

City of West Sacramento 2005 Urban Water Management Plan

Prepared by:
RMC
Water and Environment

September 15, 2005



Los Angeles
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September 15, 2005

City of West Sacramento
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Subject: 2005 Urban Water Management Plan

Dear Mr. Bessette:

RMC is pleased to submit this final version of the 2005 Urban Water Management Plan.

If you have any questions, please don't hesitate to contact me at (916) 851-0292.

Sincerely,
RMC Water and Environment

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Appendix A – Resolution for the Adoption of the UWMP

Appendix B – Water Rights Permits, Contracts, Agreements

Appendix C – Water Conservation and Education Literature

Appendix D – Agency Coordination and Proof of Public Hearing

Appendix E – Emergency/Disaster Response Plan

Chapter 1 Introduction

This 2005 City of West Sacramento Urban Water Management Plan (UWMP) was prepared in compliance with the Urban Water Management Planning Act, as amended. It includes all information necessary to meet the requirements of California Water Code, Division 6, Part 2.6.

1.1 Background

1.1.1 Urban Water Management Act

The Urban Water Management Act (Act) was created by Assembly Bill 797 (AB 797) which was signed into law by Governor Deukmejian on September 21, 1983. The Act requires that urban water suppliers (i.e. municipal water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 AF annually) prepare and adopt Urban Water Management Plans containing certain specified elements.

The Act was amended by Assembly Bill 2661 (AB 2661), which was signed into law by Governor Deukmejian on July 18, 1990. AB 2661 deleted the January 1, 1991 termination date specified in AB 797. AB 2661 also expanded the elements which are to be addressed in Urban Water Management Plans.

The Act was also amended by Assembly Bill 1869 (AB 1869), which was signed by Governor Wilson on October 13, 1991. AB 1869 requires that urban water suppliers update (not just review) Urban Water Management Plans every five years to include projections of both potable and reclaimed water use, identify current reclamation practices, address additional alternative conservation measures, and describe findings, actions, and planning related to a number of water conservation and reclamation measures.

The Act was further amended by Assembly Bill 11X (AB 11X) signed by Governor Wilson on October 13, 1991. AB 11X requires that urban water suppliers prepare an Urban Water Shortage Contingency Plan as an amendment to its Urban Water Management Plan. Water Shortage Contingency Plans must be updated every five years and specify proposed measures for response to short and long term water shortages.

1.1.2 Purpose of Plan Preparation

By preparing this UWMP, the City of West Sacramento continues its commitment to smart planning and management of its water supplies. With this document, the City meets the UWMP requirement for funding under the Proposition 50, Chapter 8 Integrated Regional Water Management Plan Grant Program. Data from the UWMP can also be linked to California Water Plan Updates. Additionally, a complete UWMP serves as a foundational document for SB 610/SB 221 requirements.

1.1.3 Resource Maximization/Input Minimization

The City of West Sacramento understands that water is a limited, though renewable resource, and that a long-term reliable supply of water is essential to protect the local and state economy. It also recognizes that, while conservation and efficient use of water is a statewide concern, planning for this use is best done at the local level.

The main focus for the City is to maximize the efficient use of water and install water meters. In addition to the water meter program, the City is increasing its other water conservation measures as described later in the UWMP.

1.2 Agency Coordination

1.2.1 Plan Preparation Coordination

The City does not serve water to any other cities or agencies nor does it have any interconnections between its potable water system and potable water systems operated by other water suppliers. However, the City has worked with the cities of Sacramento, Roseville, the County of Sacramento, and the East Bay Municipal Utilities District to develop a Sacramento River Watershed Sanitary Survey. This was prepared in accordance with the California Surface Water Treatment Rule that requires public water supply agencies using surface water sources to conduct a Watershed Sanitary Survey for their water source.

1.3 Plan Updates

This 2005 UWMP serves as an update to the City's 2000 UWMP. Sections of the plan, notably those addressing Demand Management Measures, were previously updated in July.

1.4 City and County Notification and Participation

The City is a member of the Water Resources Association of Yolo County (WRA), and has therefore notified WRA of the UWMP update process. WRA was sent a draft copy of the UWMP and a notice of intention to adopt, a copy of which is included in Appendix D.

1.5 Public Participation

On August 2, 2005, the City placed a notice in the News Ledger (City newspaper) stating that its UWMP was being updated and that a public hearing would be conducted to address comments and concerns from members of the community. The notice stated that a public review period would be scheduled from August 22 through September 7, 2005. A copy of this notification is included in Appendix D. The Draft 2005 UWMP was made available for public inspection at the City of West Sacramento's City Hall, located at 1110 West Capitol Avenue, 2nd floor, as well as the City's Public Works Department, located at 1951 South River Road.

In addition, the City directly contacted three of the largest water user stakeholders in the service area, Unocal, Norcal Beverage Company, and the City Parks Department, and invited them specifically to attend this public hearing to voice their comments.

1.6 Plan Adoption

The City prepared this 2005 UWMP Update during the summer of 2005. The plan was adopted by its City Council on September 7, 2005 and was submitted to the California Department of Water Resources within 30 days of the council approval. See Appendix A for a copy of the resolution.

1.7 U.S. Bureau of Reclamation and the Department of Health Services

Upon completion, this UWMP was submitted to the United States Bureau of Reclamation and the Department of Health Services.

Chapter 2 Supplier Service Area

2.1 Service Area Description

The City of West Sacramento (City) is located in eastern Yolo County and borders the Sacramento River. The City is part of a four county metropolitan area that includes Yolo County, Sacramento County, and portions of Placer County and El Dorado County. The City limits extend from the Sacramento River and Tule Lake Road on the north, the Sacramento River on the east, Shangri-La Slough on the South, and the Yolo Bypass on the west. The study area comprises all of the existing and future developments within the City boundaries. Covering approximately 20 square miles, the City's service area boundary is contiguous with the City limits as shown in Figure 2-1 which covers approximately 20 square miles. Lands north of the Barge Canal are considered the North area, including Broderick and Bryte, which are older, well-established neighborhoods. Lands south of the Barge Canal are considered the Southport area. The City has an estimated 2005 population of 40,206 (California Department of Finance 2005).

The North area includes a mix of residential, commercial, and industrial development. There is a large industrial development located in the southwestern portion of the North area that has high fire protection demands. The current residential and commercial developments will grow with the addition of three new developments. The Rivers, a residential community planned for the northern tip of the City, will add housing and residents to the community. Commercial development and the addition of office space in the North area will increase in the near future with the addition of the Triangle and Pioneer Bluff developments. These developments, as well as more industrial growth, will substantially raise the future water demands for the North area.

The Southport area is expanding rapidly with the addition of several new housing developments including: Bridgeway Lakes with 1,300 new homes, Newport Estates with 860 new homes, and the soon to be developed PAIK and Richland Communities adding several thousand new homes. The Southport Area is also growing in its industrial demands. With the abundant growth in the Southport area, the water demands in this region will increase substantially in the future.

In January 1987, the City was incorporated and assumed ownership and responsibility for operation of the water system from East Yolo Community Services District, which had purchased the system in 1983 from the Washington Water and Light Company, a subsidiary of Citizens Utilities Company of California. The City currently serves approximately 11,600 connections through its water supply, treatment, and distribution system.

Since its incorporation and initiation of operation of the water system, the City has made major improvements, the most significant being the construction of the Bryte Bend surface water treatment plant (BBWTP) in 1988. This allowed the City to convert from reliance solely on poor-quality groundwater to a centralized, high-quality surface supply. The City has recently deactivated its groundwater wells.

Ground surface elevations within the City generally range from about 10 feet above sea level in the north to approximately 20 feet above sea level in the south. The City is within the reclaimed flood plain of the Sacramento River.

2.2 Climate

Temperatures average 60°F annually, ranging from average winter morning lows in the 30's to average summer afternoon highs in the 90's. Relative humidity ranges from 60 to 90 percent in winter months to 30 percent in summer months. Annual rainfall averages approximately 17 inches, with most rainfall occurring between November and April. Evapotranspiration (ET) values, which serve as indicators of how much water is required to maintain healthy agriculture

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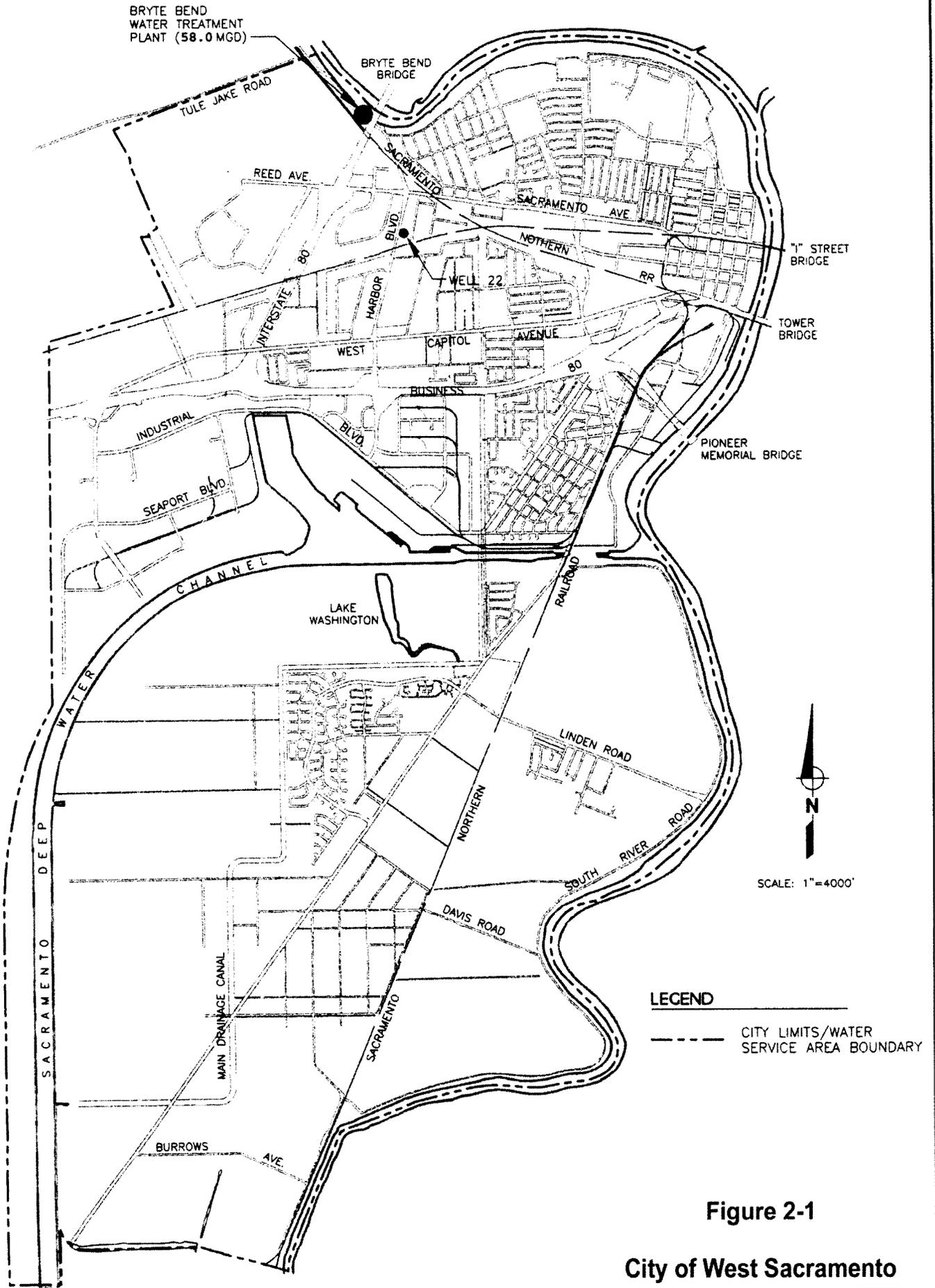


Figure 2-1
City of West Sacramento
Water Service Area

and landscaping, range from 1.55 inches during December and January to 8.68 inches in July. Temperature, rainfall and evapotranspiration averages for the City are presented in Table 2-1.

Table 2-1: Service Area Climate (Guidebook Table 3)^a

	January	February	March	April	May	June
Average ET _o ^b (in)	1.55	2.24	3.72	5.10	6.82	7.80
Average Rainfall ^c (in)	3.74	3.26	2.38	1.47	0.45	0.01
Average Temperature ^d (F)	52.7	60.0	64.0	71.1	80.3	87.8

Table 2-1 (Guidebook Table 3) (continued)							
	July	August	September	October	November	December	Annual
Average ET _o (in)	8.68	7.75	5.70	4.03	2.10	1.55	57.0
Average Rainfall (in)	--	--	--	0.92	2.03	3.19	17.1
Average Temperature (F)	93.2	92.1	87.3	77.9	63.1	52.7	73.5

Footnotes:

- a. The term “Guidebook X” refers to the table in the *Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan* by DWR.
- b. California Irrigation Management Information System
- c. California Data Exchange Center, Department of Water Resources
- d. <http://www.climate-zone.com/climate/united-states/california/sacramento/>

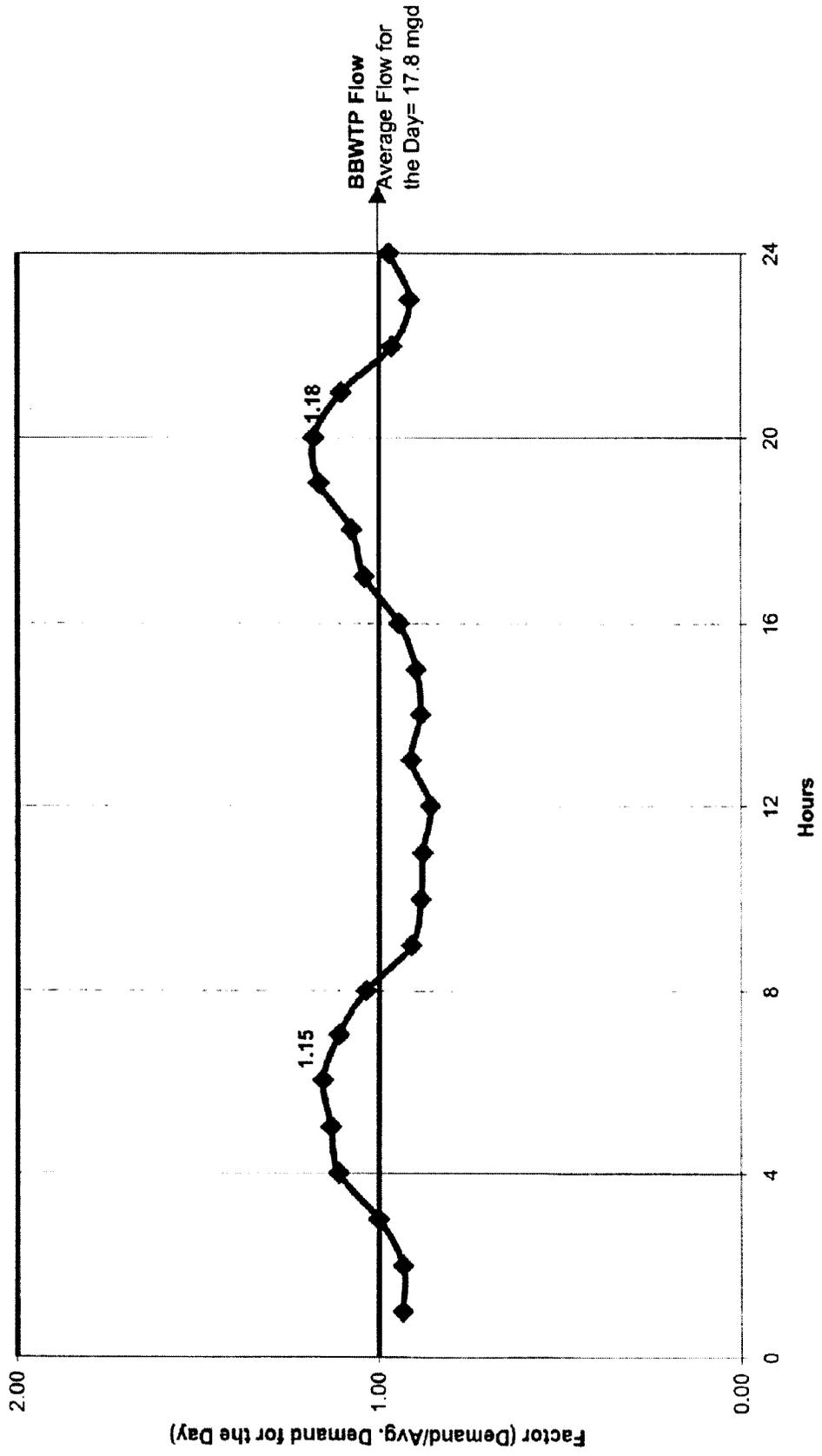
2.3 Other Demographic Factors

On June 8, 2004, the City performed a 24-Hour Demand Test to determine daily fluctuations in water demands within the service area. The resulting demand pattern for the City during the test day was relatively flat and does not indicate extreme high or low demand hours over a 24-hour period. It appears that the City’s high percentages of commercial and industrial land use, which typically correspond to higher mid-day demands, balance with the higher night-time demands associated with lawn and landscape irrigation, resulting in a daily demand pattern that is devoid of very pronounced peaks or troughs. Figure 2-2 shows the demand pattern described above.

2.4 Population Projections

The City has determined that buildout conditions will occur in 2020. Based on the City’s development projections, population at buildout is expected to be 78,700 (City of West Sacramento). Interpolated population projections are presented in Table 2-2.

**Figure 2-2 Diurnal Demand Curve
City of West Sacramento**



Note: Temperatures varied between 55 and 78 degrees during the test period. (June 8, 2004)

Table 2-2: Current and Projected Population (Guidebook Table 2)

	2005	2010 ^a	2015 ^a	2020	2025 ^b	2030 ^b
Service Area Population	40,206 ^a	53,037	65,869	78,700	78,700	78,700

Footnotes:

- a. California Dept. of Finance (DoF). Population growth between 40,206 (DoF) and 78,700 (City of West Sacramento) is assumed to be linear.
- b. Buildout for the City is expected to occur in 2020; population therefore should not increase after 2020.

Chapter 3 Water Supply

3.1 Groundwater

The City used groundwater as its only supply source in the past, and still has existing wells with a pumping capacity of about 5.6 million gallons per day (mgd). In general, however, the wells are not in good operating condition and the quality of water they produce is poor. Use of groundwater in the City thus involves the need to treat the water to remove iron, manganese, methane and possibly arsenic. Treatment, however, does not reduce the dissolved solids concentration that can make the water taste poorly. Rehabilitation of these existing wells, and integration of wellhead treatment units and emergency power supplies to make the wells available during power outages, could be costly when compared on a lifecycle cost basis to providing equivalent treated water storage capacity. This resource, therefore, does not provide the City with a very reliable supply option.

As indicated in the City's recently completed 2005 Water Master Plan Update, the City intends to deactivate its existing groundwater sources. Therefore, for the purposes of this UWMP, it is a reasonable assertion that the City has no groundwater supplies.

3.2 Current Water Supply

3.2.1 Water Supply Facilities

The City currently relies on surface water supplies from the Sacramento River to meet demands. The City's existing surface water supply facilities include the 58 mgd [permitted capacity = 40 mgd (November – March), 58 mgd (April – October)] Bryte Bend Water Treatment Plant (BBWTP). Prior to the construction of the BBWTP in 1988, all water supplied within the service area was groundwater.

3.2.2 Appropriative Water Right

The City has an appropriative right for diversion of surface water from the Sacramento River. Permit Number 18150, issued by the State Water Resources Control Board (SWRCB) under this right, allows the City to divert up to 18,350 acre-feet per year (AFY) of water from the Sacramento River at the BBWTP intake structure. This permit was issued in 1981 and limits the diversion of water to the periods of January 1 through June 30, and September 1 through December 31 of each year, with a maximum rate of diversion for municipal use limited to 62 cubic feet per second (cfs), about 40 mgd. Under this permit the City does not have the right to divert water during the high demand months of July and August. There are no charges for raw water associated with the use of this supply.

This diversion is authorized under the State's appropriative water rights law, which is based on the theory of "first in time, first in rights." As such, it is subject to reduction by the SWRCB, if necessary, due to drought conditions and/or to meet downstream water quality objectives. In the permit, the SWRCB reserves the right to modify, reduce, or completely eliminate the authorized diversions because of variations in demand and hydrologic conditions within the Sacramento River Basin, and/or the need to meet downstream water quality objectives in the Delta.

Under Standard Permit Term 91 (Term 91) of the City's appropriative right, diversions were reduced by 100 percent during the drought years of 1991 and 1992 between the months of June and October. In more recent years, Term 91 restrictions of varying severity and duration have become more typical; for the purposes of this UWMP, however, it is assumed that in a normal water year, Term 91 supply reductions will not impact the City's overall supply strategy, due to the nature of the City's Bureau of Reclamation contract as described below.

3.2.3 Bureau of Reclamation Contract

To obtain a firm surface water supply during the summer months, the City entered into a forty-year agreement with the United States Bureau of Reclamation (BuRec). BuRec Contract No. 0-07-20-W0187 authorizes the City to divert from the Sacramento River a specified quantity of the water supply created by the Central Valley Project (CVP). The contract was entered into in 1980 and allows the City to divert up to 23,600 AFY from the Sacramento River of combined appropriative right water, as described above, and CVP water. The total diversion amount of 23,600 acre-feet per year (AFY) is equivalent to an annual average day diversion of 21.1 mgd. The BuRec contract does not limit the maximum rate or months of diversion from the river by the City. The contract does obligate the City to pay for specified percentages of the diverted quantities during the months of June through September, and requires the City to purchase a certain minimum annual quantity. The City is required to purchase 20 percent, 88 percent, 100 percent, and 100 percent of the water diverted during the months of June, July, August and September, respectively. As a result, 20 percent and 100 percent of the water diverted in June and September, respectively, must come from BuRec, even though diversions from the City's appropriative right during these periods may be legal in normal water years. In some years, additional Term 91 limits have been imposed on the City's appropriative right, causing an increased percentage of diverted water to come from the BuRec supply.

The contract has an increasing schedule of minimum purchase starting at 105 AF in 1981 and increasing to 9,680 AF after 40 years. The minimum purchase in 2005 is 8,330 AF. The 2005 cost of water under the contract is \$21.72 per acre-foot, a total cost of \$180,928. The City will also pay restoration charges of \$15.87 per acre-foot for an estimated 6,235 AF of project water from June through September in 2005, at a total cost of \$98,949. The City will also pay a maintenance and interest average between \$20,000 and \$25,000 in 2005.

The minimum purchase in 2006 will be 8,440 AF. The 2006 cost of water under the contract will be \$21.72 per acre-foot, at a total cost of \$183,317. The City will also pay restoration charges of \$16.10 per acre-foot for an estimated 7,170 AF of project water from June through September in 2006, at a total cost of \$115,437. The City will also pay a maintenance and interest average between \$20,000 and \$25,000 in 2006.

Provisions in the contract allow for the renewal of the contract for successive periods and to increase or decrease the quantity of water available to the City. The City is required under the contract to prepare and implement a water conservation program for all water diverted from the river. This program must be submitted to BuRec for approval every five years. The 1995 Urban Water Management Plan was submitted to BuRec for review and approval to satisfy this requirement. Upon completion, this UWMP, and the water conservation measures it includes, will also be submitted to BuRec for review.

The contract states that BuRec will use all reasonable means to prevent shortages in the quantity of water available to the City. However, the contract also states that no liability shall accrue against the United States if shortages occur due to drought or other causes which are beyond the control of the United States. During drought conditions, CVP diversions can be cut back significantly, as was the case in 1992 when they were reduced by 75 percent.

A summary of the City's entitlements is presented in Table 3-1 below.

Table 3-1: City of West Sacramento Surface Water Entitlements

Period of Use	Authority	Maximum Diversion
January to May	Appropriative Right	62 cfs
June	Appropriative Right	62 cfs
	BuRec Contract	No Limit
July	BuRec Contract	No Limit
August	BuRec Contract	No Limit
September	Appropriative Right	62 cfs
	BuRec Contract	No Limit
October to December	Appropriative Right	62 cfs
	Appropriative Right	18,350 AFY
Annual	BuRec Contract	23,600 AFY
	(maximum combined diversions, including diversions authorized by the City's Appropriative Right)	

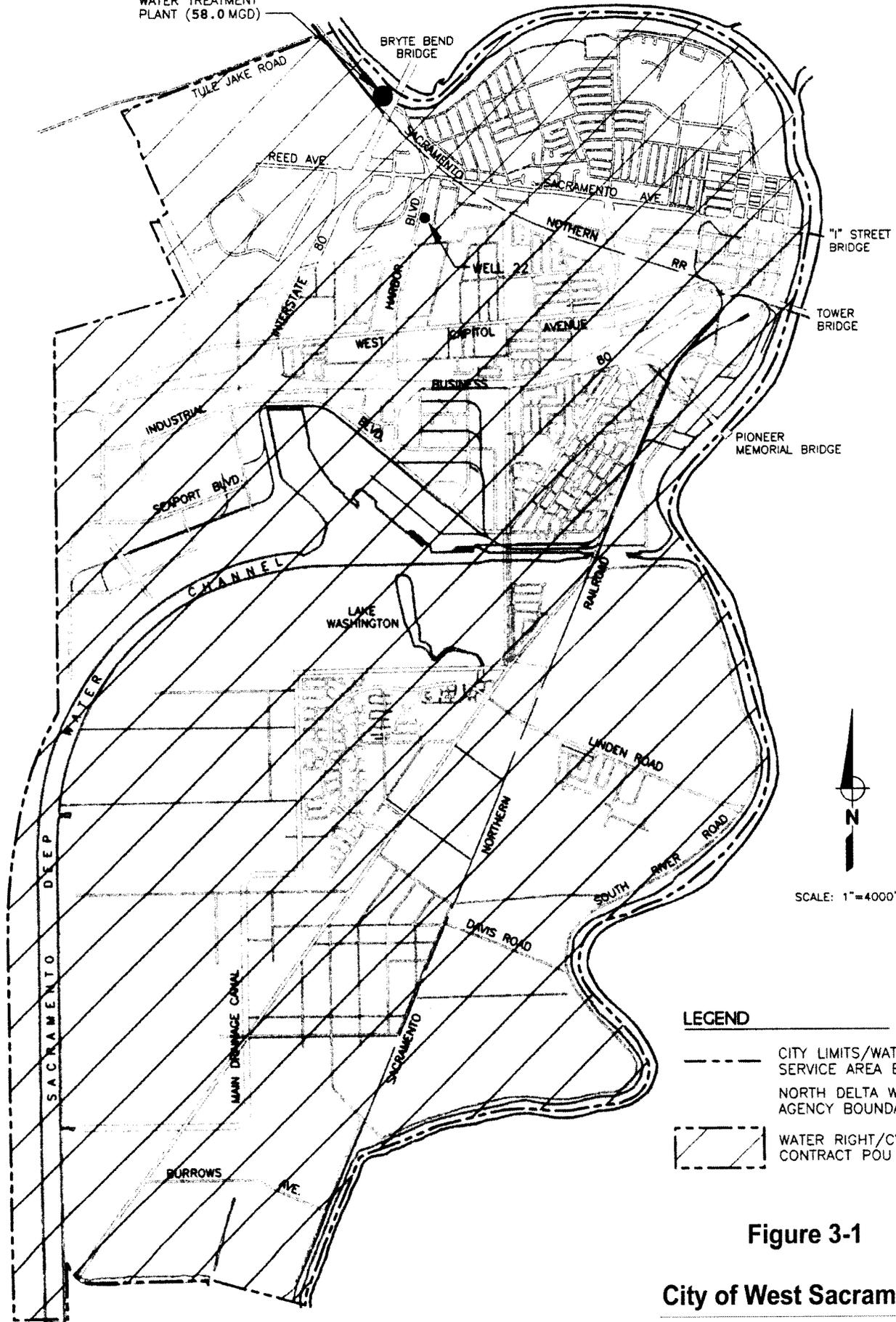
3.2.4 North Delta Water Agency

The water supplies for most of the City are guaranteed by the contract between the North Delta Water Agency (NDWA) and the State of California. The NDWA was formed in 1974 to protect the water resources in specific portions of Yolo, Solano, Sacramento, and San Joaquin counties and to negotiate and administer contracts with the CVP and State Water Project (SWP). The majority of the City lies within the NDWA boundary, as shown on Figure 3-1. In 1981, the NDWA negotiated the "Contract Between the California Department of Water Resources for the Assurance of a Dependable Water Supply of Suitable Quality." This contract assures that the State, through both the SWP and CVP, will maintain within the NDWA a dependable water supply of adequate quantity and quality for municipal, industrial and agricultural purposes. In exchange for this assurance the NDWA agreed to pay the State \$170,000 per year starting in 1982. The annual payments are subject to adjustments every five years. Payments to the NDWA are made by all landowners within the NDWA boundaries through annual tax assessments on their property, including the City.

In 1998, DWR and NDWA developed a Memorandum of Understanding (MOU) during the Bay-Delta Water Rights hearings conducted by the SWRCB. This MOU states that the 1981 contract between DWR and NDWA remains in full force and effect. DWR agreed that if diversions were modified to achieve flow objectives from the Bay-Delta Water Quality Control Plan, water within the NDWA would be subject to the existing obligation of DWR to provide water to the area subject to reasonable and beneficial use. A copy of the agreement between DWR and NDWA is included in Appendix B.

During the 1987-1992 drought years, contractors of the CVP and SWP received reduced deliveries from the projects. During these drought years, however, diversions from the Sacramento River by water purveyors within the NDWA, including the City, were not reduced. A

BRYTE BEND
WATER TREATMENT
PLANT (58.0 MGD)



LEGEND

- CITY LIMITS/WATER SERVICE AREA BOUNDARY
- - - NORTH DELTA WATER AGENCY BOUNDARY
- ▨ WATER RIGHT/CVP CONTRACT POU

Figure 3-1

City of West Sacramento

NDWA Boundary

large portion of the City's surface water supply appears to be assured under the NDWA contract, even if its appropriative right and BuRec contract deliveries are reduced. Use of this supply is limited to the portion of the City that is within NDWA boundaries. NDWA's northern boundary is along the Union Pacific Railroad (UPRR) tracks. The area within the City north of the UPRR tracks is served water obtained under appropriative/contractual entitlements.

A summary of the City's current and planned water supplies is presented in Table 3-2 below.

Table 3-2: Current and Planned Water Supplies (AFY) (Guidebook Table 4)^a

Water Supply Sources	2005	2010	2015	2020	2025	2030
U.S. Bureau of Reclamation ^b	10,390	14,262	14,660	13,390	13,390	13,390
Appropriative Right	5,610	7,700	8,940	10,210	10,210	10,210
North Delta Water Agency	0	0	1,900	5,520	5,520	5,520
Total	16,000^c	21,962^c	25,500	29,120	29,120	29,120

Footnotes:

- a. The term "Guidebook X" refers to the table in the *Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan* by DWR.
- b. Under the BuRec contract, the City may divert up to 23,600 AFY from the Sacramento River of combined appropriative right water, as described above, and CVP water. The total supplies from BuRec and the City's appropriative right therefore must not exceed 23,600 in any year.
- c. Although a total of 23,600 AFY is available through the City's appropriative right and BuRec contract, only the amount needed to match demands is shown for 2005 and 2010.

3.3 Future Water Supply

For a large portion of the City, water supply in future years is assured by NDWA. The City's appropriative right will not expire, and can therefore be used to provide portions of the City's supply indefinitely. The City's contract with BuRec will lapse in 2020; the City expects to renew the contract at that time in order to guarantee a continued and reliable supply for the portion of the City that is outside NDWA boundaries.

Capital improvements to the City's water supply facilities and distribution system have been outlined in the City's 2005 Water Master Plan Update. These improvements include the construction and/or rehabilitation of over 100,000 lineal feet of pipeline, as well as the construction of over 23 million gallons of additional reservoir storage to alleviate the City's current and anticipated water storage deficits.

At this time, the City does not plan to pursue additional water supplies, as buildout demands are met by the City's existing supplies.

3.4 Exchange or Transfer Opportunities

At the present time the City does not foresee any opportunities for exchange or transfer of its water supply.

3.5 Desalinated Water

At the present time the City does not foresee any opportunities for the use of desalinated water.

3.6 Wholesale Supplies

Since water must be purchased from BuRec during high demand months, BuRec is considered a wholesale water supplier by DWR. As such, the City has provided demand projections to BuRec for the next twenty years. Similarly, the City has requested availability projections from BuRec for the same time frame. These demand and availability projections are shown in Tables 3-2 and 3-3.

Table 3-2: Wholesale Demand Projections (AFY) (Guidebook Table 19)

Wholesaler	2010	2015	2020	2025	2030
U.S. Bureau of Reclamation	14,260	14,660	13,390	13,390	13,390

Table 3-3: Wholesale Supply Projections (AFY) (Guidebook Table 20)

Year	2010	2015	2020	2025	2030
BuRec ^a	23,600	23,600	23,600	23,600	23,600

Footnotes:

- a. As discussed with U.S. Bureau of Reclamation on August 12, 2005, annual deliveries up to the City's contract amount (23,600 AFY of combined BuRec and appropriative right water) are expected to be available. After 2020, the City's contract must be renegotiated; supplies, therefore, may change after that time.

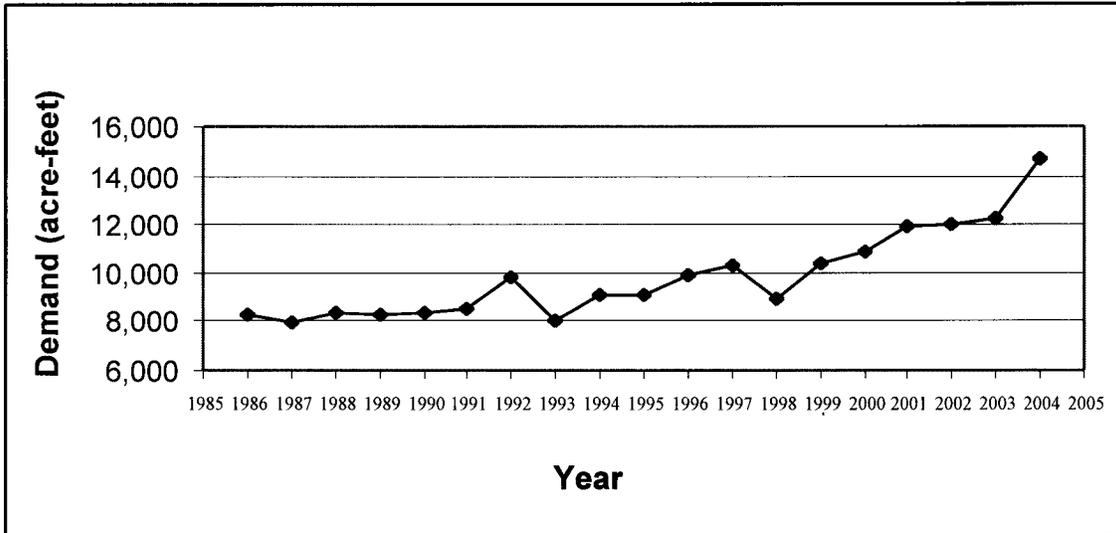
Chapter 4 Water Demand

4.1 Past, Current, and Projected Water Demand

4.1.1 Past Water Demand

Historical annual water production (demand) from groundwater wells and from the Bryte Bend Water Treatment Plant (BBWTP) from 1986 through 2005 is shown in Figure 4-1 in acre-feet (AF).

Figure 4-1: Historical Water Demands



There was little increase in annual water production between 1986 and 1991. Modest increases in production occurred between 1988 and 1991. Prior to the construction of the BBWTP, which began producing water in September 1988, the groundwater supply system was reported as having limited water production capacity. The annual water production within the City’s service area prior to 1988 may have been limited by insufficient pumping capacity to meet the summer demands. In addition, 1987 was the first year of the longest drought in recent history in northern California. Water conservation efforts by the City’s customers probably reduced the amount of water that would have been consumed under normal weather conditions. There was significant variation in City water production in 1993, 1995, and 1998. A possible explanation for these variations may be the change in weather patterns for each year, such as late or early rainfalls, which would account for decreased water usage for landscape irrigation. Therefore, future demands will be based upon normal conditions and may be slightly lower or slightly higher than historical usage.

4.1.2 Current and Future Water Demand by Sector

In order to develop estimated current and future water demands by water use sector, the following information was used: City land use information as developed in the 2000 UWMP, current water production data from BBWTP, expected future City development schedules, and buildout water demands as developed in the 2005 Water Master Plan Update. The resulting estimated annual water demands within the City’s service area are provided for 2005, 2010, 2015 and 2020 in Tables 4-1 through 4-3.

The values in Table 4-1 represent normal (average) conditions, and actual use varies based on a number of factors. For this reason, it can be expected that there will be variations in the City’s

Table 4-1 Past, Current, and Projected Water Demands by Sector: Area Within NDWA

Land Use Sector	Average Annual Water Demand, AFY											
	Within NDWA					Outside NDWA						
	1999	2005	2010	2015	2020	2025	1999	2005	2010	2015	2020	2025
Single Family Residential	3,118	3,976	5,680	6,740	7,970	7,970	1,713	2,185	2,467	2,337	1,969	1,969
Multi-Family Residential	879	1,121	1,831	2,444	3,215	3,215	295	376	512	596	633	633
Commercial	1,531	1,953	2,791	3,313	3,919	3,919	206	263	536	809	1,038	1,038
Industrial	2,890	3,686	4,939	5,475	6,012	6,012	5	6	127	272	408	408
Schools/Parks/Other	455	560	984	1,348	1,811	1,811	198	253	336	381	396	396
TOTAL	8,873	11,315	16,226	19,319	22,928	22,928	2,417	3,082	3,979	4,396	4,445	4,445

Table 4-2 Past, Current, and Projected Water Demands by Sector: Area Outside NDWA

Land Use Sector	Average Annual Water Demand, AFY											
	Within NDWA					Outside NDWA						
	1999	2005	2010	2015	2020	2025	1999	2005	2010	2015	2020	2025
Single Family Residential	4,831	6,161	9,680	8,147	9,074	9,940	1,713	2,185	2,467	2,337	1,969	1,969
Multi-Family Residential	1,174	1,497	616	2,343	3,040	3,848	295	376	512	596	633	633
Commercial	1,737	2,215	0	3,327	4,121	4,957	206	263	536	809	1,038	1,038
Industrial	2,895	3,692	0	5,069	5,751	6,421	5	6	127	272	408	408
Schools/Parks/Other	653	832	0	1,319	1,729	2,207	198	253	336	381	396	396
TOTAL	11,290	14,397	10,277	20,205	23,715	27,373	2,417	3,082	3,979	4,396	4,445	4,445

Table 4-3 Past, Current, and Projected Water Demands by Sector: Total Area

Land Use Sector	Average Annual Water Demand, AFY											
	Within NDWA						Outside NDWA					
	1999	2005	2010	2015	2020	2025	1999	2005	2010	2015	2020	2025
Single Family Residential	4,831	6,161	9,680	8,147	9,074	9,940	1,713	2,185	2,467	2,337	1,969	1,969
Multi-Family Residential	1,174	1,497	616	2,343	3,040	3,848	295	376	512	596	633	633
Commercial	1,737	2,215	0	3,327	4,121	4,957	206	263	536	809	1,038	1,038
Industrial	2,895	3,692	0	5,069	5,751	6,421	5	6	127	272	408	408
Schools/Parks/Other	653	832	0	1,319	1,729	2,207	198	253	336	381	396	396
TOTAL	11,290	14,397	10,277	20,205	23,715	27,373	2,417	3,082	3,979	4,396	4,445	4,445

a. The City is currently implementing a residential metering program. The current and projected numbers of unmetered accounts therefore appear in Table 4-3.

water usage. The values predicted in Table 4-1 have been used in this Urban Water Management Plan, as they are assumed to represent average conditions of water demand.

4.2 Sales to Other Agencies

To date, the City has made no sales to other agencies, nor does the City anticipate any in the future.

4.3 Other Demands

Additional water uses and losses in the City's service area are presented in Table 4-3 below.

Table 4-4: Additional Water Uses and Losses (AFY) (Guidebook Table 14)^a

Water Use	2000	2005	2010	2015	2020	2025	2030
Saline Barriers ^b	--	--	--	--	--	--	--
Recycled Water ^c	3	3	0	0	0	0	0
Unaccounted-for system losses ^d	1,362	1,600	1,757	1,785	1,747	1,747	1,747
Total	1,365	1,603	1,757	1,785	1,747	1,747	1,747

Footnotes:

- The term "Guidebook X" refers to the table in the *Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan* by DWR.
- The City currently returns its treated wastewater to the Sacramento River, which helps to inhibit the intrusion of salt water into the Delta. The City will no longer be responsible for the disposal of its treated wastewater after its connection to SRCSD in 2007.
- The City currently uses reclaimed water to irrigate 2.5 acres of landscaping at its Waste Water Treatment Plant. This use, however, is expected to disappear after the City begins sending its wastewater to SRCSD in 2007.
- Estimated to be 12.5%, 10%, 8%, 7%, 6%, 6%, and 6% of annual deliveries, respectively.

4.4 Total Demands

The City's total average annual demands, based on the figures presented in Tables 4-3 and 4-4, are presented in Table 4-5 below.

Table 4-5: Total Demands (AFY)

Year	2005	2010	2015	2020	2025
Demand	16,000	21,962	25,500	29,120	29,120

Chapter 5 Demand Management and Conservation

This chapter presents a detailed analysis of the Demand Management Measures (DMMs) contained in the Urban Water Management Planning Act (UWMPA), as well as the City's existing efforts to further develop their water conservation program. The description, effectiveness, implementation schedule, costs, and methods of improvement for each of the DMMs has been included.

LAW

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

- (1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures..*
- (2) A schedule of implementation for all 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 such savings on the supplier's ability to further reduce demand.*

Introduction

The California Urban Water Conservation Council (CUWCC) was created to increase efficient water use statewide. CUWCC's goal is to integrate urban water conservation best management practices into the planning and management of California's water resources. A Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) was developed and has been signed by over 150 water suppliers and other concerned parties. The MOU includes definitions, implementation, requirements, and water savings assumptions for each of 14 Best Management Practices (another term for DMM). As part of the evaluation, the recommendations by the CUWCC were used to evaluate each DMM.

The California Department of Water Resources (DWR) has developed a spreadsheet they call a Cost-Effective Tool that is available on their website. The tool is an Excel spreadsheet program into which information is entered regarding annual costs and expected water savings of each DMM. The output is information on the cost and benefit of implementing the DMM. This Cost-Effective Tool was used to evaluate the cost and benefit of several of the DMMs that have not yet been implemented by the City.

The City intends to participate in the Regional Water Authority's (RWA) Water Efficiency Program. The RWA is a joint powers authority, formed to serve and represent regional water supply interests and to assist its members in protecting and enhancing the reliability, availability, affordability and quality of water resources. As an agency that represents the interests of several water suppliers, the RWA has been able to obtain several grants for its members to use for water

conservation programs. The following is a list of programs that have been available in the past or will be available for its members:

1. Conduct a pilot study for homeowners to conduct their own home water surveys and submit information to the water supplier for inclusion into a database (DMM 1).
2. Develop a community college vocational training program for water audits and surveys (DMM 1, 3, 8, 9).
3. Conduct a workshop on a leak detection program especially for unmetered or partially metered supplies (DMM 3).
4. Develop landscape incentives available to agencies for large landscape irrigation system improvements (DMM 5).
5. Provide information on evapotranspiration and work with home developers to develop a water budget for landscaping (DMM 5).
6. Provide radio and newspaper announcements to promote water conservation (DMM 7).
7. Develop a school education program in conjunction with the Sacramento Bee for elementary schools to promote water conservation (DMM 8).
8. Develop curriculums to educate middle and high school students on water conservation (DMM 8).
9. Develop a database of the water supplier's commercial, industrial, and institutional customers and rank each one according to their water consumption (DMM 9).
10. Provide surveys for food facilities to appraise equipment such as dishwasher, steam sprayers, *etc.* (DMM 9).
11. Develop a rebate program for replacement of old, inefficient toilets (DMM 14).

These programs could be incorporated with the City's current water conservation efforts to enhance their programs. If participation in RWA's Water Efficiency Program would improve a current program, it is listed under the "Methods to Improve Effectiveness" section of each DMM analysis.

OVERVIEW

The City is committed to water conservation and has implemented several policies and on-going programs that promote and encourage water conservation. In addition, the City has several drought-specific programs that can be implemented if water supplies become limited and the need for more intensive water conservation becomes necessary.

Table 5-1 provides an overview of the City's current water conservation policies and programs as they relate to the fourteen DMMs contained in the UWMPA. Detailed descriptions of the City's policies and programs follow.

Table 5-1: Demand Management Measure Overview

DMM	Demand Management Measure Description	City Conservation Program	Compliance with UWMPA
1	Water Survey Programs for Single Family and Multi-Family Residential Customers	None at this time	Cost/Benefit Ratio = 0.2
2	Residential Plumbing Retrofit	Low-flow fixtures required for all new construction and major remodels	No longer implemented; Cost/Benefit Ratio = 0.69
3	System Water Audits, Leak Detection and Repair	Capital Improvement Programs (CIP)	Yes
4	Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections	Metering Implementation Plan in progress; All multi-family residential, commercial and industrial connections metered; all new parks are metered	In Process
5	Large Landscape Conservation Programs and Incentives	Water Efficient Landscape Ordinance; centralized SCADA system for all landscaping in Southport area; irrigation and sprinkling ordinance	Cost/Benefit Ratio = 0.57
6	High Efficiency-Washing Machine Rebate Programs	None at this time	Cost/Benefit Ratio = 0.2
7	Public Information Programs	Quarterly City newsletter, brochures and other literature are published; Water conservation kits are available	Yes
8	School Education Programs	May is "Water Education Month" with educators visiting classrooms; field trips are offered at the water treatment plant.	Yes
9	Conservation Programs for Commercial, Industrial, and Institutional Accounts	Low-flow fixtures and water efficient landscaping required for all new development	Cost/Benefit Ratio = 0.21
10	Wholesale Agency Programs	Not Applicable	Not applicable
11	Conservation Pricing	Metering Implementation Plan will enable future conservation pricing	In Process

12	Water Conservation Coordinator	None at this time	Partially Implemented
13	Water Waste Prohibitions	Restrictions for water waste/faulty fixtures, refrigerator/AC water use, evaporative coolers, swimming/wading pools, irrigation/construction; conservation devices are required; charges for wasted water; emergency conservation measures for drought conditions	Yes
14	Residential Ultra-Low Flush Toilet Replacement Program	None at this time; ULFTs are required for all new residences	Cost/Benefit Ratio = 0.04

5.1 Demand Management Measures

DMM 1: Water Survey Programs for Single Family and Multi-Family Residential Customers

Implementation Description

Water survey programs typically involve residential interior and exterior water use reviews whereby staff assist homeowners in identifying potential leaks and areas for water savings. Interior fixtures are checked and leak tested and irrigation systems are evaluated. Residents are generally provided with recommendations for improvements, plumbing retrofit kits and water conservation literature. Such programs can be very labor intensive as they require time to set up appointments with residents, plus the actual survey and follow-up time.

The City does not currently have a water survey program in place. With all of the demand management related items being handled by the Water Services Superintendent, the City does not currently have the personnel or financial resources to effectively implement such a program. This section discusses the cost and benefit of implementing a program.

Cost/Benefit Analysis:

For this cost and benefit analysis, the value of conserved water is estimated at \$530/million gallons (MG) or \$173/acre-foot (AF), and the real discount rate is estimated at six percent. The value of the conserved water is based upon the City's water production costs. Because it is up to the individual customer to implement recommendations from a survey, results can vary widely.

The CUWCC has estimated that the outdoor water use could be decreased by up to 10 percent for each unit surveyed. If 76 surveys are completed the first year, the outdoor water use could be decreased by approximately 1.5 AF. The number of surveys would increase each year, and during the 10th year 550 surveys would be completed resulting in approximately 10.8 AFY. A snapshot of these savings is shown in Table 5-2.

Table 5-2: Cost Effectiveness Summary for DMM 1 (Guidebook Table A3)^a

Water Survey Programs for Single Family and Multi-Family Residential Customers	
Total Costs	\$5,377
Total Benefits	\$245
Discount Rate	6%
Time Horizon (years)	18
Cost of Water (per AF)	\$173
Water Savings (AFY)	1.5

Footnotes:

- a. The term “Guidebook X” refers to the table in the *Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan* by DWR.

The City does not currently budget for this program. With the addition of a Water Conservation Coordinator (discussed in DMM 12), the average cost of the survey program would be approximately \$50 to \$75 per survey. To complete the recommended 15 percent of the single-family unit surveys and 15 percent of the multi-family unit surveys over 10 years, it was assumed that the City would follow the implementation schedule provided by the CUWCC. Approximately 76 surveys would need to be completed the first year and 550 surveys in the 10th year. The life span of a water survey is approximately four years. This would result in a discounted cost of approximately \$5,400 in the first year, and up to \$23,000 in the 10th year. Using the Cost-Effectiveness Tool provided by DWR, the cost/benefit ratio is approximately 0.2. A cost/benefit ratio below 1.0 is not considered beneficial; therefore, the City should not implement this program at this time.

Implementation Schedule

Water Survey Programs: None at this time; will consider in the future

Methods to Improve Effectiveness:

As a participant in RWA’s Water Efficiency Program, the City could participate in a program to reduce the annual costs and increase the benefits to the City.

Legal Authority

The City has the legal authority to implement this DMM.

Non-Economic, Environmental, Social, and Health Factors

As the City becomes fully metered, this service may be requested by ratepayers. This factor will be taken into consideration.

DMM 2: Residential Plumbing Retrofit

Implementation Description

In the past, the City had a program to distribute water conservation kits throughout the City. The kits have been distributed at special City events, council meetings, and community meetings, in addition to being available at the public works office. Water Conservation Kits, however, are no

longer available. As of July 2002, the City had distributed over 700 kits that have included the following items:

- Toilet tank bank
- Toilet tank fill cycle diverter
- Low-flow showerhead
- Leak detection tablets
- Universal home faucet aerator

Methods to Evaluate Effectiveness:

The effectiveness is based upon the number of conservation kits distributed and the percentage of customers that install the equipment after receiving it.

Conservation Savings

Because it is up to the individual customer to implement the conservation kits, savings are difficult to quantify. The CUWCC estimates that a low-flow showerhead retrofit will save approximately 2.9 gallons per capita per day (gpcd) on post-1980 constructed homes and 7.2 gpcd on pre-1980 constructed homes. The average savings for a toilet retrofit is 1.3 gpcd on pre-1980 constructed homes only.

Assuming that 50 percent of the distributed kits were installed and half of the homes were pre-1980 homes, the City saves approximately 10 AFY.

Budget

These kits were partially funded by a grant from the United States Bureau of Reclamation. The City’s portion of the costs was \$2,500.

Implementation Schedule

Water Conservation Kits: No longer implemented

Table 5-3 presents historical data on the distribution and effectiveness of this DMM.

Table 5-3: Historical Data for Residential Plumbing Retrofit DMM (Guidebook Table B1)

Category	Total as of July, 2002
Number of Single-Family devices ^a	700
Number of Multi-Family devices ^a	
Expenditures, \$	\$2,500
Water Savings, AFY	10

Footnotes:

- a. No distinction was made between single and multi-family devices.

Table 5-4: Cost Effectiveness Summary for DMM 2 (Guidebook Table B3)

Residential Plumbing Retrofit DMM	
Total Costs	\$830
Total Benefits	\$570
Discount Rate	6%
Time Horizon (years)	10
Cost of Water (per AF)	\$173
Water Savings (AFY)	3.3

Based on the cost effectiveness summary presented above, the Cost-Benefit ratio for this DMM is approximately 0.69.

Methods to Improve Effectiveness

If the City decides to resume implementation of this DMM, the distribution of water conservation kits should be targeted towards areas with older homes that would not have low-flow fixtures installed. This targeting would maximize the benefit from these kits.

DMM 3: System Water Audits, Leak Detection and Repair

Implementation Description

Many of the City's water distribution system pipelines are steel pipes over 30 years old. Deterioration is a cause of continued problems with leakage. The City has a Water Pipeline Replacement Program to replace older water pipelines within the City which are leaking, undersized, or are of inferior materials. Since 1999, approximately 60 thousand lineal feet of pipeline have been replaced, and the City plans to continue replacing deteriorating pipelines into the foreseeable future. As presented in the City's recently completed 2005 Water Master Plan Update, the City's Capital Improvement Program (CIP) has proposed over \$53 million in Transmission Main, Water Main Replacement, and Operational Improvement projects between Fiscal Year (FY) 2005-2006 and FY 2019-2020. These improvements include the construction of over 100,000 lineal feet of new pipeline.

Methods to Evaluate Effectiveness

The best way to evaluate the effectiveness of this program is to compare water production data at the water treatment plant with water consumption from the City's customers. Without meters in place to compare water supply and demand data, it is very difficult to evaluate the effectiveness of the pipeline replacement program. A Metering Implementation Plan, however, has been initiated by the City. For more information on the City's Metering Implementation Plan, see DMM 4.

Conservation Savings

Because the effectiveness cannot be determined without meters in place, savings have to be estimated. With over 60 thousand lineal feet of replacement from 1999 to 2006, water savings will be realized. Assuming a minimum of two to three percent reduction of the annual water production, the current savings is approximately 200 AFY and savings at buildout would be approximately 600 AFY.

Budget

The City's annual budget has been between \$1,000,000 and \$1,500,000 for each of the last five years. The City's budget for future years is shown in the table below.

Implementation Schedule

Water Pipeline Replacement Program:

On-going

Table 5-5: System Water Audits, Leak Detection, and Repair DMM (Guidebook Table C1)

Category	2001	2002	2003	2004	2005
% of Unaccounted for Water ^a	14.3	14	13.7	13.3	13
Pipeline Replaced & Constructed (lf)	8,600	8,600	8,600	10,000	10,000
Expenditures ^c , \$	\$1,250,000	\$1,250,000	\$1,250,000	\$1,250,000	\$3,939,000
Water Savings, AFY	--	--	--	--	200

Table 5-5 (Continued)

Category	2006	2007	2008	2009	2010
% of Unaccounted for Water ^a	12.4	11.8	11.2	10.6	10
Pipeline Replaced & Constructed (lf)	17,310	17,310	17,310	17,310	17,310
Expenditures ^c , \$	\$5,838,00	\$8,289,000	\$7,636,000	\$13,900,000	\$1,478,000
Water Savings ^b , AFY	--	--	--	--	--

Footnotes:

- Based on "Estimated Percentage of Water Produced Not Delivered" in 2000 UWMP
- Water savings at buildout are expected to be approximately 600 AFY
- Values derived from Chapter 8: Capital Improvement Program (CIP) in 2005 Water Master Plan Update. CIP budgets can vary substantially from year to year; thus 2009 expenditures appear much larger than other years.

Methods to Improve Effectiveness

The City should develop a regular leak detection program to focus work areas for the future. In addition, as a participant in RWA's Water Efficiency Program, the City could receive assistance to develop a leak detection program, especially in the unmetered areas of the City.

DMM 4: Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections

The Bureau of Reclamation (BuRec) has recently prepared a draft Standard Criteria for Evaluating Water Management Plans. This draft Standard explicitly states that this DMM is not exemptible for any contractor, such as the City, that receives water from the Central Valley Project (CVP).

Assembly Bill 514

Assembly Bill No. 514 (AB 514) became law in 2003 and promulgated that all Central Valley Project (CVP) municipal contractors are required to install water meters on all residential and commercial services constructed prior to 1992. This bill was enacted in order to prevent the loss of water supplies by CVP municipal contractors, which fail to comply with federal water metering requirements. AB 514 applies to all municipal water suppliers that receive CVP water, including the City, as well as other cities such as Roseville and Fresno.

In order to comply with AB 514, the City is required to:

- Install water meters on all service connections to residential and commercial buildings constructed prior to January 1992, no later than January 1, 2013.
- Begin charging customers for water based on actual volume used commencing no later than March 1, 2013.

Implementation Description

Installing water meters and billing for actual water use provides a strong incentive for customers to use less water and equalizes service cost for each customer to their actual use (high water users would pay a more equitable share of the system costs). Water metering can reduce exterior landscape water use and can also achieve a modest reduction in interior water use.

The City currently meters and bills for actual water used for commercial and industrial customers, and for all City parks and median landscaping. All of these customers are billed monthly based on a monthly service charge (based on meter size) and a quantity charge (based on actual water consumption). For these customers, actual water use is billed at one rate (\$1.49 per 100 cubic feet).

Table 5-6: City of West Sacramento Water Service Commodity Rates

Monthly Service Charge		Quantity Charge
3/4-inch meter:	\$ 4.96	\$1.49 per 100 cubic feet
1-inch meter:	\$ 8.28	
1 1/2-inch meter:	\$ 16.51	
2-inch meter:	\$ 26.43	
3-inch meter:	\$ 52.88	
4-inch meter:	\$ 82.65	
6-inch meter:	\$ 165.24	
8-inch meter:	\$ 264.42	
12-inch meter:	\$ 557.79	

Approximately ninety-four percent of the City’s multi-family residential units are metered. For these multi-family residential units, the City reads the meters but does not yet bill according to water used. A rate schedule is being developed for multi-family users to bill at commodity rates that better match their cost of service.

Although the City does not currently bill single-family residential units for actual water used, the City is in the process of implementing a residential metering program. The City requires all new connections to include a meter. As part of the Water Pipeline Replacement Program, the City has

also installed service jumpers at all residential locations where the pipelines have been replaced. These service jumpers will facilitate an easier transition for meter installation as the City implements its residential metering program. As of 2002, over 500 service jumpers had been installed.

Methods to Evaluate Effectiveness

The best way to evaluate the effectiveness of metering is periodic review of customer water use. Additionally, current water use per capita can be compared with historic data (before and after commodity rates are established.)

Conservation Savings

The CUWCC has estimated that metered accounts may result in a 10 to 20 percent reduction in demand compared to non-metered accounts. This reduction could result in a savings for the City of over 5,800 AFY at buildout.

Budget

The total construction and implementation cost of the City’s Metering Implementation Plan has been estimated at \$4,253,000, with \$3,271,900 estimated for construction and meter installation, and \$991,600 estimated for implementation costs. Implementation costs include public outreach, engineering, inspections, and the City’s administration of the program.

Implementation Schedule

Billing at Commodity Rates for Existing Commercial/Industrial:	On-going
Meter Installation for New Connections:	On-going
Service Jumper Installation:	On-going

Table 5-7: Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections DMM (Guidebook Table D1)

Actual	2001	2002	2003	2004	2005
Number of Unmetered Accounts	--	--	--	--	10,277
Number of Retrofit Meters Installed ^a	--	--	--	--	--
Number of Accounts w/o Commodity Rates ^b	--	--	--	--	10,277
Expenditures ^c	--	--	--	--	--
Water Savings ^d , AFY	--	--	--	--	--

Table 5-7 (Continued)

Planned	2006	2007	2008	2009	2010
Number of Unmetered Accounts	8,564	6,851	5,138	3,425	1,712
Number of Retrofit Meters Installed	1,713	1,713	1,713	1,713	1,713
Number of Accounts w/o Commodity Rates ^b	10,277	10,277	10,277	10,277	10,277
Expenditures	\$200,000	\$78,008	\$78,008	\$476,913	\$500,807
Water Savings ^d , AFY	--	--	--	--	--

- a. Radio read meters were installed starting spring 1997. Thus, a total of 3,524 residences constructed since 1997 will only require installation of transmitters. Since 1994, 1,564 meter boxes have been installed as part of the City's Main Replacement Projects.
- b. Although many of the City's flat rate customers currently have meters installed, the start date for commodity metering has not yet been determined.
- c. At the time this UWMP was prepared, this data was unavailable.
- d. Dates have not yet been set for the actual meter reading start date. It has been recommended that new residences start using metered rates when they begin service, while existing customers receive 12 months of comparative billing prior to the switchover from flat to metered rates. Once residential metering has been fully implemented, the City can expect to save between 10 and 20 of its annual demand.

Methods to Improve Effectiveness

The City should begin collecting meter data for the existing single-family units that have meters installed. This would establish a baseline of water use for later comparison. In addition, as a participant in RWA's Water Efficiency Program, the City could receive assistance on obtaining grant funding to implement a meter retrofit program or feasibility study.

DMM 5: Large Landscape Conservation Programs and Incentives

Implementation Description

The City Municipal Code (Section 17.35.010) requires that a water conservation plan be developed to reduce water consumption related to landscaped areas for all new development. The Code provides standards for plant types, including plants suggested for non-turf areas, to be well suited to the climate of the region and require minimal water once established in the landscape.

In addition, City Resolution 90-71 encourages the undertaking of the following voluntary water saving measures:

1. Do not use water to clean sidewalks, driveways and patios. Do not wash streets and commercial parking lots with a hose, except as required for health and safety reasons.
2. Repair leaking pipes, fixtures, or sprinklers promptly.
3. Do not use water to wash down buildings or to cool roofs of buildings.

4. Plant water efficient landscaping.
5. Do not water lawns or landscaping between the hours of 1:00 PM and 7:00 PM. Water only on alternate days.
6. Install water saving devices on shower heads and hoses.
7. Wash full loads in laundry and dishwasher.

In 2002, all of the park and median landscape irrigation in the Southport area was put on a centralized SCADA control system for efficient control of irrigation. This control system allows the City to evenly distribute peak irrigation demands over several hours, thus reducing the largest peak demands. Additionally, with a centralized unit, the City can control the application rate to better match changing weather conditions.

The City does not currently perform water conservation surveys for large landscapes.

Methods to Evaluate Effectiveness

Because the control system has only recently been installed, its effectiveness is still being evaluated. By examining additional summertime data, the City should soon be able to determine the effects on peak demands.

Conservation Savings

Savings are undetermined at this time; peak demands, however, could decrease by as much as five percent. By efficiently irrigating, peak irrigation demands could drop as much as 500 gallons per minute (gpm) at peak times.

Budget

The costs of this program are included in the water department’s overhead.

Implementation Schedule

Water-Efficient Landscape Requirements:	On-going
SCADA Control of Landscape Irrigation:	On-going

Table 5-8: Cost Effectiveness Summary for DMM 5 (Guidebook Table E3)

Large Landscape Conservation Programs and Incentives	
Total Costs ^a	\$37,500
Total Benefits ^b	\$21,400
Discount Rate	6%
Time Horizon ^c (years)	10
Cost of Water (per AF)	\$173
Water Savings (AFY)	124

Footnotes:

- a. The cost of a Large Landscape Survey is estimated at \$250/acre.
- b. It is estimated that water use reductions of up to 15% can be achieved through surveying.
- c. It is estimated that 0.75% of Large Landscape accounts would be surveyed by the end of the first year of implementation.

Based on the cost effectiveness summary presented above, the Cost-Benefit ratio for this DMM is approximately 0.57.

Methods to Improve Effectiveness:

The City should examine the evapotranspiration information available from the California Irrigation Management Information System (CIMIS). This information will allow the City to determine the water required to efficiently irrigate turf and landscaping areas as weather conditions change over the year. This information could be integrated into the SCADA system to effectively match irrigation demands and application rates. As a participant in RWA's Water Efficiency Program, the City could receive assistance in obtaining grant funding to develop a program to provide incentives to commercial and industrial customers and home developers to reduce landscape irrigation demands.

DMM 6: High-Efficiency Washing Machine Rebate Programs

Implementation Description

Typically, a high-efficiency washing machine rebate program would offer a \$75 to \$100 rebate to qualifying customers who install them in their home. The City currently does not offer this program. This section discusses the costs and benefits of implementing such a program.

Cost/Benefit Analysis

Using the values as shown in DMM 1, the value of conserved water is estimated at \$530/MG or \$173/AF, and the real discount rate is estimated at six percent. The CUWCC estimates that a high efficiency washing machine will reduce water usage by approximately 5,100 gallons per year. It was also assumed that rebates would be accepted by one percent of the single-family units per year for 20 years and that the life span of a washing machine is approximately 12 years. Approximately 90 rebates would be issued the first year, increasing to approximately 170 rebates per year at buildout. The savings would be equivalent to approximately 1.4 AFY the first year and 2.6 AFY at buildout. A snapshot of these savings is shown in Table 5-7.

Table 5-9: Cost Effectiveness Summary for DMM 6 (Guidebook Table F3)

Cost Effectiveness Summary	
Total Costs	\$7,494
Total Benefits	\$726
Discount Rate	6%
Time Horizon (years)	20
Cost of Water (per AF)	\$173
Water Savings (AFY)	1.4

The CUWCC recommends a minimum rebate of \$50. An additional \$25 per rebate was assumed for program administration and overhead. Using the Cost-Effectiveness Tool provided by DWR, the cost/benefit ratio is approximately 0.2 and would not be beneficial for the City to implement at this time.

Legal Authority

The City has the legal authority to implement this DMM.

Non-Economic, Environmental, Social, and Health Factors

As the City becomes fully metered, this service may be requested by ratepayers. This factor will be taken into consideration.

Implementation Schedule

High-Efficiency Washing Machine Rebate Program: Not planned at this time

Methods to Improve Effectiveness

The City should investigate if the local energy company would be interested in sharing the costs for a rebate program. Additionally, the City should pursue grant funding if it is available. As a participant in RWA's Water Efficiency Program, the City could receive assistance on obtaining grant funding to implement this program. The City should consider developing a rebate program for multi-family units and mandating the provision of high-efficiency washers in new multi-family construction.

DMM 7: Public Information Programs

Implementation Description

The City currently has a well-developed public information program, and intends to continue to provide public information services and materials to remind the public about water and its stewardship.

The City produces a newsletter that is mailed to all City residents each quarter. The newsletter traditionally has had a section related to water use, describing water use restrictions and providing water conservation tips, especially landscape watering during the peak summer months.

The City also has a number of brochures and other literature regarding specific conservation practices which are available at various offices, including the water treatment plant and the public works department. These brochures include information on water-wise landscaping, ways to conserve water, and simple water repairs. These brochures are also available at City special events, council meetings, and community meetings.

The City has a program in place to distribute water conservation kits throughout the City, as described in DMM 2. The kits are distributed at City special events, council meetings, and community meetings. They are always available at all times at the water treatment plant and public works department.

Methods to Evaluate Effectiveness

The effectiveness of this program is determined by the amount of information available to the community. To evaluate the information, the City will track the number of brochures distributed, special events attended, and other activities pursued to promote water conservation. The City will also track customer response and any commentary regarding the information provided.

Conservation Savings

The CUWCC has not determined any methods to quantify the savings of this DMM; however, the City believes that this program is beneficial and necessary to implement other DMMs effectively.

Budget

The City’s proposed annual budget for this program is \$1,700 for materials.

Implementation Schedule

Quarterly Newsletter to all City residents:	On-going
Distribution of Brochures and Other Literature:	On-going
Water Conservation Kits:	On-going

Table 5-10: Public Information Programs DMM (Guidebook Table G1)

Category	2001	2002	2003	2004	2005
Quarterly Newsletters	Yes	Yes	Yes	Yes	Yes
Brochures & Other Literature	Yes	Yes	Yes	Yes	Yes
Special Events	Yes	Yes	Yes	Yes	Yes
Water Conservation Kits	Yes	Yes	Yes	Yes	Yes
Approximate Expenditures	\$1,700	\$1,700	\$1,700	\$1,700	\$1,700

Table 5-10 (Continued)

Category	2006	2007	2008	2009	2010
Quarterly Newsletters	Yes	Yes	Yes	Yes	Yes
Brochures & Other Literature	Yes	Yes	Yes	Yes	Yes
Special Events	Yes	Yes	Yes	Yes	Yes
Water Conservation Kits	Yes	Yes	Yes	Yes	Yes
Approximate Expenditures	\$1,700	\$1,700	\$1,700	\$1,700	\$1,700

Methods to Improve Effectiveness

Public information can be one of the best tools to conserve water. The City can continue to improve its public information program by including water conservation information on the City’s website. A citizens’ advisory committee could assist in developing new ways to communicate with the public and the media about water conservation and other resource issues. A Water Conservation Coordinator, discussed in DMM 12, could optimize the program by coordinating additional opportunities for community speakers and special events. In addition, as a participant in RWA’s Water Efficiency Program, the City may participate in regional public outreach programs, including paid advertising on television and radio.

DMM 8: School Education Programs

Implementation Description

The City has implemented a school education program to promote water conservation and efficient water uses. The month of May has been set aside by the City as “Water Education Month.” During this time, visits are made to classrooms to educate the students on water conservation. Information is provided on the importance of water, the water cycle, and the need to conserve the water we have. Activities have been included to help reinforce the information. In addition, the City has sent letters to local schools inviting them to bring their students to the water treatment plant for a tour.

Methods to Evaluate Effectiveness

The effectiveness of this program is determined by the number of students and schools that participate. To evaluate the effectiveness, the city will track the number of presentation and tours given, curriculum materials provided, and students that participated. The City will also survey the institutions and educators that participate in the program on the number of programs and materials available and recommendations for improvements.

Conservation Savings

The CUWCC has not determined any methods to quantify the savings of this DMM but the City believes that this program is beneficial to the community and important to the long-term success of the overall water conservation program effort.

Budget

The City’s proposed annual budget for this program is \$500 for materials.

Implementation Schedule

School Education Programs: On-going
 Bryte Bend Water Treatment Plant Tours: On-going

Table 5-11: School Education Programs DMM (Guidebook Table H1)

School or Public Group Given Tour of Bryte Bend Water Treatment Plant	2001	2002	2003 ^a	2004 ^a	2005
Sacramento City College MET Program		X			
City Employees with Public		X			
Sacramento High School					X
Sacramento State University Engineering Dept.					X
Golden State Middle School					X
West Acres Middle School					X
Budget	\$500	\$500	\$500	\$500	\$500

a. During the 2003 and 2004 budget years, BBWTP underwent construction. No plant tours were given during that time.

Methods to Improve Effectiveness

Similar to a public information program, a school education program can also be one of the best tools to conserve water. The American Water Works Association (AWWA) and the Water Education Foundation (WEF) provide educational material for youth to explain the water cycle and pollution, and to promote water conservation, including videos, bookmarks, games, and water experiments. The City can continue to improve its school education program by including additional material available from AWWA and WEF. A Water Conservation Coordinator, discussed in DMM 12, could enhance the program by meeting with school principals and educators to promote classroom presentations and field trips to the treatment plant. In addition, as a participant in RWA's Water Efficiency Program, the City could receive additional education materials and information on ways to target the curriculum to specific age groups to effectively teach the students.

DMM 9: Conservation Programs for Commercial, Industrial and Institutional Accounts**Implementation Description**

The City's Building Code requires that all new construction install low-flow fixtures, including low-flow faucets and toilets. This requirement includes commercial and industrial facilities.

As described in DMM 5, the City Municipal Code (Section 17.35.010) also requires that a water conservation plan be developed to reduce water consumption related to landscaped areas for all new development, including commercial and industrial facilities. The Code provides standards for plant types, including plants suggested for non-turf areas that are well suited to the climate of the region and require minimal water once established in the landscape.

Methods to Evaluate Effectiveness

The programs in place for this DMM are difficult to evaluate. The best way to determine the effectiveness of this DMM is to monitor the actual water use. The City should monitor the water use of the commercial and industrial customers, and assess demand characteristics and water use patterns. Historic data can be compared to current average annual water use for each account type. When the City has fully implemented its residential metering plan, a similar analysis should be performed.

Conservation Savings

The actual savings for this DMM will vary.

Budget

Enforcement costs are a part of the water department's overhead.

Implementation Schedule

Requirements for Low-Flow Fixtures:	On-going
Requirements for Water Efficient Landscape:	On-going

Table 5-12: Cost Effectiveness Summary for DMM 9 (Guidebook Table I3)

Conservation Programs for Commercial, Industrial and Institutional (CII) Accounts	
Total Costs ^a	\$1,470
Total Benefits ^b	\$313
Discount Rate	6%
Time Horizon ^c (years)	10
Cost of Water (per AF)	\$173
Water Savings (AFY)	1.8

Footnotes:

- It is estimated that the cost of surveys for commercial and institutional accounts is \$680/account. For industrial accounts the cost is estimated at \$1,680/account.
- It is estimated that the water savings from commercial and institutional account surveys is 0.83 AF/survey. For industrial accounts the savings are estimated at 2.1 AF/survey.
- Approximately 10% of CII accounts would be surveyed within ten years; it is estimated that approximately 0.25% of all CII accounts would be surveyed within the first year of implementation.

Based on the cost effectiveness summary presented above, the Cost-Benefit ratio for this DMM is approximately 0.21.

Methods to Improve Effectiveness

The City should gather additional information about coordinating and cost-sharing with the sanitation department and/or local energy utilities to provide surveys for commercial and industrial customers. In addition, as a participant in RWA's Water Efficiency Program, the City could participate in several programs aimed at water conservation for commercial and industrial customers. These programs could include developing a database of the commercial and industrial water use and providing surveys for facilities to promote water conservation.

DMM 10: Wholesale Agency Programs

This DMM applies to wholesale agencies only and therefore is not applicable to the City.

DMM 11: Conservation Pricing**Implementation Description**

Water conservation is encouraged through a pricing system that rewards customers who use less water with financial incentives, while high water users are charged a higher rate. Often this is implemented through a two or three-tiered pricing system. The program rewards customers with lower uses, but may not address conservation as effectively as possible. As the City continues to install water meters, the City will transition from flat rate pricing to commodity rate pricing. Tiered pricing is not planned to be implemented.

Methods to Evaluate Effectiveness

Conservation pricing is often cited as a means to have market mechanisms provide incentives for conservation. Water consumption, however, has a relatively inelastic demand relative to price, meaning as unit prices go up, unit demand does not correspond in a 1:1 linear fashion. This is due to a variety of factors. Only a portion of water use for a residence can be considered discretionary, generally a portion of landscaping use and excess showering periods and the like. Most use is simply a basic function of existence. At the point discretionary use has been rung out of the system due to marginal costs of water, another rate tier is unlikely to reap much conservation savings. Further, such tiers can be considered discriminatory against larger families, which could have a low per-capita use but a large household consumption relative to another household. Additionally, California's Proposition 218 requires water rates to be developed on a cost of services bases. In other words, the top tier of the water rate must have a reasonable relationship to the avoided cost of service for marginal supply.

Conservation Savings

Water savings due to conservation pricing is difficult to determine since the City is currently in the process of becoming metered.

Budget

Not being implemented at this time.

Implementation Schedule

Conservation Pricing:

Not planned at this time

Methods to Improve Effectiveness

The City should consider developing tiered rates keyed to actual water consumption to encourage water conservation. They should start with the commercial and industrial users, as these customers are already being charged based on actual water use. In addition, the City should consider charging a sewer service rate for commercial and industrial customers also based on water consumption.

DMM 12: Water Conservation Coordinator**Implementation Description**

Although the City does not currently have a Water Conservation Coordinator, this DMM is partially implemented. All demand management related items are handled by the Water Services Superintendent, as time permits. The position of Water Conservation Coordinator would include tasks such as: monthly tracking of production vs. billed consumption, enforcement of water use restrictions, and implementation of conservation programs.

Methods to Evaluate Effectiveness

The effectiveness of this DMM is determined by the work performed by the Water Conservation Coordinator (Water Services Superintendent). The City should set up performance standards and goals, and compare them with the results.

Budget

The City currently does not have a separate budget for the time the Water Services Superintendent spends on demand management related items. However, based on conversations with the City, it has been estimated that approximately 5% of the Water Services

Superintendent's time is spent handling demand management related issues. Based on the 2005 annual salary of the Water Services Superintendent, this equates to an annual budget of approximately \$4,500.

An annual budget for a full-time Water Conservation Coordinator would vary, dependent upon qualifications, experience, need of full or part time position, and City requirements.

Implementation Schedule

Water Conservation Coordinator: Partially implemented

Methods to Improve Effectiveness

The City should consider including water conservation-related staff costs as part of the annual budget. In addition, as a participant in RWA's Water Efficiency Program, the City would receive assistance on developing a job description and determining employment requirements. The RWA would also assist the Water Conservation Coordinator as necessary to improve the City's water conservation programs.

DMM 13: Water Waste Prohibitions

Implementation Description

The City has incorporated several ordinances to discourage water waste. The following are sections of the City's water code prohibiting the waste of water. They also provide a mechanism which the City can use to enforce water conservation measures.

Section 13.04.760

Water Waste. No person shall cause or permit any water furnished to the person's premises by the City to run to waste.

Section 13.04.770

Faulty Fixtures. It shall be unlawful for any person to maintain or allow on the person's premises, leaky or faulty water fixtures or devices to which City water is supplied, so that City water is wasted thereby.

Section 13.04.780

Conservation Devices Required on New Dwelling Units. All new dwelling units connected to the City distribution system after the effective date of the Ordinance shall be equipped with City-approved water-saving showerheads, water-saving aerators on sinks and lavatories, water-saving toilets, and pressure-reducing valves.

Section 13.04.790

Conservation Devices Required on New Public Uses. All new public uses connected to the City water distribution system after the effective date of this Ordinance shall be equipped with City-approved water-saving showerheads, water-saving toilets, self-closing valves on lavatories, and pressure-reducing valves.

Section 13.04.800

Air Conditioning and Refrigeration Devices. All new or replacement systems using water from the City distribution system or discharging into the City sewer system, installed after the effective date of this Ordinance, shall be equipped with water-conservation devices of sufficient capacity to

limit makeup water to a maximum of 0.2 gpm per ton of rated capacity under full loading at a maximum summer temperature of 105° F.

Section 13.04.810

Evaporative Coolers. Evaporative coolers installed after the effective date of the Ordinance shall be equipped with a recirculating pump. The makeup supply line shall be equipped with an inlet valve which shall open only when makeup water is required.

Section 13.04.820

Swimming and Wading Pools. All swimming or wading pools installed after the effective date of the Ordinance, which have a capacity of over 2,000 gallons of water, and which use water from the City distribution system or which discharge water into the City sewer system, shall be equipped with recirculating systems and approved filters. Filling or discharging swimming or wading pools shall be limited to the hours between 8:00 PM and 7:00 AM.

Section 13.04.830

Irrigation and Sprinkling. No person shall use, or cause to be used, any City water for the purpose of irrigation or the sprinkling of lawns through an automatic sprinkler for a period exceeding 30 minutes in any valved section or through a hose for a period exceeding 2-1/2 hours during each day.

Section 13.04.840

Charge for Wasted Water. The amount of water wasted in any manner prescribed by this ordinance shall be estimated by the Manager and charged for at the rate set forth by the City.

Section 13.04.860

Construction Uses. Water uses for dust control, curing, compacting, cleaning, or other construction use may be subject to limitations and shall not interfere with other domestic uses. Also, in 1993 the City Council adopted an Urban Water Shortage Contingency Plan, which includes a 4-stage rationing program and specific water conservation measures for each stage.

Methods to Evaluate Effectiveness

The effectiveness of this DMM can be determined by a decrease in violators. The number of citations and violations should be reported annually. If an area is determined to have excessive violations, the City should implement a specific public outreach program informing the public about the specific ordinance.

Conservation Savings

The CUWCC has not determined any methods to quantify the savings of this DMM but the City believes that this program is necessary to curtail flagrant water waste situations.

Budget

Enforcement costs are a part of the water department's overhead.

Implementation Schedule

Water waste prohibitions:	On-going
Additional drought restrictions:	Program in place. Restrictions within program would be enacted by City Council if water supply conditions required additional conservation measures

Table 5-13: Water Waste Prohibitions DMM (Guidebook Table M1)

Category	2001	2002	2003	2004	2005
Waste Ordinance in Effect	Yes	Yes	Yes	Yes	Yes
Number of On-site Visits ^a	--	--	--	--	--
Water Softener Ordinance	No	No	No	No	No
Expenditures ^b	--	--	--	--	--

Footnotes:

- a. This information was unavailable at the time this UWMP was prepared.
- b. Part of Water Department overhead

Table 5-13 (Continued)

Category	2006	2007	2008	2009	2010
Waste Ordinance in Effect	Yes	Yes	Yes	Yes	Yes
Number of On-site Visits ^a	--	--	--	--	--
Water Softener Ordinance	No	No	No	No	No
Expenditures ^b	--	--	--	--	--

Footnotes:

- a. This information was unavailable at the time this UWMP was prepared.
- b. Part of Water Department overhead

Methods to Improve Effectiveness

The City should continue to monitor the effectiveness of this DMM. The implementation of a Water Conservation Coordinator (DMM 12) would greatly aid in this effort. In addition, the City should develop effective means to levee fines against waste prohibition violators. This task will be made significantly easier once the meter implementation program has been completed.

DMM 14: Residential Ultra-Low Flush Toilet Replacement Programs

Implementation Description

The City’s Building Code requires that all new residential construction and major remodels or renovations of existing homes install low flow fixtures, including low flow toilets. Because of this new construction requirement, approximately 25 percent of the single-family residential units have ultra-low flush toilets. As the City grows, the percent of ultra-low flush toilets will grow accordingly. With the expected growth rate for the City, over 70 percent of the single-family residential units will have ultra-low flush toilets by buildout (2020).

Methods to Evaluate Effectiveness

A database can be maintained on the number of new residential units constructed and older residential units remodeled requiring ultra-low flush toilets, and the average number of toilets per household. This database can be used to determine the percentage of single and multi-family residential units that have ultra-low flush toilets.

Conservation Savings

Programs such as these have been shown to produce savings of approximately 1.9 gallons per flush over the high-water-using toilets. If 70 percent of single and multi-family residential units at buildout have ultra-low flush toilets, the estimated savings would be approximately 300 AFY.

Budget

Typical costs for ULFT rebate programs are \$125 per toilet. Assuming that approximately 3.5 percent of single family residential units would receive ULFT replacement rebates during the first year of implementation, approximately 840 toilets would be replaced. At a savings of approximately of 1.9 gallons per flush, the City could expect to realize approximately 22 AF of water savings during the first year of implementation. A cost effectiveness summary for this DMM is presented below.

Table 5-14: Cost Effectiveness Summary for DMM 14 (Guidebook Table N5)

Cost Effectiveness Summary	
Total Costs	\$105,000
Total Benefits	\$3,865
Discount Rate	6%
Time Horizon (years)	20
Cost of Water (per AF)	\$173
Water Savings (AFY)	22

Based on the cost effectiveness summary presented above, the Cost-Benefit ratio for this DMM is approximately 0.04.

Implementation Schedule

Although the City does not currently offer a replacement program for residential ULFTs, installation of ULFTs is required for all new residential customers.

Methods to Improve Effectiveness

The City could realize more water savings if existing homes with high-water-using toilets were offered incentives to replace those toilets with ultra-low flush toilets. To increase the number of retrofits for existing homes, the City should pursue any opportunities for grants. As a participant in RWA's Water Efficiency Program, the City could also participate in an old toilet replacement rebate program.

Chapter 6 Water Supply Reliability

Because water supply for the portion of the City lying within the North Delta Water Agency (NDWA) boundary is assured in all years, diversions from the Sacramento River in accordance with the City’s appropriative right and BuRec contract can be used to just provide water to serve the area of the City lying outside the NDWA boundary. This chapter examines the reliability of the water supply available to that portion of the City, under both normal and dry conditions.

6.1 Climate

6.1.1 Reliability & Vulnerability of Water Supply to Seasonal or Climatic Changes

Since the City’s only water supply in future years will come from the Sacramento River, seasonal and climatic changes may impact the availability of water to the portion of the City outside the NDWA boundary. Historical curtailments in the City’s supply occurred during the drought years of the early 1990s, namely in 1991 and 1992. These curtailments, however, had no effect on the portions of the City which lie inside the NDWA boundary, as diversions under NDWA were not restricted.

6.2 Projected Normal Water Year Supply

During a normal water year, a combined delivery of 23,600 AF of water is available to the City under its appropriative right and its contract with BuRec. Although buildout demands are expected to exceed this amount, NDWA will provide an adequate supply for municipal, industrial, and agricultural demands within its boundaries. Focus is therefore placed on the supply and demand outside the NDWA boundary. Based on the combined BuRec and appropriative right supply of 23,600 AFY, and typical City demands during the months of no restriction (November through May) equal to about 42 percent of annual demand, the water available to the City in the months of likely diversion restrictions would be equal to about 58 percent of the BuRec entitlement, or about 13,806 AFY. Based on current buildout demand projections, demand outside the NDWA during the same time period is 2,700 AFY. This information is presented in Table 6-1 below.

Table 6-1: Water Supply Reliability (AFY) (Guidebook Table 8)^a

Average / Normal Water Year ^b	Single Dry Water Year ^c	Multiple Dry Water Years ^d			
		Year 1	Year 2	Year 3	Year 4
13,806	10,354	10,354	6,898	3,449	3,449
% of Normal	75%	75%	50%	25%	25%

Footnotes:

- a. The term “Guidebook X” refers to the table in the *Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan* by DWR.
- b. The basis for the normal water year presented above is 2000.
- c. The basis for the single dry water year presented above is 1991.
- d. The basis for the multiple dry water years presented above is the period 1991-1992.

6.3 Projected Dry Year Scenarios

In order to help predict the effects of supply reductions during dry years, four supply scenarios have been developed for the portion of the City lying outside of the NDWA boundary. These scenarios, which present potential reductions in the amount of water that may be diverted by the City, are presented below and shown in Table 6-1. These scenarios are discussed in further detail in Chapter 9.

Scenario 1 100 percent restriction in diversion under the City's appropriative right between June 1 and October 31 (zero appropriative right water), and 25 percent restriction in supply delivery by BuRec (delivery of up to 75 percent of contractual entitlement, or $0.75 \times 13,806 \text{ AF} = 10,354 \text{ AF}$).

Scenario 2 100 percent restriction in diversion under the City's appropriative right between June 1st and October 31st, and 50 percent restriction in supply delivery by BuRec (delivery of up to 50 percent of contractual entitlement, or $0.50 \times 13,806 \text{ AF} = 6,898 \text{ AF}$).

Scenario 3 100 percent restriction in diversion under the City's appropriative right between June 1st and October 31st, and 75 percent restriction in supply delivery by the BuRec (delivery only to 25 percent of contractual entitlement, or $0.25 \times 13,806 \text{ AF} = 3,449 \text{ AF}$).

Scenario 4^a 100 percent restriction in diversion under both the City's appropriative right and the BuRec contract between June 1st and October 31st (no surface supply from either entitlement).

- a. Scenario 4 is presented in order to satisfy the legal requirements of the UWMP, and is considered highly unlikely.

6.4 Projected Single Dry Year Supply Comparison

Assuming that a single dry year occurs in the midst of wetter years (i.e. the years prior to and after the single dry year are 'normal' water years), it is reasonable to assume that only moderate restrictions would be imposed on the City's entitlements. Taking this approach, a single dry year can be defined as a year in which Scenario 1, as described above, goes into effect. Under these circumstances only 10,354 AF would be available to the City during the summer months. This amount remains well in excess of the projected buildout demand of 2,700 AF for the area outside the NDWA boundary. This information is presented in Table 6-1 above.

6.5 Projected Multiple Dry Year Supply Comparison

Assuming that the year prior to the first year of a multiple dry year period is a 'normal' water year, it is again reasonable to assume only moderate diversion restrictions during the summer months of the first dry year. Subsequent dry years will likely face progressively harsher restrictions. For the purposes of this UWMP, it is assumed that Multiple Dry Year 1 will be identical to a Single Dry Year, which is defined by Scenario 1 above. Multiple Dry Years 2 and 3 will be defined by Scenarios 2 and 3, respectively. Finally, Multiple Dry Year 4 is assumed to

follow the restrictions set forth in Scenario 3. This assumption is based on the historical curtailments that were imposed during the drought years of the early 1990s. As stated in the City’s contract with BuRec, all reasonable means will be used to prevent water shortages in the quantity of water available to the City. Therefore, it is reasonable to assume that even in Year 4 of a multiple dry-year period, BuRec will refrain from maximizing diversion restrictions until absolutely necessary. For this reason Scenario 4, as described above, is not included in the multiple dry year period. This information is presented in Table 6-1 above.

6.5.1 Minimum Supply Volumes for the Next Three Years

The SWP and CVP reservoirs are currently full. Therefore it appears that the water supply for the next three years can be considered “normal years”.

6.5.2 Basis for Normal, Single Dry and Multiple Dry Water Year Data

The normal, single dry and multiple dry water years presented above were developed based on historical curtailments. Furthermore, these scenarios reflect the assumption that only the portion of the City outside of NDWA boundaries is susceptible to supply reductions due to drought conditions.

6.6 Supply Inconsistencies

Water supply from the City’s appropriative right is susceptible to several factors, including Standard Term 91 supply reductions, drought conditions, stringent downstream water quality objectives in and the Delta, and diversions by more senior appropriative rights holders. Any combination of these factors may result in reductions in supply during certain periods of the year. This supply is legally unavailable during the high demand months of July and August and as a result of Standard Term 91 limits, is typically reduced by varying amounts during the month of June. For the remainder of the year, this supply can be considered consistent.

Water supply from the City’s BuRec contract is susceptible primarily to drought conditions, when diversions from the Sacramento River may be reduced by BuRec. Historical reductions have been minimal, however, and with the exception of drought years in the early 1990s, this supply can be considered more or less consistent on a year-round basis. Supply reliability projections for this source are presented in Table 6-2.

Table 6-2: Wholesale Supply Availability % of Normal (AFY) (Guidebook Table 21)

Wholesale Source	Multiple Dry Water Years				
	Single Dry Year	Year 1	Year 2	Year 3	Year 4
BuRec ^a	23,600	23,600	23,600	23,600	23,600

Footnotes:

- a. As discussed with U.S. Bureau of Reclamation on August 12, 2005, annual deliveries up to the City's contract amount (23,600 AFY of combined BuRec and appropriative right water) are expected to be available. After 2020, the City's contract must be renegotiated; supplies, therefore, may change after that time.

For the majority of the City, NDWA provides a supply that is essentially drought-proof. Inconsistencies in this supply could result from several factors, including drastic reductions in water quality in the Sacramento River and/or catastrophic interruptions to the source or to the

City's water treatment facilities. The City does have a Disaster/Emergency Response Plan which addresses many of the possible scenarios which could interrupt winter supply from the Sacramento River.

As a result of the relative consistency of the City's water supplies, there are no plans at this time to replace any of the City's sources with alternative sources.

Chapter 7 Water Quality Impacts on Reliability

In general, water quality in the Sacramento River has a limited effect on the City's ability to provide its service area with a reliable source of high quality drinking water. The recently expanded Bryte Bend Water Treatment Plant (BBWTP) is a robust facility capable of treating 58 million gallons per day (mgd) of raw water from the Sacramento River. Recent improvements to the plant have included the conversion to a newer, more efficient ACTIFLO clarification process, as well as the replacement of the plant's sand/antracite filters with granular activated carbon filters. As a result, the City is capable of effectively treating very large volumes of water for a wide range of water quality parameters.

7.1 Water Quality Impacts

Although the City's untreated surface water supply is of high quality, future changes or interruptions to the water supply may impact the quality of the raw water and thus the City's ability to maintain a reliable water supply. These changes or interruptions could result from catastrophic circumstances in the Sacramento River or the City's water treatment facilities, including earthquakes, major fire emergencies, water outages due to loss of power, localized flooding, water contamination, and acts of sabotage. In response to these possibilities, the City has developed an Emergency/Disaster Response Plan, which includes appropriate personnel listings, resource inventories, locations for emergency operations centers, response procedures, and the steps necessary to resume normal operations. A copy of the plan is included in Appendix E.

Due to the nature of the potential water quality impacts described above, no future unaddressed impacts have been identified.

Chapter 8 Wastewater and Recycled Water

8.1 Planning Requirements

Section 10633 of the California Water Code states that 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. It also states that, to the extent available, 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:

- **10633 (a)** A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.
- **10633 (b)** A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.
- **10633 (c)** A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.
- **10633 (d)** A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.
- **10633 (e)** The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.
- **10633 (f)** A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.
- **10633 (g)** A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote 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.

8.2 Agency Coordination

The City has not developed a recycled water plan at this time. It is anticipated, however, that water recycling planning discussions will take place in the future between the City and the Sacramento Regional County Sanitation District (SRCSD). The basis of these anticipated discussions is described in further detail in the subsequent sections of this chapter.

8.3 Wastewater System Description

The City owns and operates one wastewater treatment plant (WWTP) located on South River Road. The WWTP is permitted for a dry weather capacity of 7.5 million gallons per day (mgd) and a wet weather capacity of 18.0 mgd. Recent average dry weather flows in million gallons per day (mgd) into the WWTP are listed in Table 8-1.

Table 8-1: ADWF at South River Road WWTP

Month of Year ^a	Average Dry Weather Flow (mgd)				
	2001	2002	2003	2004 ^b	2005 ^b
April	4.80	4.71	5.41	5.62	5.84
May	4.90	4.58	5.44	5.65	5.87
June	5.06	4.85	5.25	5.45	5.66
July	5.12	4.96	5.34	5.55	5.76
August	5.10	4.89	5.30	5.50	5.72
September	4.98	4.78	5.23	5.43	5.64
October	4.89	4.56	5.28	5.48	5.70
November	4.88	4.56	5.32	5.53	5.74

- a. Data for the months of December through March were unavailable at the time this UWMP was prepared.
- b. Data for 2004 and 2005 was unavailable at the time this UWMP was prepared; the figures presented above have been extrapolated based on the average increase/decrease in ADWF between 2001 and 2003.

The City anticipates that its WWTP will reach dry weather capacity by the end of 2007. The plant, however, is scheduled to go offline in late 2007, when all City wastewater flows will be diverted through the newly constructed Lower Northwest Interceptor (LNWI), a major pipeline with pumping facilities being constructed by SRCSD. Upon completion, the LNWI will serve West Sacramento and portions of Sacramento County.

The LNWI will deliver City wastewater flows to the Sacramento Regional Wastewater Treatment Plant located in Elk Grove. After connection to SRCSD in 2007, the City will have an additional capacity of nearly 47 mgd. Although the South River Road WWTP will be decommissioned, the City will continue to operate and maintain its existing wastewater collection system.

In 2001, the City Council of West Sacramento approved an eventual wastewater connection to SRCSD. As part of the effort to plan for long-term wastewater treatment needs for the City, this decision acknowledges increasingly stringent wastewater permitting requirements and the associated high costs of compliance. In April 2004, a wastewater services agreement was executed and the City was annexed by SRCSD. Other agreements have followed that will allow for the implementation of the wastewater connection. Currently, SRCSD provides sewage conveyance and treatment services to the Sacramento Metropolitan area.

8.4 Wastewater Treatment Process Description

The area serviced by the City's existing WWTP includes the incorporated area of the City of West Sacramento. The wastewater receives secondary treatment through the following plant processes:

- Influent flow measurement;
- Raw sewage screening;
- Primary clarification;
- Activated sludge with an anoxic selector;
- Secondary clarification;
- Chlorination for disinfection;
- Dechlorination with sulfur dioxide;
- Effluent flow measurement;

- Effluent pumping;
- Anaerobic sludge digestion; and,
- Belt press sludge dewatering.

Residual solids produced within the treatment processes are anaerobically digested, dewatered by belt filter presses, and trucked to land application sites or hauled to a landfill by a private contractor.

8.5 Wastewater Disposal

The City’s water demands for municipal, industrial, and agricultural uses within the City’s incorporated area are met solely by diversions from the Sacramento River. The City’s wastewater effluent, which is approximately 50% of the diverted water supply, is returned to the Sacramento River 11 miles south of the City. The City discharges treated wastewater into a ten-mile long sewer outfall that returns to the Sacramento River just upstream of Clarksburg; however, once the City’s wastewater is treated by SRCSD, it will be returned to the Sacramento River at Freeport.

Approximate annual City wastewater collection and treatment volumes for recent years are listed in Table 8.2.

Table 8-2: Wastewater Collection and Treatment

Year	Approximate Volume of Wastewater Collected and Treated	
	(acre-feet)	(million gallons)
2000	5,448	1,775
2001	5,981	1,949
2002	6,011	1,959
2003	6,143	2,002
2004	7,370	2,401
2005 ^a	8,000	2,607

Footnotes:

- a. Based on partial year data available at the time this UWMP was prepared.

8.6 Current and Projected Recycled Water Use

Treated effluent from the City’s wastewater treatment plant is used for process and washdown purposes at the existing WWTP. In addition, the City uses reclaimed water for irrigation of approximately 2.5 acres of WWTP on-site landscaping, equaling an annual demand of approximately 3 AFY. No water, however, is treated to meet recycled water standards. When the existing WWTP is decommissioned in 2007, no recycled water will be produced within the City.

At the present time, no discussions have taken place between the City and SRCSD regarding the future availability and use of recycled water. Therefore, no plans currently exist to equip the City with recycled water infrastructure. As a result, current projected use of recycled water within the City's service area at the end of 2010, 2015, 2020 and 2025 is zero, as a recycled water source does not exist within the City and is not planned for development in the next 20 years.

Although no formal recycled water timeline has been discussed between the City and SRCSD, the City does anticipate this discussion with SRCSD in the future. With the introduction of recycled SRCSD water to the nearby Elk Grove/Laguna area, as well as increased demands for water within the City, recycled water will be an alternative supply that will be considered in West Sacramento's future planning.

8.7 Potential Uses of Reclaimed Water

No infrastructure exists at this time to support recycled water use within the City of West Sacramento. If future recycled water planning discussions with SRCSD prove fruitful, however, potential uses of recycled water within the City could include:

- Urban (park and streetscape) landscape irrigation,
- Residential irrigation,
- School landscape irrigation, and,
- Dual-plumbed business/commercial developments.

At the present time, the City has not made any commitment to pursue any of the above recycled water uses. Currently, recycled water use is not economically feasible in this area since new infrastructure would be required and this burden would make recycled water costs prohibitive when compared to other water supplies available.

8.8 Encouraging Recycled Water Use

As recycled water planning discussions begin with SRCSD, recycled water projects may be identified and pursued by the City, provided that those projects are feasible and cost-effective, and that they will provide water supply benefits both to the City and the greater SRCSD service area.

If these conditions can be met, methods to encourage recycled water use can be developed to maximize project benefits.

8.9 Recycled Water Use Optimization Plan

At the present time, no recycled water use optimization plan has been developed due to the lack of recycled water infrastructure.

Chapter 9 Supply and Demand Comparison

Because water supply for the portion of the City lying within the NDWA is assured in all years, diversions from the Sacramento River in accordance with both the City's appropriative right and its contract with the Bureau of Reclamation (BuRec) may be used to just provide water supply to the area of the City lying outside the North Delta Water Agency (NDWA) boundary. This chapter therefore compares demands outside of the NDWA boundary with the water supply available from the City's appropriative right and BuRec contract during normal and drought years.

9.1 Demands Outside NDWA Boundary

Because the area outside the NDWA is not guaranteed water deliveries, it becomes necessary to determine the amount of water required to supply this area during periods of reduced diversions.

During the months of June through October, when diversions could be restricted under both the appropriative right and the BuRec contract, the portion of the City outside NDWA is estimated to have used 1,515 AF in 2005, and will use approximately 2,750 AF at buildout. Even during years of reduced diversions, these demands can be met by either the BuRec contract or by the City's appropriative right, or by a combination of both.

9.2 Water Supply Reductions

The City received notification from the State Water Resources Control Board (SWRCB) in 1989 through 1992 that under Standard Permit Term 91 (Term 91) of its appropriative right, it would have to cease diversions from the Sacramento River. The periods for restriction of diversion varied for each of these years, but in 1992 the restriction extended from June 1 through November 1. In the other three years, the period of restriction extended from July 1 through August 31. During these time periods, the City could divert no water under its appropriative right entitlement.

During this same time period, the City was notified by BuRec that delivery of water supply under its Central Valley Project (CVP) contract would also be limited to less than 100 percent. Restrictions in the delivery of CVP water to the City by the BuRec varied over this period from zero restriction in 1989 and 1990, to 25 percent of water scheduled in 1991.

In order to help predict the effects of supply reductions during dry years, four supply scenarios have been developed for the portion of the City lying outside of the NDWA boundary. These scenarios, which present potential reductions in the amount of water that may be diverted by the City, are presented in Section 6.3 of this UWMP.

Based on historical restrictions, the worst scenario the City is likely to face would be a 100 percent restriction in diversion under the City's appropriative right between June 1 and October 31, with a simultaneous 75 percent restriction in scheduled BuRec deliveries (Scenario 3 in Section 6.3).

Tables 9-1 through 9-16 present comparisons between the water supply available to the City in each of the restriction scenarios and the corresponding demand projections for the City areas both within and outside the NDWA boundary. As the data in these tables indicate, the City will always have sufficient water available from its combined BuRec and appropriative right entitlements to manage demands for the portion of the City outside NDWA's boundary, even when BuRec deliveries are reduced to no more than 25 percent of the contractual entitlement. In

ALL DEMANDS ARE IN ACRE-FEET PER YEAR (AFY)

Table 9-1: Normal Water Year 2005

NORM WATER YEAR	Normal Water Year 2005												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Year 2005	708	654	860	1,149	1,567	1,968	2,157	2,052	1,752	1,425	892	787	16,000
Monthly % of Total	4%	4%	5%	7%	10%	12%	13%	13%	11%	9%	6%	5%	100%
Total Demand	708	654	860	1,149	1,567	1,968	2,157	2,052	1,752	1,425	892	787	16,000
Non-NDWA Demand	115	106	139	186	258	318	349	332	283	231	144	127	2,589
NDWA Demand	593	548	721	963	1,308	1,649	1,808	1,720	1,468	1,194	748	660	13,411
NDWA Area													
Appropriative Right	297	274	361	481	669	1,319	1,808	1,720	1,468	1,194	748	660	4,702
BuRec	297	274	361	481	669	1,319	1,808	1,720	1,468	1,194	748	660	4,702
NDWA	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-NDWA Area													
Appropriative Right	57	53	70	93	129	255	349	332	283	231	144	127	2,589
BuRec	57	53	70	93	129	255	349	332	283	231	144	127	2,589
NDWA	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS													
Total Appropriative Right	354	327	430	574	798	1,574	2,157	2,052	1,752	1,425	892	787	16,000
Total BuRec	354	327	430	574	798	1,574	2,157	2,052	1,752	1,425	892	787	16,000
Subtotal AR+BuRec	708	654	860	1,149	1,567	1,968	2,157	2,052	1,752	1,425	892	787	16,000
Total NDWA	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	708	654	860	1,149	1,567	1,968	2,157	2,052	1,752	1,425	892	787	16,000

* Monthly demands as a percentage of total annual demand were calculated by averaging water production rates from the City's Brye Bend Water Treatment Plant over the last 5 years (2000-2004).

b Total demands were developed by analyzing current and buildout populations, population growth rates, and development schedules for the City per its 2005 Water Master Plan Update.

c Non-NDWA Demand refers to the projected demand for the area of the City that lies outside the North Delta Water Agency (NDWA) boundary.

d NDWA Demand refers to the projected demand for the portions of the City within the North Delta Water Agency boundary.

e The City has an appropriative right (AR) to divert water from the Sacramento River. These diversions are limited 18,350 AFY. Diversion is prohibited under this right during the months of July and August. Additional Term 91 limits may further reduce this supply during dry months.

f The City has a contract with the Bureau of Reclamation (BuRec) to divert Central Valley Project water from the Sacramento River. These diversions, when combined with the City's appropriative right, may not exceed 23,600 AFY. The City is required to purchase from BuRec 20%, 88%, 100% and 100% of diversions during the months of June, July, August and September, respectively.

g NDWA will provide adequate supply in all years to all areas of the City within its boundaries. The demand projections in this table reflect the assumption that supplies available to the City through its entitlements should be exhausted, from an accounting standpoint, before drawing from NDWA supplies.

h Historically, restrictions in the amount of water that can be diverted under the City's appropriative right and BuRec contract have occurred between June 1st and October 31st. Under normal circumstances, the City's appropriative right is restricted (zero diversions) for the months of July and August.

i Since NDWA is unable to supply water outside its boundaries, all demands for this portion of the City must be met by the City's two entitlements. For the purposes of this UWMP, available entitlement supply during all years and under all scenarios is applied first to non-NDWA area demands. After these demands have been met, remaining supply is distributed among the areas within NDWA boundaries. Any remaining demands are met by NDWA supplies.

Table 9-2: Normal Water Year 2010

Year	NORMAL WATER YEAR												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2010	4%	4%	5%	7%	10%	12%	13%	13%	11%	9%	6%	5%	100%
	972	898	1,181	1,577	2,192	2,701	2,960	2,817	2,404	1,956	1,224	1,080	21,962
NDWA Area	815	753	980	1,322	1,837	2,264	2,481	2,361	2,015	1,639	1,026	905	18,409
	407	376	495	661	919	1,811	2,481	2,361	2,015	1,639	1,026	453	6,454
Appropriative Right	0	0	0	0	0	0	0	0	0	0	0	0	0
	407	376	495	661	919	1,811	2,481	2,361	2,015	1,639	1,026	453	11,954
Non-NDWA Area	79	73	96	128	177	350	479	456	389	158	99	87	1,246
	79	73	96	128	177	350	479	456	389	158	99	87	2,808
TOTALS	157	145	191	255	355	437	479	456	389	316	198	175	3,553
	486	449	590	788	1,096	2,161	2,960	2,817	2,404	1,978	1,224	540	7,700
Total BurRec	486	449	590	788	1,096	2,161	2,960	2,817	2,404	1,978	1,224	540	14,262
	972	898	1,181	1,577	2,192	2,701	2,960	2,817	2,404	1,956	1,224	1,080	21,962
Total NDWA	0	0	0	0	0	0	0	0	0	0	0	0	0
	972	898	1,181	1,577	2,192	2,701	2,960	2,817	2,404	1,956	1,224	1,080	21,962

Table 9-3: Normal Water Year 2015

Year	NORMAL WATER YEAR												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2015	4%	4%	5%	7%	10%	12%	13%	13%	11%	9%	6%	5%	100%
	946	874	1,149	1,534	2,133	2,628	2,881	2,742	2,340	1,904	1,192	1,051	21,374
NDWA Area	473	437	575	767	1,067	2,103	2,194	2,088	1,782	952	596	526	7,494
	473	437	575	767	1,067	2,103	2,194	2,088	1,782	952	596	526	11,980
Non-NDWA Area	946	874	1,149	1,534	2,133	2,628	2,881	2,742	2,340	1,904	1,192	1,051	21,374
	91	84	111	148	206	406	556	529	452	184	115	101	1,447
Appropriative Right	0	0	0	0	0	0	0	0	0	0	0	0	0
	91	84	111	148	206	406	556	529	452	184	115	101	2,679
TOTALS	183	169	222	296	412	507	556	529	452	367	230	203	4,126
	564	521	686	915	1,272	2,509	2,750	2,617	2,233	1,135	711	627	8,941
Total BurRec	564	521	686	915	1,272	2,509	2,750	2,617	2,233	1,135	711	627	14,659
	1,428	1,043	1,371	1,831	2,545	3,136	3,437	3,271	2,792	2,271	1,422	1,254	23,600
Total NDWA	27	25	33	44	61	75	742	706	67	55	34	30	1,900
	1,428	1,043	1,371	1,831	2,545	3,136	3,437	3,271	2,792	2,271	1,422	1,254	25,500

Table 9-4: Normal Water Year 2020

Year	NORMA WATER YEAR												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2020	4%	4%	5%	7%	10%	12%	13%	13%	11%	9%	8%	5%	100%
	1,289	1,181	1,566	2,091	2,906	3,581	3,925	3,188	2,593	2,593	1,823	1,432	28,120
NDWA Area	208	193	253	338	470	579	635	604	516	420	283	1,200	4,712
	1,080	988	1,312	1,752	2,436	3,001	3,290	3,131	2,672	2,174	1,361	1,200	24,408
Appropriative Right	540	489	656	876	1,218	2,401	2,833	2,230	1,050	1,087	680	600	8,558
	540	489	656	876	1,218	2,401	2,833	2,230	1,050	1,087	680	600	10,330
NDWA	0	0	0	0	0	579	2,140	2,036	1,738	0	0	0	6,484
	1,080	988	1,312	1,752	2,436	3,001	3,290	3,131	2,672	2,174	1,361	1,200	24,408
Non-NDWA Area	104	96	127	169	235	464	635	604	516	210	131	116	1,652
	104	96	127	169	235	464	635	604	516	210	131	116	3,060
TOTALS	208	193	253	338	470	579	635	604	516	420	283	232	4,712
	644	585	783	1,045	1,453	2,955	3,288	2,738	2,108	1,297	812	716	10,210
Total BuRec	644	585	783	1,045	1,453	2,955	3,288	2,738	2,108	1,297	812	716	13,360
	1,289	1,181	1,566	2,091	2,906	3,581	3,925	3,188	2,593	2,593	1,823	1,432	23,600
Total NDWA	0	0	0	0	0	0	1,997	1,901	1,622	0	0	0	5,520
	1,289	1,181	1,566	2,091	2,906	3,581	3,925	3,188	2,593	2,593	1,823	1,432	28,120

Table 9-5: Scenario 1: Year 2005

Year	SCENARIO 1: 25% REDUCTION												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2005	4%	4%	5%	7%	10%	12%	13%	13%	11%	9%	8%	5%	100%
	708	654	860	1,149	1,597	1,968	2,157	2,052	1,752	1,425	892	787	16,000
NDWA Area	115	106	139	186	258	318	349	332	283	231	144	127	2,589
	593	548	721	963	1,338	1,649	1,808	1,720	1,468	1,194	748	660	13,411
Appropriative Right	297	274	361	481	669	1,649	1,808	1,720	1,468	1,194	374	330	2,786
	297	274	361	481	669	1,649	1,808	1,720	1,468	1,194	374	330	10,625
NDWA	0	0	0	0	0	0	0	0	0	0	0	0	0
	593	548	721	963	1,338	1,649	1,808	1,720	1,468	1,194	748	660	13,411
Non-NDWA Area	57	53	70	93	129	318	349	332	283	231	72	64	538
	57	53	70	93	129	318	349	332	283	231	72	64	2,051
TOTALS	115	106	139	186	258	318	349	332	283	231	144	127	2,589
	354	327	430	574	798	1,968	2,157	2,052	1,752	1,425	446	393	3,373
Total BuRec	354	327	430	574	798	1,968	2,157	2,052	1,752	1,425	446	393	12,677
	708	654	860	1,149	1,597	1,968	2,157	2,052	1,752	1,425	892	787	16,000
Total NDWA	0	0	0	0	0	0	0	0	0	0	0	0	0
	708	654	860	1,149	1,597	1,968	2,157	2,052	1,752	1,425	892	787	16,000

Table 9-6: Scenario 1: Year 2010

Year	Scenario 1: Year 2010												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2010	SCENARIO 1: 25% REDUCTION	407	376	495	661	919	1,231	1,171	1,000	813	513	453	3,824
	Monthly % of Total	4%	4%	5%	7%	10%	13%	13%	11%	9%	6%	5%	100%
	Total Demand	972	898	1,181	1,577	2,192	2,701	2,680	2,404	1,956	1,224	1,080	18,409
	Non-NDWA Demand	157	145	191	255	355	437	456	389	316	198	175	3,553
NDWA Demand	815	753	990	1,322	1,837	2,264	2,224	2,015	1,560	1,026	905	18,409	
NDWA Area	Appropriative Right BuRec 407 376 495 661 919 1,231 1,171 1,000 813 513 453 9,778 NDWA 0 0 0 0 0 524 1,251 1,190 1,016 826 0 0 4,807												
Non-NDWA Area	Appropriative Right BuRec 79 73 96 128 177 437 479 456 389 316 99 87 738 NDWA 157 145 191 255 355 437 479 456 389 316 198 175 3,553												
TOTALS	Total Appropriative Right 486 449 590 788 1,096 2,177 1,710 1,627 1,389 1,130 612 540 4,562 Total BuRec 486 449 590 788 1,096 2,177 1,710 1,627 1,389 1,130 612 540 4,562 Subtotal AR+BuRec 972 898 1,181 1,577 2,192 2,177 1,710 1,627 1,389 1,130 1,224 1,080 17,155 Total NDWA 0 0 0 0 0 524 1,251 1,190 1,016 826 0 0 4,807 TOTAL 972 898 1,181 1,577 2,192 2,701 2,680 2,404 1,956 1,224 1,080 905 21,962												

Table 9-7: Scenario 1: Year 2015

Year	Scenario 1: Year 2015												TOTAL	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
2015	SCENARIO 1: 25% REDUCTION	473	437	575	767	1,067	1,830	1,741	1,486	1,209	586	526	4,440	
	Monthly % of Total	4%	4%	5%	7%	10%	13%	13%	11%	9%	6%	5%	100%	
	Total Demand	1,128	1,043	1,371	1,831	2,545	3,136	3,271	2,742	2,340	1,904	1,192	1,051	21,374
	Non-NDWA Demand	183	168	222	296	412	507	559	452	367	230	203	0	4,126
NDWA Demand	946	874	1,149	1,534	2,133	2,628	2,712	2,288	1,888	1,637	962	1,051	21,374	
NDWA Area	Appropriative Right BuRec 473 437 575 767 1,067 1,830 1,741 1,486 1,209 586 526 4,440 NDWA 0 0 0 0 0 959 1,051 854 695 0 0 0 4,960													
Non-NDWA Area	Appropriative Right BuRec 91 84 111 148 208 507 556 529 452 367 230 203 4,126 NDWA 183 168 222 296 412 507 556 529 452 367 230 203 4,126													
TOTALS	Total Appropriative Right 564 521 686 915 1,272 2,385 2,270 1,938 1,576 1,422 711 627 15,644 Total BuRec 564 521 686 915 1,272 2,385 2,270 1,938 1,576 1,422 711 627 15,644 Subtotal AR+BuRec 1,128 1,043 1,371 1,831 2,545 3,136 3,271 2,742 2,340 1,904 1,422 1,254 20,940 Total NDWA 0 0 0 0 0 959 1,051 854 695 0 0 0 4,960 TOTAL 1,128 1,043 1,371 1,831 2,545 3,136 3,271 2,742 2,340 1,904 1,422 1,254 25,500													

Table 9-8: Scenario 1: Year 2020

Year	Scenario 1: Year 2020												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2020	4%	4%	5%	7%	10%	12%	13%	13%	11%	9%	6%	5%	100%
Total Demand	1,289	1,191	1,566	2,091	2,906	3,581	3,925	3,735	3,188	2,953	1,603	1,432	29,120
Non-NDWA Demand	208	193	253	338	470	579	695	604	516	420	285	232	4,712
NDWA Demand	1,080	998	1,312	1,752	2,436	3,001	3,230	3,131	2,672	2,174	1,361	1,200	24,408
NDWA Area													
Appropriative Right	540	499	656	876	1,218	1,587	1,751	1,666	1,422	1,157	680	600	5,070
BurRec	540	499	656	876	1,218	1,587	1,751	1,666	1,422	1,157	680	600	12,663
NDWA	0	0	0	0	0	1,404	1,539	1,465	1,250	1,017	0	0	6,676
Subtotal	1,080	998	1,312	1,752	2,436	3,001	3,290	3,131	2,672	2,174	1,361	1,200	24,408
Non-NDWA Area													
Appropriative Right	104	96	127	169	235	235	235	604	516	420	131	116	979
BurRec	104	96	127	169	235	235	235	604	516	420	131	116	3,733
NDWA	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	208	193	253	338	470	579	635	604	516	420	263	232	4,712
TOTALS													
Total Appropriative Right	644	595	783	1,045	1,453	1,822	2,086	2,270	1,938	1,576	812	716	6,049
Total BurRec	644	595	783	1,045	1,453	1,822	2,086	2,270	1,938	1,576	812	716	16,396
Subtotal AR+BurRec	1,289	1,191	1,566	2,091	2,906	3,644	3,925	3,735	3,188	2,953	1,623	1,432	22,444
Total NDWA	0	0	0	0	0	1,404	1,539	1,465	1,250	1,017	0	0	6,676
TOTAL	1,289	1,191	1,566	2,091	2,906	3,581	3,925	3,735	3,188	2,953	1,623	1,432	29,120

Table 9-8: Scenario 2: Year 2005

Year	Scenario 2: Year 2005												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2005	4%	4%	5%	7%	10%	12%	13%	13%	11%	9%	6%	5%	100%
Total Demand	708	654	860	1,149	1,597	1,997	2,157	2,052	1,752	1,425	882	787	16,000
Non-NDWA Demand	115	106	139	186	255	318	349	332	283	231	144	127	2,589
NDWA Demand	593	548	721	963	1,338	1,649	1,808	1,720	1,468	1,194	748	660	13,411
NDWA Area													
Appropriative Right	287	274	361	481	669	1,133	1,242	1,182	1,008	820	374	330	2,786
BurRec	287	274	361	481	669	1,133	1,242	1,182	1,008	820	374	330	8,170
NDWA	0	0	0	0	0	516	566	539	460	374	0	0	2,455
Subtotal	593	548	721	963	1,338	1,649	1,808	1,720	1,468	1,194	748	660	13,411
Non-NDWA Area													
Appropriative Right	57	53	70	93	129	129	318	349	283	231	72	64	538
BurRec	57	53	70	93	129	129	318	349	283	231	72	64	2,051
NDWA	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	115	106	139	186	255	318	349	332	283	231	144	127	2,589
TOTALS													
Total Appropriative Right	354	327	430	574	798	1,451	1,581	1,514	1,292	1,051	446	393	3,323
Total BurRec	354	327	430	574	798	1,451	1,581	1,514	1,292	1,051	446	393	10,221
Subtotal AR+BurRec	708	654	860	1,149	1,597	1,451	1,581	1,514	1,292	1,051	892	787	13,545
Total NDWA	0	0	0	0	0	516	566	539	460	374	0	0	2,455
TOTAL	708	654	860	1,149	1,597	1,968	2,157	2,052	1,752	1,425	892	787	16,000

Table 9-10: Scenario 2: Year 2010

SCENARIO 2: 50% REDUCTION	Year 2010												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Total Demand	4%	4%	5%	7%	10%	13%	13%	13%	11%	9%	6%	5%	
Non-NDWA Demand	972	688	1,181	1,577	2,192	2,701	2,860	2,817	2,404	1,956	1,224	1,080	
NDWA Demand	157	145	191	255	355	437	479	456	389	316	196	175	
NDWA Demand	815	753	980	1,322	1,837	2,264	2,481	2,361	2,015	1,639	1,026	905	
NDWA Area													
Appropriative Right	407	376	495	661	819	1,014	1,112	1,058	903	734	513	453	
BuRec	407	376	495	661	819	1,014	1,112	1,058	903	734	513	453	
NDWA	0	0	0	0	0	1,250	1,370	1,303	1,113	905	0	0	
Subtotal	815	753	980	1,322	1,837	2,264	2,481	2,361	2,015	1,639	1,026	905	
Non-NDWA Area													
Appropriative Right	79	73	96	128	177	219	247	245	203	161	99	87	
BuRec	79	73	96	128	177	219	247	245	203	161	99	87	
NDWA	0	0	0	0	0	0	0	0	0	0	0	0	
Subtotal	157	145	191	255	355	437	479	456	389	316	198	175	
TOTALS													
Total Appropriative Right	486	449	590	788	1,096	1,451	1,591	1,514	1,292	1,051	612	540	
Total BuRec	486	449	590	788	1,096	1,451	1,591	1,514	1,292	1,051	612	540	
Subtotal AR+BuRec	972	898	1,181	1,577	2,192	2,902	3,182	3,028	2,584	2,102	1,224	1,080	
Total NDWA	0	0	0	0	0	1,250	1,370	1,303	1,113	905	0	0	
TOTAL	972	898	1,181	1,577	2,192	2,701	2,960	2,817	2,404	1,956	1,224	1,080	

Table 9-11: Scenario 2: Year 2015

SCENARIO 2: 50% REDUCTION	Year 2015												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Total Demand	4%	4%	5%	7%	10%	12%	13%	13%	11%	9%	6%	5%	
Non-NDWA Demand	183	169	222	296	412	507	556	529	452	367	230	203	
NDWA Demand	946	874	1,149	1,534	2,133	2,628	2,881	2,742	2,340	1,904	1,192	1,051	
NDWA Area													
Appropriative Right	473	437	575	767	1,067	1,344	1,484	1,404	1,184	963	596	526	
BuRec	473	437	575	767	1,067	1,344	1,484	1,404	1,184	963	596	526	
NDWA	0	0	0	0	0	1,685	1,847	1,757	1,500	1,220	0	0	
Subtotal	946	874	1,149	1,534	2,133	2,628	2,881	2,742	2,340	1,904	1,192	1,051	
Non-NDWA Area													
Appropriative Right	91	84	111	148	206	256	281	271	229	181	115	101	
BuRec	91	84	111	148	206	256	281	271	229	181	115	101	
NDWA	0	0	0	0	0	0	0	0	0	0	0	0	
Subtotal	183	169	222	296	412	507	556	529	452	367	230	203	
TOTALS													
Total Appropriative Right	564	521	686	915	1,272	1,600	1,765	1,675	1,413	1,144	711	627	
Total BuRec	564	521	686	915	1,272	1,600	1,765	1,675	1,413	1,144	711	627	
Subtotal AR+BuRec	1,128	1,043	1,371	1,831	2,545	3,200	3,530	3,350	2,826	2,288	1,422	1,254	
Total NDWA	0	0	0	0	0	1,685	1,847	1,757	1,500	1,220	0	0	
TOTAL	1,128	1,043	1,371	1,831	2,545	3,136	3,437	3,271	2,792	2,271	1,422	1,254	

Table 9-12: Scenario 2: Year 2020

SCENARIO 2: 50% REDUCTION	Year 2020												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Monthly % of Total	4%	4%	5%	7%	10%	12%	13%	13%	11%	9%	6%	5%	
Total Demand	1,289	1,191	1,566	2,091	2,906	3,581	3,925	3,735	3,188	2,953	1,623	1,432	
Non-NDWA Demand	283	193	253	338	470	579	635	604	516	420	263	232	
NDWA Demand	1,006	998	1,312	1,752	2,436	3,001	3,290	3,131	2,672	2,174	1,361	1,200	
NDWA Area													
Appropriative Right	540	499	656	876	1,218	1,218	955	909	776	631	680	600	
BuRec	540	499	656	876	1,218	1,218	955	909	776	631	680	600	
NDWA	0	0	0	0	0	2,190	2,335	2,222	1,886	1,542	0	0	
Subtotal	1,080	998	1,312	1,752	2,436	3,001	3,290	3,131	2,672	2,174	1,361	1,200	
Non-NDWA Area													
Appropriative Right	104	96	127	169	235	235	635	604	516	420	131	116	
BuRec	104	96	127	169	235	235	635	604	516	420	131	116	
NDWA	0	0	0	0	0	NDWA may not provide supply this portion of the City	0	0	0	0	0	0	
Subtotal	208	193	253	338	470	579	635	604	516	420	263	232	
TOTALS													
Total Appropriative Right	644	595	783	1,045	1,453	1,453	1,514	1,514	1,292	1,051	812	716	
Total BuRec	644	595	783	1,045	1,453	1,453	1,514	1,514	1,292	1,051	812	716	
Subtotal AR+BuRec	1,289	1,191	1,566	2,091	2,906	3,581	3,925	3,735	3,188	2,953	1,623	1,432	
Total NDWA	0	0	0	0	0	2,130	2,335	2,222	1,886	1,542	0	0	
TOTAL	1,289	1,191	1,566	2,091	2,906	3,581	3,925	3,735	3,188	2,593	1,623	1,432	

Table 9-13: Scenario 3: Year 2005

SCENARIO 3: 75% REDUCTION	Year 2005												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Monthly % of Total	4%	4%	5%	7%	10%	12%	13%	13%	11%	9%	6%	5%	
Total Demand	708	654	860	1,149	1,597	1,968	2,157	2,062	1,752	1,425	892	787	
Non-NDWA Demand	115	106	139	186	258	318	349	332	283	231	144	127	
NDWA Demand	593	548	721	963	1,338	1,649	1,808	1,720	1,468	1,194	748	660	
NDWA Area													
Appropriative Right	287	274	361	481	669	407	446	425	363	295	374	330	
BuRec	287	274	361	481	669	407	446	425	363	295	374	330	
NDWA	0	0	0	0	0	1,242	1,361	1,298	1,106	899	0	0	
Subtotal	593	548	721	963	1,338	1,649	1,808	1,720	1,468	1,194	748	660	
Non-NDWA Area													
Appropriative Right	57	53	70	93	129	318	349	332	283	231	72	64	
BuRec	57	53	70	93	129	318	349	332	283	231	72	64	
NDWA	0	0	0	0	0	NDWA may not provide supply this portion of the City	0	0	0	0	0	0	
Subtotal	115	106	139	186	258	318	349	332	283	231	144	127	
TOTALS													
Total Appropriative Right	354	327	430	574	798	726	795	757	646	525	446	393	
Total BuRec	354	327	430	574	798	726	795	757	646	525	446	393	
Subtotal AR+BuRec	708	654	860	1,149	1,597	1,452	1,590	1,514	1,292	1,051	882	787	
Total NDWA	0	0	0	0	0	1,242	1,361	1,298	1,106	899	0	0	
TOTAL	708	654	860	1,149	1,597	1,968	2,157	2,062	1,752	1,425	892	787	

Table 9-14: Scenario 3: Year 2010

SCENARIO 3: 75% REDUCTION	Scenario 3: Year 2010												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Monthly % of Total	4%	4%	5%	7%	10%	12%	13%	13%	11%	9%	6%	5%	
Total Demand	972	898	1,081	1,577	2,192	2,701	2,960	2,817	2,404	1,956	1,224	1,060	
Non-NDWA Demand	157	145	191	255	355	437	479	456	389	316	198	175	
NDWA Demand	815	753	890	1,322	1,837	2,264	2,481	2,361	2,015	1,639	1,026	905	
NDWA Area													
Appropriative Right	407	376	495	661	919	1,177	1,272	1,272	1,067	815	513	453	
BuRec	407	376	495	661	919	1,177	1,272	1,272	1,067	815	513	453	
NDWA	0	0	0	0	0	1,975	2,165	2,060	1,758	1,430	0	0	
Subtotal	815	753	990	1,322	1,837	2,264	2,481	2,361	2,015	1,639	1,026	905	
Non-NDWA Area													
Appropriative Right	79	73	96	128	177	218	239	228	194	158	99	87	
BuRec	79	73	96	128	177	218	239	228	194	158	99	87	
NDWA	0	0	0	0	0	437	479	456	389	316	0	0	
Subtotal	157	145	191	255	355	437	479	456	389	316	198	175	
TOTALS													
Total Appropriative Right	486	449	590	788	1,096	1,395	1,510	1,499	1,261	971	612	540	
Total BuRec	486	449	590	788	1,096	1,395	1,510	1,499	1,261	971	612	540	
Subtotal AR+BuRec	972	898	1,181	1,577	2,192	2,790	2,960	2,817	2,404	1,956	1,224	1,060	
Total NDWA	0	0	0	0	0	1,975	2,165	2,060	1,758	1,430	0	0	
TOTAL	972	898	1,181	1,577	2,192	2,701	2,960	2,817	2,404	1,956	1,224	1,060	

Table 9-15: Scenario 3: Year 2015

SCENARIO 3: 75% REDUCTION	Scenario 3: Year 2015												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Monthly % of Total	4%	4%	5%	7%	10%	12%	13%	13%	11%	9%	6%	5%	
Total Demand	1,128	1,043	1,371	1,831	2,545	3,136	3,437	3,271	2,752	2,271	1,422	1,254	
Non-NDWA Demand	183	169	222	296	412	507	556	529	452	367	230	203	
NDWA Demand	946	874	1,149	1,534	2,133	2,628	2,881	2,742	2,300	1,904	1,192	1,051	
NDWA Area													
Appropriative Right	473	437	575	767	1,067	1,318	1,448	1,448	1,214	946	596	526	
BuRec	473	437	575	767	1,067	1,318	1,448	1,448	1,214	946	596	526	
NDWA	0	0	0	0	0	2,410	2,642	2,514	2,146	1,746	0	0	
Subtotal	946	874	1,149	1,534	2,133	2,628	2,881	2,742	2,340	1,904	1,192	1,051	
Non-NDWA Area													
Appropriative Right	81	84	111	148	206	266	296	266	214	169	115	101	
BuRec	81	84	111	148	206	266	296	266	214	169	115	101	
NDWA	0	0	0	0	0	507	556	529	452	367	230	203	
Subtotal	183	169	222	296	412	507	556	529	452	367	230	203	
TOTALS													
Total Appropriative Right	554	521	686	915	1,272	1,584	1,744	1,714	1,428	1,115	711	627	
Total BuRec	554	521	686	915	1,272	1,584	1,744	1,714	1,428	1,115	711	627	
Subtotal AR+BuRec	1,128	1,043	1,371	1,831	2,545	3,136	3,437	3,271	2,752	2,271	1,422	1,254	
Total NDWA	0	0	0	0	0	2,410	2,642	2,514	2,146	1,746	0	0	
TOTAL	1,128	1,043	1,371	1,831	2,545	3,136	3,437	3,271	2,752	2,271	1,422	1,254	

Table 9-16: Scenario 3: Year 2020

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
SCENARIO 3: 75% REDUCTION	4%	5%	5%	7%	10%	12%	13%	13%	11%	9%	6%	5%	100%
	1,289	1,191	1,566	2,091	2,906	3,581	3,925	3,735	3,188	2,593	1,823	1,432	29,120
	208	193	253	338	470	579	635	604	516	420	263	232	4,712
	1,080	998	1,312	1,752	2,436	3,001	3,290	3,131	2,672	2,174	1,361	1,200	24,408
NDWA Area	540	499	656	876	1,218	1,468	160	152	130	106	680	600	5,070
Appropriative Right	540	499	656	876	1,218	146	160	152	130	106	680	600	5,765
BurRec	0	0	0	0	0	2,855	3,130	2,878	2,542	2,068	0	0	13,574
NDWA	0	0	0	0	0	3,001	3,290	3,131	2,672	2,174	1,361	1,200	24,408
Subtotal	1,080	998	1,312	1,752	2,436	3,001	3,290	3,131	2,672	2,174	1,361	1,200	24,408
Non-NDWA Area	104	96	127	169	235	235	635	604	516	420	131	116	979
Appropriative Right	104	96	127	169	235	235	635	604	516	420	131	116	3,733
BurRec	0	0	0	0	0	0	0	0	0	0	0	0	0
NDWA	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	208	193	253	338	470	579	635	604	516	420	263	232	4,712
TOTALS	644	595	783	1,045	1,453	1,453	1,453	1,453	1,453	1,453	1,453	1,453	6,049
Total Appropriative Right	644	595	783	1,045	1,453	1,453	1,453	1,453	1,453	1,453	1,453	1,453	9,498
Total BurRec	0	0	0	0	0	0	0	0	0	0	0	0	15,546
Subtotal AR+BurRec	1,289	1,191	1,566	2,091	2,906	3,581	3,925	3,735	3,188	2,593	1,823	1,432	29,120
Total NDWA	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1,289	1,191	1,566	2,091	2,906	3,581	3,925	3,735	3,188	2,593	1,823	1,432	29,120

the unlikely event that entitlements from both the City's BuRec contract and its appropriative right were reduced to zero, the City would need to reactivate its groundwater pumping facilities to meet demands for portions of the City lying outside NDWA.

9.3 Supply and Demand Comparisons

9.3.1 Non-NDWA Area Comparisons

For the area of City lying outside NDWA boundaries, water must be supplied solely by the City's two entitlements. Although the City's current demands can be met entirely by its entitlements, this will not always be the case. Because water is assured for the portion of the City lying within NDWA boundaries, however, focus may be shifted to the area of the City lying outside the NDWA boundary, where increases in demand, coupled with potential restrictions in supply entitlements, are a more realistic threat to the City's water management strategy. Tables 9-1 through 9-16 are therefore divided into two discrete City areas: NDWA and Non-NDWA. The computations for these comparisons were based on the assumption that for the period in which restrictions in supply have historically taken place, approximately 58 percent of the City's total entitlement of 23,600 AF, or 13,806 AF, is available for diversion from the Sacramento River ($0.585 \times 23,600 \text{ AF} = 13,806 \text{ AF}$).

9.3.2 NDWA Area Comparisons

If the amount of entitlement water available during a given year exceeds the demands for non-NDWA areas, the remainder of that supply will be applied to meeting demands within the NDWA boundary. For years when total annual City demands are less than the amount of water available from the City's appropriative right and its contract with BuRec, there will be no need for NDWA diversions. When the City's demands surpass the amount allotted by its entitlements, the difference in supply will be met by diverting additional NDWA water for the portions of the City that lie inside NDWA boundaries. Therefore, the total supply expected during those years, even when entitlements are restricted, simply matches the demand, as NDWA assures that adequate water supplies will be available during all years. Supply and demand computations are presented above in Tables 9-1 through 9-16. See attached footnotes for further clarification.

As the above tables indicate, in all but the worst case scenario (Scenario 4), demands in all years will be met by first applying the City's entitlements to the portion of the City outside the NDWA boundary, and then meeting remaining City demands by combining the remaining entitlements with NDWA water. If the worst case scenario were to take place, where both the City's appropriative right and its BuRec entitlement were reduced to zero percent, a portion of the City would in fact be left with a legal shortfall – meaning that water diverted under the auspices of NDWA could not be distributed to this portion of the City. To mitigate this potential shortfall, the City would need to reactivate its groundwater pumping facilities under these circumstances.

9.4 Accounting for Water Use

As the above analysis indicates, the City will have sufficient water supply to meet existing and projected water demands by applying the supply available from its appropriative right and its BuRec contract to just meet the needs of the portion of the City lying outside the NDWA boundaries in periods of restricted diversion, unless diversion under these entitlements is reduced to zero. The remainder of the City lies within the NDWA boundaries and is assured water supply under all hydrologic conditions by virtue of the agreement between the DWR and the NDWA. If the Sacramento River diversions are reduced to zero under these two entitlements, the City would have to pump groundwater to meet the demands in the area lying outside the NDWA boundaries, and use NDWA surface water entitlements to meet demands in the remainder of the City.

The City and the BuRec operate a water meter at the Bryte Bend Water Treatment Plant, which records all diversions from the river by the City. It was suggested in discussions with DWR staff during a past SWRCB hearing that the City should consider separately measuring the amount of water diverted from the Sacramento River under each of its entitlements. Installation of the meters to enable the City to record this information would be very expensive (nearly one-half million dollars). The only time the City risks exceeding its entitlements, however, is when BuRec diversions are reduced to zero. Otherwise, the City will have sufficient supply available from its BuRec contract and from NDWA in all but the most severe dry periods. If diversions are reduced to zero under the BuRec contract, the City can pump sufficient groundwater from existing wells to supply demands in the City area lying outside the NDWA boundaries. This groundwater can be metered at the wellhead and separately reported. It thus appears reasonable to require the City to just record the total amount of diversion from the Sacramento River to ensure that such diversions never exceed the amount provided for under the City's entitlements.

9.4.1 Additional Supply and Demand Comparisons

Section 10635 (a) of the California Water Code states that 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, single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the population projections within the service area of the urban water supplier.

In order to satisfy the requirements set forth in the Water Code, additional supply and demand comparisons are presented in Tables 9-17 through 9-34 below (Guidebook Tables 40-57). Due to the nature of the City's somewhat unique combination of entitlements, contracts, and agreements, much of the information that appears below may seem redundant. This redundancy, however, is due simply to the fact that NDWA supplies will be used to meet demands above and beyond the 23,600 AF that is available through the City's appropriative right and its contract with BuRec.

Table 9-17: Projected Normal Water Supply (AFY)

Supply	2010	2015	2020	2025	2030
	23,600	25,500	29,120	29,120	29,120
% of 2005	100%	108%	123%	123%	123%

Table 9-18 Projected Normal Water Demand (AFY)

Demand	2010	2015	2020	2025	2030
	23,600	25,500	29,120	29,120	29,120
% of 2005	100%	108%	123%	123%	123%

Table 9-19 Projected Normal Supply and Demand Comparison (AFY)

	2010	2015	2020	2025	2030
Supply Totals	23,600	25,500	29,120	29,120	29,120
Demand Totals	23,600	25,500	29,120	29,120	29,120
Difference	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

Table 9-20 Projected Single Dry Year Water Supply (AFY)

Supply	2010	2015	2020	2025	2030
% of Projected Supply	23,600	25,500	29,120	29,120	29,120

Table 9-21 Projected Single Dry Year Water Demand (AFY)

Demand	2010	2015	2020	2025	2030
% of Projected Demand	23,600	25,500	29,120	29,120	29,120

Table 9-22 Projected Single Dry Year Supply and Demand Comparison (AFY)

	2010	2015	2020	2025	2030
Supply Totals	23,600	25,500	29,120	29,120	29,120
Demand Totals	23,600	25,500	29,120	29,120	29,120
Difference	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

Table 9-23 Projected Supply During Multiple Dry Year Period Ending in 2010 (AFY)

Supply	2006	2007	2008	2009	2010
	23,600	23,600	23,600	23,600	23,600
% of Projected Normal Supply	100%	100%	100%	100%	100%

Table 9-24 Projected Demand During Multiple Dry Year Period Ending in 2010 (AFY)

Demand	2006	2007	2008	2009	2010
	17,192	18,385	19,577	20,770	21,962
% of Projected Normal Demand	100%	100%	100%	100%	100%

Table 9-25 Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2010 (AFY)

	2006	2007	2008	2009	2010
Supply Totals	23,600	23,600	23,600	23,600	23,600
Demand Totals	17,192	18,385	19,577	20,770	21,962
Difference	6,408	5,215	4,023	2,830	1,638
Difference as % of Supply	27%	22%	17%	12%	7%
Difference as % of Demand	31%	28%	21%	14%	8%

Table 9-26 Projected Supply During Multiple Dry Year Period Ending in 2015 (AFY)

Supply	2011	2012	2013	2014	2015
	23,600	23,600	24,085	24,792	25,500
% of Projected Normal Supply	100%	100%	100%	100%	100%

Table 9-27 Projected Demand During Multiple Dry Year Period Ending in 2015 (AFY)

Demand	2011	2012	2013	2014	2015
	22,670	23,377	24,085	24,792	25,500
% of Projected Normal	96%	99%	100%	100%	100%

Table 9-28 Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2015 (AFY)

	2011	2012	2013	2014	2015
Supply Totals	23,600	23,600	24,085	24,792	25,500
Demand Totals	22,670	23,377	24,085	24,792	25,500
Difference	930	223	0	0	0
Difference as % of Supply	4%	1%	0%	0%	0%
Difference as % of Demand	4%	1%	0%	0%	0%

Table 9-29 Projected Supply During Multiple Dry Year Period Ending in 2020 (AFY)

Supply	2016	2017	2018	2019	2020
	26,224	26,948	27,672	28,396	29,120
% of Projected Normal Supply	100%	100%	100%	100%	100%

Table 9-30 Projected Demand During Multiple Dry Year Period Ending in 2020 (AFY)

Demand	2016	2017	2018	2019	2020
	26,224	26,948	27,672	28,396	29,120
% of Projected Normal Demand	100%	100%	100%	100%	100%

Table 9-31 Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2020 (AFY)

	2016	2017	2018	2019	2020
Supply Totals	26,224	26,948	27,672	28,396	29,120
Demand Totals	26,224	26,948	27,672	28,396	29,120
Difference	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

Table 9-32 Projected Supply During Multiple Dry Year Period Ending in 2025 (AFY)

Supply	2021	2022	2023	2024	2025
	29,120	29,120	29,120	29,120	29,120
% of Projected Normal Supply	100%	100%	100%	100%	100%

Table 9-33 Projected Demand During Multiple Dry Year Period Ending in 2025 (AFY)

Demand	2021	2022	2023	2024	2025
	29,120	29,120	29,120	29,120	29,120
% of Projected Normal Demand	100%	100%	100%	100%	100%

Table 9-34 Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2025 (AFY)

	2021	2022	2023	2024	2025
Supply Totals	29,120	29,120	29,120	29,120	29,120
Demand Totals	29,120	29,120	29,120	29,120	29,120
Difference	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

Chapter 10 Water Shortage Contingency Plan

10.1 Coordination with Other Suppliers

Section 10620 (d)(2) of the California Water Code requires that the City coordinate, to the extent practicable, preparation of its urban water shortage contingency plan with other urban water suppliers and public agencies in the area

The City of West Sacramento (City) does not have any interconnections between its potable water system and potable water systems operated by other water suppliers. However, as part of preparing this plan, the City has reviewed the water shortage contingency plan adopted by the City of Sacramento, which also diverts water from the Sacramento River and have conferred with representatives of the State Water Resources Control Board (SWRCB), State Department of Health Services Office of Drinking Water, North Delta Water Agency (NDWA), and United States Bureau of Reclamation (BuRec).

10.2 Past, Current, and Projected Water Use (1986-2020)

Section 10631 (e)(1) of the California Water code requires that the City address past, current, and projected water use and, to the extent records are available, breakdown of those uses on the basis of single family residential, multi-family residential, industrial, commercial, governmental, and agriculture use.

Past, current and projected water production for the City water supply service area is shown in Chapter 4.

Water production for 2004 was approximately 14,740 AF. Annual production requirements are projected to increase to 29,120 AFY by 2020. Unaccounted for water is currently estimated at approximately 12 percent of total deliveries (1,770 AFY). Based on the currently estimated population and estimated water deliveries (16,000 AF for 2005), per capita water use is estimated at 375 gallons per day per capita (gpcd).

10.3 Stages of Action

Section 10631 (e)(3) of the California Water Code requires that the City develop stages of action to be undertaken in response to a water supply shortage, including up to a 50 percent reduction in water supply. The City must also identify specific water supply conditions which are applicable to each stage.

Section 10631 (e)(6) requires that the City's urban water shortage contingency plan include penalties or charges for excessive use.

A four-stage rationing plan, including voluntary and mandatory stages, is described below:

10.3.1 Stage 1 Water Shortage (Goal of 15% Reduction)

Application: There is a probability that the City will not be able to meet all the water requirements of its customers.

Type of Program: Voluntary

Triggering Mechanism: A cutback in available water supply of up to 15%.

Consumption Limits: All customers would be requested to reduce consumption by 15%.

City Actions: Continue existing conservation programs, and:

1. Initiate public information campaign. Explain drought or water shortage situation to the public and governmental bodies. Explain other stages and forecast future actions. Request voluntary water conservation.
2. Coordinate media outreach program. Issue news releases to the media. Begin advertising campaign to remind consumers of the need to save water.
3. Prepare and distribute education brochures, bill inserts, etc. Provide technical information to customers on ways to save water.

Requested Consumer Actions: Customers would be requested to implement voluntary Stage 1 Water Conservation Measures, presented in Table 10-1, and adhere to the “No Waste” ordinance.

Follow-up for Noncompliance: For the first and subsequent violations of the water conservation measures in force, customers will receive the following sequence of enforcement actions (over two week time frame each):

1. A conservation letter or visit from a City conservation specialist
2. A second letter offering City assistance

10.3.2 Stage 2 Water Shortage (Goal of 30% Reduction)

Application: The City is not able to meet all customer water requirements with voluntary Stage 1 rationing measures.

Type of Program: Mandatory

Triggering Mechanism: A cutback in available water supply of 15 to 30%.

Consumption Limits: All customers would be required to reduce consumption by 30%.

City Actions: Continue existing conservation programs, and:

1. The City Manager would declare a Water Shortage Emergency.
2. Mandate compliance with Stage 2 Water Conservation Measures, presented in Table 10-1.
3. Continue rigorous public information campaign. Explain drought conditions. Distribute technical information.

Requested Consumer Actions: Customers would be required to comply with mandatory Stage 2 Water Conservation Measures (Table 10-1).

Enforcement/Charges for Excessive Water Use:

For the first and subsequent violations of the water conservation measures in force, customers will receive the following sequence of enforcement actions (over two week time frame each):

1. For the first violation, the person that committed the violation shall be issued a written notice stating the type of violation.
2. For the second violation, the person that committed the violation shall be issued a written notice.
3. For the third violation, the person that committed the violation and the property owner shall be issued a written notice. For the third violation, the subject property water rates shall be increase to five (5) times the normal monthly rates for the month of the violation, and then said water rates would be returned to their regular schedule.
4. For the fourth violation, the person that committed the violation and the property owner shall be issued a written notice. For the fourth violation, the subject property water rates shall be increased to five (5) times the normal monthly rates for the duration of the water shortage and then said water rates would return to their regular schedule.

10.3.3 Stage 3 Water Shortage (Goal of 40% Reduction)

Application: The City is not able to meet all customer water requirements with voluntary Stage 2 rationing measures.

<u>Type of Program:</u>	Mandatory
<u>Triggering Mechanism:</u>	A cutback in available water supply of 30 to 40% .
<u>Consumption Limits:</u>	All customers would be required to reduce consumption by 40%.
<u>City Actions:</u>	Continue existing conservation programs, and:
4.	Mandate adherence to all Stage 3 Water Conservation Measures, presented in Table 10-1.
5.	Continue rigorous public information campaign

Requested Consumer Actions: Customers would be required to comply with mandatory Stage 3 Water Conservation Measures (Table 10-1).

Enforcement/Charges for Excessive Water Use:

For the first and subsequent violations of the water conservation measures in force, customers will receive the following sequence of enforcement actions (over two week time frame each):

1. For the first violation, the person that committed the violation shall be issued a written notice stating the type of violation.
2. For the second violation, the person that committed the violation shall be issued a written notice.
3. For the third violation, the person that committed the violation and the property owner shall be issued a written notice. For the third violation, the subject property water rates shall be increase to five (5) times the normal monthly rates for the month of the violation, and then said water rates would be returned to their regular schedule.
4. For the fourth violation, the person that committed the violation and the property owner shall be issued a written notice. For the fourth violation, the subject property water rates shall be increased to five (5) times the normal monthly rates for the duration of the water shortage and then said water rates would return to their regular schedule.
5. For the fifth violation, the person that committed the violation and the property owner shall be issued a shut-off letter warning of termination of service and a possible reconnect fee.
6. For the sixth violation, service shall be shut-off, and the property owner shall be subject to a charge for reconnection.

10.3.4 Stage 4 Water Shortage (Goal of 50% Reduction)

Application: The City is experiencing a major failure of supply, storage, or distribution facility. The City is not able to meet all customer water requirements with mandatory Stage 3 rationing measures.

Type of Program: Mandatory

<u>Triggering Mechanism:</u>	A cutback in available water supply of 50% or greater.
<u>Consumption Limits:</u>	All customers would be required to reduce consumption by 50% for the duration of the water emergency.
<u>City Actions:</u>	Continue existing conservation programs and Stage 3 City actions, and:

1. Mandate adherence to all Stage 4 Water Conservation Measures, presented in Table 10-1.
2. Intensify media outreach program with regular updates on the emergency
3. Monitor production weekly for compliance with necessary reduction

Requested Consumer Actions: Customers would be required to comply with mandatory Stage 4 Water Conservation Measures (Table 10-1).

Enforcement/Charges for Excessive Water Use:

For the first and subsequent violations of the water conservation measures in force, customers will receive the following sequence of enforcement actions (over two week time frame each):

7. For the first violation, the person that committed the violation shall be issued a written notice stating the type of violation.
8. For the second violation, the person that committed the violation shall be issued a written notice.
9. For the third violation, the person that committed the violation and the property owner shall be issued a written notice. For the third violation, the subject property water rates shall be increase to five (5) times the normal monthly rates for the month of the violation, and then said water rates would be returned to their regular schedule.
10. For the fourth violation, the person that committed the violation and the property owner shall be issued a written notice. For the fourth violation, the subject property water rates shall be increased to five (5) times the normal monthly rates for the duration of the water shortage and then said water rates would return to their regular schedule.
11. For the fifth violation, the person that committed the violation and the property owner shall be issued a shut-off letter warning

of termination of service and a possible reconnect fee.

12. For the sixth violation, service shall be shut-off, and the property owner shall be subject to a charge for reconnection.

10.4 Minimum Supply for Next Three Years

Section 10631 (e)(2) of the California Water Code requires that the City estimate the minimum water supply available at the end of the 12, 24, and 36 months, assuming the worst case water supply shortage.

Surface Water Supply

The City has two surface water supply entitlements: an appropriative water right established through Permit for Diversion and Water Use No. 18150, and the City's Contract with BuRec to acquire Central Valley Project (CVP) water. Combined, these two sources provide a total entitlement of 23,600 AFY.

Additional surface water is also supplied to the City by the North Delta Water Agency. For the portion of the City lying inside NDWA boundaries, there is no limit to the amount of water diverted.

Although the City's entitlements are subject to reductions, a water supply for the majority of the City is assured by NDWA.

Worst Case Supply Shortage

Based on historical curtailments to the City's supplies, it appears that the minimum supply volumes for 2006, 2007, and 2008 would be dictated by Scenario 3, as described in Section 6.3. This scenario entails a 100% reduction in the City's appropriative right between June 1 and October 31, and a 75% reduction in the City's BuRec contract during the same time period. The resulting supply available to the area of the City lying outside NDWA boundaries would therefore be equal to 3,449 AFY, which is in excess of the projected demands (2,700 AFY at buildout) for that area. It should again be noted that for the portion of the City lying within the NDWA boundary there is no minimum supply, due to the nature of the agreement between NDWA and DWR.

10.5 Catastrophic Supply Interruption Plan

Changes or interruptions in the City's surface water supplies could result from catastrophic circumstances in the Sacramento River or the City's water treatment facilities, including earthquakes, major fire emergencies, water outages due to loss of power, localized flooding, water contamination, and acts of sabotage. In response to these possibilities, the City has developed an Emergency/Disaster Response Plan, which includes appropriate personnel listings, resource inventories, locations for emergency operations centers, response procedures, and the steps necessary to resume normal operations. A copy of the plan is included in Appendix E.

10.6 Prohibitions, Consumption Reduction Methods, and Penalties

Section 10631 (e)(4) of the California Water Code requires that the City develop mandatory provisions to reduce water use, including prohibitions against specific wasteful practices, such as gutter flooding.

A draft “No Waste” Ordinance is included at the end of this chapter. The ordinance includes restrictions which would become effective immediately and restrictions which would only become effective during a declared “Water Shortage Emergency.”

10.6.1 Prohibitions and Consumption Reduction Methods

Table 10-1: Water Shortage Contingency Plan Conservation Measures

Water Shortage Stage	Conservation Measure/Prohibition
1	<ol style="list-style-type: none"> 1. Cease using water to wash sidewalks and driveways 2. Cease using water to wash streets and parking lots 3. Repair leaking pipes, fixtures, and sprinklers within five days of customer identification or receipt of notice from the City 4. Cease using water to wash down buildings or to cool building roofs 5. Only plant water efficient landscaping 6. Install water saving devices on showers, faucets, and hoses 7. Wash full loads in washing machines and dishwashers 8. Metered commercial/industrial customers are requested to reduce consumption by 15%

Table 10-1 (Continued)

Water Shortage Stage	Conservation Measure/Prohibition
2	<ol style="list-style-type: none"> 1. Use of water to wash sidewalks and driveways is prohibited 2. Use of water to wash streets and parking lots is prohibited 3. Repair leaking pipes, fixtures, and sprinklers within 72 hours of customer identification or receipt of notice from the City 4. Use of water to wash down building or to cool building roofs is prohibited 5. Planting of water efficient landscaping is required 6. Installation of water saving devices on showers, faucets, and hoses is requested 7. Washing full loads in washing machines and dishwashers is required 8. Watering of lawns or landscaping between noon and 6:00 p.m. is prohibited 9. Outdoor watering limited to an odd/even schedule. Customers with street addresses that end in an odd number may only irrigate on Tuesdays, Thursdays, and Saturdays. Customers with street addresses that end in an even number may only irrigate on Wednesdays, Fridays, and Sundays. No irrigation is permitted on Mondays. 10. Metered commercial/industrial users are required to reduce consumption by 30%

Table 10-1 (Continued)

Water Shortage Stage	Conservation Measure/Prohibition
3	<ol style="list-style-type: none"> 1. Use of water to wash sidewalks and driveways is prohibited 2. Use of water to wash streets and parking lots is prohibited 3. Repair leaking pipes, fixtures, and sprinklers within 72 hours of customer identification or receipt of notice from the City 4. Use of water to wash down building or to cool building roofs is prohibited 5. Planting of water efficient landscaping is required 6. Installation of water saving devices on showers, faucets, and hoses is requested 7. Washing full loads in washing machines and dishwashers is required 8. Watering of lawns or landscaping between noon and 6:00 p.m. is prohibited 9. Outdoor watering is limited to one day per week. Customers with street addresses that end in an odd number may only irrigate on Saturdays. Customers with street addresses that end in an even number may only irrigate on Sundays. No irrigation is permitted Monday through Friday. 10. Use of potable water to fill or refill swimming pools or artificial ponds or lakes is prohibited 11. Use of potable water in ornamental fountains and ponds is prohibited 12. Washing of automobiles or equipment shall be done on lawns or at an establishment which uses recycled water 13. Metered commercial/industrial users are required to reduce consumption by 40%

Table 10-1 (Continued)

Water Shortage Stage	Conservation Measure/Prohibition
4	<ol style="list-style-type: none"> 1. Use of water to wash sidewalks and driveways is prohibited 2. Use of water to wash streets and parking lots is prohibited 3. Repair leaking pipes, fixtures, and sprinklers within 72 hours of customer identification or receipt of notice from the City 4. Use of water to wash down building or to cool building roofs is prohibited 5. Planting of water efficient landscaping is required 6. Installation of water saving devices on showers, faucets, and hoses is requested 7. Washing full loads in washing machines and dishwashers is required 8. Outdoor watering is prohibited 9. Use of potable water to fill or refill swimming pools or artificial ponds or lakes is prohibited 10. Use of potable water in ornamental fountains and ponds is prohibited 11. Washing of automobiles or equipment shall be done on lawns or at an establishment that uses recycled water 12. Flushing of fire hydrants is prohibited except in case of an emergency or to assure proper operation 13. New connections to the City water supply system shall not be allowed 14. Metered commercial/industrial users are required to reduce consumption by 40%

10.6.2 Penalties

For a list of penalties for violations occurring in each action stage, consult section 10.3.

10.6.3 Consumption Limits

Section 10631 (e)(5) of the California Water Code requires that the City develop appropriate consumption limits that would apply in the most restrictive water shortage emergency. Examples of potential consumption limits included percentage reductions in water allotments, per capita allocations, an increasing block rate schedule for high usage of water, and restrictions on specific uses.

Residential Users and Unmetered Commercial/Industrial Uses

Since many of the City’s customers pay for water use based on a flat rate, consumption limits that would apply in the most restrictive stages of water shortage cannot be based on measured water use. Consequently, the proposed consumption limits for residential users are based on restrictions of a specific use, namely outdoor landscape irrigation.

Consumption limits applicable during each stage are listed below in Tables 10-2 and 10-3.

Table 10-2: Water Shortage Consumption Limits for Unmetered Users

Water Shortage Stage	Restriction in Outdoor Irrigation Schedule
1	No Restriction
2	Odd/Even Day Irrigation
3	One Day per Week Irrigation
4	Landscape Irrigation Prohibited

Table 10-3: Water Shortage Consumption Limits for Metered Users

Water Shortage Stage	Required Reductions in Consumption
1	15%
2	30%
3	40%
4	50%

10.7 Analysis of Revenue Impacts of Reduced Sales during Shortages

Section 10631 (e)(7) of the California Water Code requires that the Urban Water Shortage Contingency Plan include an analysis of impacts on the City’s revenues and expenditures and proposed measures to overcome deficits (e.g., development of a reserve account or special rate adjustments).

Based on an analysis of the dependability of the City’s existing water supply sources (surface water) and existing water rights, contracts, and agreements, the City does not anticipate a water supply shortage that would impact City revenues and expenditures significantly.

Therefore, establishment of a special reserve account or a special rate adjustment is not deemed appropriate at this time. However, in the event of a water shortage, the City shall monitor water revenues and expenses closely to assure that “water shortage” adjustments to water rates are not required. Additional costs would indeed be associated with increased monitoring during water shortage situations, namely due to an increase in the hours required to read water meters. The City anticipates that all meters within the City can be read within 5 days. If additional meter reading is required, is estimated that the maximum effort required (to re-read the entire City) would be 40 hours for one additional meter reader. The additional costs associated with this effort, however, are not expected to significantly impact City revenues and expenditures.

10.8 Draft Ordinance and Use Monitoring

Section 10631 (e)(7) of the California Water Code requires that the City develop a draft water shortage contingency resolution to carry out the Urban Water Shortage Contingency Plan.

10.8.1 Draft Water Shortage Contingency Ordinance (Enacted As Needed)

ORDINANCE NO. ____
AN ORDINANCE OF THE CITY COUNCIL
OF THE CITY OF WEST SACRAMENTO, CALIFORNIA,
AMENDING CHAPTER ____ OF THE WEST SACRAMENTO MUNICIPAL CODE
TO ADD SECTION ____ FOR WATER CONSERVATION IN
THE CITY OF WEST SACRAMENTO

The City Council of the City of West Sacramento does hereby resolve as follows:

The Municipal Code of the City of West Sacramento is hereby amended by adding a Section ____ to Chapter 13 to read as follows:

13.04. __ PROHIBITING WASTEFUL USE OF WATER

Regulations and Restrictions on Water Use

1. The following restrictions are effective immediately:
No Customer shall waste water. As used herein, the term “waste” means:
 - a. Using potable water to irrigate grass, lawns, ground-cover, shrubbery, crops, and trees in such manner as to result in runoff for more than five (5) minutes.
 - b. Allowing potable water to escape from breaks within the customer’s plumbing system for more than 3 days (72 hours) after customer has been notified or discovers the break.
 - c. Washing cars, boats, trailers, aircraft, or other vehicles by hose without a shutoff nozzle and bucket except at vehicle washing facilities using water recycling equipment.
 - d. All ornamental fountains and ponds shall be equipped with a recirculating pump.
2. The following restrictions are effective during a declared Water Shortage Emergency.
 - a. No restaurant, hotel, café, cafeteria or other public place where food is sold, served, or offered for sale, shall serve drinking water to any customer unless expressly requested.
 - b. Potable water shall not be used to clean, fill, or maintain decorative fountains, lakes, or ponds unless such water reclaimed.
 - c. Potable water shall not be used for construction, compaction, dust control, street or parking lot sweeping, or building washdown where non-potable or recycled water is available.
 - d. Potable water shall not be used for sewer system maintenance or fire protection training without prior approval by the City Manager.

ADOPTED this ____ day of _____, 20 ____.

Mayor of the City of West Sacramento

City Clerk of the City of West Sacramento

10.8.2 Mechanism for Determining Actual Reductions in Water Use

Section 10631 (e)(9) of the California Water Code requires that the Urban Water Shortage Contingency Plan include a mechanism for determining actual reductions in water use.

For metered accounts, reductions in water use for each user can be determined based on meter readings. For unmetered accounts and the Service Area as a whole, reductions in water use must be determined by measuring daily and monthly surface water production (at BBWTP).

Chapter 11 Adoption and Implementation of the UWMP

11.1 Provision of Water Supply Reliability Section to Service Area Customers

The City of West Sacramento does not supply water to cities or agencies other than its own customers. Therefore, the UWMP will not be distributed to other agencies except as described in Chapter 1.

11.2 Public Participation and Plan Adoption

The adoption resolution for the UWMP is found in Appendix A. The Draft UWMP was made available for public review between August 22 and September 7, 2005. Notices were placed in the City's local newspaper to encourage involvement from all social, cultural and economic groups. A public hearing was conducted for the Draft UWMP to allow public review and comment. Proof of the public hearing, as well as an overview of the comments received, is located in Appendix D.

11.3 Review of 2000 UWMP

The City has continued to implement the management programs discussed in the 2000 UWMP. The main management program specified in the 2000 UWMP was the installation of water meters. The City is currently installing meters.

11.4 Provision of 2005 UWMP to Local Government

Water Code Section 10644 requires that the City of West Sacramento provide a copy of this UWMP to all cities and counties within which the City provides water. Therefore, this UWMP will be sent to Water Resources Association of Yolo County as described in Section 1.4.

11.5 Public Review

This document was made available for public review as described in section 1.5.

Appendix A - Resolution for the Adoption of the UWMP

RESOLUTION 05-81
A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WEST SACRAMENTO
ADOPTING THE 2005 URBAN WATER MANAGEMENT PLAN

WHEREAS, the City of West Sacramento has prepared and made available to the public for review, and Urban Water Management Plan, dated September 2005, in compliance with the requirement contained in Part 2.6 of Division 6 of the Water Code of the State of California; and

WHEREAS, the aforementioned plan is entitled "City of West Sacramento 2005 Urban Water Management Plan"; and

WHEREAS, the City held a public hearing to receive comments from the public on the plan prior to adoption; and

WHEREAS, the City coordinated closely with the California Department of Water Resources and the United States Bureau of Reclamation on the completion of this document; and

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of West Sacramento approves the following:

1. The 2005 Urban Water Management Plan is hereby adopted; and
2. The Superintendent of Water Services is hereby authorized and directed to file this Plan with the California Department of Water Resources.

PASSED AND ADOPTED by the City Council of the City of West Sacramento on this 7th day of September 2005, by the following vote:

AYES: Beers, Kristoff, Pierson, Villegas, Cabaldon

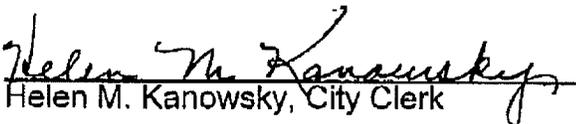
NOES: None

ABSENT: None



Christopher L. Cabaldon, Mayor

ATTEST:



Helen M. Kanowsky, City Clerk

Appendix B - Water Rights Permits, Contracts Agreements

Water Rights Permit #18150

STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

77 Cadillac Drive, Sacramento, CA 95825

(916) 920-6307

IN REPLY REFER
To: 333:DEM:25616

JANUARY 14 1981

East Yolo Community Services District
General Manager
P. O. Box 802
West Sacramento, CA 95691

APPLICATION 25616 PERMIT 18150

YOUR WATER RIGHT PERMIT IS ENCLOSED. THE BOARD REQUIRES THAT YOU SUBMIT ANNUAL REPORTS SHOWING THE PROGRESS YOU HAVE MADE IN THE CONSTRUCTION OF YOUR PROJECT OR, IF CONSTRUCTED, THE USE MADE UNDER YOUR PERMIT WHICH WOULD QUALIFY FOR LICENSING PURPOSES. WE WILL MAIL THE FORMS TO YOU WHEN THE REPORTS ARE DUE.

PLEASE NOTE THAT, WITH RESPECT TO OTHER RIGHTS ATTACHING TO THIS SOURCE, THE PRIORITY OF THIS RIGHT COMMENCES WITH THE DATE OF THE APPLICATION. THEREFORE, IN TIME OF WATER SHORTAGE, THOSE WITH RIGHTS SENIOR TO YOURS CAN TAKE THEIR WATER FIRST. ADDITIONAL LIMITATIONS ON THE DIVERSION OF WATER ARE SPECIFIED BY THE TERMS OF THIS PERMIT. YOU SHOULD READ THE TERMS AND CONDITIONS CAREFULLY SO THAT YOU ARE FAMILIAR WITH YOUR RESPONSIBILITIES AS AN APPROPRIATOR OF WATER UNDER THIS ENTITLEMENT.

AFTER THE PROJECT HAS BEEN COMPLETED, AN INSPECTION WILL BE MADE TO DETERMINE THE AMOUNT OF WATER WHICH HAS BEEN PLACED TO BENEFICIAL USE WITHIN THE TERMS OF THE PERMIT. A LICENSE WILL THEN BE ISSUED CONFIRMING A RIGHT TO THAT AMOUNT OF WATER.

PLEASE INFORM US OF ANY CHANGE IN ADDRESS OR OWNERSHIP.

A handwritten signature in cursive script, appearing to read "D. W. Sabiston".

D. W. SABISTON
PROGRAM MANAGER
HEARING SECTION

ENCLOSURE

STATE OF CALIFORNIA
 THE RESOURCES AGENCY
 STATE WATER RESOURCES CONTROL BOARD
 DIVISION OF WATER RIGHTS

PERMIT FOR DIVERSION AND USE OF WATER

PERMIT 18150

Application 25616 of EAST YOLO COMMUNITY SERVICES DISTRICT
19515 SOUTH RIVER ROAD, WEST SACRAMENTO, CALIFORNIA 95691

Filed on DECEMBER 22, 1977 119, has been approved by the State Water Resources Control Board SUBJECT TO VESTED RIGHTS and to the limitations and conditions of this Permit.

Permittee is hereby authorized to divert and use water as follows:

1. Source:	Tributary to:
<u>SACRAMENTO RIVER</u>	<u>SUISUN BAY</u>
_____	_____
_____	_____
_____	_____

2. Location of point of diversion:	40-acre subdivision of public land survey or projection thereof	Section	Township	Range	East and Meridian
ON THE WEST BANK OF THE SACRAMENTO RIVER ABOUT 250 FEET NORTH OF THE CENTER LINE OF THE PIONEER MEMORIAL BRIDGE	NW 1/4 OF NE 1/4	3	8N	4E	HO

County of YOLO

3. Purpose of use:	4. Place of use:	Section	Township	Range	East and Meridian	Acres
MUNICIPAL	EAST YOLO COMMUNITY SERVICES DISTRICT WITHIN PROJECTED SECTIONS 26 TO 35, 78N, R4E, AND SECTIONS 7 TO 10, 15 TO 18, 19 TO 22, AND 29 AND 30 18N, R4E, HOBLN.					

The place of use is shown on map filed with the State Water Resources Control Board.

5. THE WATER APPROPRIATED SHALL BE LIMITED TO THE QUANTITY WHICH CAN BE BENEFICIALLY USED AND SHALL NOT EXCEED 62 CUBIC FEET PER SECOND TO BE DIVERTED FROM JANUARY 1 TO JUNE 30 AND FROM SEPTEMBER 1 TO DECEMBER 31 OF EACH YEAR. THE MAXIMUM AMOUNT DIVERTED UNDER THIS PERMIT SHALL NOT EXCEED 18,350 ACRE-Feet PER YEAR.

6. THE AMOUNT AUTHORIZED FOR APPROPRIATION MAY BE REDUCED IN THE LICENSE IF INVESTIGATION WARRANTS.

7. CONSTRUCTION WORK SHALL BE COMMENCED WITHIN TWO YEARS FROM DATE OF PERMIT AND SHALL BE COMPLETED BY DECEMBER 1, 1995.

8. COMPLETE APPLICATION OF THE WATER TO THE AUTHORIZED USE SHALL BE MADE BY DECEMBER 1, 2000.

9. PROGRESS REPORTS SHALL BE SUBMITTED PROMPTLY BY PERMITTEE WHEN REQUESTED BY THE STATE WATER RESOURCES CONTROL BOARD UNTIL LICENSE IS ISSUED.

10. PERMITTEE SHALL ALLOW REPRESENTATIVES OF THE STATE WATER RESOURCES CONTROL BOARD AND OTHER PARTIES AS MAY BE AUTHORIZED FROM TIME TO TIME BY SAID BOARD, REASONABLE ACCESS TO PROJECT WORKS TO DETERMINE COMPLIANCE WITH THE TERMS OF THIS PERMIT.

11. PURSUANT TO CALIFORNIA WATER CODE SECTIONS 100 AND 275, ALL RIGHTS AND PRIVILEGES UNDER THIS PERMIT AND UNDER ANY LICENSE ISSUED PURSUANT THERETO, INCLUDING METHOD OF DIVERSION, METHOD OF USE, AND QUANTITY OF WATER DIVERTED, ARE SUBJECT TO THE CONTINUING AUTHORITY OF THE STATE WATER RESOURCES CONTROL BOARD IN ACCORDANCE WITH LAW AND IN THE INTEREST OF THE PUBLIC WELFARE TO PREVENT WASTE, UNREASONABLE USE, UNREASONABLE METHOD OF USE, OR UNREASONABLE METHOD OF DIVERSION OF SAID WATER.

THE CONTINUING AUTHORITY OF THE BOARD MAY BE EXERCISED BY IMPOSING SPECIFIC REQUIREMENTS OVER AND ABOVE THOSE CONTAINED IN THIS PERMIT WITH A VIEW TO MINIMIZING WASTE OF WATER AND TO MEETING THE REASONABLE WATER REQUIREMENTS OF PERMITTEE WITHOUT UNREASONABLE DRAFT ON THE SOURCE. PERMITTEE MAY BE REQUIRED TO IMPLEMENT SUCH PROGRAMS AS (1) REUSING OR RECLAIMING THE WATER ALLOCATED; (2) USING WATER RECLAIMED BY ANOTHER ENTITY INSTEAD OF ALL OR PART OF THE WATER ALLOCATED; (3) RESTRICTING DIVERSIONS SO AS TO ELIMINATE AGRICULTURAL TAILWATER OR TO REDUCE RETURN FLOW; (4) SUPPRESSING EVAPORATION LOSSES FROM WATER SURFACES; (5) CONTROLLING PHREATOPHYTIC GROWTH; AND (6) INSTALLING, MAINTAINING, AND OPERATING EFFICIENT WATER MEASURING DEVICES TO ASSURE COMPLIANCE WITH THE QUANTITY LIMITATIONS OF THIS PERMIT AND TO DETERMINE ACCURATELY WATER USE AS AGAINST REASONABLE WATER REQUIREMENTS FOR THE AUTHORIZED PROJECT. NO ACTION WILL BE TAKEN PURSUANT TO THIS PARAGRAPH UNLESS THE BOARD DETERMINES, AFTER NOTICE TO AFFECTED PARTIES AND OPPORTUNITY FOR HEARING, THAT SUCH SPECIFIC REQUIREMENTS ARE PHYSICALLY AND FINANCIALLY FEASIBLE AND ARE APPROPRIATE TO THE PARTICULAR SITUATION.

12. THE QUANTITY OF WATER DIVERTED UNDER THIS PERMIT AND UNDER ANY LICENSE ISSUED PURSUANT THERETO IS SUBJECT TO MODIFICATION BY THE STATE WATER RESOURCES CONTROL BOARD IF, AFTER NOTICE TO THE PERMITTEE AND AN OPPORTUNITY FOR HEARING, THE BOARD FINDS THAT SUCH MODIFICATION IS NECESSARY TO MEET WATER QUALITY OBJECTIVES IN WATER QUALITY CONTROL PLANS WHICH HAVE BEEN OR HEREAFTER MAY BE ESTABLISHED OR MODIFIED PURSUANT TO DIVISION 7 OF THE WATER CODE. NO ACTION WILL BE TAKEN PURSUANT TO THIS PARAGRAPH UNLESS THE BOARD FINDS THAT (1) ADEQUATE WASTE DISCHARGE REQUIREMENTS HAVE BEEN PRESCRIBED AND ARE IN EFFECT WITH RESPECT TO ALL WASTE DISCHARGES WHICH HAVE ANY SUBSTANTIAL EFFECT UPON WATER QUALITY IN THE AREA INVOLVED, AND (2) THE WATER QUALITY OBJECTIVES CANNOT BE ACHIEVED SOLELY THROUGH THE CONTROL OF WASTE DISCHARGES.

13. IN ACCORDANCE WITH SECTION 1603 AND/OR SECTION 6100 OF THE FISH AND GAME CODE, NO DIVERSION FACILITY SHALL BE CONSTRUCTED OR WATER DIVERTED UNDER THIS PERMIT UNTIL APPLICANT HAS CONSUMATED A STREAM OR LAKE ALTERATION AGREEMENT WITH THE DEPARTMENT OF FISH AND GAME AND/OR THE DEPARTMENT HAS DETERMINED THAT MEASURES NECESSARY TO PROTECT FISH LIFE HAVE BEEN INCORPORATED INTO THE PLANS AND CONSTRUCTION OF SUCH DIVERSION FACILITY. THE CONSTRUCTION, OPERATION, OR MAINTENANCE COSTS OF ANY FACILITY REQUIRED PURSUANT TO THIS PROVISION SHALL BE BORNE BY THE PERMITTEE.

14. THE STATE WATER RESOURCES CONTROL BOARD RESERVES JURISDICTION OVER THIS PERMIT TO CHANGE THE SEASON OF DIVERSION TO CONFORM TO THE RESULTS OF A COMPREHENSIVE ANALYSIS OF THE AVAILABILITY OF UNAPPROPRIATED WATER IN THE SACRAMENTO RIVER BASIN. ACTION TO CHANGE THE SEASON OF DIVERSION WILL BE TAKEN ONLY AFTER NOTICE TO INTERESTED PARTIES AND OPPORTUNITY FOR HEARING.

15. THIS PERMIT IS SUBJECT TO PRIOR RIGHTS. PERMITTEE IS PUT ON NOTICE THAT DURING SOME YEARS WATER WILL NOT BE AVAILABLE FOR DIVERSION DURING PORTIONS OR ALL OF THE SEASON AUTHORIZED HEREIN. THE ANNUAL VARIATIONS IN DEMANDS AND HYDROLOGIC CONDITIONS IN THE SACRAMENTO RIVER BASIN ARE SUCH THAT IN ANY YEAR OF WATER SCARCITY THE SEASON OF DIVERSION AUTHORIZED HEREIN MAY BE REDUCED OR COMPLETELY ELIMINATED ON ORDER OF THIS BOARD MADE AFTER NOTICE TO INTERESTED PARTIES AND OPPORTUNITY FOR HEARING.

16. NO DIVERSION IS AUTHORIZED BY THIS PERMIT WHEN SATISFACTION OF INBASIN ENTITLEMENTS REQUIRES RELEASE OF SUPPLEMENTAL PROJECT WATER. THE BOARD SHALL ADVISE PERMITTEE OF THE PROBABILITY OF IMMINENT CURTAILMENT OF DIVERSIONS AS FAR IN ADVANCE AS PRACTICABLE BASED ON ANTICIPATED REQUIREMENTS FOR SUPPLEMENTAL PROJECT WATER PROVIDED BY THE CENTRAL VALLEY PROJECT OR THE STATE WATER PROJECT OPERATORS. THE BOARD SHALL NOTIFY THE PERMITTEE OF CURTAILMENT OF DIVERSIONS WHEN IT FINDS THAT NO WATER IS AVAILABLE FOR DIVERSION UNDER THIS PERMIT.

FOR THE PURPOSE OF INITIALLY DETERMINING SUPPLEMENTAL PROJECT WATER REQUIRED FOR INBASIN ENTITLEMENTS, THE FOLLOWING DEFINITIONS SHALL APPLY:

- A. INBASIN ENTITLEMENTS ARE DEFINED AS ALL RIGHTS TO DIVERT WATER FROM STREAMS TRIBUTARY TO THE SACRAMENTO-SAN JOAQUIN DELTA OR THE DELTA FOR USE WITHIN THE RESPECTIVE BASINS OF ORIGIN OR THE LEGAL DELTA, UNAVOIDABLE NATURAL REQUIREMENTS FOR RIPARIAN HABITAT AND CONVEYANCE LOSSES, AND FLOWS REQUIRED BY THE BOARD FOR MAINTENANCE OF WATER QUALITY AND FISH AND WILDLIFE. EXPORT DIVERSIONS AND PROJECT CARRIAGE WATER ARE SPECIFICALLY EXCLUDED FROM THE DEFINITION OF INBASIN ENTITLEMENTS.
- B. SUPPLEMENTAL PROJECT WATER IS DEFINED AS WATER IMPORTED TO THE BASIN BY THE PROJECTS, AND WATER RELEASED FROM PROJECT STORAGE, WHICH IS IN EXCESS OF WATER REQUIRED FOR PROJECT EXPORT AND PROJECT INBASIN DELIVERIES.

NOTICE OF CURTAILMENT OF DIVERSION UNDER THIS TERM SHALL NOT BE ISSUED BY THE BOARD UNTIL:

1. PROJECT OPERATORS JOINTLY DEVELOP AND DEMONSTRATE TO THE BOARD A REASONABLY ACCURATE METHOD OF CALCULATING SUPPLEMENTAL PROJECT WATER.
 2. THE BOARD HAS APPROVED THE METHOD OF CALCULATING SUPPLEMENTAL PROJECT WATER AND HAS CONFIRMED THE DEFINITIONS OF INBASIN ENTITLEMENTS AND SUPPLEMENTAL PROJECT WATER AFTER PUBLIC HEARING.
 3. THE PROJECT OPERATORS HAVE NOTIFIED THE BOARD THAT THE RELEASE OF SUPPLEMENTAL PROJECT WATER IS IMMINENT OR HAS OCCURRED. SUCH NOTICE SHOULD INCLUDE THE TIMES AND AMOUNTS OF RELEASES OR POTENTIAL RELEASES.
 4. THE BOARD FINDS THAT SUPPLEMENTAL PROJECT WATER HAS BEEN RELEASED OR WILL BE RELEASED.
17. IN ORDER TO PREVENT DEGRADATION OF THE QUALITY OF WATER DURING AND AFTER CONSTRUCTION OF THE PROJECT, PRIOR TO COMMENCEMENT OF CONSTRUCTION PERMITTEE SHALL FILE A REPORT PURSUANT TO WATER CODE SECTION 13260 AND SHALL COMPLY WITH ANY WASTE DISCHARGE REQUIREMENTS IMPOSED BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, CENTRAL VALLEY REGION, OR BY THE STATE WATER RESOURCES CONTROL BOARD.
18. THE STATE WATER RESOURCES CONTROL BOARD RETAINS CONTINUING AUTHORITY OVER THIS PERMIT AND ANY LICENSE ISSUED PURSUANT THERETO TO REQUIRE PERMITTEE TO IMPLEMENT A WATER CONSERVATION PROGRAM TO ASSURE THAT WATER IS NOT BEING USED IN A WASTEFUL OR UNREASONABLE MANNER.
19. THE TOTAL QUANTITY OF WATER DIVERTED UNDER THIS PERMIT, TOGETHER WITH THAT DIVERTED UNDER CONTRACT WITH THE UNITED STATES SHALL NOT EXCEED 23,600 ACRE-FEET PER ANNUM.

This permit is issued and permittee takes it subject to the following provisions of the Water Code:

Section 13290. A permit shall be effective for such time as the water is lawfully appropriated under it to such use as would and beneficial purposes in conformity with the division (of the Water Code), but no longer.

Section 13291. Every permit shall include the enumeration of conditions therein which the licensee shall include all of the provisions of this article and the statement that any appropriation of water to whom a permit is issued is subject to the conditions therein approved.

Section 13292. Every permittee, if he accepts a permit, does so under the conditions precedent that no value whatsoever in terms of the actual amount paid by the State therefore shall at any time be subject to or claimed for any permit granted or issued under the provisions of this division (of the Water Code), or for any rights created or required under the provisions of this division (of the Water Code), in respect to the regulation by any municipal public authority of the waters or the price of the waters to be traded by any permittee or by the holder of any right created or required under the provisions of this division (of the Water Code) or in respect to any valuation for purposes of sale to or purchase, whether through coordination of the State, of the rights and property of any permittee, or the payment of any right created, issued, or required under the provisions of this division (of the Water Code).

Dated: JANUARY 14 1951

STATE WATER RESOURCES CONTROL BOARD

/s/ L. C. Spencer, *for*
 CHIEF, DIVISION OF WATER RIGHTS

ASSUMPTION OF CONTRACT AND CONSENT THERETO

CONTRACT BETWEEN THE UNITED STATES OF AMERICA AND EAST YOLO
COMMUNITY SERVICES DISTRICT, diverter of water from Sacramento River
sources, providing for Project water service and agreement on diversion of
water.

CONTRACT NO. 0-07-20-W0187

ASSUMPTION OF CONTRACT

CITY OF WEST SACRAMENTO hereby assumes Contract No. 0-07-20-W0187
and agrees to be bound by and perform all the terms and conditions of said
contract, dated July 1, 1980, a copy of which is attached hereto as Exhibit
"A" and incorporated herein by this reference.

CITY OF WEST SACRAMENTO

Dated: May 17, 1989

By *[Signature]*

CONSENT TO ASSUMPTION OF CONTRACT

THE UNITED STATES OF AMERICA hereby consents to the assumption by
the CITY OF WEST SACRAMENTO of Contract No. 0-07-20-W0187 between the
UNITED STATES and EAST YOLO COMMUNITY SERVICES DISTRICT.

THE UNITED STATES OF AMERICA

Dated: _____

By _____

DIWSACS

USBR Contract # 0-07-20-W0187

EXHIBIT A

UNITED STATES
DEPARTMENT OF THE INTERIOR
WATER AND POWER RESOURCES SERVICE
Central Valley Project, California

Contract No.
0-07-20-W0187

CONTRACT BETWEEN THE UNITED STATES OF AMERICA AND
EAST YOLO COMMUNITY SERVICES DISTRICT, DIVERTER OF WATER FROM
SACRAMENTO RIVER SOURCES, PROVIDING FOR PROJECT WATER
SERVICE AND AGREEMENT ON DIVERSION OF WATER

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UNITED STATES
DEPARTMENT OF THE INTERIOR
WATER AND POWER RESOURCES SERVICE
Central Valley Project, California

Contract No.
0-07-20-W0187

CONTRACT BETWEEN THE UNITED STATES OF AMERICA AND
EAST YOLO COMMUNITY SERVICES DISTRICT, DIVERTER OF WATER FROM
SACRAMENTO RIVER SOURCES, PROVIDING FOR PROJECT WATER
SERVICE AND AGREEMENT ON DIVERSION OF WATER

THIS CONTRACT, made this 15th day of July, 1980, in
pursuance generally of the Act of June 17, 1902 (32 Stat. 388), and
acts amendatory or supplementary thereto, between THE UNITED STATES OF
AMERICA, hereinafter referred to as the United States, acting through
the Secretary of the Interior, and the EAST YOLO COMMUNITY SERVICES
DISTRICT, hereinafter referred to as the District or Contractor, a
public agency of the State of California, duly organized, existing,
and acting pursuant to the laws thereof, with its principal place of
business in West Sacramento, California.

WITNESSETH, That:

EXPLANATORY RECITALS

WHEREAS, pursuant to authorizing acts, the United States has
under construction and is operating the Central Valley Project, California
for the development, conservation, and utilization of water resources
in California in the Sacramento, the American, the San Joaquin, and
the Trinity River Basins; and

Preamble
Explanatory Recitals

1 WHEREAS, the Contractor asserts that it will obtain rights
2 to divert, and will divert, for reasonable beneficial use, water from
3 the natural flow of the Sacramento River; and

4 WHEREAS, the construction and operation of the integrated
5 and coordinated Central Valley Project have changed and will further
6 change the regimen of the Sacramento, American, San Joaquin, and
7 Trinity Rivers and the Sacramento-San Joaquin Delta from unregulated
8 flow to regulated flow; and

9 WHEREAS, the United States asserts that it has rights to
10 divert, is diverting, and will continue to divert waters from said
11 Rivers and said Delta in connection with the operation of the said
12 Central Valley Project; and

13 WHEREAS, to assure the Contractor of the enjoyment and use
14 of the regulated flow of said Rivers and Delta, and to provide for
15 the economical operation of the Central Valley Project by, and the
16 reimbursement to, the United States for expenditures made for said
17 Project;

18 NOW, ~~THEREFORE~~, in consideration of the performance of the
19 herein contained provisions, conditions, and covenants, it is agreed
20 as follows:

21
22

1 (b) If at any time on the basis of studies conducted by
2 the Contracting Officer and the Contractor jointly it is determined
3 that the water needs of the Contractor for the remainder of the term
4 of this contract are for quantities greater or lesser than the maximum
5 quantity established in this article, the parties may amend this con-
6 tract so as to decrease, or to the extent that additional water is
7 available, as determined by the Contracting Officer, increase the
8 quantities of water to be furnished by the United States. It also
9 shall be the right of the Contractor to contract with other parties or
10 develop its own additional water supplies provided that the development
11 of such water supplies shall not involve the use of any facilities or
12 water rights of the United States without its permission.

13 (c) Water diverted by the Contractor under this contract
14 shall be used or furnished by the Contractor only for M&I purposes.

15 (d) No sale or other disposal of any water or the right to
16 the use thereof for use on land other than that shown on Exhibit A
17 shall be made by the Contractor without first obtaining the written
18 consent of the United States thereto.

19 (e) The Contractor shall develop and implement an effective
20 water conservation program for all water diverted under this contract.
21 That water conservation program shall contain definite goals, appropri-
22 ate water conservation measures, and time schedules for meeting the

1 water conservation objectives. While the contents and standards of
2 a given water conservation program are primarily matters of State
3 and local determination, there is a strong Federal interest in
4 developing an effective water conservation program because of this
5 contract.

6 (f) A water conservation program, acceptable to the Contract-
7 ing Officer, shall be in existence prior to diversion of water pursuant
8 to this contract. At 5-year intervals, thereafter, the Contractor shall
9 resubmit, and the Contracting Officer shall review the water conserva-
10 tion program. After consultation with the Contractor, the Contracting
11 Officer may require modifications to the water conservation program.

12 (g) The United States assumes no responsibility for and
13 neither it nor its officers, agents, or employees shall have any
14 liability for or on account of:

15 (1) The control, carriage, handling, use, disposal,
16 or distribution of said water outside the facilities constructed
17 and then being operated and maintained by the United States;

18 (2) Claims of damage of any nature whatsoever, in-
19 cluding, but not limited to, property loss or damage, personal
20 injury or death arising out of or connected with the control,
21 carriage, handling, use, disposal, or distribution of said water
22 outside of the hereinabove referred to facilities; and

1 (3) Any damage whether direct or indirect arising out
2 of or in any manner caused by a shortage of water whether such
3 shortage be on account of errors in operation, drought, or un-
4 avoidable causes.

5 QUALITY OF WATER

6 4. The United States assumes no responsibility with respect to
7 the quality of water to be furnished pursuant to this contract, it
8 being understood and agreed that the Contractor shall be solely
9 responsible for such treatment as may be required to render such
10 water suitable for the purposes for which it is to be used.

11 RETURN FLOW

12 5. The United States reserves the right to the use of all waste,
13 seepage, and return-flow water derived from Project water diverted
14 from the Sacramento River by the Contractor and which escapes or is
15 discharged beyond the boundaries of the area shown on Exhibit A and
16 nothing herein shall be construed as an abandonment or a relinquish-
17 ment by the United States of the right to use any such water.

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WATER SHORTAGE AND APPORTIONMENT

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2 6. (a) In its operation of the Project, the United States will
3 use all reasonable means to guard against a condition of shortage in
4 the quantity of water available to the Contractor pursuant to this
5 contract. Nevertheless, if a shortage does occur during any year
6 because of drought, or other causes which, in the opinion of the
7 Contracting Officer, are beyond the control of the United States, no
8 liability shall accrue against the United States or any of its officers,
9 agents, or employees for any damage, direct or indirect, arising therefrom.

10 (b) In any year that the Contracting Officer determines there
11 is a shortage in the quantity of water available to customers of the
12 United States from the Project, the Contracting Officer will apportion
13 available water among the water users by reducing deliveries to all
14 users by the same percentage, unless he is prohibited by existing
15 contract, Project authorizations, or he determines that some other
16 method of apportionment is required to prevent undue hardship.

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1 RATE OF PAYMENT AND QUANTITY OF WATER TO BE PAID FOR

2 7. (a) The Contractor shall make payments to the United States
3 each year at the rate of \$9.00 for each acre-foot of Project water
4 required to be paid for in accordance with subdivision (d) of this
5 article.

6 (b) The water rate shall be adjusted effective January 1,
7 1981, and every 5th year thereafter to account for changes in costs
8 (including operation, maintenance and replacement) for Project water
9 supply, as appropriate, in accordance with the then current M&I rate
10 setting policies of the Project.

11 (c) The Contracting Officer will make available to the
12 Contractor the computations, appropriate rate policy, and cost
13 allocation upon which any proposed rate adjustment is based and will
14 afford the Contractor not less than 3 months to study, to comment,
15 and the opportunity to consult on the proposed adjustment of rates,
16 the rate policies, or the cost allocation procedures before announcing
17 an adjustment of the rate. Final determination of an adjustment will
18 be announced by the Contracting Officer after consideration of the
19 Contractor's comments but not less than 6 months prior to the effective
20 date thereof.

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1 (d) The Contractor shall pay for the quantity of water
2 determined in accordance with the following:

3 (1) Twenty percent of all water diverted from the
4 Sacramento River during the month of June of each year;

5 (2) Eighty-eight percent of all water diverted from
6 the Sacramento River during the month of July each year; and

7 (3) One Hundred percent of the water diverted from the
8 Sacramento River during the months of August and September
9 of each year.

10 (e) Notwithstanding the provisions of subdivision (d)
11 of this article the Contractor shall have paid for, by October 31
12 of each year, the quantity of water shown on the following table
13 (years shown in the table refer to the year of execution of this
14 contract and the following years): Provided, That if the Contractor
15 is unable in any year to accept quantity sufficient to satisfy the
16 total minimum for that year, the amount of payments for water not used
17 may be applied to meet the payment for water taken in excess of the
18 minimum requirement in any of the subsequent 5 years but not thereafter:
19 Provided further, That payments for water received in excess of the
20 annual minimum may be used to satisfy minimum payments due during any
21 of the subsequent 5 years but not thereafter.

22

TABLE OF MINIMUM DELIVERIES

<u>Year</u>	<u>Acres-Feet</u>
1	105
2	215
3	320
4	430
5	535
6	640
7	750
8	855
9	965
10	1,070
11	6,300
12	6,450
13	6,610
14	6,770
15	6,910
16	7,060
17	7,210
18	7,360
19	7,500
20	7,630
21	7,750
22	7,870
23	8,000
24	8,120
25	8,230
26	8,330
27	8,440
28	8,540
29	8,650
30	8,760
31	8,860
32	8,970
33	9,080
34	9,180
35	9,270
36	9,350
37	9,430
38	9,510
39	9,590
40	9,680

1 (1) It shall constitute full agreement as between
2 the United States and the Contractor as to the quantity of
3 water and the allocation thereof between base supply and
4 Project water which may be diverted by the Contractor from
5 the Sacramento River for beneficial use within the area shown
6 on Exhibit A which said diversion, use, and allocation shall
7 not be disturbed so long as the Contractor shall fulfill all
8 of its obligations hereunder; and

9 (2) The Contractor shall not claim any right against
10 the United States in conflict with the provisions hereof.

11 (b) Nothing herein contained is intended to or does limit
12 rights of the Contractor against others than the United States or
13 of the United States against any person other than the Contractor:
14 Provided, however, That in the event the Contractor, the United
15 States, or any other person shall become a party to a general
16 adjudication of rights to the use of water of the Sacramento River
17 system, this contract shall not jeopardize the rights or position
18 of either party hereto or of any other person and the rights of all
19 such persons in respect to the use of such water shall be determined
20 in such proceedings the same as if this contract had not been entered
21 into, and if final judgment in any such general adjudication shall
22 determine that the rights of the parties hereto are different from

1 the rights as assumed herein, the United States shall submit to the
2 Contractor an amendment to give effect to such judgment and the
3 contract shall be deemed to have been amended accordingly unless
4 within 60 days after submission of such amendment to the Contractor
5 the Contractor elects to terminate the contract or within the same
6 period of time the parties agree upon mutually satisfactory amend-
7 ments to give effect to such judgment.

8 (c) In the event this contract terminates, the rights of
9 the parties to thereafter divert and use water shall exist as if
10 this contract had not been entered into. However, the fact that
11 this contract places a limit on the total supply to be diverted
12 annually by the Contractor during the contract term and segregates
13 it into base supply and Project water, shall not jeopardize the
14 rights or position of either party with respect to its water rights
15 or the yield thereof at all times after the contract terminates. It
16 is further agreed that the Contractor at all times will first use water
17 to the use of which it is entitled by virtue of its own water rights,
18 and neither the provisions of this contract, action taken thereunder, nor
19 payments made thereunder to the United States by the Contractor shall be
20 construed as an admission that any part of the water used by the Con-
21 tractor during the term of this contract was in fact water to which it
22 would not have been entitled under water rights owned by it nor shall

1 receipt of payments thereunder by the United States from the Con-
2 tractor be construed as an admission that any part of the water used
3 by the Contractor during the term of this contract was in fact water
4 to which it would have been entitled under water rights owned by it.

5 POINT OF DIVERSION AND MEASUREMENT OF WATER

6 10. (a) All water diverted by the Contractor from Sacramento
7 River will be diverted at such point or points as may, be mutually
8 agreed upon in writing by the Contracting Officer and the Contractor.

9 (b) All water diverted by the Contractor at the point or
10 points established pursuant to subdivision (a) of this article through
11 metering facilities installed and operated and maintained by the
12 Contractor at the Contractor's expense. Upon request of the Contracting
13 Officer the accuracy of such measurements may be investigated by either
14 of the parties and any errors appearing therein adjusted.

15 (c) A computation of the total quantity of water diverted
16 each month by the Contractor from the Sacramento River shall be
17 furnished by the Contractor to the Contracting Officer on or before
18 the 7th day of the following month or at other times upon the request
19 of the Contracting Officer.

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SCHEDULES

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2 11. (a) Before November 1 of each year, the Contractor shall
3 submit a schedule in writing to the Contracting Officer in a form and
4 from an operational standpoint satisfactory to the Contracting Officer
5 indicating the desired times and quantities for the delivery of water
6 pursuant to this contract during the following year. Within the
7 provisions hereof, the United States shall attempt to make said
8 water available in accordance with said schedule or any revision
9 thereof satisfactory to the Contracting Officer submitted by the
10 Contractor within a reasonable time before the desired change of
11 times or quantities, or both, for delivery.

12 (b) If in any year after the Contracting Officer has
13 approved a schedule or any revision thereof submitted by the Contractor
14 pursuant to subdivision (a) of this article, the United States is
15 unable to furnish any portion of the water in the quantities, and at
16 the times requested in the schedule and the Contractor does not
17 elect to divert and does not divert such water at other times
18 during such year, the Contractor shall be entitled to an adjustment
19 as provided in Article 8 hereof.

20 (c) If the Contractor during any month diverts a quantity
21 of water in addition to that which it has requested for such month
22 in its schedule, the Contractor shall be deemed to have revised its

1 schedule and ordered such additional water and the United States
2 shall be deemed to have accepted such revision as satisfactory.
3 As soon thereafter as possible the Contractor shall submit a revised
4 schedule to the United States for the remaining quantity to be
5 diverted during that year.

6 COMPLIANCE WITH RULES AND REGULATIONS

7 12. The Secretary may from time to time promulgate rules and
8 regulations to implement the reclamation laws. The Contractor agrees
9 to abide by such final rules and regulations lawfully adopted. This
10 contract is subject to all such lawful rules and regulations now or
11 hereafter in force when not inconsistent with any express and specific
12 provisions herein. Such rules and regulations are made a part of this
13 contract.

14 PENALTY FOR DELINQUENT PAYMENTS

15 13. The Contractor shall pay a penalty on installments or
16 charges which become delinquent computed at the rate of 1% per
17 month of the amount of such delinquent installments or charges
18 for each day from such delinquency until paid: Provided, That
19 no penalty shall be charged to the Contractor unless such delin-
20 quency continues for more than 30 days in which event the penalty
21 shall accrue from the initial date of delinquency.

1 ASSIGNMENT LIMITED--SUCCESSORS AND ASSIGNS OBLIGATED

2 14. The provisions of this contract shall apply to and bind the
3 successors and assigns of the parties hereto, but no assignment or
4 transfer of this contract or any part or interest therein shall be
5 valid until approved by the Contracting Officer.

6 OFFICIALS NOT TO BENEFIT

7 15. (a) No member of or delegate to Congress or resident
8 commissioner shall be admitted to any share or part of this contract
9 or to any benefit that may arise herefrom, but this restriction shall
10 not be construed to extend to this contract if made with a corporation
11 for its general benefit.

12 (b) No official of the Contractor shall receive any benefit
13 that may arise by reason of this contract other than as a water user
14 within the Project and in the same manner as other water users within
15 the Project.

16 CONTINGENT ON APPROPRIATION OR ALLOTMENT OF FUNDS

17 16. The expenditure or advance of any money or the performance
18 of any work by the United States hereunder which may require appropri-
19 ation of money by the Congress or the allotment of funds shall be
20 contingent upon such appropriation or allotment being made. The
21 failure of the Congress to appropriate funds or the absence of any
22 allotment of funds shall not relieve the Contractor from any obliga-
23 tions then accrued under this contract and no liability shall accrue
24 to the United States in case such funds are not appropriated or allotted.

25 BOOKS, RECORDS, AND REPORTS

26 17. The Contractor shall establish and maintain accounts and
27 other books and records pertaining to its financial transactions,
28 land use and crop census, water supply, water use, and to other
29 matters as the Contracting Officer may require for purposes of
30 this contract. Reports thereon shall be furnished to the Contracting
31 Officer in such form and on such date or dates as he may require.
31 Subject to applicable Federal laws and regulations, each party shall
32 have the right during office hours to examine and make copies of
33 each other's books and records relating to matters covered by this
34 contract.

EQUAL OPPORTUNITY

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18. During the performance of this contract, the Contractor agrees as follows:

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(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

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(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without discrimination because of race, color, religion, sex, or national origin.

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(3) The Contractor will send to each labor union or representative of workers, with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Contracting Officer, advising the said labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

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(4) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

1 (5) The Contractor will furnish all information and
2 reports required by said amended Executive Order and by
3 the rules, regulations, and orders of the Secretary of
4 Labor, or pursuant thereto, and will permit access to its
5 books, records, and accounts by the Contracting Officer
6 and the Secretary of Labor for purposes of investigation
7 to ascertain compliance with such rules, regulations, and
8 orders.

9 (6) In the event of the Contractor's noncompliance
10 with the nondiscrimination clauses of this contract or
11 with any of the said rules, regulations, or orders, this
12 contract may be canceled, terminated, or suspended, in
13 whole or in part, and the Contractor may be declared
14 ineligible for further Government contracts in accordance
15 with procedures authorized in said amended Executive Order,
16 and such other sanctions may be imposed and remedies invoked
17 as provided in said Executive Order, or by rule, regulation,
18 or order of the Secretary of Labor, or as otherwise provided
19 by law.

20 (7) The Contractor will include the provisions of para-
21 graphs (1) through (7) in every subcontract or purchase order
22 unless exempted by the rules, regulations, or orders of the
23 Secretary of Labor issued pursuant to Section 204 of said
24 amended Executive Order, so that such provisions will be
25 binding upon each subcontractor or vendor. The Contractor
26 will take such action with respect to any subcontract or
27 purchase order as may be directed by the Secretary of Labor
28 as a means of enforcing such provisions, including sanctions
29 for noncompliance: Provided, however, That in the event a
30 Contractor becomes involved in, or is threatened with,
31 litigation with a subcontractor or vendor as a result of
32 such direction, the Contractor may request the United States
33 to enter into such litigation to protect the interests of
34 the United States.

TITLE VI, CIVIL RIGHTS ACT OF 1964

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2 19. (a) The Contractor agrees that it will comply with Title VI
3 of the Civil Rights Act of July 2, 1964 (78 Stat. 241) and all require-
4 ments imposed by or pursuant to the Department of the Interior Regulation
5 (43 CFR 17) issued pursuant to that title, to the end that, in accordance
6 with Title VI of that Act and the Regulation, no person in the United
7 States shall, on the grounds of race, color, sex, or national origin
8 be excluded from participation in, be denied the benefits of, or be
9 otherwise subjected to discrimination under any program or activity
10 for which the Contractor receives financial assistance from the United
11 States and hereby gives assurance that it will immediately take any
12 measures to effectuate this agreement.

13 (b) If any real property or structure thereon is provided
14 or improved with the aid of Federal financial assistance extended to
15 the Contractor by the United States, this assurance obligates the Con-
16 tractor, or, in the case of any transfer of such property, any transferee
17 for the period during which the real property or structure is used for a
18 purpose involving the provision of similar services or benefits. If
19 any personal property is so provided, this assurance obligates the
20 Contractor for the period during which it retains ownership or possession
21 of the property. In all other cases, this assurance obligates the Con-
22 tractor for the period during which the Federal financial assistance
23 is extended to it by the United States.

24 (c) This assurance is given in consideration of and for
25 the purpose of obtaining any and all Federal grants, loans, contracts,
26 property, discounts, or other Federal financial assistance extended
27 after the date hereof to the Contractor by the United States, including
28 installment payments after such date on account of arrangements for
29 Federal financial assistance which were approved before such date.
30 The Contractor recognizes and agrees that such Federal financial
31 assistance will be extended in reliance on the representations and
32 agreements made in this assurance, and that the United States shall
33 reserve the right to seek judicial enforcement of this assurance.
34 This assurance is binding on the Contractor, its successors, trans-
35 ferees, and assignees.

WATER AND AIR POLLUTION CONTROL

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2 20. The Contractor, in carrying out this contract, shall comply
3 with all applicable water and air pollution laws and regulations of
4 the United States and the State of California and shall obtain all
5 required permits or licenses from the appropriate Federal, State, or
6 local authorities.

7 GENERAL OBLIGATION--BENEFITS CONDITIONED UPON PAYMENT

8 21. (a) The obligation of the Contractor to pay the United States
9 as provided in this contract is a general obligation of the Contractor
10 notwithstanding the manner in which the obligation may be distributed
11 among the Contractor's water users and notwithstanding the default of
12 individual water users in their obligations to the Contractor.

13 (b) The payment of charges becoming due hereunder is a
14 condition precedent to receiving benefits under this contract. No
15 water will be made available to the Contractor through Project facili-
16 ties during any period in which the Contractor may be in arrears in
17 the advance payment of any charges due the United States. The Con-
18 tractor shall not furnish water made available pursuant to this
19 contract for lands or parties which are in arrears more than 12
20 months in the advance payment of charges as levied or established.

21 NOTICES

22 22. Any notice, demand, or request authorized or required by
23 this contract shall be deemed to have been given, on behalf of the
24 Contractor, when mailed, postage prepaid, or delivered to the
25 Regional Director, Mid-Pacific Region, Water and Power Resources
26 Service, 2800 Cottage Way, Sacramento, California 95825, and on
27 behalf of the United States, when mailed, postage prepaid, or
28 delivered to the Board of Directors, of the East Yolo Community
29 Services District, Post Office Box 802, West Sacramento, California
30 95691. The designation of the addressee or the address may be
31 changed by notice given in the same manner as provided in this
32 article for other notices.

33 CONFIRMATION OF CONTRACT

34 23. The execution of this contract shall be authorized or ratified
35 by the qualified electors of the Contractor at an election held for that
36 purpose. The Contractor, after the election and upon the execution of
37 this contract, shall promptly secure a final decree of the proper court

1 of the State of California approving and confirming the contract and
2 decreeing and adjudging it and the apportionment of the benefits made
3 thereunder to be lawful, valid, and binding on the Contractor. The
4 Contractor shall furnish to the United States a certified copy of such
5 decrees and of all pertinent supporting records.

6 CHANGES IN CONTRACTOR'S SERVICE AREA

7 24. While this contract is in effect, no change shall be made
8 in the Contractor's service area by inclusion or exclusion of lands,
9 by dissolution, consolidation, merger, or otherwise except upon the
10 Contracting Officer's written consent in advance.

11 IN WITNESS WHEREOF, the parties hereto have executed this
12 contract the day and year first hereinabove written.

13 THE UNITED STATES OF AMERICA

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17 By M.A. Oatman
18 Acting Regional Director, Mid-Pacific Region
19 Water and Power Resources Service
20

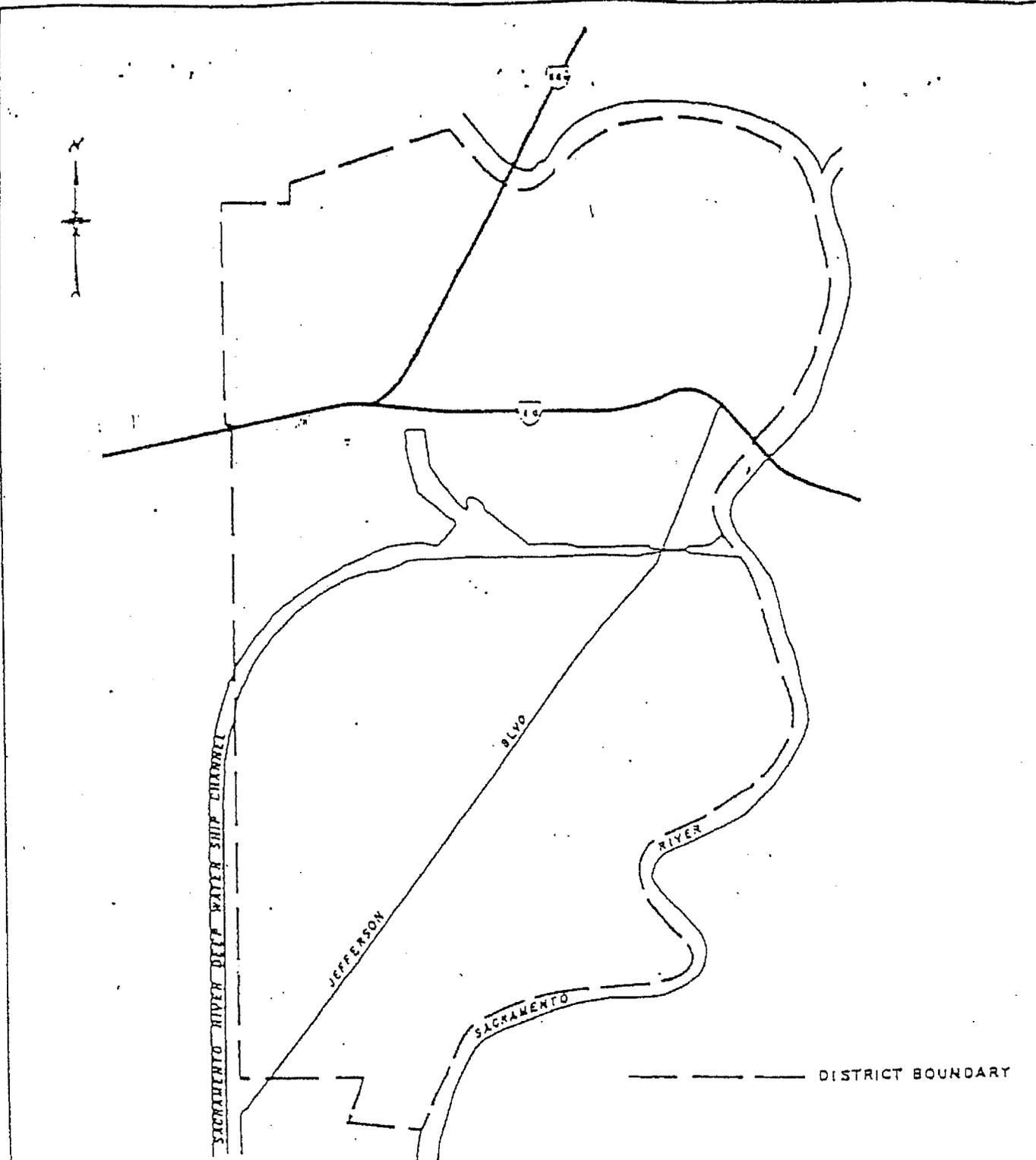
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22
23 EAST YOLO COMMUNITY SERVICES DISTRICT

24
25 (SEAL)

26
27 By Carl Anderson
28 President

29 Attest:

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32 Challen Bunn
Secretary



----- DISTRICT BOUNDARY

UNITED STATES
 DEPARTMENT OF THE INTERIOR
 WATER AND POWER RESOURCES SERVICE
 CENTRAL VALLEY PROJECT
 SACRAMENTO RIVER DIVISION - CALIF.
 EAST YOLO COMMUNITY SERVICE DISTRICT
 DISTRICT BOUNDARY
 EXHIBIT A

SEPT. 1979

214-208-6

RESOLUTION NO. 79- 40

1
2 OF THE BOARD OF DIRECTORS OF THE EAST
3 YOLO COMMUNITY SERVICES DISTRICT APPROVING
4 CONTRACT BETWEEN THE UNITED STATES OF AMERICA
5 AND THE EAST YOLO COMMUNITY SERVICES DISTRICT
6 FOR DIVERSION OF WATER AND AUTHORIZING EXE-
7 CUTION

8 WHEREAS, the East Yolo Community Services District has
9 negotiated a contract with the United States of America, Department
10 of Interior, Water and Power Resources Service, for a surface water
11 supply for the District and its inhabitants; and

12 WHEREAS, the United States Department of Interior has
13 forwarded the contract to the District for execution pursuant to a
14 cover letter dated December 7, 1979; and

15 WHEREAS, said contract has been approved by the voters of
16 this District, and by the Board of Directors, and appears to be in
17 appropriate form;

18 NOW, THEREFORE, BE IT RESOLVED by the Board of Directors
19 of the East Yolo Community Services District that the Contract
20 Between The United States of America and The East Yolo Community
21 Services District, Divorter of Water From Sacramento River Sources
22 Providing for Project Water Service and Agreement on Diversion of
23 Water REV.W.O. 7/18/79 is hereby approved by the Board of Director
24 of this District and the President and the Secretary of the Dis-
25 trict are hereby authorized and directed to execute same.

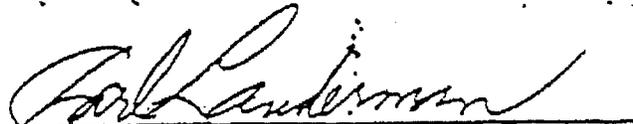
26 The foregoing resolution was duly passed at a regular
27 meeting of the Board of Directors of the East Yolo Community Ser-
28 vices District held on the 20th day of December, 1979 by the
following vote on roll call:

///

1 AYES: Kristoff, Misfeldt, Landerman, Collins, Cameron

2 NOES: NONE

3 ABSENT: NONE

4 
President, Board of Directors

5 ATTEST:

6 
7 David A. Breninger
8 Secretary, Board of Directors

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C E R T I F I C A T I O N

I, David A. Breninger, Secretary of the Board of Directors of the East Yolo Community Services District, certify that the foregoing Resolution No. 79- 40 is a true copy of the same resolution adopted by a meeting of the East Yolo Community Services District held on December 20, 1979 and the foregoing is in full force and effect on this date.

Dated: December 24, 1979



David A. Breninger
Secretary, Board of Directors
East Yolo Community
Services District

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United States Department of the Interior



BUREAU OF RECLAMATION
MID-PACIFIC REGIONAL OFFICE
2300 COTTAGE WAY
SACRAMENTO, CALIFORNIA 95825-1898

IN REPLY
REFER TO:

MP-440
832

APR 24 1989

Mr. Larry S. Gossett
Department of Public Works
City of West Sacramento
PO Box 449
West Sacramento CA 95691

Subject: Contract Assumption, Commencement of Diversions, and Critical Year Reductions, City of West Sacramento, Central Valley Project (Your Letters Dated August 30, 1988; December 30, 1988; and January 23, 1989) (Water Service)

Dear Mr. Gossett:

Thank you for enclosing a copy of Resolution No. 85-13 (Resolution), dated October 23, 1985, of the Yolo County Local Agency Formation Commission in your December 30, 1988, letter to the Bureau of Reclamation (Reclamation). This letter is also intended to facilitate the completion of the contract assumption, and to formally advise the City of West Sacramento (City) of the restoration of Central Valley Project (CVP) long-term water entitlements.

The Resolution provides, among other matters, for the dissolution of the East Yolo Community Services District (East Yolo) and assumption by the City of the functions of East Yolo. We are enclosing for signature by the proper official of the City a consent of assumption form. Execution of the consent form by the City, and thereafter by the Regional Director of Reclamation's Mid-Pacific Region, will formalize and complete the assumption of Contract No. 0-07-20-W0187 (Contract W0187) by the City.

Your August 30, 1988, letter states the City intends to initiate delivery of CVP water in 1989 pursuant to Contract W0187. Reclamation is pleased to be able to provide water service to the City. As a result of the initiation of diversions and pursuant to subdivision (d) of Article 7 of Contract W0187, the City must pay the United States for the following quantities of water:

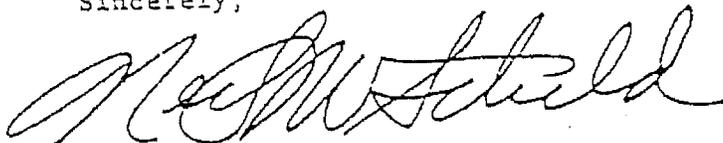
1. Twenty percent of all water diverted during the month of June of each year;
2. Eighty eight percent of all water diverted during the month of July of each year; and,
3. One hundred percent of all water diverted during the months of August and September of each year.

Commencement of diversions by the City will institute a change in the method of payments relative to those made in prior years. In accordance with the requirements of subdivision (a) of Article 8 of Contract W0187, the City is required to pay prior to June 1 of each year for all CVP water to be diverted during June and July. Before the end of June and July the City is required to pay for all CVP Project water scheduled to be diverted during the month thereafter. All such payments will include credit for water not used but previously paid for, if the City takes in excess of its minimum requirements in any of the subsequent 5 years as provided by subdivision (e) of Article 7.

On March 31, 1989, Reclamation announced full restoration of long-term CVP water entitlements. Due to heavy precipitation and snowfall in March 1989, the United States has withdrawn the scheduled imposition of water deficiencies upon CVP contractors.

We request the City to submit its future water schedules and other contract matter to Reclamation's Willows Office, PO Box 988, Willows, CA 95988-0988. Mr. Jaklitsch is available at the Willows Office to answer questions regarding your contract or other related matters. He may be contacted at (916) 934-7066.

Sincerely,



NEIL W. SCHILD
ASSISTANT REGIONAL DIRECTOR

Enclosure

MEETING DATE: May 17, 1989

ITEM #

SUBJECT:

CONSIDERATION OF RESOLUTION NO. 89-67
 APPROVING ASSUMPTION OF CONTRACT NO. 0-07-20-20187
 BETWEEN THE UNITED STATES OF AMERICA AND THE CITY OF WEST SACRAMENTO

 INITIATED OR
 REQUESTED BY: Council

 REPORT COORDINATED
 OR PREPARED BY:

 Staff Other


 Larry S. Gossett, Director of Public Works

 ATTACHMENT No INFORMATION DIRECTION ACTION
RECOMMENDED ACTION

IT IS RECOMMENDED that your Council adopt Resolution No. 89-67, approving the Assumption of Contract No. 0-07-20-W0187 between the United States of America and the City of West Sacramento.

REASON FOR RECOMMENDED ACTION

To formalize the assumption of the contract for Sacramento River Water diversion originally entered into between the US Bureau of Reclamation and East Yolo Community Services District.

BACKGROUND AND DISCUSSION

On July 1, 1980, East Yolo Community Services District Board of Directors entered into a contract with the U.S. Department of Interior, Bureau of Reclamation to divert Central Valley Project water from the Sacramento River for treatment in the Bryte Bend Water Treatment Plant. The contract provides for diversion of a maximum of 23,600 acre feet of water annually for 40 years at an initial rate of \$9.00 for each acre foot. This rate is to be adjusted every 5th year to account for changes in costs for project water.

The City of West Sacramento uses water provided by the State of California Department of Water Resources, at no cost, from 1 October thru 31 May each year. However, only Bureau of Reclamation Central Valley Project Water is available June thru September each year.

ATTACHMENTS

1. Resolution No. 89-67
2. Bureau Letter with Contract

RESOLUTION NO. 89-67
APPROVING ASSUMPTION OF CONTRACT NO. 0-07-20-W0187
BETWEEN THE UNITED STATES OF AMERICA AND THE CITY OF WEST SACRAMENTO
FOR DIVERSION OF WATER AND AUTHORIZING EXECUTION

WHEREAS, on July 1, 1980 the Board of Directors of the East Yolo Community Services District entered into Contract No. 0-07-20-W01987 with the United States of America, Department of the Interior which authorized the diversion of Central Valley Project water from Sacramento River sources for a surface water supply for the residents of West Sacramento and surrounding areas; and

WHEREAS, on January 1, 1987, the East Yolo Community Services District was dissolved by the incorporation of the City of West Sacramento ("City"); and

WHEREAS, the City is the successor to all rights, duties, and obligations of the dissolved District; and

WHEREAS, the United States Department of the Interior requires that City assume said contract by executing the Consent of Assumption attached hereto as Exhibit A and incorporated herein.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of West Sacramento hereby approved the assumption of Contract No. 0-07-20-W0187 and agrees to be bound by and perform all the terms and conditions of said contract dated July 1, 1980 and that the Mayor is hereby authorized to execute said contract on behalf of the City.

PASSED AND ADOPTED by the City Council of the City of West Sacramento at a regular meeting held on this 17th day of May, 1989 by the following vote on roll call:

AYES:
NOES:
ABSENT:

ATTEST:

Fidel A. Martinez, Mayor

Helen M. Kanowsky, Deputy City Clerk

**Contract Between the State of California Department of
Water Resources and North Delta Water Agency**

CONTRACT
BETWEEN
STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
AND
NORTH DELTA WATER AGENCY
FOR THE ASSURANCE
OF A DEPENDABLE WATER SUPPLY OF SUITABLE QUALITY

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**CONTRACT BETWEEN THE STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES
AND THE NORTH DELTA WATER AGENCY
FOR THE ASSURANCE OF A DEPENDABLE WATER SUPPLY OF SUITABLE QUALITY**

THIS CONTRACT, made this 23 day of Jan, 1981, between the STATE OF CALIFORNIA, acting by and through its DEPARTMENT OF WATER RESOURCES (State), and the NORTH DELTA WATER AGENCY (Agency), a political subdivision of the State of California, duly organized and existing pursuant to the laws thereof, with its principal place of business in Sacramento, California.

RECITALS

(a) The purpose of this contract is to assure that the State will maintain within the Agency a dependable water supply of adequate quantity and quality for agricultural uses and, consistent with the water quality standards of Attachment A, for municipal and industrial uses, that the State will recognize the right to the use of water for agricultural, municipal, and industrial uses within the Agency, and that the Agency will pay compensation for any reimbursable benefits allocated to water users within the Agency resulting from the Federal Central Valley Project and the State Water Project, and offset by any detriments caused thereby.

(b) The United States, acting through its Department of the Interior, has under construction and is operating the Federal Central Valley Project (FCVP).

(c) The State has under construction and is operating the State Water Project (SWP).

(d) The construction and operation of the FCVP and SWP at times have changed and will further change the regimen of rivers tributary to the Sacramento-San Joaquin Delta (Delta) and the regimen of the Delta channels from unregulated flow to regulated flow. This regulation at times improves the quality of water in the Delta and at times diminishes the quality from that which would exist in the absence of the FCVP and SWP. The regulation at times also alters the elevation of water in some Delta channels.

(e) Water problems within the Delta are unique within the State of California. As a result of the geographical location of the lands of the Delta and tidal influences, there is no physical shortage of water. Intrusion of saline ocean water and municipal, industrial and agricultural discharges and return flows, tend, however, to deteriorate the quality.

(f) The general welfare, as well as the rights and requirements of the water users in the Delta, require that there be maintained in the Delta an adequate supply of good quality water for agricultural, municipal and industrial uses.

(g) The law of the State of California requires protection of the areas within which water originates and the watersheds in which water is developed. The Delta is such an area and within such a watershed. Part 4.5 of Division 6 of the California Water Code affords a first priority to provision of salinity control and maintenance of an adequate water supply in the Delta for reasonable and beneficial uses of water and relegates to lesser priority all exports of water from the Delta to other areas for any purpose.

(h) The Agency asserts that water users within the Agency have the right to divert, are diverting, and will continue to divert, for reasonable beneficial use, water from the Delta that would have been available therein if the FCVP and SWP were not in existence, together with the right to enjoy or acquire such benefits to which the water users may be entitled as a result of the FCVP and SWP.

(i) Section 4.4 of the North Delta Water Agency Act, Chapter 83, Statutes of 1973, as amended, provides that the Agency has no authority or power to affect, bind, prejudice, impair, restrict, or limit vested water rights within the Agency.

(j) The State asserts that it has the right to divert, is diverting, and will continue to divert water from the Delta in connection with the operation of the SWP.

(k) Operation of SWP to provide the water quality and quantity described in this contract constitutes a reasonable and beneficial use of water.

(l) The Delta has an existing gradient or relationship in quality between the westerly portion most seriously affected by ocean salinity intrusion and the interior portions of the Delta where the effect of ocean salinity intrusion is diminished. The water quality criteria set forth in this contract establishes minimum water qualities at various monitoring locations. Although the water quality criteria at upstream locations is shown as equal in some periods of some years to the water quality at the downstream locations, a better quality will in fact exist at the upstream locations at almost all times. Similarly, a better water quality than that shown for any given monitoring location will also exist at interior points upstream from that location at almost all times.

(m) It is not the intention of the State to acquire by purchase or by proceeding in eminent domain or by any other manner the water rights of water users within the Agency, including rights acquired under this contract.

(n) The parties desire that the United States become an additional party to this contract.

AGREEMENTS

1. Definitions. When used herein, the term:

(a) "Agency" shall mean the North Delta Water Agency and shall include all of the lands within the boundaries at the time the contract is executed as described in Section 9.1 of the North Delta Water Agency Act, Chapter 283, Statutes of 1973, as amended.

(b) "Calendar year" shall mean the period January 1 through December 31.

(c) "Delta" shall mean the Sacramento-San Joaquin Delta as defined in Section 12220 of the California Water Code as of the date of the execution of the contract.

(d) "Electrical Conductivity" (EC) shall mean the electrical conductivity of a water sample measured in millimhos per centimeter per square centimeter corrected to a standard temperature of 25° Celsius determined in accordance with procedures set forth in the publication entitled "Standard Methods of Examination of Water and Waste Water", published jointly by the American Public Health Association, the American Water Works Association, and the Water Pollution Control Federation, 13th Edition, 1971, including such revisions thereof as may be made subsequent to the date of this contract which are approved in writing by the State and the Agency.

(e) "Federal Central Valley Project" (FCVP) shall mean the Central Valley Project of the United States.

(f) "Four-River Basin Index" shall mean the most current forecast of Sacramento Valley unimpaired runoff as presently published in the California Department of Water Resources Bulletin 120 for the sum of the flows of the following: Sacramento River above Bend Bridge near Red Bluff; Feather River, total inflow to Oroville Reservoir; Yuba River at Smartville; American River, total inflow to Folsom Reservoir. The May 1 forecast shall continue in effect until the February 1 forecast of the next succeeding year.

(g) "State Water Project" (SWP) shall mean the State Water Resources Development System as defined in Section 12931 of the Water Code of the State of California.

(h) "SWRCB" shall mean the State Water Resources Control Board.

(i) "Water Quality Criteria" shall mean the water quality criteria set forth in this contract.

through September 30 of the following year.

2. Water Quality.

(a) (i) The State will operate the SWP to provide water qualities at least equal to the better of: (1) the standards adopted by the SWRCB as they may be established from time to time; or (2) the criteria established in this contract as identified on the graphs included as Attachment A.

(ii) The 14-day running average of the mean daily EC at the identified location shall not exceed the values determined from the Attachment A graphs using the Four-River Basin Index except for the period February through March of each year at the location on the Sacramento River at Emmaton for which the lower value of the 80 percent probability range shall be used.

(iii) The quality criteria described herein shall be met at all times except for a transition period beginning one week before and extending one week after the date of change in periods as shown on the graphs of Attachment A. During this transition period, the SWP will be operated to provide as uniform a transition as possible over the two-week period from one set of criteria to the next so as to arrive at the new criteria one week after the date of change in period as shown on the graphs of Attachment A.

(b) While not committed affirmatively to achieving a better water quality at interior points upstream from Emmaton than those set forth on Attachment A, the State agrees not to alter the Delta hydraulics in such manner as to cause a measurable adverse change in the ocean salinity gradient or relationship among the various monitoring locations shown on Attachment B and interior points upstream from those locations, with any particular flow past Emmaton.

(c) Whenever the recorded 14-day running average of mean daily EC of water in the Sacramento River at Sacramento exceeds 25 mmhos, the quality criteria indicated on the graphs of Attachment A may be adjusted by adding to the value taken therefrom the product of 1.5 times the amount that the recorded EC of the Sacramento River at Sacramento exceeds 0.25 mmhos.

3. Monitoring. The quality of water shall be measured by the State as needed to monitor performance pursuant to Article 2 thereof with equipment installed, operated, and maintained by the State, at locations indicated on "Attachment B". Records of such measurements shall at regular intervals be furnished to the Agency. All monitoring costs at North Fork Mokelumne River near Walnut Grove, Sacramento River at Walnut Grove, and Steamboat Slough at Sutter Slough incurred by the State solely for this contract shall be shared equally by the Agency and the State. All monitoring costs to be borne by the Agency for monitoring at the above locations are included in the payment under Article 10.

4. Emergency Provisions.

(a) If a structural emergency occurs such as a levee failure or failure of an SWP facility, which results in the State's failure to meet the water quality criteria, the State shall not be in breach of its contract if it makes all reasonable efforts to operate SWP facilities so that the water quality criteria will be met again as soon as possible. For any period in which SWP failure results in failure of the State to meet the water quality criteria, the State shall waive payment under Article 10, prorated for that period, and the amount shall be deducted from the next payment due.

(b) (i) A drought emergency shall exist when all of the following occur:

(1) The Four-River Basin Index is less than an average of 9,000,000 acre feet in two consecutive years (which occurred in 1933-4 and 1976-7); and

(2) An SWRCB emergency regulation is in effect providing for the operation of the SWP to maintain water quality different from that provided in this contract; and

SWP agricultural contractors in the San Joaquin Valley is being reduced by at least 50 percent of these agricultural entitlements (it being the objective of the SWP to avoid agricultural deficiencies in excess of 25 percent) or the total of water supplied to meet annual entitlements of all SWP contractors is being reduced by at least 15 percent of all entitlements, whichever results in the greater reduction in acre feet delivered.

(ii) A drought emergency shall terminate if any of the conditions in (b) (i) of this Article ceases to exist or if the flow past Sacramento after October 1 exceeds 20,000 cubic feet per second each day for a period of 30 days.

(iii) Notwithstanding the provisions of Article 2 (a), when a drought emergency exists, the emergency water quality criteria of the SWRCB shall supersede the water quality requirements of this contract to the extent of any inconsistency; provided, however, that the State shall use all reasonable efforts to preserve Delta water quality, taking into consideration both the limited water supply available for that purpose and recognizing the priority established for Delta protection referred to in Recital (g).

(iv) When a drought emergency exists, and an overland supply is not available to an individual water user comparable in quality and quantity to the water which would have been available to the user under Attachment A, the State shall compensate the user for loss of net income for each acre either (A) planted to a more salt-tolerant crop in the current year, (B) not planted to any crop in the current year provided such determination not to plant was reasonable based on the drought emergency, or (C) which had a reduced yield due to the drought emergency, calculated on the basis of the user's average net income for any three of the prior five years for each such acre. A special contract claims procedure shall be established by the State to expedite and facilitate the payment of such compensation.

5. Overland Water Supply Facilities.

(a) Within the general objectives of protecting the western Delta areas against the destruction of agricultural productivity as a result of the increased salinity of waters in the Delta channels resulting in part from SWP operation, the State may provide diversion and overland facilities to supply and distribute water to Sherman Island as described in the report entitled "Overland Agricultural Water Facilities Sherman Island" dated January 1980. Final design and operating specifications shall be subject to approval of the Agency and Reclamation District No. 341. The Agency or its transferee will assume full ownership, operation, and maintenance responsibility for such facilities after successful operation as specified. After the facilities are constructed and operating, the water quality criteria for the Sacramento River at Emmaton shall apply at the intake of the facilities in Three Mile Slough.

(b) The State and the Agency may agree to the construction and operation of additional overland water supply facilities within the Agency, so long as each landowner served by the overland facilities receives a quality of water not less than that specified in Attachment A for the upstream location nearest to his original point of diversion. The design and operation of such facilities and the cost sharing thereof are subject to approval of any reclamation district which includes within its boundaries the area to be served. The ownership, operation, and maintenance of diversion works and overland facilities shall be the subject of a separate agreement between the Agency or its transferees and the State.

6. Flow Impact. The State shall not convey SWP water so as to cause a decrease or increase in the natural flow, or reversal of the natural flow direction, or to cause the water surface elevation in Delta channels to be altered, to the detriment of Delta channels or water users within the Agency. If lands, levees, embankments, or revetments adjacent to Delta channels within the Agency incur

fied as a result of altered water surface elevations as a result of the conveyance of water from the SWP to lands outside the Agency after the date of this contract, the State shall repair or alleviate the damage, shall improve the channels as necessary, and shall be responsible for all diversion facility modifications required.

7. Place of Use of Water.

(a) Any subcontract entered into pursuant to Article 18 shall provide that water diverted under this contract for use within the Agency shall not be used or otherwise disposed of outside the boundaries of the Agency by the subcontractor.

(b) Any subcontract shall provide that all return flow water from water diverted within the Agency under this contract shall be returned to the Delta channels. Subject to the provisions of this contract concerning the quality and quantity of water to be made available to water users within the Agency, and to any reuse or recapture by water users within the Agency, the subcontractor relinquishes any right to such return flow, and as to any portion thereof which may be attributable to the SWP, the subcontractor recognizes that the State has not abandoned such water.

(c) If water is attempted to be used or otherwise disposed of outside the boundaries of the Agency so that the State's rights to return flow are interfered with, the State may seek appropriate administrative or judicial action against such use or disposal.

(d) This article shall not relieve any water user of the responsibility to meet discharge regulations legally imposed.

8. Scope of Contract.

(a) During the term of this contract:

(i) This contract shall constitute the full and sole agreement between the State and the Agency as to (1) the quality of water which shall be in the Delta channels, and (2) the payment for the assurance given that water of such quality shall be in the Delta channels for reasonable and beneficial uses on lands within the Agency, and said diversions and uses shall not be disturbed or challenged by the State so long as this contract is in full force and effect.

(ii) The State recognizes the right of the water users of the Agency to divert from the Delta channels for reasonable and beneficial uses for agricultural, municipal and industrial purposes on lands within the Agency, and said diversions and uses shall not be disturbed or challenged by the State so long as this contract is in full force and effect, and the State shall furnish such water as may be required within the Agency to the extent not otherwise available under the water rights of water users.

(iii) The Agency shall not claim any right against the State in conflict with the provisions hereof so long as this contract remains in full force and effect.

(b) Nothing herein contained is intended to or does limit rights of the Agency against others than the State, or the State against any person other than the Agency and water users within the Agency.

(c) This contract shall not affect, bind, prejudice, impair, restrict, or limit vested water rights within the Agency.

(d) The Agency agrees to defend affirmatively as reasonable and beneficial the water qualities established in this contract. The State agrees to defend affirmatively as reasonable and beneficial the use of water required to provide and sustain the qualities established in this contract. The State agrees that such use should be examined only after determination by a court of competent jurisdiction that all uses of water exported from the Delta by the State and by the United States, for agricultural, municipal, and industrial purposes are reasonable and beneficial, and that irrigation practices, conservation efforts, and groundwater management within areas served by such exported water should be examined in particular.

the Delta so long as this contract remains in full force and effect and the State is in compliance herewith.

9. Term of Contract.

(a) This contract shall continue in full force and effect until such time as it may be terminated by the written consent and agreement of the parties hereto, provided that 40 years after execution of this contract and every 40 years thereafter, there shall be a six-month period of adjustment during which any party to this contract can negotiate with the other parties to revise the contract as to the provisions set out in Article 10. If, during this period, agreement as to a requested revision cannot be achieved, the parties shall petition a court of competent jurisdiction to resolve the issue as to the appropriate payment to be made under Article 10. In revising Article 10, the court shall review water quality and supply conditions within the Agency under operation of the FCVP and SWP, and identify any reimbursable benefits allocated to water users within the Agency resulting from operation of the FCVP and SWP, offset by any detriments caused thereby. Until such time as any revision is final, including appeal from any ruling of the court, the contract shall remain in effect as without such revision.

(b) In the event this contract terminates, the parties' water rights to quality and quantity shall exist as if this contract had not been entered into.

10. Amount and Method of Payment for Water.

(a) The Agency shall pay each year as consideration for the assurance that an adequate water supply and the specific water quality set forth in this contract will be maintained and monitored, the sum of one hundred seventy thousand dollars (\$170,000.00). The annual payments shall be made to the State one-half on or before January 1 and one-half on or before July 1 of each year commencing with January 1, 1982.

(b) The payment established in (a) above shall be subject to adjustment as of January 1, 1987, and every fifth year thereafter. The adjusted payment shall bear the same relation to the payment specified in (a) above that the mean of the State's latest projected Delta Water Rate for the five years beginning with the year of adjustment bears to \$10.00 per acre foot; provided that, no adjusted payment shall exceed the previous payment by more than 25 percent.

(c) The payments provided for in this article shall be deposited by the State in trust in the California Water Resources Development System Revenue Account in the California Water Resources Development Bond Fund. The trust shall continue for five years (or such longer period as the State may determine) but shall be terminated when the United States executes a contract as provided in Article 11 with the State and the Agency at which time the proportion of the trust fund that reflects the degree to which the operation of the FCVP has contributed to meeting the water quality standard under this contract as determined solely by the State shall be paid to the United States (with a pro rata share of interest). In the event that the United States has not entered into such a contract before the termination of the trust, the trust fund shall become the sole property of the State.

11. Participation of the United States. The Agency will exercise its best efforts to secure United States joinder and concurrence with the terms of this contract and the State will diligently attempt to obtain the joinder and concurrence of the United States with the terms of this contract and its participation as a party hereto. Such concurrence and participation by the United States in this contract shall include a recognition ratified by the Congress that the excess land provisions of Federal reclamation law shall not apply to this contract.

12. Remedies.

formance of the provisions of this contract by a decree of the Superior Court in Sacramento County requiring the State to meet the standards set forth in this contract. If the water quality in Delta channels falls below that provided in this contract, then, at the request of the Agency, the State shall cease all diversions to storage in SWP reservoirs or release stored water from SWP reservoirs or cease all export by the SWP from Delta channels, or any combination of these, to the extent that such action will further State compliance with the water quality standards set forth in this contract, except that the State may continue to export from Delta channels to the extent required to meet water quality requirements in contracts with the Delta agencies specified in Section 11456 of the California Water code.

(b) To the extent permitted by law, the State agrees to forego the use of eminent domain proceedings to acquire water rights of water users within the Agency or any rights acquired under this contract for water or water quality maintenance for the purpose of exporting such water from the Delta. This provision shall not be construed to prohibit the utilization of eminent domain proceedings for the purpose of acquiring land or any other rights necessary for the construction of water facilities.

(c) Except as provided in the water quality assurances in Article 2 and the provisions of Article 6 and Article 8, neither the State nor its officers, agents, or employees shall be liable for or on account of:

(i) The control, carriage, handling, use, disposal, or distribution of any water outside the facilities constructed, operated and maintained by the State.

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

(d) The use by the Agency or the State of any remedy specified herein for the enforcement of this contract is not exclusive and shall not deprive either from using any other remedy provided by law.

13. Comparable Treatment. In the event that the State gives on the whole substantially more favorable treatment to any other Delta entity under similar circumstances than that accorded under this contract to the Agency, the State agrees to renegotiate this contract to provide comparable treatment to the Agency under this contract.

GENERAL PROVISIONS

14. Amendments. This contract may be amended or terminated at any time by mutual agreement of the State and the Agency.

15. Reservation With Respect to State Laws. Nothing herein contained shall be construed as estopping or otherwise preventing the Agency, or any person, firm, association, corporation, or public body claiming by, through, or under the Agency, from contesting by litigation or other lawful means, the validity, constitutionality, construction or application of any law of the State of California.

16. Opinions and Determinations. Where the terms of this contract provide for action to be based upon the opinion, judgment, approval, review, or determination of either party hereto, such terms are not intended to be and shall never be construed as permitting such opinion, judgment, approval, review, or determination to be arbitrary, capricious, or unreasonable.

17. Successors and Assigns Obligated. This contract and all of its provisions shall apply to and bind the successors and assigns of the parties hereto.

18. Assignment and Subcontract. The Agency may enter into subcontracts with water users within the Agency boundaries in which the assurances and obligations provided in this contract as

to such water user or users are assigned to the area covered by the subcontract. The Agency shall remain primarily liable and shall make all payments required under this contract. No assignment or transfer of this contract, or any part hereof, rights hereunder, or interest herein by the Agency, other than a subcontract containing the same terms and conditions, shall be valid unless and until it is approved by the State and made subject to such reasonable terms and conditions as the State may impose. No assignment or transfer of this contract or any part hereof, rights hereunder, or interest herein by the State shall be valid except as such assignment or transfer is made pursuant to and in conformity with applicable law.

19. Books, Records, Reports, and Inspections Thereof. Subject to applicable State laws and regulations, the Agency shall have full and free access at all reasonable times to the SWP account books and official records of the State insofar as the same pertain to the matters and things provided for in this contract, with the right at any time during office hours to make copies thereof, and the proper representatives of the State shall have similar rights with respect to the account books and records of the Agency.

20. Waiver of Rights. Any waiver at any time by either party hereto of its rights with respect to a default, or any other matter arising in connection with this contract, shall not be deemed to be a waiver with respect to any other default or matter.

21. Assurance Relating to Validity of Contract. This contract shall be effective after its execution by the Agency and the State. Promptly after the execution and delivery of this contract, the Agency shall file and prosecute to a final decree, including any appeal therefrom to the highest court of the State of California, in a court of competent jurisdiction a special proceeding for the judicial examination, approval, and confirmation of the proceedings of the Agency's Board of Directors and of the Agency leading up to and including the making of this contract and the validity of the provisions thereof as a binding and enforceable obligation upon the State and the Agency. If, in this proceeding or other proceeding before a court of competent jurisdiction, any portion of this contract should be determined to be constitutionally invalid, then the remaining portions of this contract shall remain in full force and effect unless modified by mutual consent of the parties.

22. Notices. All notices that are required either expressly or by implication to be given by one party to the other shall be deemed to have been given if delivered personally or if enclosed in a properly addressed, postage prepaid, envelope and deposited in a United States Post Office. Unless or until formally notified otherwise, the Agency shall address all notices to the State as follows:

Director, Department of Water Resources
P.O. Box 388

Sacramento, California 95802

and the State shall address all notices to the Agency as follows:

North Delta Water Agency
921 1/2 11th St., Rm. 703
Sacramento, California 95814

IN WITNESS WHEREOF, the parties hereto have executed this contract on the date first above written.

Approved as to legal form and sufficiency: STATE OF CALIFORNIA

By /s/ P. A. TOWNER
Chief Counsel
Dept. of Water Resources

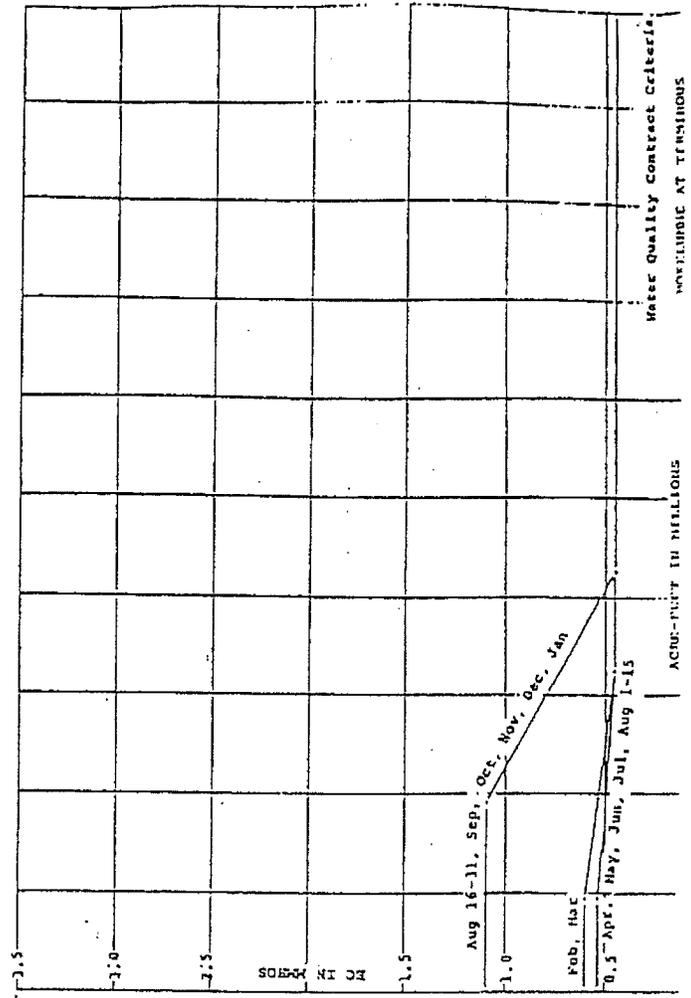
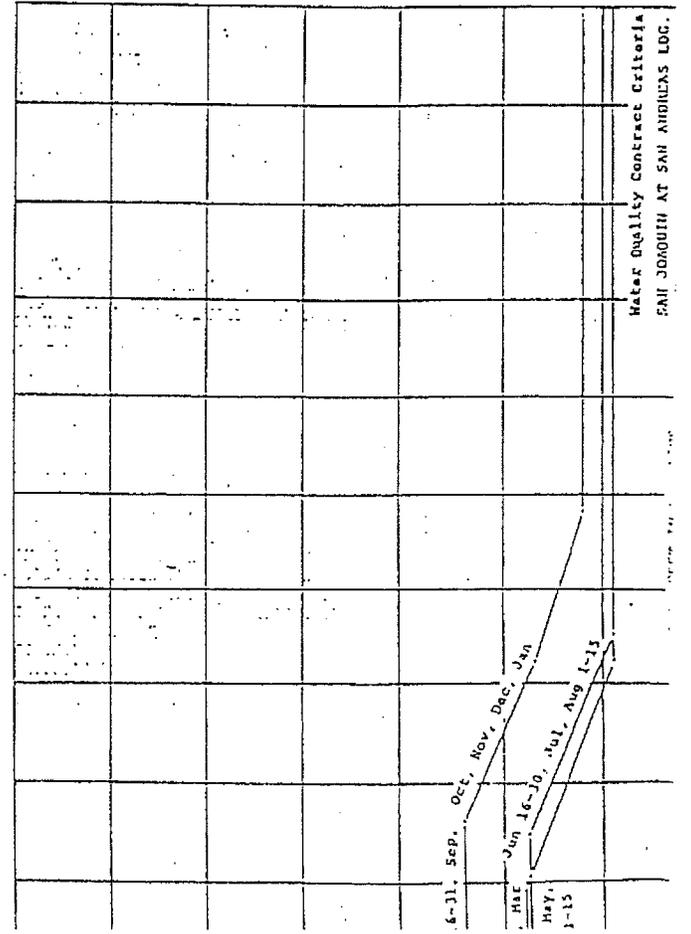
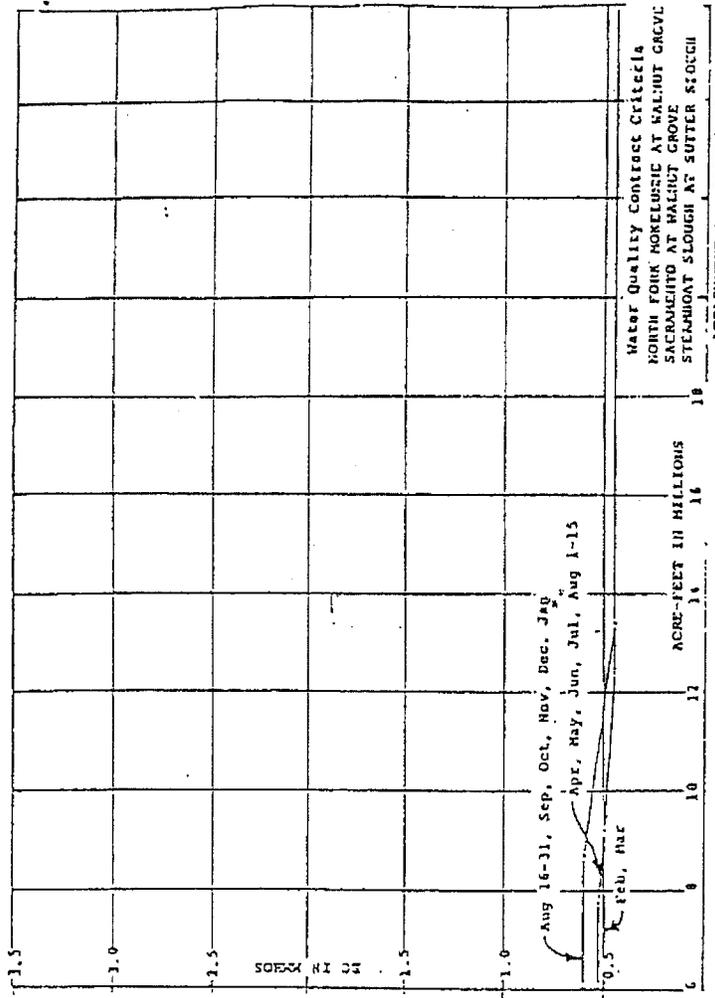
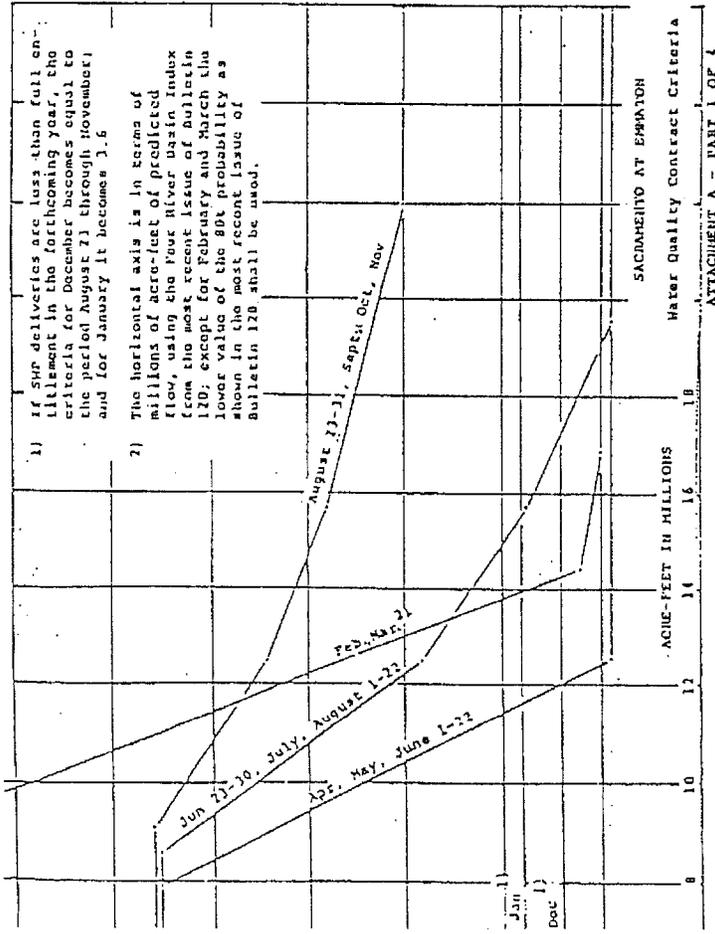
By /s/ RONALD B. ROBBIE
Dept. of Water Resources

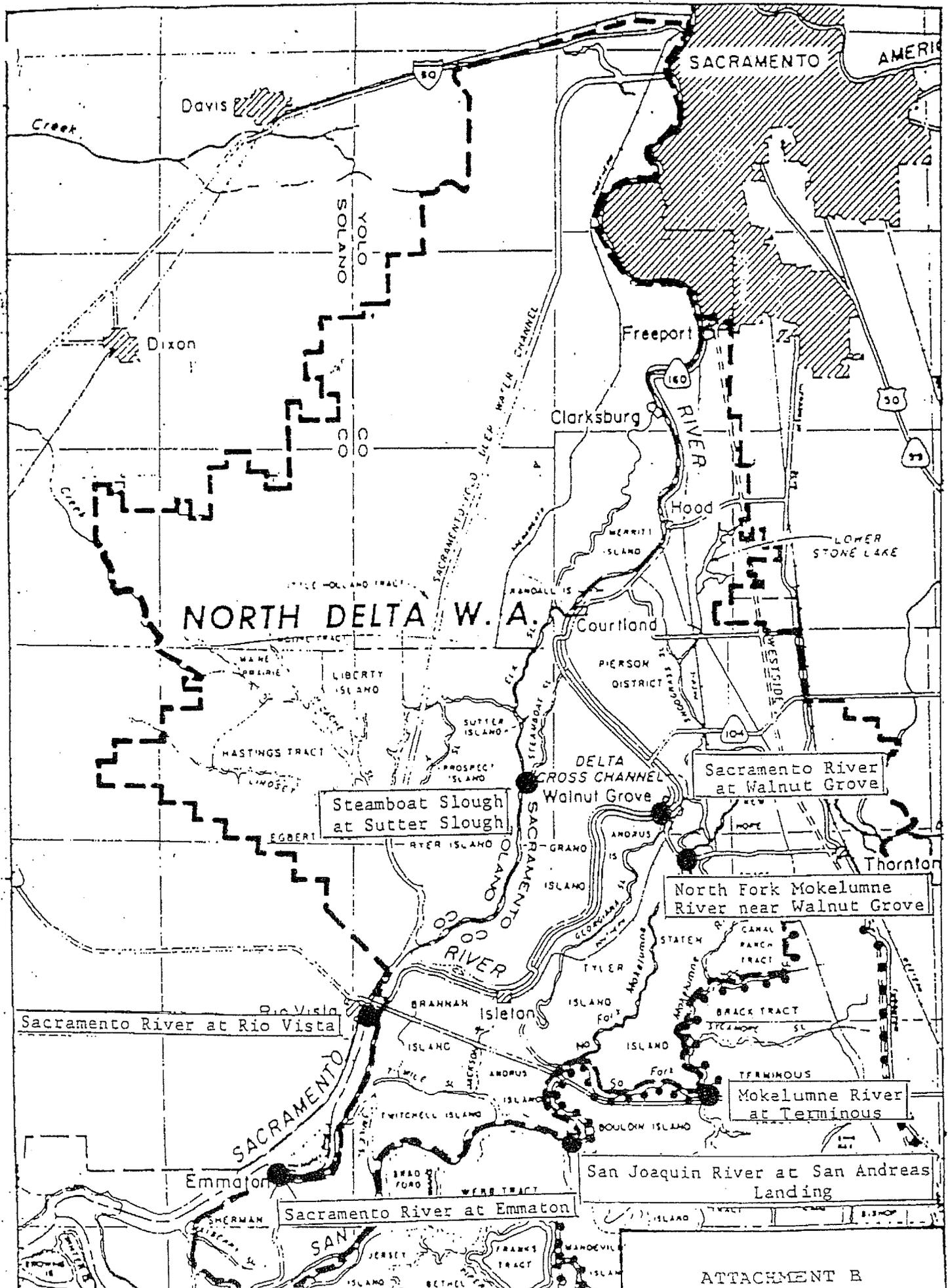
Approved as to legal form and sufficiency:

NORTH DELTA WATER AGENCY

By /s/ GEORGE BASTY
General Counsel
North Delta Water Agency

By /s/ W. R. DARSIE
Chairman
Board of Directors





Steamboat Slough at Sutter Slough

Sacramento River at Walnut Grove

North Fork Mokelumne River near Walnut Grove

Mokelumne River at Terminous

San Joaquin River at San Andreas Landing

Sacramento River at Emmaton

Sacramento River at Rio Vista

AGREEMENT

WHEREAS, The State of California, through its Department of Water Resources (DWR), and the North Delta Water Agency entered into a Contract for the Assurance of a Dependable Water Supply of Suitable Quality on January 28, 1981 under which, inter alia, the State agreed to operate the State Water Project to provide water qualities at least equal to the better of (1) standards adopted by the State Water Resources Control Board, or (2) criteria identified on the graphs included as Attachment A;

WHEREAS, Article 5 of the 1981 Contract permits a shift of Attachment A water quality criteria for the Sacramento River at Emmaton to a location on Three Mile Slough upon completion of an overland facility to supply and distribute water to Sherman Island;

WHEREAS, with the concurrence of landowners on Sherman Island and NDWA, DWR commenced a program of land acquisition on Sherman Island in lieu of building the overland facility described in Article 5;

WHEREAS, DWR presented plans to Reclamation District 341 for an overland facility to service lands remaining in private ownership and R.D. 341 approved the plans;

WHEREAS, DWR presented the same plans to NDWA; but prior to NDWA reaching a decision to approve or disapprove the plans, DWR

reached agreement in principle with the remaining landowners to purchase their lands on Sherman Island, making an overland facility unnecessary;

WHEREAS, DWR and NDWA wish to amend the 1981 Contract to change the monitoring station at Emmaton to Three Mile Slough for the reason that DWR is pursuing its land acquisition program in lieu of the overland facility;

WHEREAS, the parties disagree on whether DWR should pay assessments on land it owns within NDWA's jurisdiction, and wish to resolve the issue herein;

IT IS HEREBY AGREED:

The State of California acting by and through its Department of Water Resources, hereinafter "State," and the North Delta Water Agency, hereinafter "NDWA," agree to amend the 1981 Contract Between State of California Department of Water Resources and North Delta Water Agency for the Assurance of a Dependable Water Supply of Suitable Quality ("the 1981 Contract") as follows:

1. Subject to the terms and conditions set forth in this agreement, NDWA approves the State's plans for acquisition of agricultural lands on Sherman Island and agrees that such acquisition is in lieu of the overland facility described in Article 5 of the 1981 Contract.

2. NDWA agrees that the water quality criteria for the Sacramento River at Emmaton shall apply at the monitoring station at Three Mile Slough, as shown on Exhibit A, attached hereto and incorporated herein by reference.

3. State agrees that NDWA's approval in paragraph 1 is contingent, and paragraph 2 shall only be effective, upon State's acquiring fee title to, or a water quality easement or similar waiver on, those agricultural lands on Sherman Island which are specified in the draft report entitled "Overland Agricultural Facilities Sherman Island" dated January 1980. The parties agree that the 1981 Contract imposes no obligation relating to the quality of water for domestic uses on Sherman Island.

4. State agrees to hold harmless from all costs, defend and indemnify NDWA for any claim or action brought by any person or entity based on this agreement, including any claim or action based on the change in water quality criteria for the Sacramento River under the 1981 Contract.

5. State agrees to reimburse NDWA for engineering costs paid for review of the plans for the overland facility, based on invoices received for work performed between May 12, 1995 and July 3, 1996, inclusive.

6. State agrees that NDWA may permanently reduce its annual payments due under Article 10 of the 1981 Contract by a percentage equal to the percentage of acreage of land owned or

hereafter acquired by the Department of Water Resources within NDWA's jurisdiction compared to all lands within NDWA's jurisdiction. NDWA agrees not to assess or assert any right to assess DWR-owned lands. In all other respects, payment obligations imposed by the 1981 Contract shall remain the same.

7. The term of this agreement is concurrent with that of the 1981 Contract.

8. This agreement shall be effective immediately after it is both signed by DWR and approved by the NDWA Board of Directors. NDWA agrees to deliver to DWR a copy of the resolution authorizing NDWA to enter into this agreement.

9. NDWA shall promptly notice a hearing on this amendment pursuant to California Water Code Appendix section 115-7.8 and hold a hearing pursuant to Water Code Appendix section 155-7.6. If a substantial written protest is received, NDWA shall promptly hold an election on this amendment pursuant to Water Code appendix section 115-7.6. If an election is held and the majority of the votes cast do not approve this amendment, the term of the agreement (as defined in paragraph 8), shall be changed to a one-year term as an interim agreement pursuant to Water Code Appendix section 115-7.1, and all other terms of this agreement shall remain valid for the one-year interim period.

10. Promptly after the execution and delivery of this contract, NDWA shall file and prosecute to a final decree,

including any appeal therefrom to the highest court of the State of California, in a court of competent jurisdiction a special proceeding for the judicial examination, approval, and confirmation of the proceedings of the NDWA Board of Directors and of NDWA leading up to and including the making of this contract and the validity of the provisions thereof as a binding and enforceable obligation upon the State and the NDWA. If, in this proceeding or other proceeding before a court of competent jurisdiction, any portion of this contract should be determined to be invalid, then the remaining portions of this contract shall remain in full force and effect unless modified by mutual consent of the parties.

NORTH DELTA WATER AGENCY


W.R. Darsie, Chairman
Board of Directors

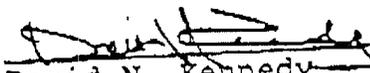
Dated: 12-24-96

Approved as to legal form and sufficiency:


Steve Saxton
Attorney for North Delta
Water Agency

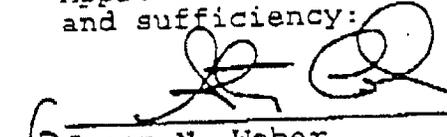
Dated: 12/27/96

STATE OF CALIFORNIA,
DEPARTMENT OF WATER RESOURCES


David N. Kennedy
Director

Dated: 1-21-97

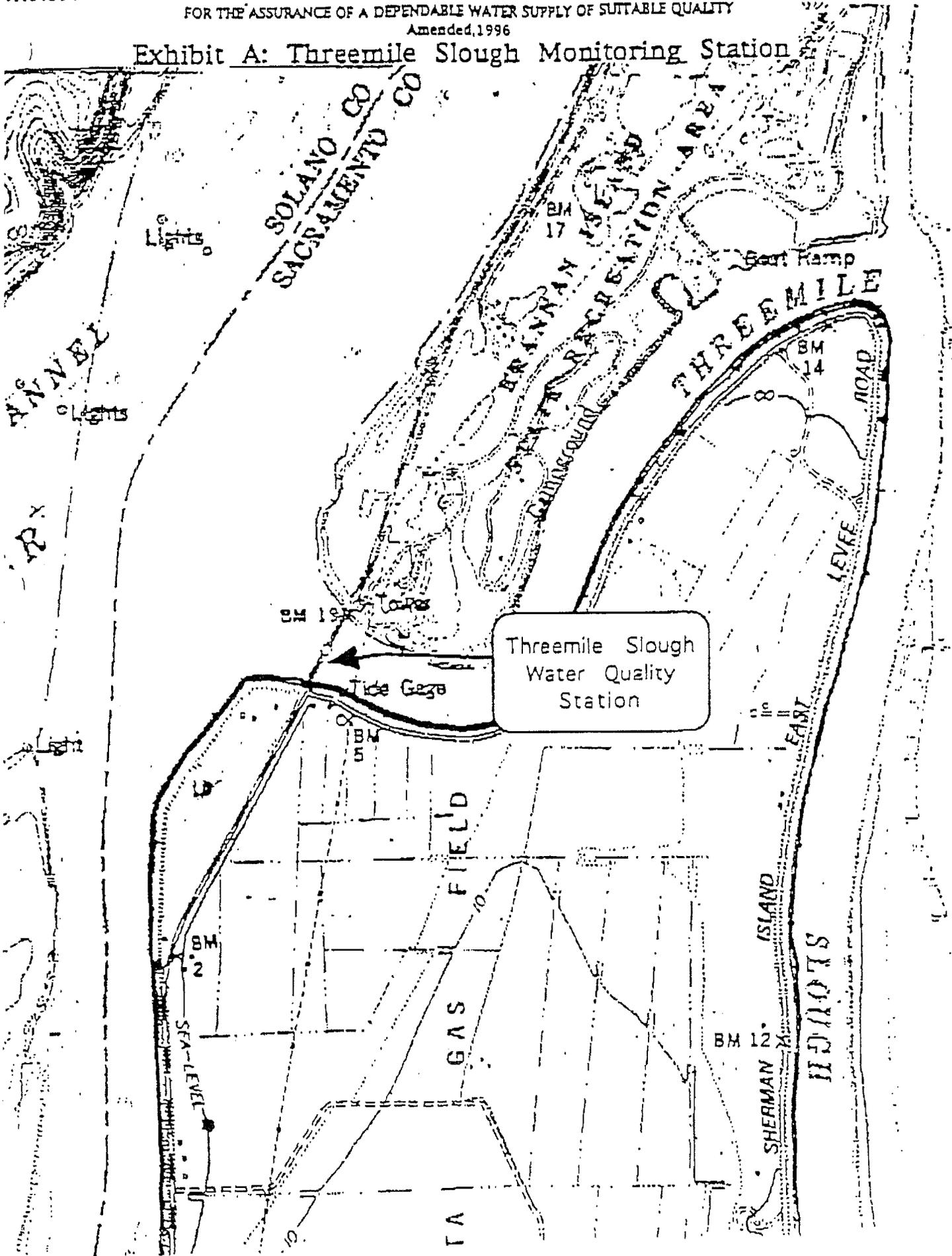
Approved as to legal form and sufficiency:


Susan N. Weber
Chief Counsel

Dated: 1/17/97

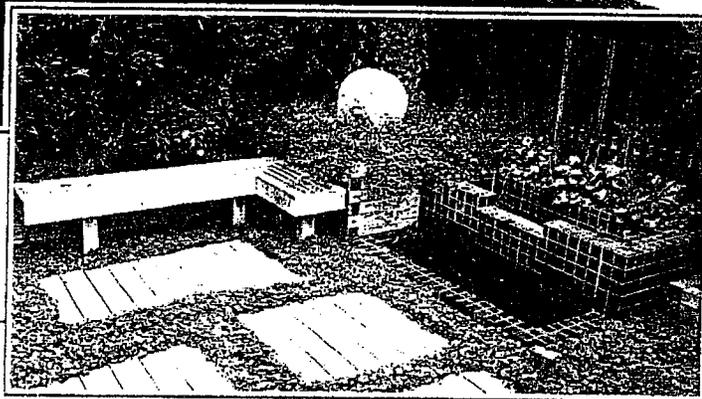
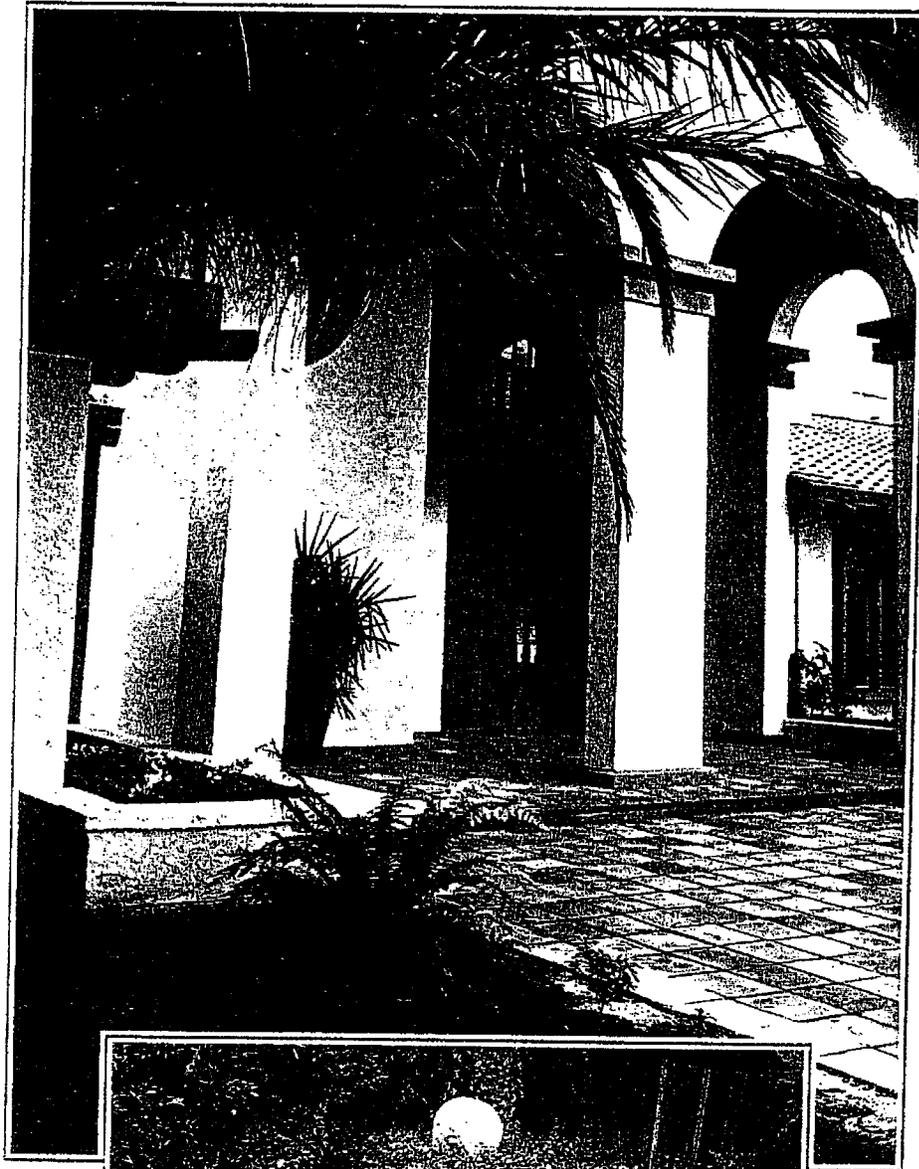
Amended, 1996

Exhibit A: Threemile Slough Monitoring Station



Appendix C - Water Conservation and Education Literature

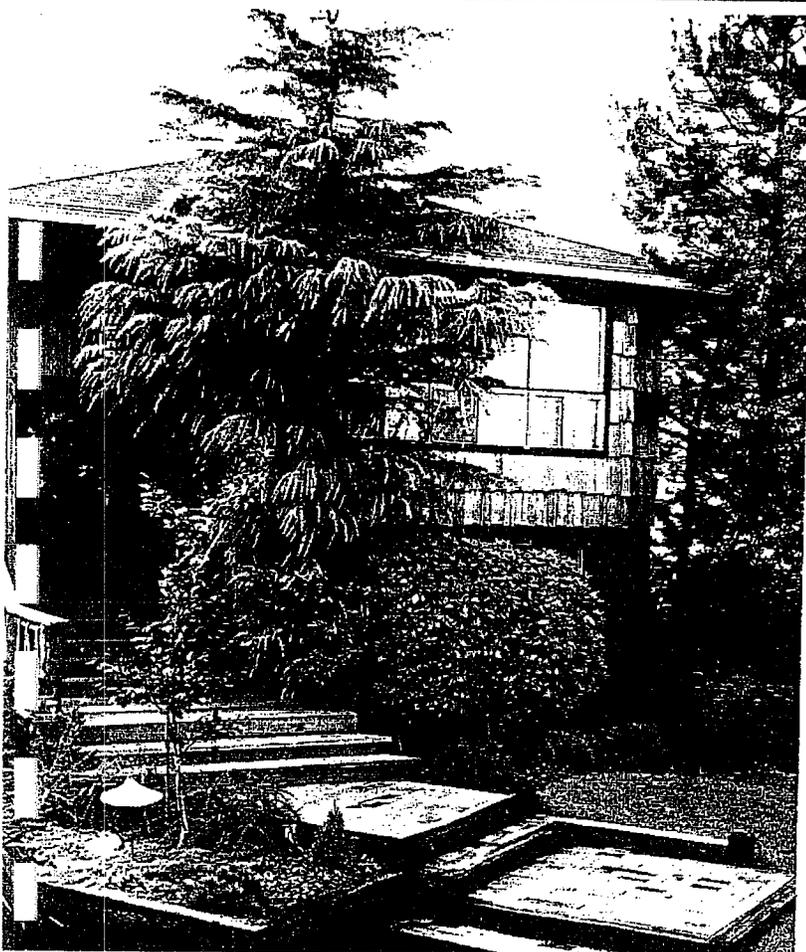
LANDSCAPE DESIGN II



RE-DO YOUR LANDSCAPE
THE EASY AND EFFICIENT WAY

LANDSCAPE DESIGN

EASY & EFFICIENT





- Don't wash exteriors of dwellings, boats, vehicles, driveways - without the use of quick-acting shutoff nozzles.
- Don't overwater - allowing excess runoff when watering grass or garden.
- Don't allow leaks to go unrepaired.
- Violations could result in increases to your water bill.
- Other _____

PLEASE HELP US CONSERVE.

Thank You For Your Cooperation

CITY OF WEST SACRAMENTO
PUBLIC WORKS DEPARTMENT



LEAKS: WHERE TO LOOK HOW TO REPAIR

1. HOSE, LAWN AND UTILITY FAUCETS; SHOWER AND SPRINKLER HEADS. Check closely for pinhole leaks. Replace old fittings if needed.
2. HOT WATER HEATERS. Check seams for moisture and rusting. Look under heater for leaks in the core.

HOW TO FIX A LEAKY FAUCET. A leaky faucet can waste as much as 50 gallons of water a day! An inexpensive washer is usually all you need to fix it. To replace a worn washer, use a crescent wrench and have an assortment of different-sized washers on hand. Turn off the water at the shut-off valve below the faucet. Remove the handle by removing the large handle screw. Then loosen the packing nut. Lift out the spindle and inspect the washer. If worn or damaged, replace it. If the leak continues up through the stem, remove the handle and cap nut. Look for a defective "O" ring. Replace if necessary.

HOW TO FIX A LEAKY TOILET. Most toilet leaks are at the plunger ball (put a few drops of food coloring in your toilet tank, if the color appears in the bowl without flushing, you have a leak). If it's at the overflow, the water level may be too high and the mechanism may only need adjusting. *GENTLY* bend the float arm down so the valve shuts off the water about a half-inch below the top of the overflow pipe.

If this is not the case and you have a leaky plunger-ball, the entire ball may need replacing. This too, is a relatively simple repair for a do-it-yourselfer and instructions can usually be obtained from any good household do-it-yourself book.

06.85BRW

TIPS FOR WATER CONSERVATION AT HOME

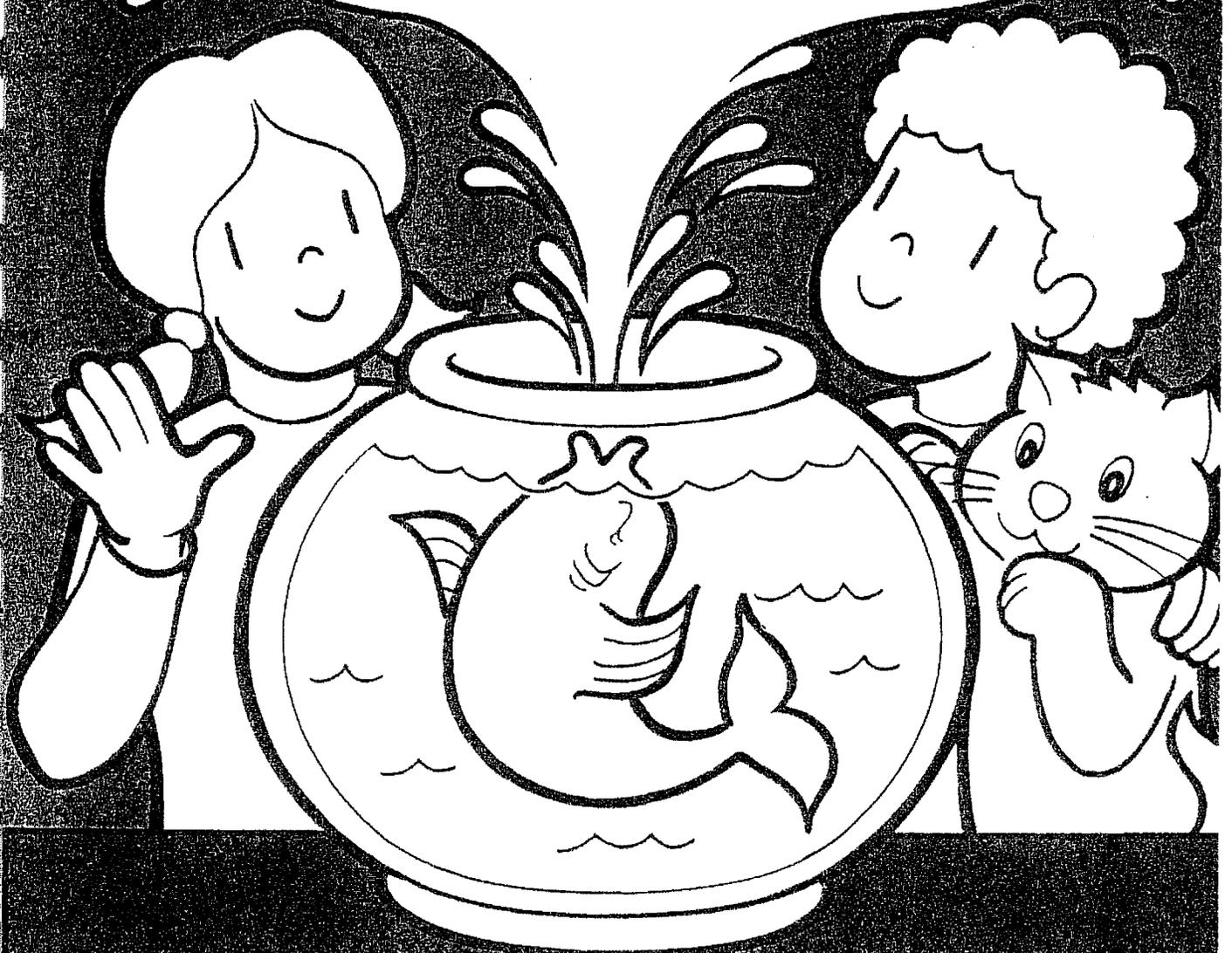


A TURN
FOR THE
BETTER



Public Works 373-5852

LET'S LEARN ABOUT
WATER



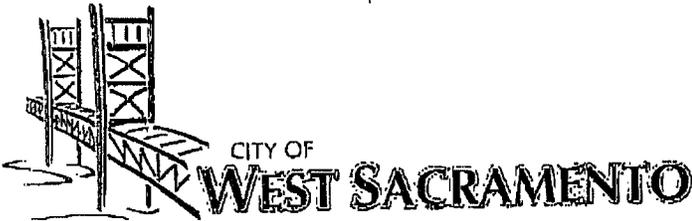
This coloring & activities
book belongs to



City of West Sacramento

City of West Sacramento

Appendix D - Agency Coordination & Notice of Public Hearing



CITY HALL

1110 West Capitol Avenue
West Sacramento, CA 95691

City Council
City Manager
City Clerk
Human Resources
(916) 617-4500
Fax (916) 372-8765

Information Technology
(916) 617-4520
Fax (916) 372-8765

Community Development
Planning
Engineering
(916) 617-4645
Fax (916) 371-8145

Building
(916) 617-4683
Fax (916) 371-8845

Parks & Recreation
(916) 617-4620
Fax (916) 372-5329

Redevelopment
Economic Development
(916) 617-4515
Fax (916) 373-5148

Grants & Community Investment
(916) 617-4555
Fax (916) 372-1584

Finance
(916) 617-4575
Fax (916) 373-9006

Utilities
(916) 617-4589
Fax (916) 373-9006

Refuse & Recycling
(916) 617-4590
Fax (916) 373-9006

Fire Administration
(916) 617-4680
Fax (916) 371-5017

POLICE
550 Jefferson Blvd
West Sacramento, CA 95605

Police
(916) 617-4900
Fax (916) 373-2377
Code Enforcement
(916) 617-4927

PUBLIC WORKS
1951 South River Road
West Sacramento, CA 95691

(916) 617-4850
Fax (916) 371-1516

www.ci.west-sacramento.ca.us

August 4, 2005

Water Resources Association of Yolo County
Attn: Donna Gentile, Administrative Coordinator
P.O. Box 8624
Woodland, CA 95776

Subject: 2005 Urban Water Management Plan – Draft

Dear Ms. Gentile:

Attached is the City of West Sacramento's draft 2005 Urban Water Management Plan (UWMP). The State of California Water Code Section 10644 requires that the City provide a copy of this UWMP to all cities and counties within which the City provides water. If you have any comments on this draft UWMP, please send them to my attention. The public review period is from August 22nd to September 7th. This plan will be brought to the City of West Sacramento City Council for adoption on September 7, 2005.

If you have any questions, please contact me at (916) 617-4645.

Sincerely,

MICHAEL W. BESSETTE, P.E.
Associate Civil Engineer

Encl: Draft 2005 UWMP

cc: Cameron Beebe, Senior Civil Engineer
Dan Mount, Water Services Superintendent
Glenn Hermanson, RMC
File – W.O. #2113

E:\1ENG\1MikeB\UWMP\2005 UWMP Update\WRA Let.doc

PUBLIC NOTICE^a

“The City of West Sacramento invites the public to review and comment upon the 2005 Urban Water Management Plan (UWMP). As a water provider in the State of California, the City is required to prepare, adopt, and submit and UWMP in accordance with the California Water Code every five years. The Code requires that the plan be made available for public review and comment. The plan is to be filed with the California Department of Water Resources by December 31, 2005. An UWMP contains such elements as: water demand and supply analysis, water quality analysis, reclaimed water use, demand management measures, conservation practices, water shortage contingency plans, and best management practices. The public review period is scheduled from August 22 through September 7, 2005. The UWMP can be reviewed at the City of West Sacramento’s City Hall, located at 1110 West Capitol Avenue, 2nd floor. The city’s project manager is Associate Civil Engineer Michael Bessette, who can be contacted at 617-4645.”

- a. Placed in West Sacramento’s News Ledger on August 10 and 17, 2005

Public Hearing Comments from September 7, 2005

Comment:

The statement that the UWMP contains a water quality analysis is incorrect.

Clarification:

Chapter 7 of the UWMP addresses the quality of the supply due to potential catastrophic events on the source water, the Sacramento River. The City has developed an Emergency/Disaster Response Plan in response to those possibilities. The statement that the UWMP "contains a water quality analysis" was not intended to mean a chemical analysis of the source water.

Question:

What does "RMC" stand for in the name of the Engineer RMC Water and Environment?

Answer:

Raines, Melton, and Carella

grant commenced to transact business under the fictitious name or names above on 4/5/90.

/s/Paul Makley certify that this is a true copy of the original document on file in this office. This certification is true as long as there are no alterations to the document, AND as long as the document is sealed with a red seal.

State of California
County of Yolo
Freddie Oakley, Clerk
Date: July 7, 2005
/Linda Smith, Deputy Clerk
Aug 3 10 17 24

a game that is on a five-inch —the distance in your cars.
—Bobby Jones

Fictitious Business Name Statement

Filed July 27, 2005
File No. 2005-789

The following person is doing business as LesLee's Place, 217 Circle, Davis CA 95616.

by: Try & Roger L. Ayres, Husband and Wife.

The registrant commenced to transact business under the fictitious business name or names above on 1/1/05.

/s/Leslie Try certify that this is a true copy of the original document on file in this office. This certification is true as long as there are no alterations to the document, AND as long as the document is sealed with a red seal.

State of California
County of Yolo
Freddie Oakley, Clerk
Date: July 27, 2005
/s/Valerie Clinton, Deputy Clerk
Aug 3 10 17 24

Fictitious Business Name Statement

Filed Aug 2, 2005
File No. 2005-813

The following person is doing business as Liberty Tax Service, 1351 Merkley Ave., West Sacramento CA 95691; mailing: 2891 Pegler Ct., West Sacramento CA 95691:

Rummel S. Carlos, 2891 Pegler Ct., West Sacramento CA 95691.

This business is conducted by an individual.

The registrant commenced to transact business under the fictitious business name or names listed above on 8/2/05.

/s/Rummel Carlos I hereby certify that this is a true copy of the original document on file in this office. This certification is true as long as there are no alterations to the document, AND as long as the document is sealed with a red seal.

State of California
County of Yolo
Freddie Oakley, Clerk
Date: Aug 2, 2005
by: /s/Eleigh Fagel, Deputy Clerk
Aug 3 10 17 24

Fictitious Business Name Statement

Filed July 6, 2005
File No. 2005-713

The following person is doing business as J and M Vending, 2435-A West Capitol Ave., West Sacramento CA 95691:

Jerry N. Kearsing and Martha A. Kearsing, 3480 St. Croix Rd., West Sacramento CA 95691.

This business is conducted by Husband and Wife.

The registrant commenced to transact business under the fictitious business name or names listed above on 7/6/05.

/s/Jerry N. Kearsing I hereby certify that this is a true copy of the original document on file in this office. This

certification is true as long as there are no alterations to the document, AND as long as the document is sealed with a red seal.

State of California
County of Yolo
Freddie Oakley, Clerk
Date: July 6, 2005
by: /s/Linda Smith, Deputy Clerk
Aug 3 10 17 24

NOTICE OF INTENT TO ADOPT A NEGATIVE DECLARATION

A Negative Declaration has been prepared for the Sacramento Stucco Conditional Use Permit project, to be located at 1550 Parkway Boulevard, West Sacramento, California. This Negative Declaration has been prepared to address the potential environmental impacts of the proposed relocation of the Sacramento Stucco in its new facility at 1550 Parkway Boulevard. The new location of the business will operate in a previously constructed one-story 70,000 square-foot concrete building. The building is located on a 5.25 acre site and is zoned M-2 (Heavy Industrial).

The Negative Declaration concludes that there will be no significant adverse impacts on the environment. Copies of the Negative Declaration are on file in the office of the West Sacramento Community Development Department at 1110 West Capitol Avenue, West Sacramento, CA 95691.

Any affected or interested parties may submit comments to the Community Development Department no later than August 30, 2005.

The West Sacramento Planning Commission will consider adoption of the Negative Declaration on September 15, 2005, in the City Council chambers located at 1110 West Capitol Avenue, West Sacramento, CA, 95691 at 6:00 p.m., or as soon thereafter as the matter may be heard.

Aug 10

PUBLIC NOTICE

The City of West Sacramento invites the public to review and comment upon the 2005 Urban Water Management Plan (UWMP). As a water provider in the State of California, the City is required to prepare, adopt, and submit an UWMP in accordance with the California Water Code every five years. The Code requires that the plan be made available for public review and comment. The plan is to be filed with the California Department of Water Resources by December 31, 2005. An UWMP contains such elements as: water demand and supply analysis, water quality analysis, reclaimed water use, demand management measures, conservation practices, water shortage contingency plans, and best management practices. The public review period is scheduled from August 22nd thru September 7th. The UWMP can be reviewed at the City of West Sacramento's City Hall, located at 1110 West Capitol Avenue, 2nd floor. The city's project manager is Associate Civil Engineer Michael Bessette, who can be contacted at 617-4645.

Aug 10 17

If there is any larceny in a man, golf will bring it out.

—Paul Gallico

Council Certification of P.A.C. Election FOR THE WEST SACRAMENTO REDEVELOPMENT PROJECT NO. 1

The West Sacramento Redevelopment Agency (Agency) is considering amending its Redevelopment Plan. The amendments being considered include 1) increasing the total amount of tax increment the Agency can receive; 2) increasing the Agency's bonding capacity; and 3) re-establishing the Agency authority to use eminent domain in the Project Area. The proposed Amendment

will not change the boundaries of the Project Area or modify any other existing time limits outlined in the Existing Plan.

As required by State law, and in order to provide community input into the amendment process, a Project Area Committee (PAC) will be formed. The PAC is a group of elected residential owner occupants, elected residential tenants, and elected business owners from the Project Area. The elected members of the PAC will be voted in by existing residential owner occupants, residential tenants, and business owners from within the Project Area at a community election. The PAC will also include Council appointed existing community organizations from the Project Area. The PAC will review and make recommendations on the proposed Amendment and may advise the Agency on policy matters that affect the residents of the Project Area.

Council Certification of PAC Election. At this meeting the City Council will certify that the PAC election occurred according to adopted procedures. Council appointments of existing community organizations to the PAC will also be made on this date. The public hearing will be held on Wednesday, August 17, 2005, at the hour of 7:30 P.M. or as soon thereafter as the matter can be heard, in the City Council Chambers located at City Hall, 1110 West Capitol Avenue, West Sacramento.

Any questions relative to the above matters may be directed to Shanna Wasserman, Redevelopment Analyst at (916) 617-4535. As information becomes available, please refer to the City's web page at www.ci.west-sacramento.ca.us for additional information on the PAC formation process.

Aug 3 10

Don't let love interfere with your appetite.

—Anthony Trollope

Appendix E - Emergency/Disaster Response Plan

City of West Sacramento

Public Works-Water Treatment Division

Emergency/Disaster Response Plan

1) INTRODUCTION

To continue minimum service levels and mitigate the public health risks from drinking water contamination that may occur during a disaster or other emergency events and in order to provide reliable water service and minimize public health risks from unsafe drinking water during those events, the City of West Sacramento proposes the following plan that defines how it will respond to emergencies and/or disasters that are likely to affect its water system operation.

Disasters emergencies and threats that are likely to occur in the water system's service area that are addressed in this plan are: earthquake, major fire emergencies, water outages due to loss of power, localized flooding, water contamination, and acts of sabotage. The City of West Sacramento's 2004 Water System Vulnerability Assessment Report included the above items as potential problems to the continuous operation of the water treatment and distribution system.

2) SYSTEM DESCRIPTION

The City of West Sacramento, population 38,000, is located in the Sacramento Valley in Yolo County, approximately 1 mile west of the City of Sacramento. The city provides potable water service to a population of 38,000 and approximately 10,000 residential and commercial connections.

The West Sacramento water system is supplied by surface water from the Sacramento River. The primary facilities of the system include a river intake structure, the Bryte Bend Water Treatment Plant, and six remote storage and pumping facilities.

3) SIGNIFICANT SYSTEM COMPONENTS

1. Sacramento river intake structure
2. Two, 42" raw water pipelines to the plant.
3. Bryte Bend Water Treatment Plant
4. Two, 2-million gallon concrete clearwells.
5. One 54" potable water transmission main leaving the treatment plant.
6. 3 million gallon Carlin water storage tank and 12 million gallon per day pump station.
7. Northeast, Central, Southport, PSIP, Oak Street water storage tanks and remote pumping stations.

4) DESIGNATED RESPONSIBLE PERSONNEL

Name	Telephone No. (Work)	Role
Title	Telephone No. (Home)	
Water Plant Shift Operator	(916) 617-4860	Initial contact at plant, in charge for all emergencies until replaced by Water Services Superintendent
Various		
Dan Mount	(916) 617-4862	In charge of all water treatment emergencies
Water Services Superintendent	(916) 719-7128	
Jim Elrod	(916) 617-4850	In charge of all water distribution system emergencies
Utilities Superintendent	(916) 369-7576 Cellular (916) 799-4693	
Vacant	(916) 617-4850	In charge of Emergency Operations Center
Public Works Director	(530) 758-7381	
Greg Fabun	(916) 617-4850	In charge of resources and media relations
Acting Director of Public Works	(916) 207-9494	
Jose Alarcon	(916) 449-5666	Department of Health Services District Engineer (state)
Associate Sanitary Engineer California Department of Health Services	(916) 300-9673	
Wayne Taniguchi	(530) 666-8646	Department of Health Services (County)
Yolo County Environmental Health Officer		

5) INVENTORY OF RESOURCES

The following is an inventory of system resources that are used for normal operations and available for emergencies; this includes maps and schematic diagrams of the water system, lists of emergency equipment, equipment suppliers, and emergency contract agreements that are kept at the Bryte Bend Water Treatment Plant and Public Works Building offices.

- A. List of equipment on hand for emergency repairs
 1. Mobile generators (4) 225, 275, 350, and 20 KVV
 2. Trash Pumps (2) – 4 and 6 inch
 3. Vactor Truck (2)
 4. Backhoe (2)
 5. Dump Trucks (3)

6. Sweeper Trucks (2)
- B. List of sources of needed equipment, not on hand
1. Equipment Rentals – Nations Rental (916) 924-0484
 2. Mobile Generators and Trash Pumps - Paco Pumps (916) 374-9511
 3. Fuel – Ramos Oil (916) 371-2570
 4. Liquid Chlorine – Sierra Chemical (916) 371-5943
- C. List of distributors or suppliers of replacement parts for critical water system components
1. Aluminum Sulfate (Coagulant) – LA Chemical (323) 832-5000
 2. Gas Chlorine (Disinfectant) – Sierra Chemical (702) 358-0987
 3. Miscellaneous Piping – Camellia Valley Supply (916) 381-6100

6) EMERGENCY OPERATIONS CENTER

The Bryte Bend Water Treatment Plant Operations Building has been designated as the primary emergency operations center or EOC. The backup EOC is the Public Works Main Office. Emergency contact information for primary personnel is listed below. Telephone, radio and FAX will be the primary mode of communication in an emergency.

Agency	Address, City	Phone #	FAX #
Water System	Bryte Bend Water Treatment Plant 400 N.Harbor Blvd West Sacramento, CA	(916)617-4860	(916)373-9581
Fire Department	City of West Sacramento City Hall 1110 West Capital Ave, 1st Floor West Sacramento, CA	(916)617-4600	(916)371-5017
Law Enforcement	City of West Sacramento Police Headquarters 550 Jefferson Blvd West Sacramento, CA	(916)372-2461	(916)373-0517
Public Works	City of West Sacramento Public Works 1951 South River Road West Sacramento, CA	(916)617-4850	(916)371-1516

7) OTHER AGENCY COORDINATION:

Coordination procedures with governmental agencies for health and safety protection; technical, legal, and financial assistance, and public notification procedures are continually being developed and updated through regulation and experience and will be added as necessary to this plan.

8) RESPONSE PROCEDURES:

Personnel will, as quickly as possible, determine the status of other employees, assess damage to water system facilities, provide logistics for emergency repairs, monitor progress of repairs and restoration efforts, communicate with health officials and water users according to the "Emergency Notification Plan" on file with the Department of Health Services. (See Attachment)

Order of Response

- i. Operator on duty reports plant or distribution pumping problems to the Water Treatment Superintendent.
- ii. Superintendent notifies appropriate mechanical/electrical standby personnel.
- iii. If situation is critical, the Superintendent notifies the Public Works Director and calls in additional personnel as needed.
- iv. Public Works Director may open an EOC at water treatment plant or public works. Director obtains needed resources from appropriate City and County agencies.

9) RESUME NORMAL OPERATIONS

The following are the steps that will be taken to resume normal operations and to prepare and submit reports to appropriate agencies and will include identifying the nature of the emergency (e.g., earthquake-causing water outage/leaks, fire or power outage causing water shortage/outage, sabotage resulting in facility destruction or water contamination).

a. Leaks or service interruption (Result of earthquake, etc.)

- i. Isolate leak. Turn power or flow off, if necessary, to control leak.
- ii. Repair or isolate break to allow service to the maximum system population possible. Disinfect per AWWA Standards C653-99; increase system disinfectant residual as a precaution, until normal service is resumed.
- iii. Increase bacteriological sampling at leak site and up and downstream until 3 good consecutive samples are confirmed.

iv. Reestablish normal service.

b. Low pressure (Result of earthquake, fire, storm)

- i. Increase production from treatment plant or remote pumping facilities, if possible, to provide maximum system output.
- ii. Increase distribution system disinfectant residual as precaution against potential contamination.

c. Power outage (Result of storm, flood, earthquake)

- i. Ensure automatic emergency generators are on line to provide minimum water pressure to system. Place generators at remote pumping sites if needed.
- ii. Increase distribution disinfectant residual as precaution against potential contamination.

d. Contamination (Result of chemical spill, flooding, earthquake)

- i. Identify location and source of contamination.
- ii. If contamination is from Sacramento River, determine if contamination can be removed by treatment process or bypass source.
- iii. If contamination is an act of sabotage, take appropriate action based on nature of contamination. Immediately contact local law enforcement and regulatory agency (DHS). Actions should be taken in consultation with the regulatory agency and could include shutting off water until all contaminants are identified and removed. The water system area affected will remain off until negative samples are received.

e. Physical destruction of facility (Sabotage)

- i. Immediately contact local law enforcement and regulatory agency for consultation.
- ii. Isolate area if possible and maintain secure perimeter for evidence collection.
- iii. If outage is long-term, bottled water will be provided for residential use. Local distributors of bottled water could provide assistance with delivery.

All significant water outages (widespread and lasting more than eight hours) or disinfection failure will be reported to the Department of Health Services (DHS) District Office and Yolo County Health Department by telephone or equally rapid means. All emergencies will be documented along with action taken, and kept in the files at the Water Treatment Plant and Public Works Building. Acts of sabotage will be reported to the local law enforcement agency.

10) Additional Mutual Assistance or Emergency Resources

Agency/Department	Telephone No. (Day) Telephone No. (After Hours)
City of Sacramento Sac River Water Treatment Plant	(916) 264-7136
City of West Sacramento Fire Department 15 th Street Station House	(916) 375-6474 (916) 375-373-5808
City of West Sacramento Police Department	(916) 375-6474
Office of Emergency Services Warning Center	(800) 852-7550
Local FBI Office (terrorism or sabotage) (Also notify local law enforcement.)	(916) 481-9110
Sacramento City and County Emergency Operations Center	(916) 575-4501
PG&E Emergency Number On-call 24 hour response	(800) 743-5000 (916) 326-7597
EPA National Response Center	(800) 424-8802
California EPA	(916) 445-8802
RD 900	(916) 371-1483
FEMA	(415) 923-7100
Yolo County Flood Control	(530) 662-0265
Norcal Beverage	(916) 372-0600

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