land and water surfaces, causing water to rise into the air as vapor.

Precipitation

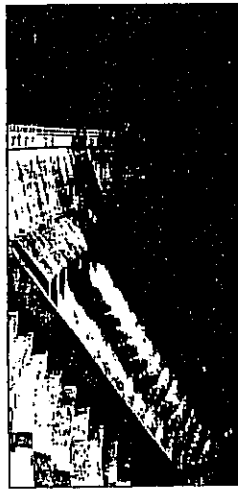
As the water falls back to earth as rain, snow, sleet, or hail, some of the water runs into rivers, lakes, and oceans. It is absorbed by the soil or it seeps into underground formations called aquifers.

TWO SOURCES FOR FINDING FRESH WATER

1. **Surface Water**
   Sources of fresh water found on the earth's surface include lakes, streams, rivers, ponds, and reservoirs.
2. **Groundwater**
   Drinking water may be found in underground rock formations, caverns, and sand and gravel beds. We get this water from wells or natural springs. Groundwater is a valuable natural resource because it's often clean and there's so much of it.

Unless you get your water from a private well or water system, it probably comes to you from a large public water supply system, which involves the following steps:

1. **WATER COLLECTION**
   The water is collected from surface sources such as lakes or rivers or from groundwater basins.
2. **STORAGE**
   Dams or reservoirs are built to ensure that supplies will be adequate.
3. **TRANSMISSION**
   Pipes or special channels called aqueducts are used in some cases to transport water.



4. **TREATMENT**
   Treatment facilities make our water safe to drink by removing contaminants, odors, and tastes.
5. **DISTRIBUTION**
   Underground pipes carry cleaned water to your home, where it's available on demand.

Conservation at Home: What You Can Do

Of the water used each year by a typical California family, 53 percent is used inside the home while 47 percent is used outside. Flushing the toilet accounts for the largest single use inside the home, followed by bathing, laundry, dish washing, drinking and, finally, cooking. Outside the house, the vast majority of water is used for landscaping. Conservation in the home is crucial to helping solve our state's water challenges.

INDOORS:

• Don't use your toilet to flush trash.

• Low-volume toilets can save some of the five to seven gallons used by conventional models for each flush.

• Toilet tank displacement bags can save over 1,000 gallons of water per person per year. Place weighted plastic bottles in your toilet tank to displace water. These bags can be obtained from local water districts or made by pouring two inches of sand or gravel into two plastic quart bottles, filling them with water and sealing. (Do not use bricks which can disintegrate and cause plumbing problems.)

• Install water-saving shower heads and take shorter showers, or take shallow baths—they use less water than showers.

• Put the stopper in the tub before you turn on the water.

• Don't leave the water running when you brush your teeth, shave, wash dishes, clean vegetables, etc.

• Use garbage disposals sparingly. Use dishwashers and washing machines only for full loads.

• Keep a bottle of ice water in the refrigerator rather than running water to get it cool.

• Check for and repair leaks. To check all toilets, faucets and pipes for leaks, turn off all water appliances and observe water meter. Check for drips or seepage around faucets. (A leaky faucet can waste 50 gallons a day, which adds up to almost 1,500 gallons a month.)

OUTDOORS:

• Water your lawn only when it is thirsty. A good way to tell is to step on some grass. If the grass springs back up when you move, it doesn't need water. (Your water supplier should be able to provide you with lawn watering guidelines for your area.)

• Water early in the morning when less water will be evaporated by the hot sun.

• Position sprinklers to water only the lawn, not the sidewalk or street.

• Set your lawn mower blade higher. Taller grass retains more moisture.

• Several inches of mulch around plants will cut down on evaporation and keep water-robbing weeds down.

• Use a rake and broom, instead of a garden hose, to clean up debris.

• When washing the car use a trigger nozzle or turn off the water while you soap the car from a bucket.

EXHIBIT "B"

Table F-1: Conservation Actions for Residential Customers
o Repair leaking faucets and use a dye test for running toilets
o Install ULF toilets and efficient showerheads
o Read the water meter weekly to determine the effect of water conservation measures
o Do not leave the tap running while brushing teeth, shaving, preparing food, etc.
o Install a shut-off valve on hoses to save water while watering plants or washing the car
o Wash only full loads in the washing machine or dishwasher
o Follow landscaping irrigation guidelines to water plants only when necessary
o Do not use water to clean driveways, sidewalks, etc.
o Take shorter showers or shallower baths
o Use garbage disposals sparingly
o Keep a bottle of drinking water in the refrigerator; this saves running the tap to get cooler water
o Adjust all water-using appliances (including water softeners and reverse osmosis units) to use the minimum amount of water necessary
o Use low-sudsing detergents; they clean just as well and require less rinse water
o Do not mow lawns too short; taller grass retains moisture better
o Position sprinklers carefully; do not water sidewalks or streets
o Water in the evening or early in the day when wind and evaporation are minimal
o Surround plants with rocks or mulch to retain soil moisture
o Use greywater on shrubs and trees.

Table F-2: Conservation Actions for Water Purveyors and Other Agencies
o Maintain an aggressive leak detection and repair program
o Repair leaking plumbing fixtures within public agencies
o Test and repair source and customer meters for better water accountability
o Reduce the washing of streets and flushing of water mains and storm drains to the minimum level necessary to maintain health and safety standards
o Turn off ornamental fountains and other highly visible water luxuries
o Cut back or eliminate fairway watering at all golf courses which receive public water; reduce watering of golf course tees and greens to a minimum
o Restrict the filling or refilling of public and private swimming pools
o Cover pools when not in use to reduce evaporation and heat losses
o Prohibit restaurants and other food establishments from routinely providing glasses of water unless specifically requested by the customer
o Install automatic turn-off valves in public restrooms
o Install ULF toilets in all agency bathrooms
o Discontinue vehicle washing except for medical or sanitary reasons; e.g., food delivery or medical vehicles
o Ban the cleaning of paved surfaces with water
o Reduce fire hydrant use by municipal road crews or contractors
o Impose fines for illegal hydrant openings
o Post water conservation notices near all water sources such as water fountains and sinks
o Install flow restrictors on hoses and faucets

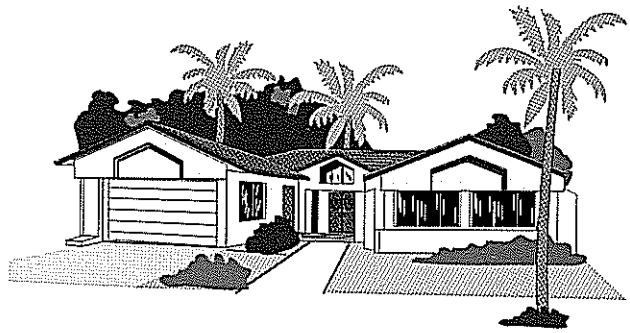
Table F-3: Conservation Actions for Business and Industrial Users

- Start a water conservation program
- Assign water usage monitors
- Read the water meter weekly to determine the effect of water conservation measures
- Install ULF toilets and low flow showerheads in employee restrooms
- Adjust water flows in industrial processes to save water
- Turn off water to rooms and building areas not in use
- Install recycling systems for chilling and cooling towers
- Use ponded water supplies when appropriate
- Discontinue continuous flow processes when possible
- Wash windows when dirty, not on a regular basis
- Instruct cleaning crews to be frugal with water
- Provide paper cups to reduce water use at water fountains
- Replace worn-out water-using appliances with newer, more efficient models
- Recycle dishwasher rinse water
- Sweep shop floors rather than hosing them
- Reduce fresh water used for cooling and air-conditioning systems (e.g. raise office air temperatures)
- Use treated waste water for landscape watering
- Use treated waste water for industrial processes
- Check water hose couplings weekly for leaks
- Ensure that solenoids and valves controlling water flows are completely closed when the water-using cycle of a machine is not engaged
- Adjust flushometers and automatic flush valves to utilize the minimum amount of water necessary
- Check for and repair leaks

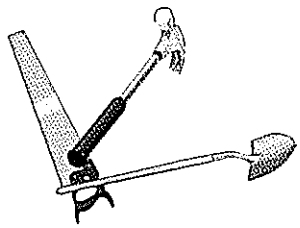
SUSTAINABLE LANDSCAPING

RESOURCE EFFICIENT LANDSCAPES FOR SANTA BARBARA COUNTY

Home Improvement Projects



Stormwater Best Management Practices (BMPs) For New Homeowners



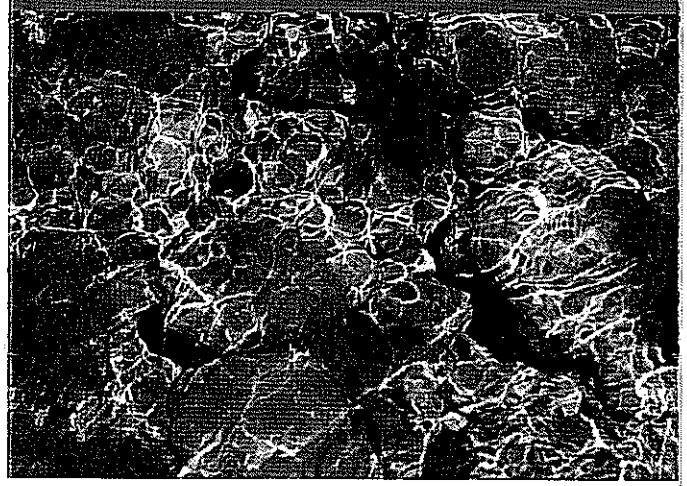
Do you know where the water goes?

Please be a responsible homeowner and a good neighbor by taking a moment to review these homeowner tips to help protect the health and safety of your family, your neighborhood, and the future of our environment.

The "DON'T DUMP!" message is located next to the storm drains to remind everyone that gutters and storm drains carry rain as well as pollutants directly to streams, creeks, lakes and the ocean *without any treatment*!

Pollutants that are generated from our activities may be washed by rain and other water sources into our waters and the ocean. Polluted water threatens our water resources, marine life, our health, and results in beach closures along the coast.

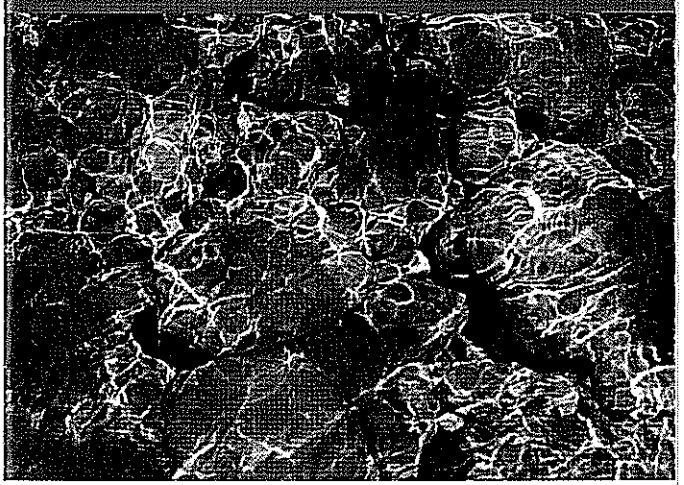
Watershed Protection Tips for Residents



Learn more about the watershed and how you can help protect it.

COMMUNITY FOR A CLEAN WATERSHED

Consejos sobre cómo proteger la cuenca hidrográfica para residentes



Conozca más sobre la cuenca hidrográfica y cómo ayudar a protegerla.

COMMUNITY FOR A CLEAN WATERSHED

Subject: News Release: EPA's Hispanic Web Site Starts Second Year on High Note - Agency adds Hispanic environmental health page to site

News for Release: Wednesday, February 1, 2006

U.S. Environmental Protection Agency (EPA)

EPA's Hispanic Web Site Starts Second Year on High Note
Agency adds Hispanic environmental health page to site

Contact: Lina Younes, 202-564-4355 / younes.lina@epa.gov

(Washington, D.C.-February 1, 2006) EPA announced today a new Hispanic environmental health page on its Spanish Web site. The new page discusses health and environmental issues associated with asthma, mold, and indoor carbon monoxide. The portal is part of the agency's continuing expansion of outreach to the Hispanic community.

During the course of this past year, EPA has reached out to Hispanics on issues including pesticides, lead poisoning prevention, hazardous waste sites and recycling, among others. The site also provides information on educational resources for students and teachers, EPA grants, fellowships and small business opportunities with the agency.

"Regardless of our heritage, we all benefit from a clean, healthy environment," said EPA Administrator Stephen L. Johnson. "EPA's Spanish Web site is a valuable tool in delivering important health and environmental information to the Hispanic community – empowering more of our residents with the facts they need to protect their families and our shared environment."

The Hispanic environmental health page, "El medio ambiente y su salud," focuses on the agency's overall efforts to educate Hispanics, researchers, and health care providers on how environmental health issues affect the different Hispanic communities throughout the United States and Puerto Rico. The page is updated regularly with new information on developments and policy. For example, the page currently includes information on indoor carbon monoxide and soon will be updated with information on carbon monoxide outdoors.

In 2005, EPA translated and posted more than 60 agency news releases on the Hispanic Web site. In addition, the agency's program offices have developed a wide variety of Spanish-language outreach materials. Among these are a toolkit entitled "Ten Steps to a Healthier, Safer and More Beautiful Community", designed to assist community leaders in raising environmental awareness among foreign-born Spanish-speakers. The toolkit contains various templates and a curriculum designed for teachers of English as a second language, using environmental terms and concepts as part of the English lessons.

Important information was provided to Spanish-speaking residents in the areas affected by last year's hurricanes. The Hispanic portal provided radio public service announcements (PSAs) and fact sheets warning of the potential environmental and health hazards posed by hurricanes as well as useful information on what residents needed to know to protect themselves upon returning to their homes and businesses in hurricane impacted areas. Due in large measure to the environmental health information related to the hurricanes, the Spanish language portal logged more than 17,000 visitors during the month of November 2005 alone.

EPA's future plans for Hispanic outreach include additional Spanish language Web pages and community forums to discuss health and environmental issues.

For more information on EPA's Spanish portal, visit: http://www.epa.gov/espanol To visit the site "El medio ambiente y su salud," go to: http://www.epa.gov/espanol/saludhispana/index.htm Other EPA Spanish pages available through the portal are Superfund en Español at: http://www.epa.gov/superfund/spanish/index.htm and regional news information along the Gulf of Mexico states at: http://epa.gov/region6/6xa/indexesp.htm

Appendix K

City Code and Guidelines for Preparation of Landscape Irrigation Plans

RESOLUTION NO. 3675

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTA PAULA ESTABLISHING GUIDELINES FOR THE PREPARATION OF LANDSCAPE AND IRRIGATION PLANS

CDP. No. : 89-12
APPLICANT: City Initiated

WHEREAS, the City of Santa Paula's General Plan sets standards for compatibility of structures and site plans with neighboring development within all zoning categories and recommends zoning and code provisions which will assure good design and functionality within projects; and

WHEREAS, the City has been limited in assuring that these recommended standards for landscaping are met due to lack of guidelines for the preparation of landscape and irrigation plans; and

WHEREAS, the City Council and Planning Commission have found that the creation of guidelines for the preparation of landscape and irrigation plans will enable the City to assure that projects are attractive and will function well once construction has been completed and will allow the City to disapprove poor quality projects.

WHEREAS, by Resolution No. 2988, the Planning Commission has recommended to the City Council of the City of Santa Paula that the Guidelines for the Preparation of Landscape and Irrigation Plans, attached hereto as Exhibit A and incorporated herein as if set forth in full, be adopted.

NOW, THEREFORE the City Council of the City of Santa Paula hereby approves and establishes these Guidelines for the Preparation of Landscape and Irrigation Plans, attached hereto as Exhibit A and incorporated herein as if set forth in full.

PASSED and ADOPTED this 20th day of March, 1989.

Les H. Maland
Mayor, City of Santa Paula

ATTEST:

Clerk, City of Santa Paula

CITY OF SANTA PAULA INCORPORATED APRIL 22, 1902 VENTURA CO. CAL.

STATE OF CALIFORNIA)
COUNTY OF VENTURA) ss
CITY OF SANTA PAULA)

I, STACEY B. MacDONALD, City Clerk of the City of Santa Paula, do hereby certify that the above and foregoing Resolution was duly passed and adopted by the Council of said City at a Regular meeting thereof held on the 20th day of March, 1989, by the following vote:

AYES: Councilmembers Wilson, Barringer, Melton and Mayor Maland

NOES: Councilmember Urias

ABSENT: None

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City this 21st th day of March, 1989.

STACEY B. MacDONALD, CMC
City Clerk

CITY OF SANTA PAULA
INCORPORATED
APRIL 22, 1902
VENTURA CO. CAL.

§ 156.631 REQUIREMENTS FOR RESIDENTIAL PARKING.

(A) *Design standards.* All parking areas shall be designed to comply with standards depicted on Drawing D1-3, entitled "Minimum Off-Street Parking Dimensions, City of Santa Paula" on file in the office of the City Engineer. ('81 Code, § 17.58.160)

(B) *Screen walls and fences.*

(1) All off-street parking facilities serving two or more dwellings are to be screened from view from adjoining properties and peripheral streets as noted in subdivision (2) of this division.

(2) Uncovered parking areas shall be screened by walls or fences constructed of slumpstone, decorative masonry block, brickwork or similar masonry materials, or wooden fences designed and constructed in accordance with city standards. Plans for screen walls and fences shall be approved by the Planning Director prior to installation.

(3) Walls or fences located on or behind required setback lines shall be at least four feet in height but not more than six feet in height, measured from the parking area side of the wall. All walls shall contain steel reinforcing and shall be engineered in accordance with city standards.

(4) Walls or fences constructed within a required building setback shall not exceed 36 inches in height.

(5) All screen walls and fences shall be set back at least three feet from all property lines that are adjacent to public or private streets.
('81 Code, § 17.58.170)

(C) *Landscaping.*

(1) At least 5% of any open parking and driveway areas providing parking for two or more dwelling units on the same lot or building site shall be landscaped as noted below. Required landscaping will be computed on the basis of the total area of all parking and driveway facilities excepting the area designated for covered parking spaces. All landscaped areas shall be provided with a suitable irrigation system. Landscaping and irrigation system plans shall be submitted along with architectural or structural plans or site plan and approved by the Planning Director prior to the issuance of any building permits.

(2) A minimum three-foot-wide planter shall be provided adjacent to and on the parking area side of screen walls or fences located along property lines. Where walls or fences are required to be set back from a property line, the open area between the property line and the wall or fence shall be landscaped.

(3) Landscaped parkways shall be provided in accordance with city standards.
('81 Code, § 17.58.180)

(D) *Covered parking.*

(1) All covered parking serving more than two dwelling units on the same lot or building site shall be enclosed on three sides, except that when built in combinations of two or more adjacent spaces, only the side opposite the entry and the two ends need to be enclosed. The lower portion of walls shall be enclosed for a height of at least four feet; except, that when storage cabinets are located adjacent to an exterior wall of a carport, that wall shall be fully enclosed from floor to roof.

(2) The floors of all garages and carports shall be constructed of concrete, a minimum of four inches in thickness, and designed in accordance with building code requirements.

(3) When doors are provided on garages or carports, minimal door widths shall be eight feet for single doors and 16 feet for double doors.

(4) Each floor of multiple-level parking structures shall have walls along the sides and ends, exclusive of ramps, and drives, that are at least 42 inches high.
('81 Code, § 17.58.190)

(C) *Landscaping*. The following landscaping requirements shall be met:

(1) A landscaped strip not less than three feet in width is required along the sides of a required parking area bounded by a street or highway, excluding space devoted to driveways or permitted buildings or structures. Appropriate wheel blocks shall be installed along the parking sides of all planting strips in a manner to assure that the automobiles do not project into the landscaped area. The landscaped area shall be surrounded by a six-inch concrete curb, and if the landscaped area is widened to five feet, the concrete curb may serve as the bumper stop if overhanging cars would not damage irrigation facilities.

(2) Required parking facilities for 10 or more automobiles shall, in addition, include interior landscaping in a manner acceptable to the Planning Director. Such area of landscaping shall be equivalent to 5% of the area of the lot, excluding the required three-foot landscaped strip adjacent to streets and highways.
('81 Code, § 17.58.280)

(D) *Access*. Driveways or private streets serving commercial and industrial projects shall be completely paved with asphaltic concrete or concrete paving and shall meet the following standards:

(1) Two-way driveways to large projects in which sound engineering and traffic practices indicate a standard street width is necessary in the opinion of the Public Works Director/City Engineer:

(a) Commercial driveways: up to 35 feet for each driveway;

(b) Industrial driveways: 48 feet;

(2) Other two-way driveways:

(a) Commercial driveways: 25 feet for each driveway;

(b) Industrial driveways: 28 feet;

(3) One-way driveways (exit only):

(a) Commercial driveways: 12 feet;

(b) Industrial driveways: 14 feet;

(4) Driveway widths shall be measured exclusive of curb height transitions or side slopes.

(5) No portion of the required front yard setback may be used for on-site circulation and access; except, that driveways located perpendicular to the front property line and designed in accordance with the driveway width provisions contained in this division may be provided.

(6) Each entrance and exit to a parking area, garage or carport shall be constructed and maintained so that any vehicle entering or leaving the parking space shall be clearly visible at a distance of not less than 10 feet to a pedestrian approaching an entrance or exit on a sidewalk or walkway which is adjacent to public street or alley.

(7) Any abandoned or nonfunctional driveway shall be removed and replaced with standard concrete curbs, gutter and sidewalks.

(8) Driveways and parking areas shall be so designed that vehicles will not back out onto a public street; provided, however, that vehicles may back out onto a public alley if, in the opinion of the Public Works Director/City Engineer, such a design is acceptable in accordance with sound engineering and traffic practices.
('81 Code, § 17.58.290) (Ord. 761, passed - -81; Ord. 788, passed - -82)

(E) *Stops, blocks and curbing*.

(1) Wheel stops or curbing shall be provided whenever parking stalls are designed in such a manner that parked cars head into and abut walls, fences, buildings or landscaped areas.

(2) Parked vehicles may overhang both sides of planter areas that are more than six feet wide or one side of planters that are less than six feet in width.

§ 156.705 MECHANICAL EQUIPMENT SCREENING.

All mechanical and electrical equipment, including ducting and piping, whether located at ground or rooftop level, shall be screened from view in a manner which is reasonably compatible and harmonious with the architectural style and detail of the building and shall be located in a position satisfactory to the Fire Marshal and Planning Director or their designees.
('81 Code, § 17.64.060) (Ord. 704, passed - -78; Am. Ord. 986, passed 5-15-95) Penalty, see § 156.999

§ 156.706 LANDSCAPING.

In addition to the landscaping requirements of §§ 156.615 through 156.654, all projects shall be landscaped according to the city's landscape guidelines.
('81 Code, § 17.64.070) (Ord. 704, passed - -78; Ord. 761, passed - -81; Am. Ord. 986, passed 5-15-95) Penalty, see § 156.999

RECYCLING FACILITIES

§ 156.715 DEFINITIONS.

For the purpose of this subchapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

ADMINISTRATIVE USE PERMIT. A permit granted by the Planning Director upon assurance of compliance with the provisions of this subchapter.

MOBILE RECYCLING UNIT. An automobile, truck, trailer or van, licensed by the Department of Motor Vehicles, which is used for the collection of recyclable materials. A ***MOBILE RECYCLING UNIT*** also means the bins, boxes or containers transported by trucks, vans, or trailers, and used for the collection of recyclable materials.

RECYCLABLE MATERIALS. Reusable material, including but not limited to metals, glass, plastic and paper, which are intended for reuse, remanufacture, or reconstitution for the purpose of using the altered form. ***RECYCLABLE MATERIAL*** does not include refuse or hazardous materials. ***RECYCLABLE MATERIAL*** may include used motor oil collected and transported in accordance with Cal. Health & Safety Code §§ 25250.11 and 25143.2(b).

RECYCLING FACILITY. A center for the collection and/or processing of recyclable materials. A ***CERTIFIED RECYCLING FACILITY*** or ***CERTIFIED PROCESSOR*** means a recycling facility certified by the California Department of Conservation as meeting the requirements of the California Beverage Container Recycling and Litter Reduction Act of 1986, being Cal. Pub. Res. Code §§ 14500 et seq. A ***RECYCLING FACILITY*** does not include storage containers or processing activity located on the premises of a residential, commercial, or manufacturing use and used solely for the recycling of material generated by that residential property, business or manufacturer. ***RECYCLING FACILITIES*** may include the following:

(1) ***COLLECTION FACILITY.*** A collection facility is a center for the acceptance by donation, redemption, or purchase, of recyclable materials from the public. Such a facility does not use power-driven processing equipment except as indicated in § 156.718. ***COLLECTION FACILITIES*** may include the following:

(a) Reverse vending machine(s);

(b) Small collection facilities which occupy an area of not more than 500 square feet, and may include:

1. A mobile unit;

2. Bulk reverse vending machines or a grouping of reverse vending machines occupying more than 50 square feet;

3. Kiosk type units which may include permanent structures;

CITY OF SANTA PAULA

GUIDELINES FOR PREPARATION OF
LANDSCAPE AND IRRIGATION PLANS

Design Guidelines, Standard Conditions of Approval, and Application Requirements

I. DESIGN GUIDELINES FOR SITE AND LANDSCAPE PLANS:

It is the intent of these guidelines to offer as much opportunity for creativity as possible when designing the required landscaping. The applicant is encouraged to take full advantage of the wide range of landscape materials and designs possible within the framework established by these guidelines. However, merely satisfying the minimum requirements will not insure approval. The Planning Commission is concerned with how the landscape space is used, how it relates to the structures on site and to the surrounding area. The Planning Commission will look carefully at the selection and size of the plant materials, their arrangement and grouping and their appropriateness in relation to the environment and proposed structures. The use of plants and irrigation systems that conserve water will be strongly encouraged, as will the design of landscapes for fire safety. Strong review emphasis will be placed on the appropriate design elements, i.e. stones and other natural materials and structural elements, i.e. decks, walks, patios, etc.

A. GENERAL

1. The Planning Commission will require landscape plans that meet the following percentages of lot landscaped for these land uses:

   a. Industrial 15%
   b. Commercial 20%
   c. Institutional 20%
   d. Office 20%
   e. Residential ....(as specified in the permit)
   f. Multi-family residential 40%
   plus areas of buffers and streetscape zones

   Landscape percentages shall be computed on the basis of the net site area which includes the area of all structures, drives, walks and parking on the site, but not areas dedicated for public right-of-way. Perimeter and interior parking lot landscaping may be credited to the overall site landscaping percentages.

2. Landscaping around the full perimeter of the site adjacent to the property lines is encouraged. Generally, an area adjacent to a public right-of-way should have landscaping, increasing in proportion as the scale, width and height of the structures increases.

3. Each landscape plan shall be compatible with the shape and topography of the site and the architectural characteristics of the structures on the site. Each landscape plan should be compatible with the character of adjacent landscaping, provided the quality of the adjacent landscaping meets the standards of these guidelines. Of particular concern is the ultimate size of the plants in relationship to the scale of surrounding development.

4. Each landscape plan should illustrate a concern for design principles such as balance, scale, texture, form and unity.

5. Each landscape plan should address the functional aspects of landscaping such as drainage, microclimate/appropriate planting, erosion prevention, wind barriers, provisions for shade, sound absorption, dust abatement and reduction of glare.

6. The plant material selected shall be capable of healthy growth within the given range of soil, climate both micro and macro and water availability (see plant list, Attachment 1).

7. The size and spacing of plants at planting time should provide the desired effect within a reasonable period of time and also provide for mature growth and minimize maintenance.

8. Landscaping should be used to relieve solid, unbroken elevations and to soften continuous wall expanses.

9. The landscaping shall permit adequate sight-distance for motorists and pedestrians.

10. Trees and shrubbery shall be arranged so landscaping does not interfere with the effectiveness of signage, parking lot and street lighting or create inappropriate visual barriers.

11. The use of design elements such as architectural features, sculptures or fountains is encouraged. The use of local stone for walls, architectural features, etc. is encouraged.

12. The use of materials such as crushed rock, redwood bark, chips, pebbles and stone or masonry slabs in place of live plant materials shall be discouraged. Artificial plant material is not acceptable.

B. <u>PLANTING FOR FIRE SAFETY</u>

Fire safety begins with isolating structures from fire hazard conditions by modifying and managing a landscape buffer of 100-150 feet around buildings. Within the buffer, four management zones and planting treatments can be established.

The defensible space is divided into four zones as described below. Plants are chosen and pruned to provide less fuel volume, so they are less flammable and there is space for firefighters and equipment to operate safely. Most existing trees can remain but all should be pruned high. In your garden, you may have to compromise between appearance and safety. The numbers after each zone indicate the recommended width of that zone. Use the smaller number if you live in a low hazard area, the greater if you live in an area of high fire risk.

Zone 1, 30 to 50 feet - Domestic planting.

The planting which is located around buildings should be carefully placed and consist of species which do not readily catch fire. Do not compromise buffer treatment by creating heavily planted landscapes which are susceptible to fire during the dry season. In addition, to avoid plants that burn easily, we should limit the amount of tall trees and make efforts to thin foliage and dead branches from large plants next to our houses. Immediately surrounding your house, use slow-to-ignite plants, mostly ground covers and low shrubs. Such plants include dwarf oleander, fortnight lily and Natal plum.

*Acceptable domestic plant species:

Arbutus unedo ..... Strawberry Tree
Arctostaphylos species ..... Manzanita
Ceratonia siliqua ..... Carob Tree
Cercis occidentalis ..... Western Redbud
Convolvulus cnerorum ..... Bush Morning Glory
Feijoa sellowiana ..... Pineapple Guava
Metrosideros excelsus ..... New Zealand Christmas Tree
Myoporum species ..... Myoporum
Nerium oleander ..... Oleander
Pittosporum species ..... Pittosporum
Prunus species ..... Evergreen Cherry
Punica granatum ..... Pomegranate
Pyracantha species ..... Firethorn
Rhamnus alaternus ..... Italian Buckthorn
Ribes species ..... Current, Gooseberry
Schinus terebinthifolius ..... Brazilian Pepper
Simmondsia chinensis ..... Jojoba
Tecomaria capensis ..... Cape Honeysuckle

Undesirable domestic plants species:

Acacia species ..... Acacia
Cedrus species ..... Cedar
Cupressus species ..... Cypress
Dodonaea viscosa ..... Hopseed Bush
Eucalyptus species ..... Eucalyptus
Juniperus species ..... Juniper
Pennisetum ..... Fountain Grass
Pinus species ..... Pine

*These plants are able to survive limited supplemental water, as well as show moderate fire retardance. Other plants are suitable for domestic planting in high fire hazard areas but require ample amounts of moisture for best performance.

Zone 2, 30 to 50 feet - Fire retardant planting.

The third planting zone establishes the maximum fire prevention edge. The use of low groundcover plants which receive regular irrigation will be best suited to stop any ground fire that could reach this area. The low foliage level, in combination with high moisture content, is the key to this planting. Nothing in this zone should be over 18 inches high and a regular program of watering and weed control is necessary. Depending upon the degree of fire risk, this planting can vary from 25-50 feet in width in order to achieve the appropriate level of safety.

While there are some drought tolerant plants which can provide good fire safety in this zone, we should invest a little more water and maintenance to achieve the maximum fire barrier well away from our homes. This drip-irrigated zone uses mostly low-growing ground covers such as Cape weed, coyote brush, dwarf ice plant and gazania. Also in this zone are fleshy succulents such as jade plant and sedum and shrubs such as oleander and star jasmine.

Low growing, high fire retarding plants:

Carpobrotus species ..... Sea Fig
Delosperma 'Alba' ..... White Trailing Ice Plant
Drosanthemum floribundum ..... Rosea Ice Plant
Lampranthus spectabilis ..... Trailing Ice Plant
Malephora crocea ..... Croceum Ice Plant

Low growing, moderate fire retarding plants:

Arctotheca calendula ..... Cape Weed
Baccharis pilularis ..... Prostrate Coyote Bush
Coprosma kirkii ..... Creeping Coprosma
Gazania rigens leucolaena ..... Trailing Gazania
Lippia canescens ..... Lippia
Myoporum parvifolium ..... Myoporum
Osteospermum fruticosum ..... African Daisy
Santolina species ..... Lavender Cotton
Trifolium fragiferum var. O'Connor's ..... O'Connor's Legume
Vinca species ..... Periwinkle

Zone 3, 30 to 100 feet - Low volume, slow burning planting.

This area is the transition between low-volume, slow-burning ground covers and plants native to your area. Selected native and introduced plants which offer some natural character should be in this zone. Growing here are shrubs such as rockrose and buckwheat which have low fuel volume and water needs. Plants with low profile and limited foliage mass can diminish the rate

and intensity of fires as well as provide reasonable soil coverage. Seeds or container plants for this zone will need some supplemental water to become established but the proper species will survive with natural moisture after one or two seasons. Invasive grasses and large or crowded plants must be removed by periodic maintenance.

Any plant that is surviving without supplemental water will have very low moisture content in their leaves during the dry summer months. The effectiveness of this planting is achieved by slowing fires with plants that have little to burn. A mixture of plant types is a good idea, as site conditions vary and different species will survive better in different locations. Plants which are considered of value in low volume, slow burning landscape zone include:

Low fuel volume native plants:

Eriophyllum species ..... Yarrow
Eschscholzia californica ..... California Poppy
Lotus scoparius ..... Deerweed
Lupinus species ..... Annual Lupines
Mimulus species ..... Monkey Flower
Penstemon species ..... Penstemon
Salvia columbariae ..... Chia
Salvia sonomensis ..... Creeping Sage
Trichostema lanatum ..... Woolly Blue Curls
Zauschneria species ..... California Fuchsia

Low fuel volume introduced plants:

Artemisia caucasica ..... Silver
Atriplex glauca ..... Saltbush
Atriplex semibaccata ..... Creeping Saltbush
Cistus crispus ..... Rockrose
Cistus salviifolius ..... Sageleaf Rockrose
Santolina chamaecyparissus ..... Lavender Cotton
Santolina virens ..... Green Santolina

<u>Zone 4, 30 to 100 feet</u> - Selective thinning of native vegetation.

The process of fire safety begins with the selective removal of highly flammable plant species, large shrubby plants and dense groupings of plants to limit overall foliage mass and reduce fuel volume. The removal of natives should be managed:

1. To protect exposure of soils that would result in erosion problems.

2. To result in a natural appearance.

3. To keep down returning plant growth.

Natives are necessary here for soil stability and because they don't require much water. Existing live oaks and shrubs are thinned. Thin all native vegetation selectively every three to five years.

High fire hazard species:

Adenostoma fasciculatum ..... Chamise
Adenostoma sparsifolium ..... Red Shanks
Artemisia californica ..... California Sagebrush
Eriogonum fasciculatum ..... Common Buckwheat
Salvia species ..... Sage

*Valuable watershed species:

Arctostphylos species ..... Manzanita
Ceanothus species ..... Wild Lilac
Comarostaphylis diversifolia ..... Summer Holly
Garrya species ..... Silk Tassel
Heteromeles arbutifolia ..... Toyon
Juglans species ..... Walnut
Rhamnus species ..... Buckthorn
Rhus species ..... Sumac
Quercus species ..... Oak

*These plants provide good slope and soil stabilization, wildlife habitat and are not as flammable as the high fire hazard species. However, all of these plants should be thinned to reduce their foliage mass and be retained in limited numbers to prevent high intensity fires.

C. SCREENING

1. Landscaping may be required to screen storage areas, trash enclosures, parking areas, public utilities and other similar land uses or elements which do not contribute to the enhancement of the surrounding areas.

2. Landscaping screening shall be of suitable width, height and density so that it provides the desired effect within three years growing time.

D. PARKING AREAS

1. Perimeter landscaping adjacent to the property lines is required in parking areas. Berms to shield cars in parking lots from the street are required whenever possible. On corner lots, the landscape shall feature some element as a focal point, i.e. a specimen tree, piece of art or street furniture, etc. The element featured shall have a site with an area of at least 500 square feet.

2. Exposed parking areas should devote a minimum of ten percent of their area to interior landscaping. Interior parking lot landscaping shall be computed on the basis of the net parking facility, which includes parking stalls, access drives, aisles, walkways, dead spaces and required separations from structures, but shall not include required landscaping of the perimeter of the property.

3. Trees should be planted in parking areas to provide shade, diversity and seasonal color, etc. (see list of selected trees, Attachment 2).

4. Interior landscaping shall be contained in planting beds or pockets with a raised concrete curb. Planter area curbs may be used in place of wheel stops.

II. STANDARD CONDITIONS OF APPROVAL FOR SITE AND LANDSCAPE PLANS

NOTE: The following conditions are typically attached, either in whole or in part, to all landscaping applications approved by the City. If any of these conditions are not acceptable, the applicant may discuss them with the staff or the Planning Commission at the time of the meeting.

1. The approval is granted only for the property described in the application and only for the approved landscaping as shown on the plans submitted.

2. The landscaping and irrigation system shall be located, installed and maintained as specified on the approved plans. All dead and/or missing plants must be replaced on a continuing basis.

3. Should the City require any changes to the landscape plans submitted, the applicant shall submit for staff review one (1) complete set of revised plans showing in detail all of the revisions and changes required.

4. No final inspection or occupancy clearance will be granted until all landscaping is installed in accordance with the plans approved and the conditions required by the City.

5. All plant materials and the landscape and irrigation design shall be represented accurately on the plans and any substantial deviation will require the express approval of the proposed revisions by the City. Any substantial change shall require the resubmittal of revised plans to the City for consideration. Any minor changes to the approved plans may be approved by the Planning Director or authorized representative.

6. All landscaping adjacent to parking and vehicular circulation areas shall be contained in planters and/or enclosed by a raised concrete curb. All planters adjacent to the street right-of-way shall be constructed per specifications of the Public Works Director/City Engineer.

7. The landscape architect shall certify the plans have been implemented according to the approved plan.

8. This approval is subject to the applicants paying all fees and assessments to the City as required by the Fee Schedule Resolution.

9. All approvals of the City are subject to and dependent upon the applicant complying with all applicable ordinances, codes, regulations, adopted policies, these conditions and the payment of all applicable fees and assessments.

10. At the sole discretion of the City, the failure to comply with any condition hereof may result in the amendment or revocation of any underlying permit, or the issuance of a citation, as may be appropriate in the case.

11. Should the applicant fail to comply with any condition hereof, the City may, in its sole discretion, undertake such acts and incur such expenses as it may consider necessary to effect compliance, the cost thereof to be reimbursed by the applicant or current property owners, as may be appropriate in the case.

III. APPLICATION REQUIREMENTS FOR SITE AND LANDSCAPE PLANS

Applications for Planning Commission approval of landscape plans shall be accompanied by the following three (3) items. Each item must be folded to fit into a 9" x 14" envelope. Four (4) copies of each item is required for preliminary review. Eleven (11) copies of each item is required for Planning Commission review.

A. A LANDSCAPE PLAN dimensioned and drawn to scale and including the following:

1. Name and address of the project by street number, street name and zip code or by Assessor's parcel number and lot number if no address has been assigned.

2. A vicinity map which locates the project in relation to streets and adjacent buildings and gives a general indication of existing landscaping on adjacent property and on site.

3. A North arrow and a bar graph indicating the scale. Acceptable drawing scales are: 1/4" = 1', 1/8" = 1', 1" = 10', 1" = 20', 1" = 30' and 1" = 40'.

B. A SOILS REPORT analyzing the texture, gypsum / lime / nitrogen / phosphorous / potassium / salinity content and pH in the areas proposed for landscaping may be required. The necessity for a soils report will be determined by staff subject to approval of the Planning Commission for those projects that the Planning Commission reviews. Generally, projects requiring a soils report will be those in newly developing areas and/or those projects of a scale that could visually affect the surrounding area.

C. Upon approval by the City of a landscape plan, two (2) copies of AN IRRIGATION PLAN must be submitted to the staff to insure that an adequate irrigation system is provided. Final approval of a landscape plan will depend on the adequacy of this submittal and its subsequent approval.

1. The following technical design guidelines should be considered when preparing an irrigation plan:

   a. Water meter and line sizes for the property should be calculated from total water demand which should be at least the sum of the maximum irrigation demand and all building demand.

   b. Flex-risers or other means of protecting exposed irrigation heads and lateral lines from damage shall be used where vandalism is probable.

   c. When appropriate, underground irrigation piping shall be buried deep enough to protect lines from damage.

   d. The system should be designed with separate control valves and/or sprinkler heads as appropriate for trees, shrubs and turf with varying irrigation requirements.

   e. The distance between sprinklers should not exceed 70% (seventy percent) of the nozzle diameter requirements.

   f. The irrigation system shall be designed so that streets, sidewalks, windows, walls and fences are not sprinkled.

2. A complete irrigation plan will generally include the following information:

   a. The point of connection.
   b. The design pressure.
   c. Indication of the pounds per square inch (PSI) and gallons per minute (GPM) of supply lines.
   d. Pipe specification: Type of pipe, size, class and/or schedule.
   e. Piping plans in relation to the landscaping plan.
   f. Type, model number and location of sprinkler heads and valves.

g. Hose bibbs.
h. Location of backflow devices.
i. Name, address and telephone number of the professional person who prepared the irrigation plans and date of preparation. Include state license number if prepared by registered landscape architect or if prepared by a licensed individual.

Attachment "3" is an example irrigation plan.

IV. SUBMITTAL REQUIREMENTS

The project's landscape design plans shall be prepared by a California registered landscape architect, unless waived by the Planning Director or designee. In order to allow evaluation of the project's landscape plans in a comprehensive and complete manner, submittals shall include the following:

1. Plan Check Fee: The applicant shall pay the required fees to cover landscape review and inspection.

2. Planting Plan: The planting design shall be drawn on clear and legible base sheets prepared especially for the landscape submittal. Three (3) copies shall be submitted at the time of filing. The following requirements and information shall be provided:

   a. Size: Plans shall not exceed 30" x 42" or be less than 22" x 36" in size.

   b. Scale: The scale shall not be smaller than 1" = 20', unless prior approval has been granted by the Planning Director or designee. Exceptions for smaller scale shall be only for those plans that are for large areas not requiring detail. In no case shall the scale be less than 1" = 40'.

   c. Title Block: Indicate on all plans the names, addresses and phone numbers of the applicant and landscape architect. Also the Community Development Project identification number shall be indicated (i.e. CDP No. 89-01).

   d. Physical Characteristics: The landscape plans should accurately and clearly portray the following existing (to be retained) and proposed features:
      - Landscape materials, trees, shrubs, groundcover, etc.
      - Property lines.
      - Streets, street right-of-ways, access easements and/or public or private driveways, walkways, bike paths and any other paved areas.
      - Buildings and structures.
      - Parking areas, lighting, striping and wheel stops.

- Grading areas, top and toe of slopes, slope direction.
- Utilities, streetlighting, fire hydrants (if available).
- Natural features, water courses, rock outcropping, etc.

Landscape designs may include design elements such as boulders, mounds, signs, sculpture, etc. All design elements shall be designated as to the size (at maturity in the case of plant materials) and be in scale with the proposed project.

Planting symbols shall be clearly drawn and plants labeled or abbreviated (3 letter minimum) on each sheet by botanic name. Numeric or graphic definition alone is not acceptable. Container size and/or spacing and quantities shall be clearly indicated for each group of plants. Sizes of plants at planting time should be adequate to meet specific conditions of project approval.

See Attachment "4" as an example of a landscape design (planting) plan.

3. Irrigation Plan: The irrigation design shall provide adequate coverage and sufficient water for the continued healthy growth of all proposed plantings with a minimum of waste or overspray on adjoining areas.

Irrigation plans shall be drawn in a legible manner, separate from, but utilizing the same format as the landscape design plan. Plans shall be concise and accurate, including, but not limited to:

a. Design pressure as well as static pressure (contact Santa Paula Water Wks., Ltd).

b. Point of connection (location and size).

c. Backflow protection, as approved by Ventura County Environmental Health.

d. Valves, piping, controllers, heads, quick couplers, etc. Show gallonage requirements for each valve on the plan.

The legend shall include equipment manufacturer, type of equipment, model number, gallons per minute (GPM) demand, pounds per square inch (PSI) demand, radius/diameter of coverage, remarks or special notes and a reference to the corresponding detail number. All equipment shall be designed for installation per manufacturer's recommendation, Uniform Plumbing Codes and all local regulations.

4. Written Specifications/Applicable Details: Three (3) copies of the details and specifications shall be provided. These shall include, at the minimum, specifications and details necessary for planting, soil preparation, tree staking and guying, separation of different types of planting areas, installation details and post installation maintenance programs, etc. (see Attachment "5").

5. Site Plan: One copy of the approved development permit site plan for the proposed project shall be provided in order for the landscape consultant to have a clear and accurate portrayal of the project and project site.

6. Architectural Elevations: One copy of the proposed project's elevations shall be submitted in order to review compatibility of proposed plant materials with architectural design elements.

7. Grading Plan: One copy of the approved grading plan shall be provided in order to review height of graded slopes, pad elevations and finished grade in relation to the plantings and irrigation planned.

8. Conditions of Approval: One copy of the approved project conditions, initialled by the applicant's landscape architect, shall be submitted with the landscape plans so that the applicant's landscape architect is ensured of having seen the conditions and so that the landscape consultant can review the proposed landscape plans for consistency with the specific conditions.

V. LANDSCAPE STANDARDS

Proposed plant materials should relate to architectural design elements of the structures on the site and should be compatible with the character of adjacent landscaping, provided the quality of the adjacent landscaping meets the standards of this guide. The following landscape standards for permanent landscaping are minimums. When special circumstances or exceptional characteristics are applicable to the property involved (size, shape, topography, etc.), the Planning Director may modify (reduce or increase) the standard(s) except as otherwise limited by the Zoning Ordinance Code.

1. Minimum Site Coverage: Landscape percentages shall be computed on the basis of the net project site area which includes the area of all structures, drives, walks and parking on the site but not areas dedicated for public right-of-way. The required percentages of landscaping relative to site area are as follows:

a. Industrial 15%
b. Commercial 20%
c. Institutional 20%
d. Office 20%
e. Residential ....(as specified in the permit)
f. Multi-family residential 40%
plus areas of buffers and streetscape zones

Minimum coverage requirements for commercial lots of less than 5,000 square feet may be modified by the Planning Director, depending on architectural design.

2. Minimum Planter Width: Landscaped areas shall be a minimum of five (5) feet wide (including curbs). Narrower landscape areas may be permitted but shall not be counted toward meeting the minimum coverage requirements of No. 1 above and No. 4a. below.

3. Perimeter Planting: The area within required setbacks of commercial or industrial projects not used for other purposes shall be landscaped.

4. Parking Areas: All open (uncovered) automobile parking areas shall have landscaping in accordance with the following:

a. Open Parking areas shall contain a minimum of ten percent (10%) of the area in landscaping, which is counted toward meeting the minimum site coverage requirements. Landscaping shall be computed on the basis of the net parking facilities, which includes parking stalls, access drives, aisles and walkways, but shall not include required landscaping adjacent to streets.

b. A landscaping strip shall be provided along property lines adjacent to any public or private street right-of-way. These planting strips shall not be less than five (5) feet wide for commercial lots and not less than ten (10) feet wide for industrial lots. Landscape strips adjacent to major thoroughfares may be required to be greater.

c. All parking lot planting areas shall be entirely enclosed within a reinforced brick or masonry planter box or portland cement concrete curb not less than six (6) inches high.

d. Landscaping shall permit adequate site-distance for motorists and pedestrians and shall not interfere with the effectiveness of signage or parking lot lighting.

e. Trees should be planted in parking areas to provide shade, diversity and seasonal color.

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f. A minimum of one tree shall be installed within a tree well or planter area of the parking lot for every ten (10) single-row parking stalls or every twenty (20) double-row parking stalls. Tree wells shall be a minimum of sixteen (16) square feet (including curbs).

g. Concrete wheel stops shall be provided for all parking spaces. The concrete curb around landscape areas may be utilized as a wheel stop provided the area of car overhang (2 1/2 foot maximum) does not damage or interfere with plant growth or irrigation systems. If this alternative is utilized, minimum planter widths (including curb) shall be as follows (see Attachment 6).

(1) Not less than 5 1/2 feet for single-vehicle overhand.

(2) Not less than 8 feet for double-vehicle overhang.

5. Screening: Landscaping should be used to screen storage areas, trash enclosures, parking areas, public utilities and other similar land uses or elements which do not contribute to the enhancement of the surrounding areas. Landscape screening shall be planted at a height and density so that it provides the desired effect within three (3) years growing time.

Long expanses of walls should be interrupted by inserts for plants.

6. Street Trees: Street trees may be required as a conditions of the development permit. No street tree will be approved for planting where its growth will cause interference, obstruction, damage or injury (either directly or indirectly) to use of a sidewalk or street right-of-way (see Attachment "7" for list of suggested street trees). Street trees shall be planted according to the following standards and as delineated per Attachments "7A" and "8":

a. Trees shall not be planted within thirty (30) feet of the curb return of a street intersection.

b. Trees shall not be planted closer than four (4) feet from any walkway or public sidewalk, except where tree wells or parkways are provided in the sidewalk area (see Attachments "8-B" and "8-C"). Where trees are planted closer than six (6) feet from any public sidewalk, Type "D" tree well details shall be used (see Attachment "8-D").

c. Trees shall not be located closer than ten (10) feet from any driveway, utility pole, fire plug or to the rear of any street or directional sign; fifteen (15) feet from light standards and twenty-five (25) feet from the front of any traffic or directional sign.

d. Trees shall be spaced an average of forty (40) feet apart but not less than one per lot and two per corner lots.

7. Use of Plant Materials: The scope of a project will ultimately determine landscape plant selection. A listing of native and exotic plant materials is outlined on Attachment "1". In order for landscaping to relate to architectural design, the following criteria is suggested:

a. Evergreen trees are encouraged against buildings to soften the appearance of blank expanses of walls, visually screen neighboring projects and subdivided exterior spaces.

b. Deciduous trees are effectively used for solar control in summer and winter. Some trees are flowering and are desirable as accents.

c. Trees that typically grow taller than twenty (20) feet in height and do not lend to top trimming will not be permitted under utility wires.

d. Large shrubs are used to screen undesirable views and act as an intermediate height element to bring buildings into human scale.

e. Medium/low shrubs are ornamental and provide foliage, texture and color to landscape themes (see Attachment "9").

f. Vines and espaliers are effective screens for visually softening walls and fences. Many vines are available that grow in narrow planters and can provide excellent flower color to brighten buildings and walls (see Attachment "10").

g. Applicable native plant materials and drought tolerant species are encouraged for water conservation (see Attachment "1").

8. Groundcover: The use of perennial groundcover is an acceptable landscaping method in reducing maintenance costs and controlling erosion. Irrigated and non-irrigated groundcovers are discussed below:

ATTACHMENT "1"

"FOR YOUR XERISCAPE GARDEN"

XERISCAPE

The word XERISCAPE is coined from the Greek word Xeros, meaning dry. A Xeriscape is not a completely dry landscape. Even drought tolerant plants need an occasional watering. The idea is simply to take the natural environment into consideration. And with Ventura County's dry summer climate and limited water supply, Xeriscape is appropriate here. A Xeriscape uses half as much water, demands fewer of your hours for mowing, watering, and feeding and can be just as beautiful.

HARDSCAPES

Hardscapes are patios, walkways, decks and other non-plant elements. They offer an aesthetic means of gaining greater use and enjoyment in the yard. Materials include paver blocks, stones, redwood, bricks and concrete.

LAWNS

Lawns are thirsty and time consuming, so plant one only where it will be used for play and entertaining. In the front yard, consider replacing the unused lawn with a creative arrangement of shrubs, trees, attractive ground covers and hardscapes. Low water using ground covers make great lawn substitutes. They need less maintenance and provide nice variety and texture. If you must include lawn, use low water using species, such as improved Fescues and Bermuda hybrids and set the lawn mower to cut longer grass blades, which helps cut down on evaporation.

IRRIGATION

Use water efficient irrigation systems, such as drip and low output sprinkler heads. Drip irrigation applies water at a slow rate only where needed, at the base of the plant, thus reducing runoff and allowing for deep watering.

Group plants according to similar needs, (sun, soil, water) and then match the irrigation system to these needs. Water trees and shrubs (with deep root systems) longer and less frequently than shallow-rooted plants, which require smaller amounts of water more frequently. Use of an automatic timer will save time and money. Automatic timers can be set to accommodate the differing water needs of the landscape, and to always water in the cool hours of the day to reduce evaporation.

Be sure to adjust your sprinkler heads properly to minimize water overspray onto unplanted areas, like sidewalks.

MULCHES

Mulches contribute greatly to water conservation by reducing evaporation, soil compaction and weeds. They can also be an attractive addition to your Xeriscape. Use bark, wood chips, pebbles or even grass clippings, compost or sawdust.

a. Irrigated: Irrigated groundcovers may be planted from rooted cuttings or applied as hydromulch. Rooted cuttings and hydromulched groundcovers may be selected from Attachment "11". Other rooted cuttings and seed mixtures may be considered if submitted by a California registered landscape architect.

b. Non-irrigated: In certain situations, temporary plantings may be required where irrigation is not economically feasible nor desirable. Non-irrigated hydromulch seeds as indicated on Attachment "12" are acceptable for natural or undisturbed slopes. Hydromulch seeds should be applied following the first measurable rainfall in the FALL of the year or a temporary irrigation method shall be provided to ensure germination and minimum growth. If the natural rainfall fails to provide adequate moisture for germination, supplemental irrigation may be required.

LOW WATER USING PLANTS

Use low water consuming plants, suited to local soil and climate, and group according to their water requirements. Fall is the best time to plant a Xeriscape. Keep in mind that new Xeriscape plants need water to keep roots moist until established. This plant list contains a sampling of low water using plants suitable for most areas in the County. Please consult the references for more complete lists.

- **Remember, water requirements of plants can vary significantly between sites due to differences in microclimates, soil, drainage and exposures.**

No supplemental water required once established	Botanical Name	Common Name	Preference: Good Drainage	Preference: Part Shade	Preference: Full Sun	Tolerance: Seacoast Conditions	Tolerance: Heat	Tolerance: Wind
	TREES - EVERGREEN							
◆	Casuarina stricta	Beefwood			✔	✔	✔	✔
◆	Eucalyptus citriodora	Lemon-Scented Gum			✔	✔	✔	
◆	Eucalyptus sideroxylon	Pink Ironbark			✔		✔	✔
	Melaleuca quinquenervia	Cajeput Tree		✔	✔	✔		✔
◆	Olea europea	European Olive	✔		✔	✔	✔	✔
	Pinus canariensis	Canary Island Pine			✔		✔	✔
◆	Prunus lyonii	Catalina Cherry	✔		✔	✔	✔	✔
◆	Quercus agrifolia	Coast Live Oak	✔		✔		✔	✔
◆	Rhus lancea	African Sumac			✔		✔	
◆	Tristania conferta	Brisbane Box	✔		✔	✔	✔	✔
	TREES - DECIDUOUS							
	Ginkgo biloba(grafted male)	Maidenhair Tree			✔	✔	✔	✔
	Lagerstroemia indica	Crape Myrtle			✔		✔	
	Metrosideros tomentosa	New Zealand Xmas Tree		✔	✔	✔	✔	✔
	Pistacia chinesis	Chinese Pistache			✔		✔	✔
	Platanus acerifolia	European Sycamore		✔	✔		✔	✔
	Platanus racemosa	California Sycamore	✔		✔		✔	
◆	Quercus lobata	Valley Oak			✔		✔	✔
	SHRUBS - LARGE							
	Abelia grandiflora	Glossy Abelia		✔	✔		✔	✔
	Arbutus unedo	Strawberry Tree		✔	✔	✔	✔	✔
◆	Arctostaphylos (species)	Manzanita	✔	✔	✔		✔	✔
	Callistemon (species)	Bottlebrush			✔	✔	✔	✔
◆	Ceanothus (species)	Wild Lilac	✔		✔		✔	✔
◆	Cercis occidentalis	Western Red Bud	✔	✔	✔			✔
	Cotoneaster (species)	Cotoneaster		✔	✔		✔	✔
◆	Elaeagnus pungens	California Silver Berry		✔	✔		✔	✔
	Escallonia "Fradesii"	Pink Escallonia		✔	✔	✔	✔	✔
◆	Fremontodendron	Flannel Bush	✔		✔		✔	
◆	Heteromeles arbutifolia	Toyon	✔	✔		✔	✔	
	Juniperus (species)	Juniper	✔	✔	✔	✔	✔	✔
	Leptospermum laevigatum	AustralianTea Tree		✔	✔	✔		✔
	Myoporum laetum	Myoporum		✔	✔	✔	✔	✔
◆	Nerium oleander	Oleander varieties			✔		✔	✔
◆	Photinia fraseri	Photinia	✔		✔		✔	
◆	Prunus ilicifolia	Hollyleaf Cherry	✔	✔	✔		✔	
◆	Punica granatum	Pomegranate			✔		✔	✔
	Rhamus californica	Coffeeberry		✔	✔	✔	✔	
	Rhus integrifolia	Lemonade Berry	✔	✔	✔	✔	✔	✔
	Xylosma congestum	Shiny Xylosma		✔	✔		✔	✔
	SHRUBS - MEDIUM							
	Cassia artemisioides	Feathery Cassia	✔		✔		✔	
◆	Echium fastuosum	Pride of Madiera			✔	✔	✔	✔
	Mahonia aquifolia	Oregon Grape (compact)		✔	✔		✔	✔
	Raphaeolepis indica varieties	Indian Hawthorne	✔		✔		✔	✔
	SHRUBS - LOW							
◆	Arctostaphylos hookeri	Monterey Manzanita	✔	✔	✔	✔	✔	✔
	Ceanothus griseus horiz.	Wild Lilac	✔		✔		✔	✔
◆	Cistus purpureus	Rock Rose	✔		✔	✔	✔	✔
	Juniperus (species)	Juniper varieties	✔	✔	✔	✔	✔	✔
	Pittosporum tobira	Dwarf Mock Orange		✔	✔		✔	✔
	Pyracantha prostrata	Santa Cruz Prostrata			✔		✔	✔
	GROUND COVERS							
	Arctotheca calendula	Yellow Capeweed			✔	✔	✔	✔
	Arctostaphylos edmundsii	Little Sur Manzanita	✔	✔	✔	✔	✔	✔
◆	Baccharis pilularis 'Twin Peaks'	Coyote Brush			✔	✔	✔	✔
	Cotoneaster microphylla	Rock Spray			✔		✔	✔
	Euryops acraeus	Euryops			✔	✔	✔	✔
	Gazania (species)	Gazania	✔		✔	✔	✔	✔
	Myoporum parvifolium	Myoporum		✔	✔	✔	✔	✔
◆	Rosmarinus prostratus	Dwarf Rosemary	✔		✔	✔	✔	✔
	VINES							
◆	Bougainvillea (species)	Bougainvillea			✔	✔	✔	
◆	Doxantha unguis-cati	Cats Claw			✔		✔	✔
	PERENNIALS - FOR COLOR							
	Coreopsis auricula	Golden Coreopsis			✔	✔	✔	
◆	Dietes (species)	Fortnight Lily		✔	✔	✔	✔	✔
◆	Diplacus hybrids	Cal. Monkey Flower		✔	✔	✔	✔	✔
	Euryops pectinatus	Green Gold Daisy			✔		✔	✔
◆	Galvezia speciosa	Island Snapdragon		✔	✔	✔		
◆	Hemerocallis aurantiaca	Golden Day Lily		✔	✔	✔	✔	
	Kniphofia uvaria	Red Hot Poker		✔	✔	✔	✔	✔
◆	Limonium perezii	Statice	✔	✔	✔	✔	✔	✔
	Penstemon hybrids	California Penstemon	✔	✔	✔	✔	✔	✔
◆	Romneya coulteri	Matilija Poppy	✔		✔		✔	✔

References/Sources

Trees and Shrubs for Dry California Landscapes, Bob Perry, Land Design Publishing, PO Box 857, San Dimas, CA 91773 ($28.50).

Flowering Plants in the Landscape, Mildred E. Mathias, University of California Press, Berkeley, California 94720.

Plants for California Landscapes; A Catalog of Drought Tolerant Plants, Bulletin 209, Department of Water Resources, State of California, P.O. Box 388, Sacramento, California 95802. ($1.60)

Plants for Dry Climates, HP Books, PO Box 5367, Tucson, Arizona, 85703 ($7.95).

Sunset Western Garden Book, Sunset Magizine, 80 Willow Road, Menlo Park, California 94025.

Success List of Water Conserving Plants, Saratoga Horticultural Foundations, Post Office Box 308, Saratoga, Cali-

ACKNOWLEDGEMENT

A special thanks to the East Bay Municipal Utility District and the Saratoga Horticultural Foundation for allowing us to reproduce a partial plant list from their publications

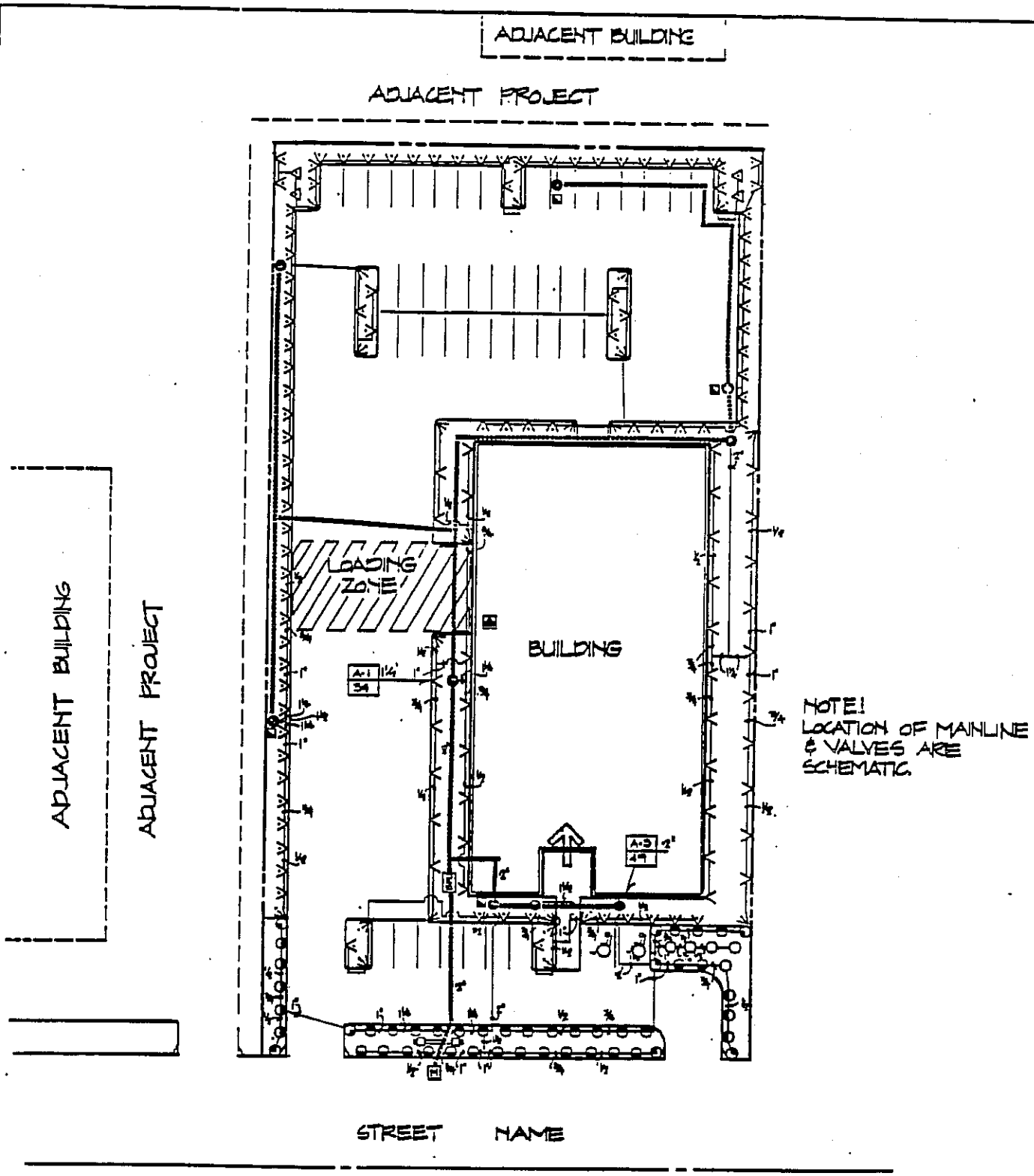
ATTACHMENT "2"

SELECTED TREES

	SCIENTIFIC NAME	COMMON NAME	Evergreen	Deciduous	Large	Medium	Small	Fall Foliage Color	Flowers Showy	Preferred
1.	Acacia baileyana	Bailev Acacia	X			X			X	X
2.	Acacia Baileyana 'Purpurea'	Purple Bailey Acacia	X			X			X	X
3.	Acer negundo	Boxelder		X	X			X		
4.	Alnus rhombifolium	White Alder		X		X				X
5.	Albizia julibrissin	Silk Tree/Mimosa		X		X			X	X
6.	Callistemon viminalis	Weeping Bottle Brush	X			X			X	
7.	Ceratonia siliqua	Carob	X		X					X
8.	Eriobotrya deflexa	Bronze Loquat	X				X	X		
9.	Eriobotrya japonica	Loquat	X			X		X		
10.	Eucalyptus camaldulensis	Red Gum	X		X					
11.	Eucalyptus sideroxylon 'Rosea'	Red Ironbark	X			X			X	
12.	Eucalyptus polyanthemos	Silver Dollar Gum	X			X				
13.	Eucalyptus nicholii	Willow Leaf Peppermint	X			X				
14.	Eucalyptus rudis	Desert Gum	X		X					
15.	Fraxinus velutina 'Glabra'	Modesto Ash		X	X			X		
16.	Ginkgo biloba	Ginkgo/Maidenhair		X	X			X		X
17.	Hymensporum flavum	Sweetshade	X			X			X	X
18.	Jacaranda acutifolia	Jacaranda		X		X			X	X
19.	Koelreuteria paniculata	Golden Rain Tree		X		X			X	X
20.	Lagerstroemia indica	Crape Myrtle		X			X		X	
21.	Laurus nobilis	Grecian Laurel	X			X				
22.	Liquidamber styraciflua	Sweet Gum		X		X		X		X
23.	Liriodendron tulipifera	Tulip Tree		X	X			X	X	X
24.	Ligustrum lucidium	Glossy Privet	X			X				
25.	Macademia ternifolia	Macademia Nut	X			X				X
26.	Magnolia grandiflora	Southern Magnolia	X		X	X			X	X
27.	Morus alba	Fuitless Mulberry		X	X			X		X
28.	Oleo europaea	Olive	X			X				X
29.	Pinus canariensis	Canary Island Pine	X		X					X
30.	Pinus halepensis	Aleppo Pine	X		X					X

SELECTED TREES Cont'd.

SCIENTIFIC NAME	COMMON NAME	Evergreen	Deciduous	Large	Medium	Small	Fall Foliage Color	Flowers Showy	Preferred
31. Pinus radiata	Monterey Pine	X		X					
32. Pittosporum undulatum	Victorian Box	X			X-X				
33. Pittosporum rhombifolium	Queensland Pittosporum	X			X				
34. Pittosporum phyllyraeoides	Weeping Pittosporum	X			X				
35. Platanus acerfolia	London Plane Tree		X	X			X		X
36. Platanus occidentalis	American Sycamore		X	X			X		X
37. Platanus racemosa	Western Sycamore		X	X			X		
38. Pistacia chinensis	Chinese Pistachio		X		X		X		X
39. Prunus cerasifera 'Atropurpurea'	Purple Leaf Plum		X		X		X	X	X
40. Prunus caroliniana	Carolina Laurel Cherry	X			X				X
41. Prunus lyonii	Catalina Cherry	X			X				X
42. Pyrus kawakamii	Evergreen Pear	X			X				
43. Quercus lobata	Valley Oak		X	X					X
44. Quercus agrifolia	Coast Live Oak	X		X					X
45. Quercus suber	Cork Oak	X		X					X
46. Ulmus parvifolia 'Sempervirens'	Evergreen Chinese Elm	X-X			X				
47. Schinus molle	California Pepper	X		X					X
48. Schinus terebinthifolius	Brazilian Pepper	X		X					X



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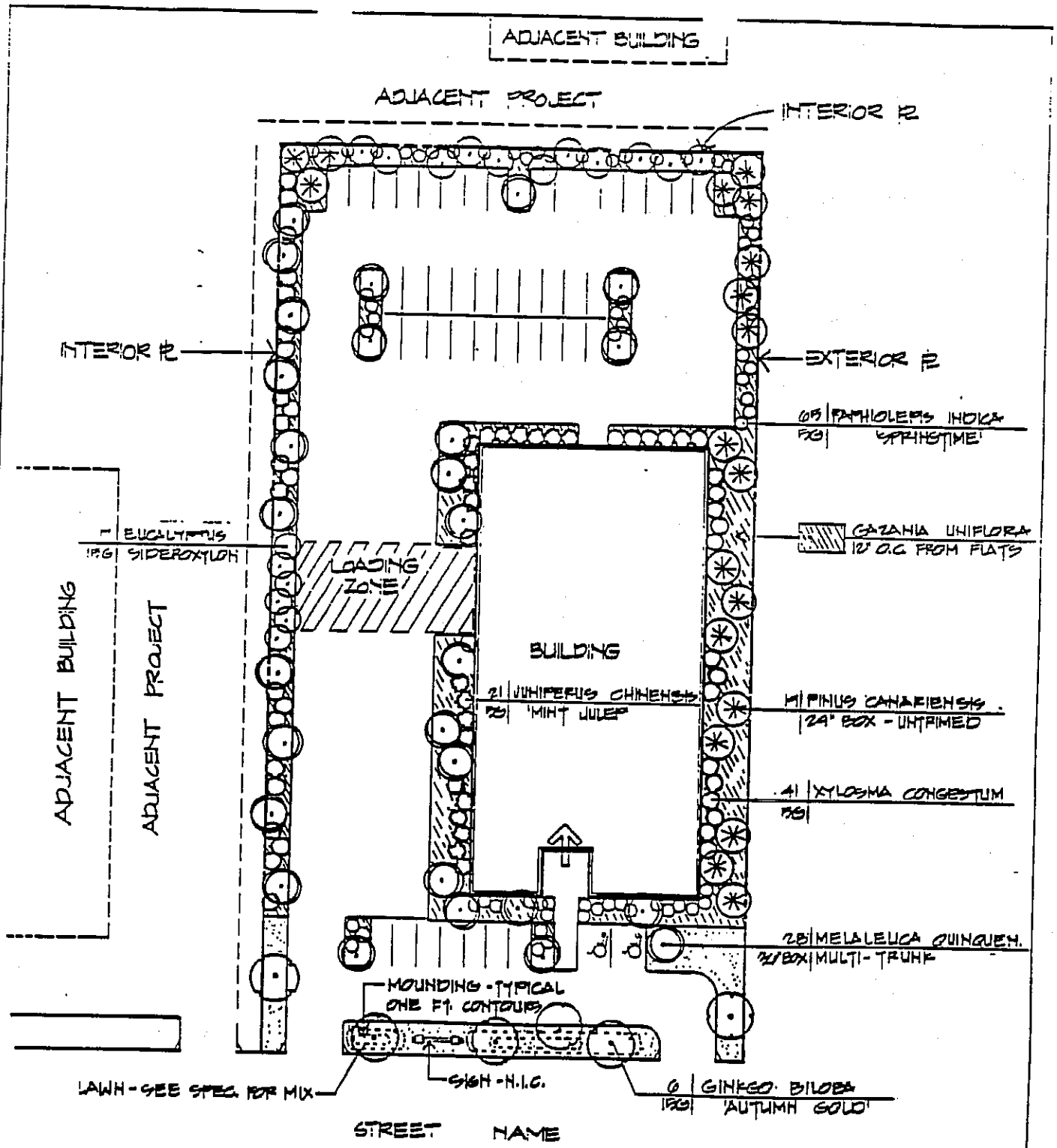
	LANDSCAPE ARCH.'S NAME/ADDRESS:	PROJECT NAME: ATTACHMENT "3"	SHEET No. ___ OF 3



NOTES:

1. SEE SPECIFICATIONS FOR SOIL PREP. & BACKFILL MIX.
2. SEE DETAILS FOR STAKING, GUYING & PLANTING.
3. ALL WORK SHALL BE APPROVED BY LANDSCAPE ARCH.

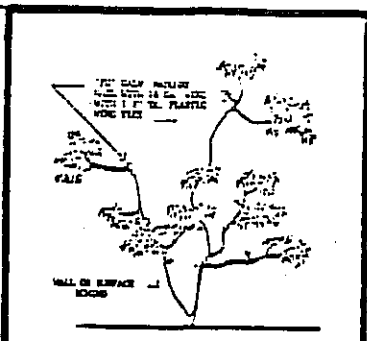
LANDSCAPE ARCHITECT'S STAMP	OWNER'S NAME/ADDRESS:	SHEET TITLE: PLANTING PLAN	DATE:
	LANDSCAPE ARCH.'S NAME/ADDRESS:	PROJECT NAME: ATTACHMENT "4"	SCALE: N.T.S.
			REVISIONS:
			SHEET No. OF 3

LEGEND

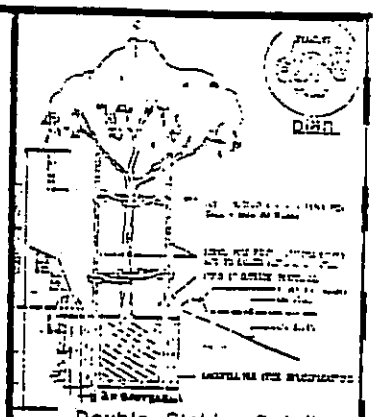
BOTANICAL NAME	COMMON NAME	QUANTITY 15 g.c.	5 g.c.	1 g.c.
-TREES-				
CERCIS OCCIDENTALIS	WESTERN REDBUD	4		
MELALEUCA RESOMIFOLIA	PINK MELALEUCA	8		
PINUS CANARIENSIS	CANARY ISLE PINE	31		
PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	65		
-SHRUBS-				
BACCHARIS PILULARIS	COYOTE BUSH			110
CEANOTHUS IMPRESSUS	SANTA BARBARA LILAC		21	
[illegible]	CALIFORNIA SILVERBERRY		20	
[illegible]	[illegible]			5
[illegible]	R.L.M.		29	
JUNIPERUS CHINENSIS TORULOSA	HOLLYWOOD JUNIPER		14	
JUNIPERUS C. ARMSTRONGII	ARMSTRONG JUNIPER		102	
JUNIPERUS C. CONFERTA	SHORE JUNIPER			2515
JUNIPERUS C. "MINT JULEP"	MINT JULEP JUNIPER			147
MAHONIA AQUIFOLIUM	DWARF OREGON GRAPE			42
MYOPORUM LATUM	N.C.N.			20
XYLOSMA CONGESTUM	SHINY XYLOSMA		71	
-COLOR-				77
HEMEROCALLIS MINOR	DWARF YELLOW DAYLILY			77
KNIPHOFIA UVARIA	RED HOT POKER			75
-GROUND COVER-				
ARCTOTHECA CALENDULA	CAPEWEED - PLANT FROM ROOTED CUTTINGS @ 18" O.C. AND 18" FROM OTHER PLANTS			
SEEDED TURF	PER CITY OF VENTURA SPECIFICATIONS			

PLANTING NOTES

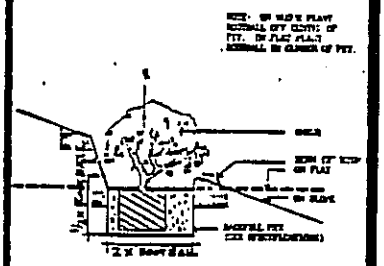
1. ALL NORTH BARE BR. PLANTING AREAS TO RECEIVE 2" OF PEBBLE BARK MULCH UNLESS OTHERWISE NOTED.



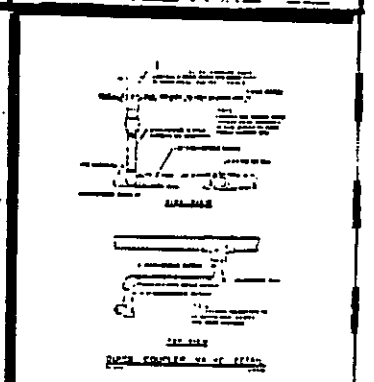
Vine Tying



Double Staking Detail



Shrub Planting

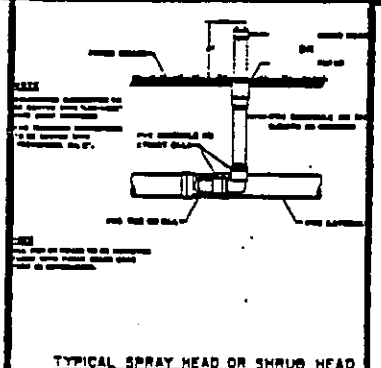


LEGEND

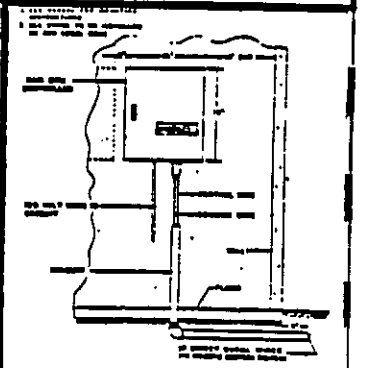
KEY	DESCRIPTION	MANUFACTURER	P.S.I.	G.P.M.	RAD.
	TURF POP-UP: 4.4 FULL HEAD	RAINBIRD 4700	30	1.5-3.8	14'
	SAME - ADJUST NOZZLE	SAME	15	1.1-3.9	11'
	STREAM SPRAY: 4.4 FULL HEAD	RAINBIRD M-35	25	0.7-1.9	20'
	SAME - ADJUST NOZZLE	SAME	15	0.5-1.5	16'
	SAME - SPACE AT 18 FT.	SAME	15	0.5-1.5	18'
			REMARKS		
	DRIP EMITTER	RAINBIRD MPW (5 OUTLETS)	W/-400 TEE by PEPCO		
	PRESSURE REGULATOR	WILEY 491	LINE SIZE		
	FILTER	JAME AMSILCO	[illegible]		
	WATER METER	PER CITY STANDARD	SIZE ON PLAN		
	BACKFLOW PREVENTER	TOPCON	REDUCED PRESSURE TYPE		
	REMOTE CONTROL VALVE	RAINBIRD SERIES "E A"	SIZE ON PLAN		
	QUICK COUPLER	RAINBIRD "E" TYPE	LOCATION		
	GATE VALVE	NAMCO OR EQUAL	LINE SIZE		
	CONTROLLER	PEDCO - PEDESTAL MOUNT	A=RC-3A B=RC-3A		
	"	" - WALL MOUNT	C,D,E= RC-3		
	MAINLINE	ARCO OR EQUAL	[illegible]		
	DOMESTIC	ARCO OR EQUAL	CLASS 315 P.V.C.		
	LATERAL LINE	ARCO OR EQUAL	CLASS 200 P.V.C.		
	DRIP LATERAL LINE	ARCO OR EQUAL	CLASS 200 P.V.C.		

GENERAL NOTES

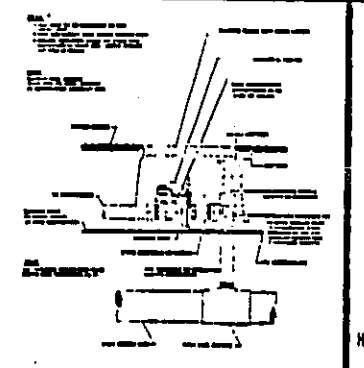
1. DESIGN PRESSURE IS 60 P.S.I.
2. SEE WRITTEN SPECIFICATIONS FOR INSTALLATION DETAILS
3. A-6 — STATION DESIGNATION; 4" — VALVE SIZE; 22.5 — G.P.M.
4. INSTALL CHECK VALVES IN LATERALS WHERE NEEDED.

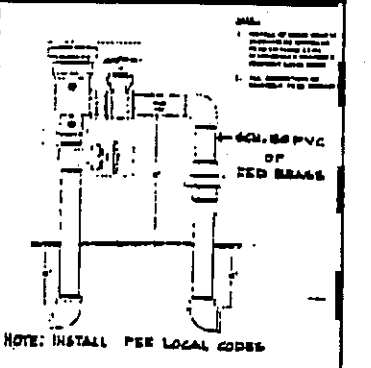


TYPICAL SPRAY HEAD OR SHRUB HEAD



CONTROLLER DETAIL





PRESSURE TYPE VACUUM BREAKER ASSEMBLY

LANDSCAPE ARCHITECTS STAMP

OWNER'S NAME/ADDRESS:

LANDSCAPE ARCH.'S NAME/ADDRESS:

SHEET TITLE: LEGENDS & DETAILS

PROJECT NAME: ATTACHMENT "5"

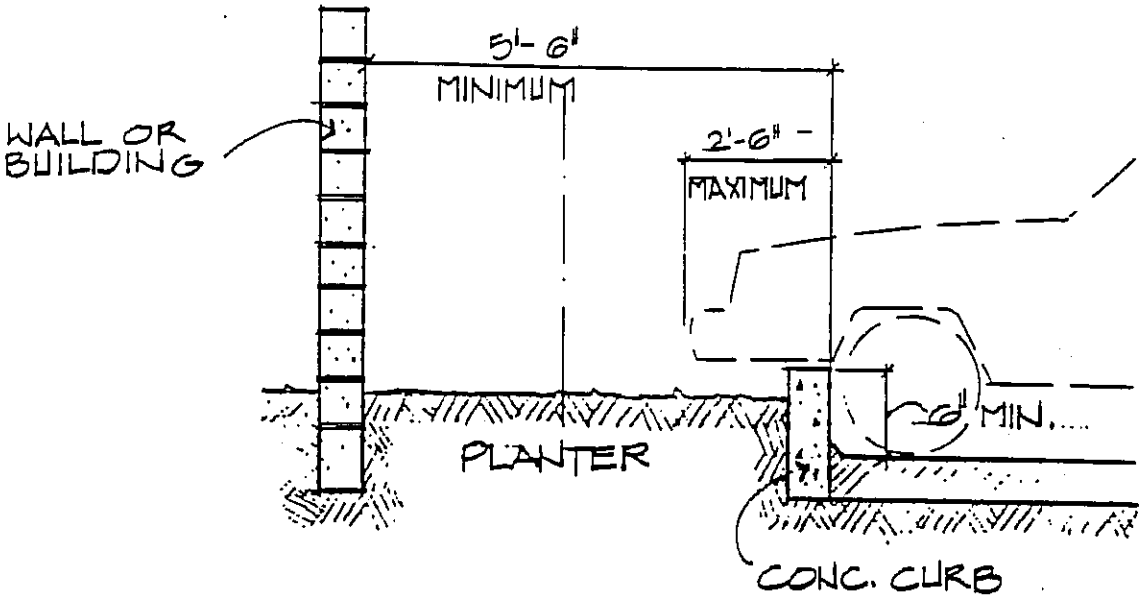
DATE: 1-1-01

SCALE: N.T.S.

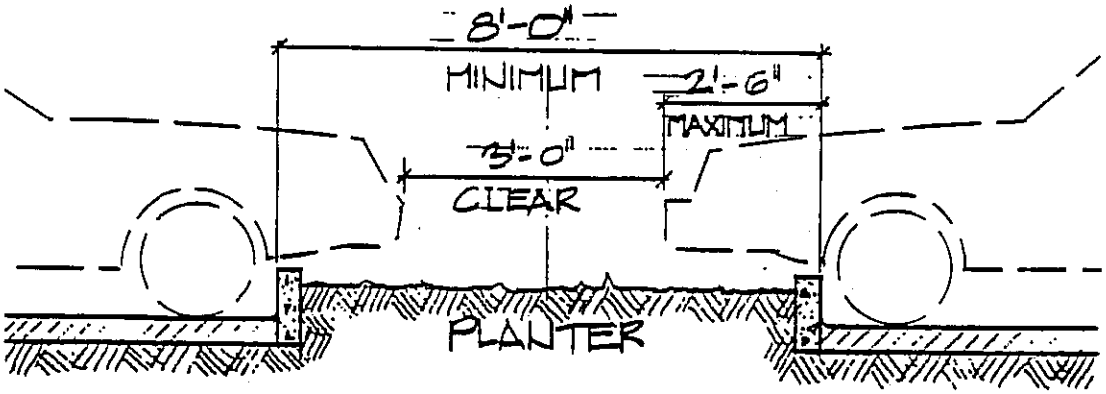
REVISIONS:

SHEET NO. 3 OF 3

R 3175



SINGLE VEHICLE OVERHANG



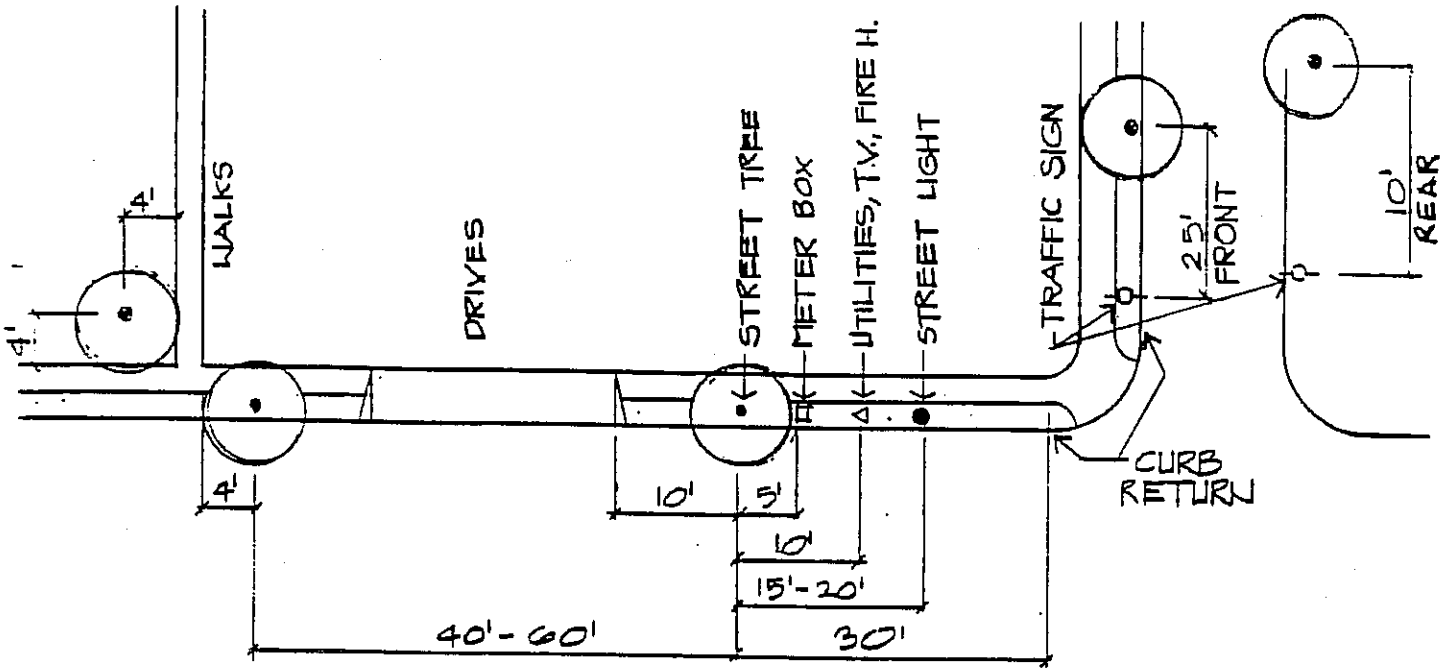
DOUBLE VEHICLE OVERHANG

ATTACHMENT " 6"

RECOMMENDED STREET TREES

Botanic Name	Common Name
Evergreen	
*Callistemon viminalis	Bottle brush
Cinnamonum camphora	Camphor
Corynocarpus laveigata	New Zealand Laurel
*Cupania anacardioides	Carrotwood
Eucalyptus cinerea	Ash Colored Eucalyptus
Eucalyptus ficifolia	Red Flowering Gum
Eucalyptus maculata	Spotted Eucalyptus
Eucalyptus nicholii	Nichols Eucalyptus
Eucalyptus pulverrulenta	Silver Mountain Gum
Eucalyptus sideroxylon rosea	Red Ironbark
Eucalyptus torquata	Coral Gum
*Geijera paviflora	Australian Willow
*Ligustrum lucidum	Glossy Privet
*Maytenus boaria	Mayten Tree
*Melaleuca quinquenervia	Cajeput Tree
*Metrosideros tomenitosa	New Zealand Christmas Tree
*Nerium oleander 'Sister Agnes'	Oleander
*Podocarpus gracilor	Fern Podocarpus
*Quercus agrifolia	California Live Oak
*Quercus ilex	Holly Oak
Quercus virginiana	Southern Live Oak
*Tristania conferta	Brisbane Box
*Ulmus parviflora sempervirens	Evergreen Elm
Conifers	
*Pinus canariensis	Canary Island Pine
Pinus pinea	Italian Stone Pine
Pinus torreyana	Torrey Pine
Deciduous	
Calodendrum capense	Cape Chestnut
*Ginkgo biloba	Maidenhair
*Koelreutaria paniculata	Golden Rain Tree
*Lagerstroemia indica	Crape Myrtle
*Liriodendron tulipfera	Tulip Tree
*Liquidambar styraciflua-Palo Alto	Sweet Gum
*Pistacia chinensis	Chinese Pistache
Platanus acerifolia	European Sycamore
*Prunas pissardi	Purple Leaf Plum
*Pyrus calleryana 'Bradford'	Bradford Pear
Tipuana tipu	Tipu Tree
*Zelcova serrata	Sawleaf Zelcova

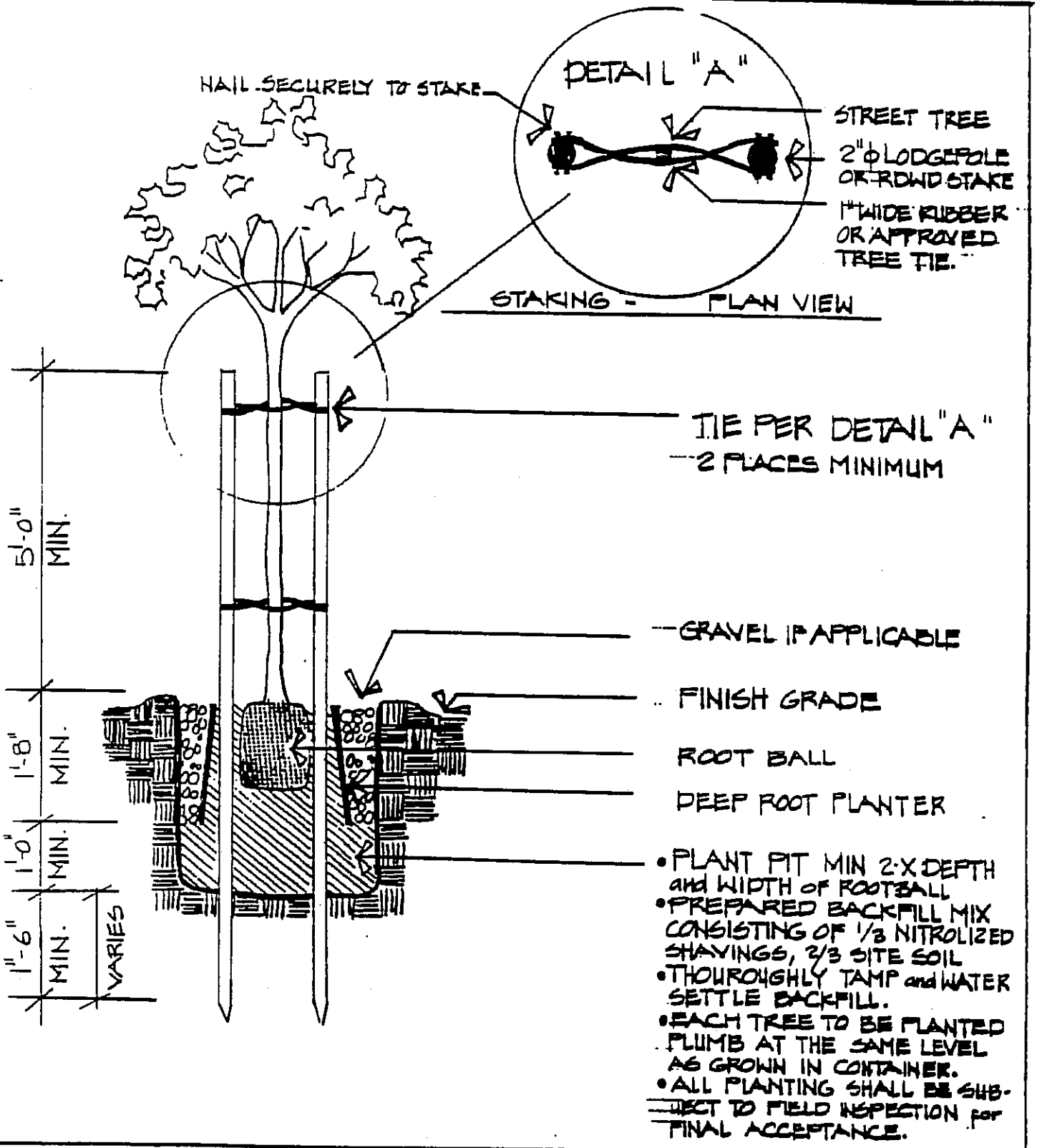
ATTACHMENT "7"



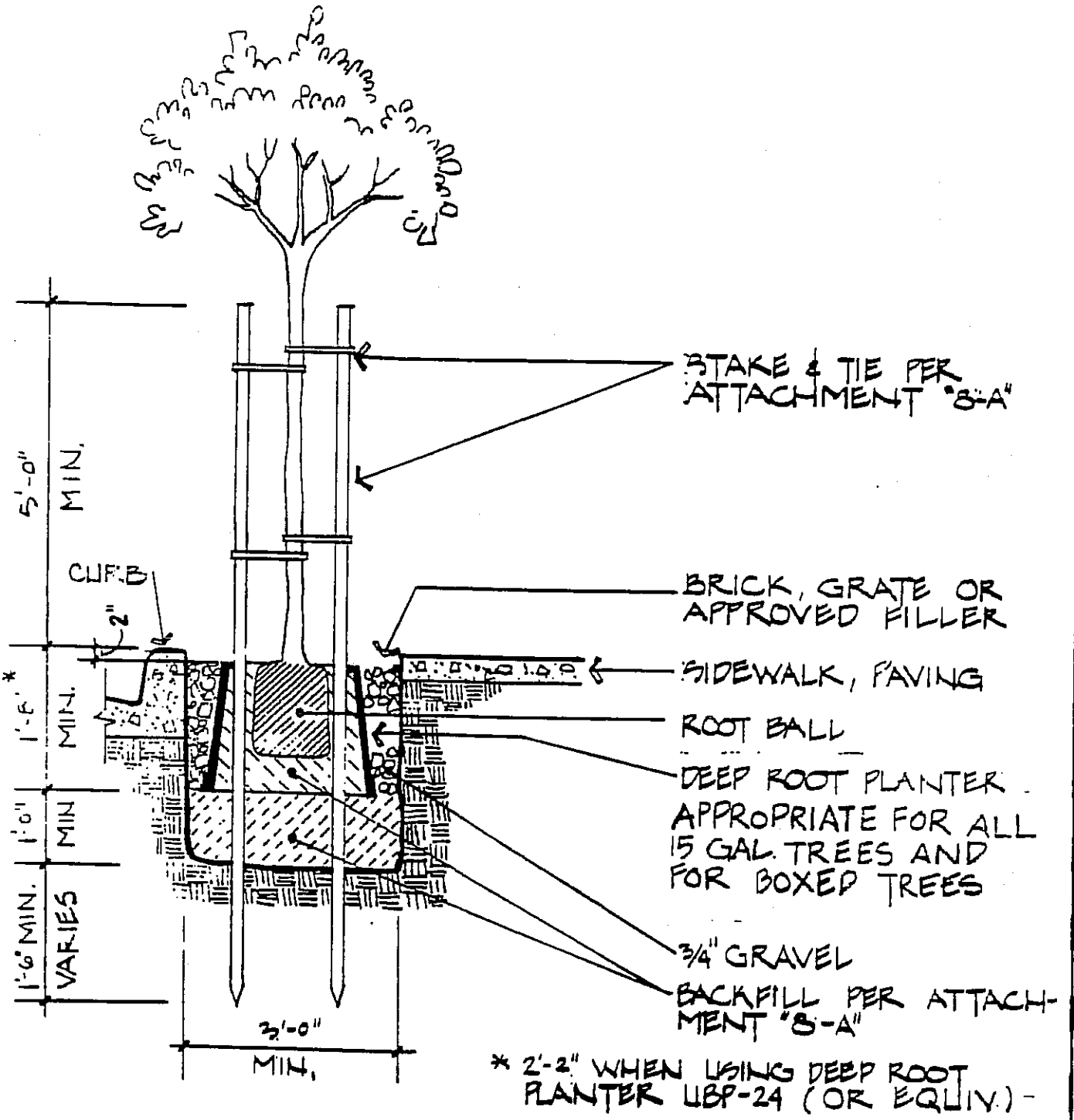
STREET TREE PLACEMENT

1. EXACT LOCATIONS OF UTILITIES, ETC. SHALL BE VERIFIED ON SITE AND SUBJECT TO CO. INSPECTION.
2. A MINIMUM OF ONE TREE PER INTERIOR LOT AND TWO PER CORNER LOT IS REQUIRED.

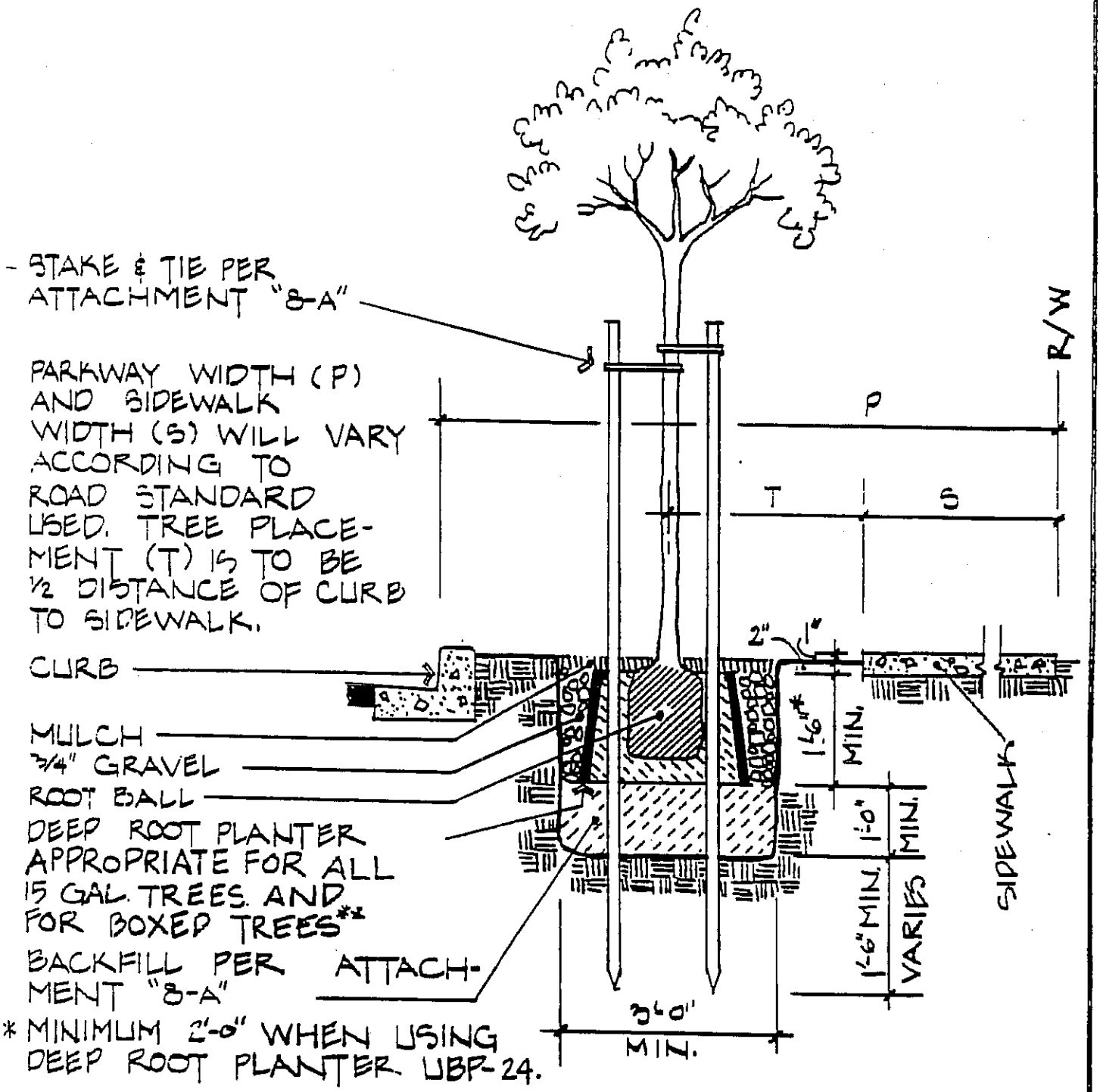
ATTACHMENT "7A"



STREET TREE PLANTING and STAKING DETAIL 8-A ATTACHMENT "8-A"	VENTURA COUNTY PUBLIC WORKS AGENCY JUNE 7, 1982



STREET TREE DETAIL TYPE "B" - TREEWELL ATTACHMENT "8-B"	VENTURA COUNTY PUBLIC WORKS AGENCY DRAWN BY B. LOCKARD JUNE 7, 1982

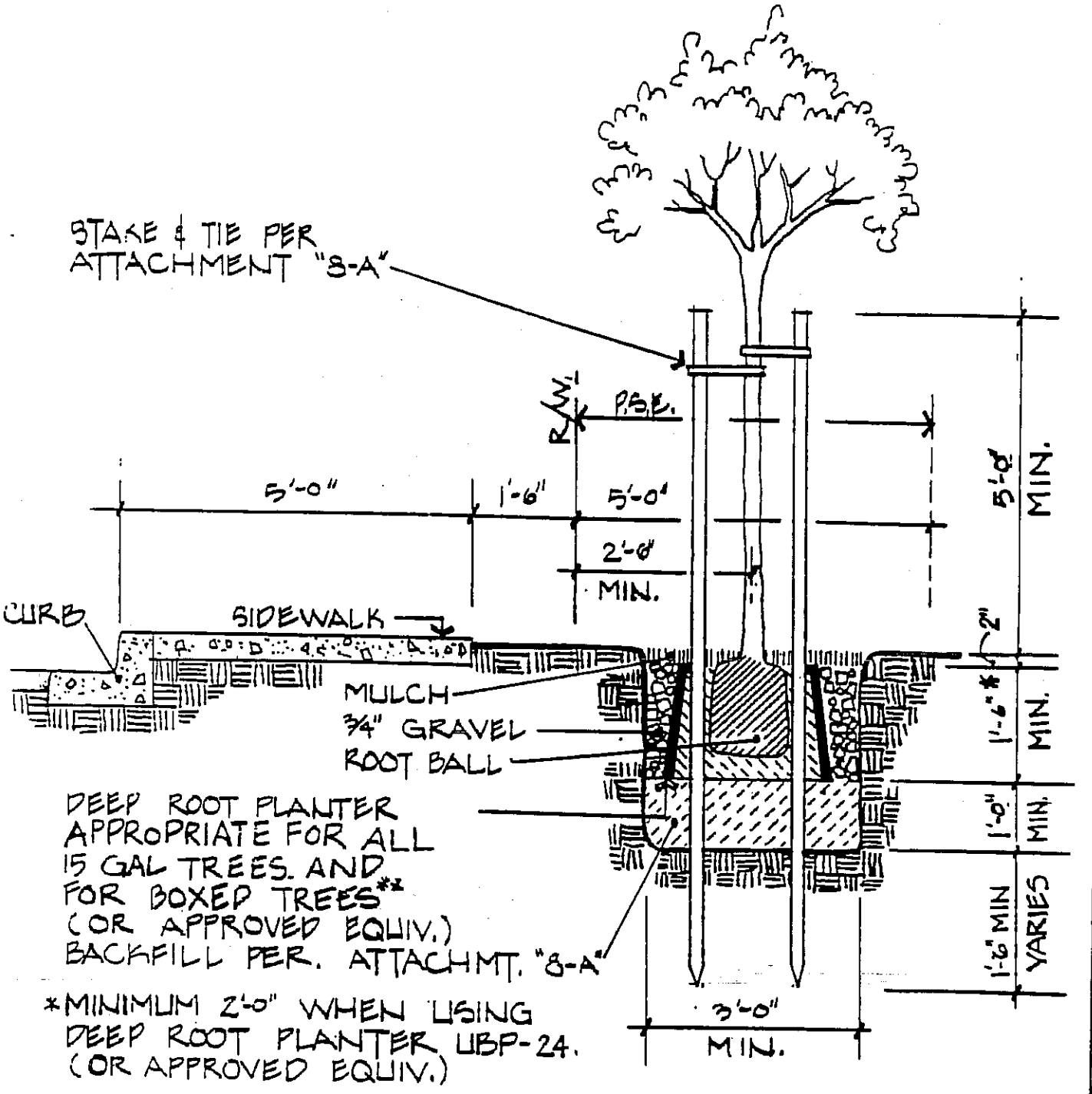


STREET TREE DETAIL
TYPE "C"- SIDEWALK ADJACENT TO RIGHT OF WAY

ATTACHMENT "8-C"

VENTURA COUNTY
PUBLIC WORKS AGENCY

DRAWN BY B. LOCKARD
JUNE 7, 1982

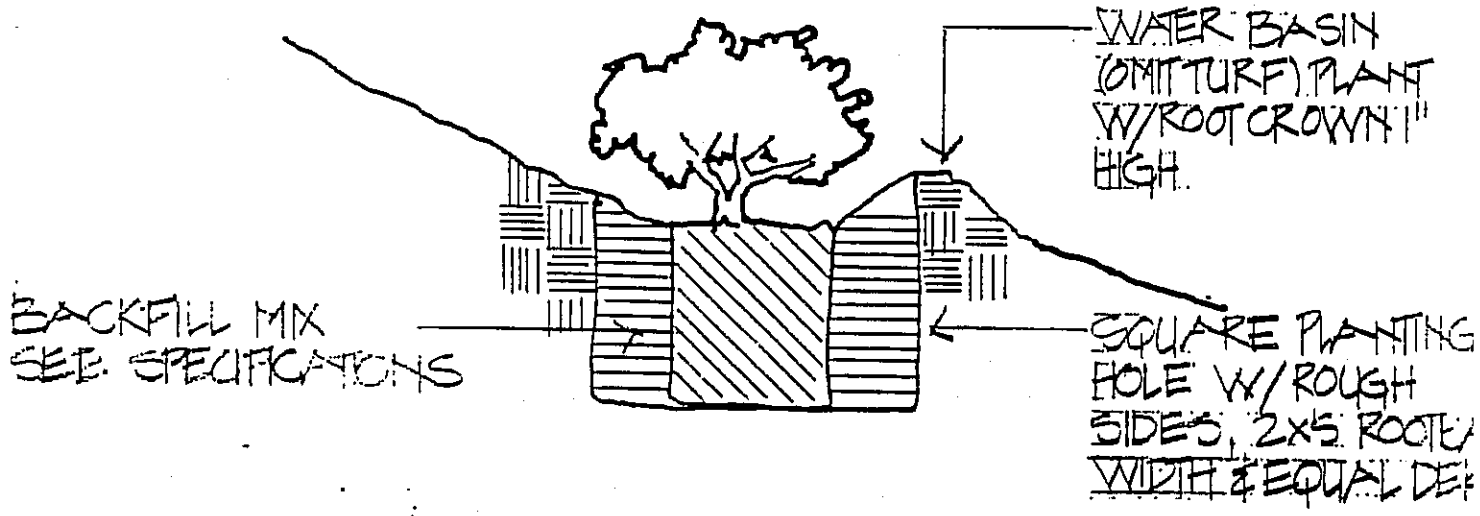


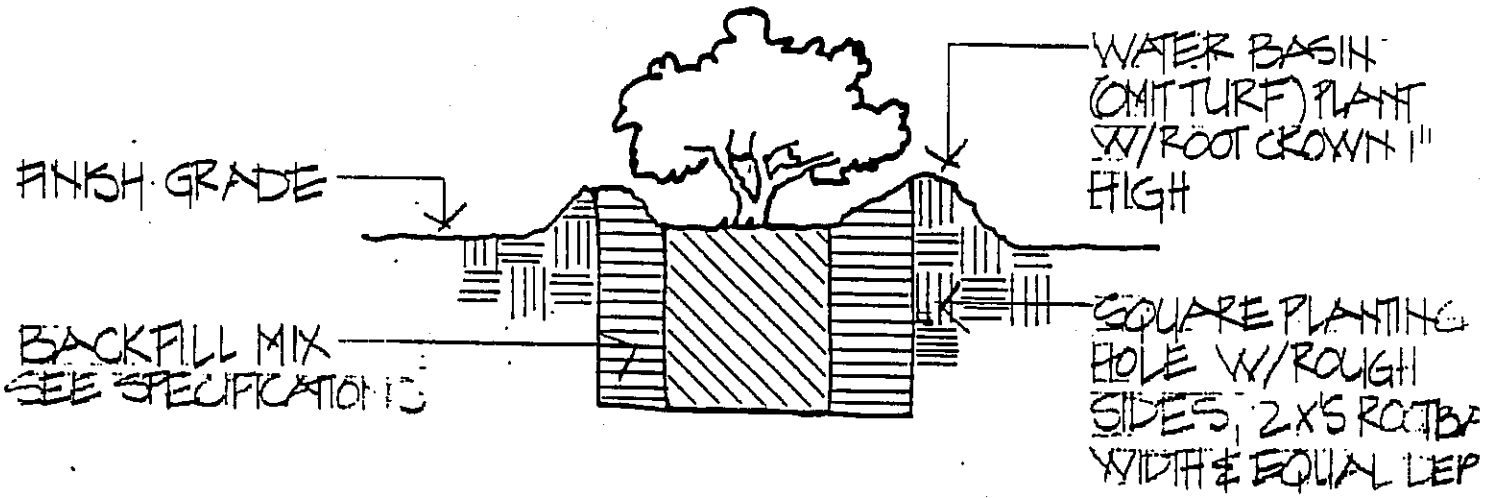
STREET TREE DETAIL TYPE "D" - SIDEWALK ADJACENT TO CURB

ATTACHMENT "8-D"

VENTURA COUNTY
PUBLIC WORKS AGENCY

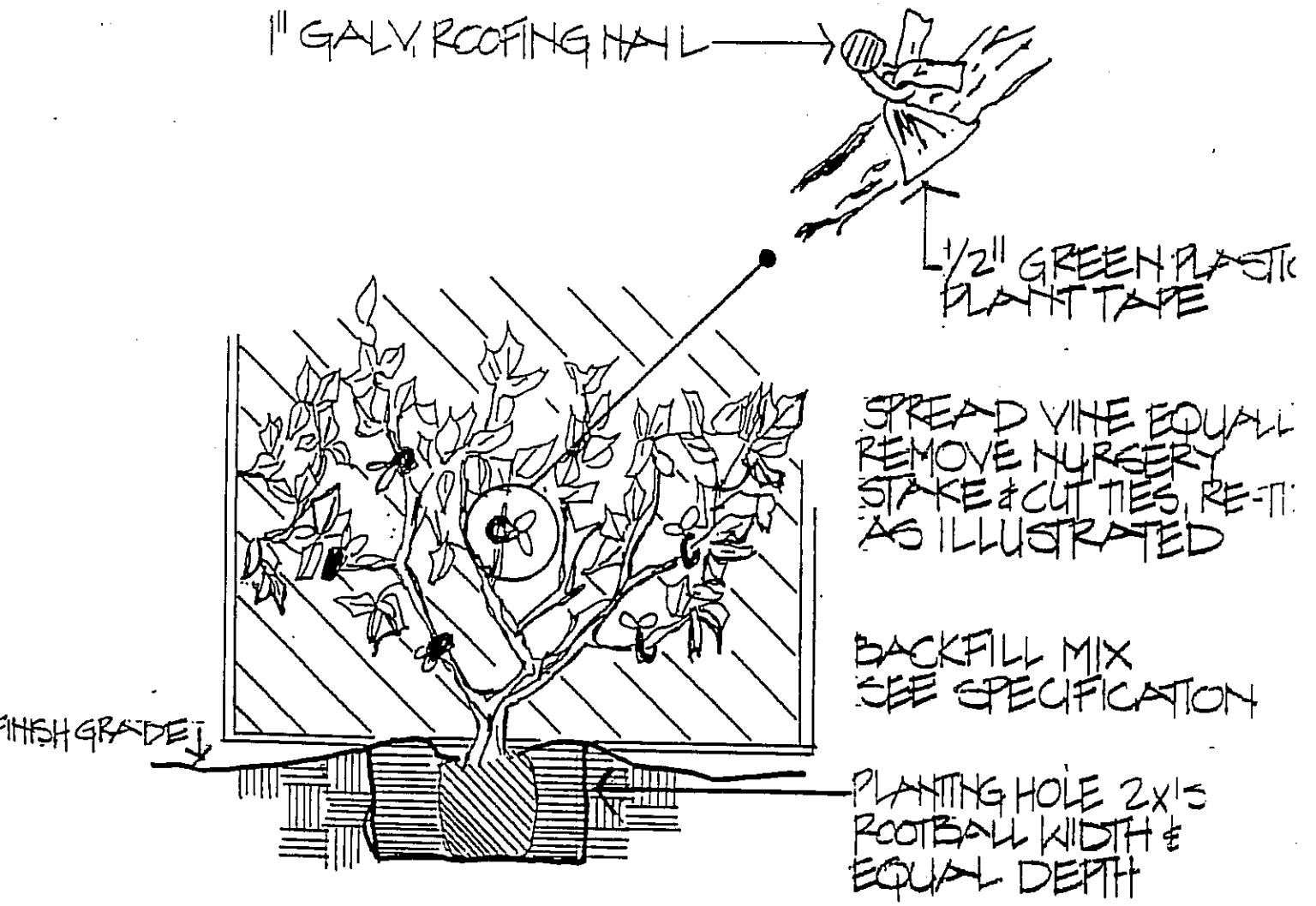
DRAWN BY B. LOCKARD
JUNE 7, 1982





SHRUB PLANTING DETAIL

ATTACHMENT "9" NTS



NOTE: ON STUCCO WALL LOCATE STUD FOR NAIL LOCATION. ON WOOD FENCE UTILIZE RAILINGS OR STRINGERS FOR NAILING.

VINE PLANTING & TYING DETAIL

NTS

ATTACHMENT "10"

P. 31 75

ATTACHMENT "11"

Irrigated Groundcovers

Proposed plant materials shall relate to architectural design elements based upon the characteristics of plant groups to assure compatibility with site improvements. Landscape materials not included on the following list may be considered, if recommended by a California registered Landscape Architect.

BOTANIC NAME	COMMON NAME
Dimorphotheca aurantiaca	Cape Marigold
Eschscholzia california	California Poppy
Calendula officinalis	Pacific Beauty Marigold
Tagetes patula	Alyssum
Lobularia maritima	Gazania
Gazania (species)	O'Conners Legume
Trifolium fragiferum	

Depending upon the terrain of the site, the following slurry mix ratio shall be utilized:

Slope	Mulch	Fertilizer
Very Flat (10:1)	1000 Lbs/Ac	500 Lbs/Ac+8-8-4*
Gentle (5:1)	1200 Lbs/Ac	500 Lbs/Ac+17-13-5**
Cut & Fills (2:1 or 1½:1)	1800 Lbs/Ac	500 Lbs/Ac+17-13-5**
Severe (1:1)	2000 Lbs/Ac	500 Lbs/Ac+17-13-5***

* 8-8-4 Fertilizer: per soil analysis
** 17-13-5 Fertilizer: per soil analysis
*** Use "Ecology Control"/M-Binder (or equal)

ATTACHMENT "12"

Non-Irrigated Groundcovers

Proposed plant materials shall relate to architectural design elements based upon the characteristics of plant groups, to assure compatibility with site improvements. Landscape materials not included on the following list may be considered, if recommended by a California registered Landscape Architect.

BOTANIC NAME	COMMON NAME
Atriplex semibacata	Saltbush
Baileya multiradiata	Desert Baileya
Lasthenia glabrata	Gold Field
Encelia californica	NCN*
Eriogonum fasciculatum	Buckwheat
Eriophyllum confertiflorum	Golden Yarrow
Lotus scobarius	Deer Weed
Lupin succulentus	Blue Lupin
Salvia columbariae	Blue Chia
Virguiera laciniata	NCN*
Dimorphotheca anna	African Daisy
Achiella millefolium	White Yarrow
Avena fatua (variety) Montezuma	Montezuma Oats
Bromus mollis	Blando Brome
Eschscholzia californica	California Poppy
Layia platyglossa	Tiny Tips
Linum grandiflorum rubrum	Red Flax
Linum lewisii	Blue Flax
Oenotheria hookeri	Wild Primrose
Pennisetum villosus	Fountain Grass
Sisyrinchum bellum	Blue Eyes Grass
Lobularia maritima	Alyssum

*NCN = No Common Name

RA:IE211

OTHER

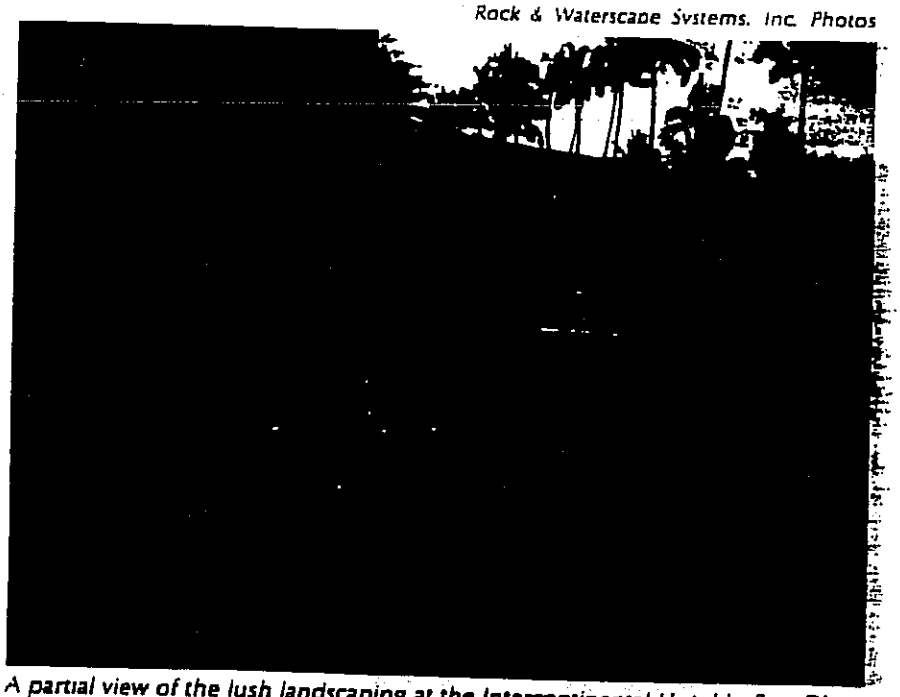
INFORMATIONAL

ATTACHMENTS

HOW VALUE ENGINEERING NETS SIGNIFICANT SAVINGS

By Gerald W. Bushree

Rock & Waterscape Systems, Inc. Photos



A partial view of the lush landscaping at the Intercontinental Hotel in San Diego.

Budgeting for landscape and irrigation can often be one of the most expensive and formidable facets of construction. This also involves the escalating costs of water.

Value engineering, applied to this important aspect of construction, can save developers 30 to 60 percent on landscape and irrigation costs, reducing the eventual price tag for consumers.

Value engineering, a method to determine whether you are receiving the most value for your construction dollar, recognizes the necessary functions of a project and provides, through knowledge and creativity, the step-by-step techniques and alternatives necessary to achieve those functions at the lowest possible cost.

Experts have estimated that 85 percent of all landscapes are overwatered. This means that possibly 85 percent of all landscape/irrigation systems are poorly designed, installed and maintained right from the beginning. Most system designs benefit from value engineering, and the savings can be tremendous, resulting in efficient operation, water conservation and less cost.

Even though value engineering has reduced the amount of equipment or offered alternatives, the integrity of the project is maintained — and in most cases improved. If a project has budgeted for medium grade landscape/irrigation services and equipment, a reduction in equipment cost can mean additional funds to upgrade the quality of all the materials on the project.

The heart of an irrigation system is the piping. If techniques common to agriculture engineers are used, the number of mechanical parts of the system such as valves and time clocks can be reduced. A good piping design can compensate for this equipment loss. Most designers do not understand the engineering behind piping since their training is lacking in hydraulic design techniques, thus designers with agriculture engineer-

Designing the irrigation portion of a landscape is often viewed as mundane, uncreative work. Such tasks are often relegated to the person with the lowest seniority in the firm — usually the person right out of school with the least amount of training and field experience. This produces irrigation systems designed by the least trained people who overcompensate for their lack of knowledge by using hydraulic overkill. If in doubt, beef it up.

An example is a housing project in the North Orange County area of Southern California. The plans called for 1,000 remote control valves. Through a careful analysis, it was recommended that only 500 were actually needed. With the average cost per valve at $65, the savings was great, netting a total of $32,500.

In another case a set of drawings for a developer's commercial project specified 21, 110 V electrical pedestals that would run 21 irrigation time clocks. By investigating the capabilities of all the time clocks on the market, a cost effective alternative was found: A time clock that could run on 24 V. Now only one $2,000 pedestal was used versus the original 21, resulting in a savings of $40,000. In addition to the above savings, less expensive low voltage wiring was used to connect the one central pedestal to all the other controllers.

Each basic irrigation system consists of an electrical pedestal, a time clock, water meter and back-flow device. The above project specified 21, 2" water meters which cost $1,200 apiece from the municipality that had jurisdiction. Through value engineering, it was determined that only 5 water meters were actually needed on this project instead of 21, saving a total of $19,200.

Much of the savings that is possible through value engineering comes from utilities. With 75 percent fewer water meter connections, a lower volume of water is used. This reduces the human tendency to overwater and translates into lower water bills. The liability is lower now too because there is less equipment to malfunction. Future maintenance is simplified and economical with less to fix.

Value engineering is applied to the aesthetic side of the landscape plans as well. The *whole picture* must be examined: the growth rate, container size and cost of certain plants, their adaptability to the soil conditions and other environmental influences. This information is matched against the developer/builder's sales and marketing schedule. Perhaps the initial budgetary figures planned for landscaping become unnecessary due to quicker than normal sales activity. It may be more cost effective to use five gallon size trees that would mature in two years instead of the specified 15 gallon size trees that are more costly. The design criteria is maintained. In no way does value engineering detract from the overall beauty of the project.

"Experts have estimated that 85 percent of all landscapes are overwatered."

Site observations and liability are another important factor since the project goes to the lowest bidding contractor. When the contractor substitutes less expensive equipment to optimize profits, these changes are frequently the source of a majority of eventual problems. If the designer has not carefully supervised the installation of the project, he points the finger of blame at the contractor, saying, "He didn't follow my plans!" When the original designer requires site observations, then it is guaranteed that the products specified are the products installed. This reduces everyone's liability.

Contractors, at first, may not like these methods. But, as they begin to work within such checks and balances, they realize how well they are being protected in the long run from legal problems.

Another aspect of reducing liability is making sure that the correct equipment has been designated. When design firms feel they are too busy to allow manufacturer representatives to visit, how can they be well informed about new technology? People become entrenched in habits and design with one particular brand of equipment for 20 years. Knowledge of the entire product spectrum and manufacturers' reputations insures efficient and cost effective systems.

The application of value engineering to the landscape and irrigation portion of construction has saved developers thousands of dollars. It is well worth selecting a firm that practices this methodology. ☐

Gerald W. Bushree is a senior principal, along with Stephen A. Alvarez and Reginald W. Stevens, of San Diego, California-based Precision Land Design, Inc.

B-3175

STANDARD DEVELOPMENT CONDITIONS FOR
SUBDIVISIONS WITH MODEL HOMES:
MODEL HOME WITH LOW WATER USE LANDSCAPING

That prior to the issuance of a Zone Clearance for more than two model homes for this tract, the permittee shall submit to the Planning Director, along with the appropriate plan check fee, a landscape plan for one of these model homes. Said landscape plans shall utilize low water using landscape design treatment. The intent of this conditions is to demonstrate to prospective home buyers the feasibility and aesthetic qualities of low water using landscape design. The permittee shall provide appropriate signing (shown on the landscape plan) explaining that this model home utilizes a low water using landscape and indicating which plant materials are used. For further details and information refer to the City of Santa Paula Guidelines for Preparation of Landscape and Irrigation Plans, Appendix 1.

WATER CONSERVING LANDSCAPE DESIGN
MODEL HOME DEVELOPMENT CRITERIA

The following criteria apply to model homes being designed to meet the water saving landscaping condition for residential tracts. Each "water saving" model home shall contain exclusively low water use plant materials and low flow irrigation systems, with appropriate signs and information for prospective home buyers.

WATER METER

All models in the complex including the low water use model shall be equipped with a separate water meter (to be obtained at no cost from the water agency serving the tract) in order to generate records regarding how much water the landscaping uses. This information will be used in public information materials about the model and the water savings potential for low water use landscapes.

PLANT MATERIALS

Some plants considered to be low water using in Ventura County are identified in the attached plant list. Other low water use plants may be substituted, if approved by the County landscape consultant for the project. Many of the plants listed are attractive, flowering, require relatively little maintenance once established, and will enhance the appearance of the model.

USE OF TURF

Turf requires more water than any other plant or groundcover. Turf shall be allowed only as needed for recreational purposes or play areas, and may cover no more than 20% of the total non-sloped lot area. Low water use varieties of turf shall be used (see plant list on page I-3) to minimize water required by turf areas.

IRRIGATION SYSTEM

As described in the Ventura County Guide to Landscape Plans, the irrigation system serving a low water use landscape shall include low precipitation rate sprinklers or drip systems. The sprinklers shall be located properly to minimize over-spray onto un-planted areas. At least one moisture sensor should be placed in the turf area with a sign indicating its location. The moisture sensor will override the controller if the soil is too wet to require irrigation.

SIGNS

Signs identifying aspects of the landscape design and irrigation shall be placed around the model. These signs should be clearly marked on the landscape plan for the model. Example language for the signs is attached. The following criteria should be used in developing and placing the signs.

Front Yard Sign Identifying Model: A sign, large enough to be visible from the street and sidewalk (at least 2 feet by 2 feet) shall be located in front of the model home. The sign shall indicate that the model is landscaped with low water using plant materials and irrigation systems.

Other Exterior Signs: Several signs shall be placed throughout the landscaped area identifying the irrigation system used, the different sub-areas of the landscape, and any other features that contribute to the overall water conserving theme (hardscapes, redwood bark, mulch). One sign indicating the use of a moisture sensor in the lawn (turf) should also be included.

Interior Signs or Displays: A drawing, or combination of drawings, should be displayed inside the model providing a schematic of the landscape. These drawings should include a key identifying the plants in the yard. It is suggested that this schematic also be printed in a one page handout to be available at the model or the sales office. The drawings could be a simplified rendering of the landscape plan itself, using common names rather than the often used Latin names for the plants. The drawings should be colorful, easy to read, and should be framed for protection.

LITERATURE

A package of literature describing water conserving landscaping shall be given out to individuals upon purchasing a home in the tract (see attached). This literature (see attached list), and additional materials shall be displayed inside the model, also enclosed in a frame, with a note indicating where this material can be obtained. Literature to be given to homebuyers at the time of purchase can be obtained by contacting the Planning Division (some are free, others must be purchased).

**NOTE: Two important aspects of a water conserving landscape are: placement or grouping of plants, and appropriate location with respect to slope and sun exposure. Many plants that are not strictly low water using, can be grouped together in confined areas, or placed in the shade, to reduce their water needs. Plants must be grouped according to the amount of water they need, and irrigated accordingly, to assure actual water savings. The landscape architect can provide expertise in this area.

Attachments

Reference list for literature
Signs (alternative wording)

EXAMPLE LANGUAGE FOR SIGNS

Sign at Entrance:

_____ Development Company presents a model home which utilizes a water conserving landscape design. Features used on this model are described on signs located in the front and rear yards, with further information available in the sales office. We believe you will find this model an attractive alternative to traditional landscapes that will help cut your water costs and maintenance time.

Sign Regarding Plants:

In an effort to demonstrate water conservation in the landscape, the plants used in this model are low water using and drought tolerant. As you can see in this landscape, it is possible to have an attractive, lush and diverse group of plants that do not require a lot of water. Plants are grouped according to their water needs, and sun or shade tolerance.

Sign Regarding Turf (Lawn):

The use of lawn in this landscape is minimized due to its high water consumption. Lawn is placed in the rear yard where it can be best used for recreational purposes. A special variety of lawn that requires less water has been used here.

Sign Regarding Irrigation System:

The irrigation system has been designed to minimize wasted water. Plants that require similar amounts of water are grouped together on the same irrigation valves. Water conservation is acheived through use of low application rate sprinklers or drip irrigation to lessen runoff. An automatic control system is used to apply water accurately and consistently. A moisture sensor placed in the lawn area determines when water is needed. This is connected to the automatic controller.

LITERATURE FOR WATER CONSERVING MODEL HOMES

Information for Model Home for General Public
Nursery Program Brochure

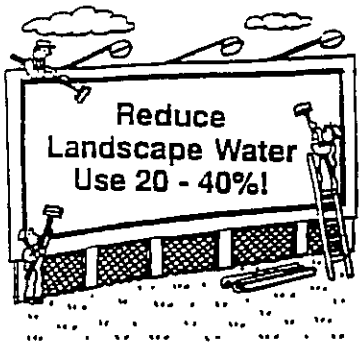
Literature for Homeowner Folder
Information sheet describing need for water conserving landscapes
Xeriscape Brochure - (from Orange County Water District)
Sunset Reprint- Water Saving Planting Ideas
Nursery Plant Tagging Program Brochure

Suggested Literature for display
Selected California Native Plants in Color
Success List for Water Conserving Plants
Plants For California Landscapes
"Drip..It's Time Has Come"
How To Have a Green Garden in a Dry State
40 Ways to Save Water in Your Yard and Garden

WHERE THIS LITERATURE CAN BE OBTAINED
Ventura County Planning Division
Metropolitan Water District of Southern California
Water purveyor providing water service to the tract
City of Thousand Oaks Utilities Division

COST
The cost to obtain copies of the general brochure to be kept in each model home will be paid by the County The folders of literature to be distributed to new home buyers shall be purchased by the developer from the County, at a reasonable cost. The developer shall purchase at least as many folders as there are units in the tract. The County will provide the folders and the literature to the developer when they have paid the appropriate fee.

Lawn Watering Guiue



If you are a typical Ventura County resident, nearly half the water you pay for hits the dirt - your lawn, flowerbeds, and gardens. And, if you are typical, you can reduce your landscape water by 20 to 40% without any adverse effects. Read this brochure, perform a simple test on your watering system, and then change a few habits.For this small investment of your time, you can save money and water and still have the best looking yard in your neighborhood! Here's how.

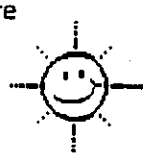
1. USE THE "LAWN WATERING GUIDE" ON THE BACK OF THIS BROCHURE TO DETERMINE YOUR APPROXIMATE WATERING NEEDS. Whether sprinklers are underground or attached to the end of a hose, follow the directions on the Guide to calculate your approximate watering times. Sprinklers on each valve will require separate measurement and calculation. It is best to conduct the test when you would normally water so that water pressure will be the same. Please remember that Ventura County has many different micro climates, soil types and rainfall patterns, so the recommendations should be used only as guidelines.

2. GET TO KNOW HOW PLANTS SIGNAL FOR WATER. The lawn itself is a reliable instrument for indicating when water is needed. Grass will not spring back after being stepped on if moisture is low. Some plants lose their gloss and start to droop a little before wilting. The time to water is when the plants need it.

Because the distribution of water, even by the best sprinkler systems, is imperfect, a small part of the lawn that received the least water will appear dry first. A good rule is "never water a lawn until part of it looks like it needs it". Rigid watering schedules waste water. If you have an automatic timer, don't be afraid to reset it.

3. SELECT APPROPRIATE GRASSES. Select grasses which are adapted to warmer, drier climates such as, varieties of Bermuda, St. Augustine, Zoysiagrass and new fescue varieties.Watering can be reduced by 20% over the more thirsty grasses such as, bluegrass, bent grass, and annual rye grass.

4. AVOID WATERING ON WINDY DAYS OR MIDDAY WHEN EVAPORATION IS HIGH. Water early in the morning before 6:00 a.m. Evenings after 8:00 p.m. is second best but then fungus has all night to attack moist foliage. Avoid watering during the peak water use hours of 5:00 p.m. to 8:00 p.m.



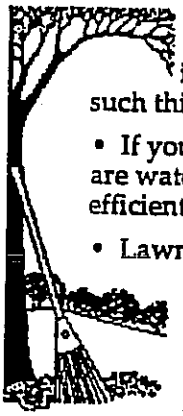
5. ADJUST SPRINKLERS TO WATER PLANTS ONLY - not the sidewalk, driveway, patio or street. Make sure that coverage is even so that you don't have to drown one area in order to get enough water on another.

6. SOIL TYPES VARY. For sandy soil, more frequent short watering periods are best. This prevents water loss beneath the root zone of the grass. For compacted or heavy soils, such as clay, it is best to water deeply and less frequently because these soils hold water longer.
It is best to split the watering time into 2 or more sessions to allow for greater absorption and decrease runoff.

In addition, use a shovel or long screwdriver to check the moisture in the soil before watering. Such a probe will usually move easily through moist soil but will stop when it reaches dry soil.

7. USE A KITCHEN TIMER as a reminder to turn sprinklers off. ***Remember,* if you have an automatic timer on your sprinkler system, it will need to be reset when the weather changes.**

Additional Water-Saving Hints:



- Compared with other plants, grass is very water consumptive. Use it only where it will be enjoyed for such things as play or entertaining.
- If you have a gardener, do not assume they are waterwise. Encourage them to follow efficient watering practices.
- Lawns which are cut very short will lose excessive water through evaporation. Let lawns reach a height of 3-4 inches.
- Fertilizing in moderation with a balanced formula saves water and will provide your lawn with the necessary nutrients to remain attractive and healthy.
- Remove water-robbing weeds.

Ventura County Lawn Watering Guide

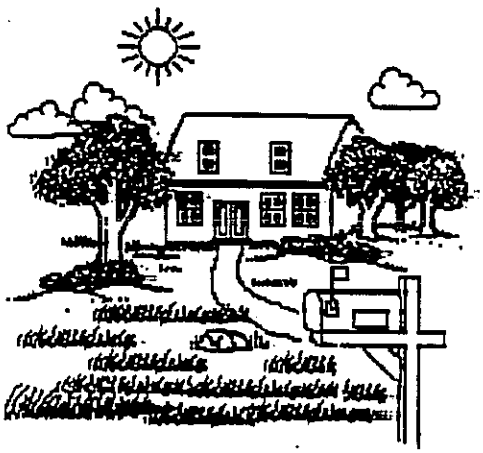
A simple way to determine your lawn watering needs

1. Set 5 flat bottom cans or coffee mugs at various places on your lawn.
2. Turn on your sprinkler(s) for 15 minutes.
3. Measure the depth of water in each can with a ruler and determine the average water depth in the cans.
4. Find your average water depth on the top of the Lawn Watering Guide.
5. Read the number of minutes you should water every third day and record the times for future reference.

Use these watering times as a guide only. Your lawn may need more water when it's extra hot or less when it's cool. Watering can be skipped when it rains. Avoid watering on windy days or midday when evaporation is high.

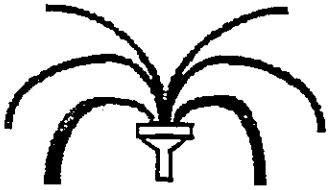
Average water depth in cans/inches		11/4"	3/4"	5/8"	1/2"	3/8"	5/16"	1/4"	1/8"
SPRING	Coast	4	8	9	12	16	19	24	49
	Inland	5	9	11	14	19	23	28	57
SUMMER	Coast	7	12	14	18	24	29	37	74
	Inland	9	15	18	22	30	36	45	90
FALL	Coast	4	7	9	11	15	18	23	46
	Inland	4	8	9	12	16	19	24	49
WINTER		Water only during prolonged warm or dry periods							

PLN194-4/88

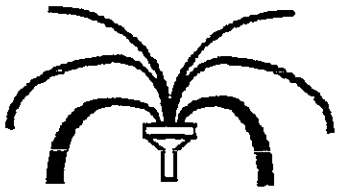


Sprinkler Adjustment

One of the greatest defects of lawn watering systems is poor uniformity of water distribution. An even distrubution of water over the entire lawn area is water efficient and can result in significant water savings.



After you have done the suggested test of your watering system, note the difference in the amount of water in each of the containers. That will tell you a lot about the uniformity of your sprinkler system. If there is more than a 1/4" difference between containers, you should adjust or change sprinkler heads or experiment with the positioning of hose end sprinklers.



If you have questions or would like additional information:

call

Ventura County Water Conservation Coordinator at (805) 654-2471

or write

Ventura County Water Conservation Program
800 South Victoria Avenue,
Ventura, CA 93009.

For more information:
call
Ventura County Water Conservation Coordinator at (805) 654-2471

Other Water Conserving Planting Suggestions:

Trees: instead of *Podocarpus* (to 60') — *Cedrus libani* (Cedar of Lebanon) - to 80')
*Umbellularia californica** (California Bay)
*Quercus agrifolia** (Coast Live Oak)

instead of *Pyrus* — *Tabebuia impetiginosa* (Pink trumpet tree) - to 25', briefly deciduous
*Fremontodendron californicum** (Flannel Bush) - perhaps should be considered a shrub, various cultivars avail.

Shrubs: instead of *Raphiolepus* "pink lady" —
Hakea suaveolens (Sweet Hakea) - evergreen and fast growing
*Ceanothus** (California lilac) - numerous cultivars avail. from small trees, to shrubs, to ground cover
*Heteromeles** (Toyon) - red berries in winter
*Garrya** (Silk-tassel)
*Calycanthus** (Spice Bush)
Arbutus (Strawberry tree) - shrubby cultivars avail.
*Rhus integrafolia** (Lemonade berry)
Duranta repens (Sky flower, Golden dew drops)
Murraya paniculata (Orange jassamine)

*California natives

Suggestions from Jennifer Matos, rec. 8/25/98.