



Stockton East Water District Urban Water Management Plan 2020 Update



June 2021



URBAN WATER MANAGEMENT PLAN 2020 UPDATE

Stockton East Water District



June 2021



Date signed: 6-22-21



Prepared by:

Provost & Pritchard Consulting Group
4701 Sisk Road, Suite 102, Modesto, CA 95356



Table of Contents

1	Introduction.....	1-1
1.1	Urban Water Management Planning Act	1-1
1.2	Basis for Preparing the UWMP	1-1
1.3	Coordination and Outreach.....	1-2
1.4	Public Participation and UWMP Adoption	1-3
1.5	UWMP Organization.....	1-4
1.6	Lay Description of Urban Water Management in Stockton East Water District.....	1-5
2	System Description.....	2-1
2.1	Description of Service Area.....	2-1
2.2	Service Area Climate.....	2-1
2.3	Service Area Population and Demographics	2-4
3	System Water Use	3-1
3.1	Water Use	3-1
3.2	Climate Change Impacts on Water Use.....	3-3
3.3	Distribution System Water Losses	3-4
4	System Supplies	4-1
4.1	Purchased Water.....	4-1
4.1.1	New Hogan	4-1
4.1.2	New Melones	4-1
4.2	Surface Water.....	4-2
4.3	Groundwater.....	4-2
4.3.1	Basin Description.....	4-5
4.4	Groundwater Levels	4-7
4.4.1	Groundwater Overdraft	4-9
4.4.2	Groundwater Quality.....	4-10
4.4.3	Groundwater Management.....	4-10
4.4.4	Historical Pumping	4-11
4.5	Stormwater	4-11
4.6	Wastewater and Recycled Water.....	4-11
4.7	Desalinated Water Opportunities	4-12
4.8	Exchanges or Transfers.....	4-12
4.9	Surface Water Banked	4-12



4.10 Historical Use of Water Supplies..... 4-12

4.11 Climate Change Impacts on Water Supplies..... 4-13

4.12 Energy Intensity 4-13

4.13 Future Water Projects..... 4-14

4.14 Summary of Existing and Planned Sources of Water 4-15

5 Water Supply Reliability Assessment.....5-1

5.1 Constraints on Water Sources.....5-1

5.1.1 New Hogan Reservoir5-1

5.1.2 New Melones Reservoir5-1

5.1.3 Groundwater.....5-1

5.1.4 Plans for Supplemental Supplies.....5-1

5.2 Reliability by Type of Year5-2

5.3 Supply and Demand Assessment.....5-3

5.4 Drought Risk Assessment.....5-8

5.5 Regional Supply Reliability.....5-9

5.6 Climate Change Impact on Water Supply Reliability5-9

5.7 Other Water Reliability Issues.....5-9

6 Water Shortage Contingency Planning.....6-1

6.1 Procedure for Annual Water Supply Assessment.....6-1

6.2 Stages of Action.....6-1

6.3 Shortage Response Actions6-2

6.4 Revenue and Expenditure Impacts6-3

6.4.1 Use of Financial Reserves6-3

6.4.2 Other Measures.....6-3

6.5 Resolution or Ordinance.....6-3

6.6 Seismic Risk Assessment and Mitigation.....6-3

6.7 Minimum Supply Next Three Years6-3

7 Demand Management Measures7-1

7.1 Metering.....7-1

7.2 Public Education and Outreach.....7-1

7.3 Water Conservation Program Coordination and Staffing Support.....7-3

7.4 Asset Management.....7-3

7.5 Wholesale Supplier Assistance Programs7-3

8 References8-1



List of Tables

Table 1-1. (DWR Table 2-2) Plan Identification1-2

Table 1-2. (DWR Table 2-3) Agency Identification.....1-2

Table 1-3. (DWR Table 2-4) Wholesale: Water Supplier Information Exchange.....1-3

Table 1-4. (DWR Table 10-1) Wholesale: Notification to Cities, Counties, and Other Agencies.....1-3

Table 1-5. Coordination with Appropriate Agencies1-4

Table 2-1. Monthly Average Climate Data Summary2-3

Table 2-2. (DWR Table 3-1) Wholesale: Population – Current and Projected2-4

Table 3-1. (DWR Table 4-1) Wholesale: Demands for Potable and Raw Water - Actual3-2

Table 3-2. (DWR Table 4-2) Wholesale: Demands for Potable and Raw Water - Projected.....3-3

Table 3-3. (DWR Table 4-3) Wholesale: Total Water Demands3-3

Table 3-4. (DWR Table 4-4) Wholesale: Water Loss Summary.....3-4

Table 4-1. (DWR Table 6-1) Wholesale: Groundwater Volume Pumped 4-11

Table 4-2. Wastewater and Recycled Water Agencies..... 4-11

Table 4-3. Energy Intensity (Year 2017) 4-14

Table 4-4. (DWR Table 6-7) Wholesale: Expected Future Water Supply Projects or Programs 4-15

Table 4-5. (DWR Table 6-8) Wholesale: Water Supplies – Actual, ac-ft/yr 4-16

Table 4-6. (DWR Table 6-9) 4-17

Table 5-1. (DWR Table 7-1) Wholesale Basis of Water Year Data – New Melones Reservoir (USBR and Central)5-2

Table 5-2. (DWR Table 7-1) Wholesale Basis of Water Year Data – New Hogan Reservoir5-3

Table 5-3. (DWR Table 7-2) Wholesale: Normal Year Supply and Demand Comparison, ac-ft/yr5-4

Table 5-4. (DWR Table 7-3) Wholesale: Single-Dry Year Supply and Demand Comparison, ac-ft/yr5-5

Table 5-5. (DWR Table 7-4)5-6

Table 5-6. Five-Year Drought Risk Assessment, ac-ft/yr.....5-8

Table 6-1. Water Shortage Stages6-1

Table 6-2. Response Actions during Water Shortage Stages6-2

Table 6-3. (DWR Table 8-4) Three-Year Minimum Water Supply, ac-ft/yr6-4



List of Figures

Figure 2-1. Water Service Area	2-2
Figure 2-2. Estimated Population Growth	2-4
Figure 3-1. Urban Contractors Total Historical Water Demands	3-1
Figure 4-1. New Hogan Supply Map	4-3
Figure 4-2. New Melones Supply Map	4-4
Figure 4-3. Alluvial Groundwater Basins and Subbasins within the San Joaquin River Hydrologic Region....	4-6
Figure 4-4. Groundwater Well Cross-Section Alignments.....	4-8
Figure 4-5. Highway 99 Cross Section: Groundwater Levels	4-9
Figure 4-6. Delivered Urban Water	4-13

Appendices

Appendix A: Documentation of City/County Notification	
Appendix B: Notice of Public Hearing	
Appendix C: Adoption Resolution	
Appendix D: DWR UWMP Checklist	
Appendix E: Second Amended Contract	
Appendix F: Urban Water Shortage Contingency Plan	

List of Abbreviations

°F.....	degrees Fahrenheit	SWRCB.....	State Water Resources Control Board
ac-ft.....	acre-feet	Urban	
ac-ft/yr.....	acre-feet per year	Contractors	Cal Water, City of Stockton, and San Joaquin County
Act.....	Urban Water Management Planning Act	USACE.....	United States Army Corp of Engineers
Allocation		USBR.....	United States Bureau of Reclamation
Contract	August 25, 1970 Contract between USBR, District, and CCWD	UWMP.....	Urban Water Management Plan
BMPs.....	Best Management Practices	WRCC.....	Western Regional Climate Center
Cal Water.....	California Water Service Company	WSCP.....	Water Shortage Contingency Plan
CASGEM.....	California Statewide Groundwater Elevation Monitoring	WTP.....	water treatment plant
CCWD.....	Calaveras County Water District	WWTP.....	wastewater treatment plant
Central.....	Central San Joaquin Water Conservation District		
CIMIS.....	California Irrigation Management Information System		
CSJWCD.....	Central San Joaquin Water Conservation District		
CVP.....	Central Valley Project		
CWC.....	California Water Code		
District.....	Stockton East Water District		
DJW WTP.....	Dr. Joe Waidhofer Water Treatment Plant		
DMMs.....	Demand Management Measures		
DWR.....	Department of Water Resources		
ESJWRM.....	Eastern San Joaquin Water Resources Model		
ETo.....	evapotranspiration		
Farmington			
Study.....	Farmington Groundwater Recharge and Seasonal Habitat Study		
GBA.....	Eastern San Joaquin County Groundwater Basin Authority		
GIS.....	Geographic Information System		
HCF.....	hundred cubic feet		
IRWMP.....	Integrated Regional Water Management Plan		
kW.....	kilowatt		
kW-hr/AF.....	kilowatt-hour per acre-foot		
MG.....	million gallons		
mgd.....	million gallons per day		
MOU.....	Memorandum of Understanding		
N/A.....	not applicable		
NGSS.....	next generation science standards		
RWCF.....	Regional Wastewater Control Facility		
RWQCB.....	Regional Water Quality Control Board		
SAWS.....	Stockton Area Water Suppliers		
SB.....	Senate Bill		
SEWD.....	Stockton East Water District		
SGMA.....	Sustainable Groundwater Management Act		
SJCFWCD.....	San Joaquin County Flood control and Water Conservation District		

1 Introduction

This Urban Water Management Plan (UWMP) was prepared for the Stockton East Water District (SEWD or District) and specifically addresses the wholesale urban water that the District provides to the Stockton municipal area. Topics addressed include the District's water supplies and demands, a description of the water supply sources, projected water use, and a comparison of water supply to water demands during normal, single dry, and multiple-dry years. This UWMP is required by the Urban Water Management Planning Act of 1983 (Act).

The remainder of this section provides an overview of the Act, public participation, agency coordination, public participation and UWMP adoption, document organization, and a layperson's description of the urban water management in SEWD.

1.1 Urban Water Management Planning Act

The Act became part of the California Water Code with the passage of Assembly Bill 797 during the 1983–1984 regular session of the California legislature. Subsequently, state and assembly bills have periodically amended the Act. Several new requirements for 2020 UWMPs were added based on State Assembly Bill 1668 and Senate Bill 606. The Act is described in California Water Code (CWC) Division 6, Part 2.6, Sections 10610 through 10657.

The Act requires every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet (ac-ft) of water annually to adopt and submit an UWMP every five years to the California Department of Water Resources (DWR). The Act describes the contents of the UWMP as well as how urban water suppliers should adopt and implement the UWMP.

1.2 Basis for Preparing the UWMP

The District is a wholesale water agency that supplies treated water to three Stockton area urban water contractors consisting of the California Water Service Company (Cal Water), the City of Stockton, and San Joaquin County. The District also sells surface water for agricultural irrigation to users in San Joaquin County.

The District has selected individual reporting for this UWMP, as identified in **Table 1-1**. This UWMP is reporting on a calendar year basis using acre-feet as the unit of measure as noted in **Table 1-2**.

Table 1-1. (DWR Table 2-2) Plan Identification	
✓	Individual UWMP
	Regional UWMP
No	Does this Regional UWMP include a Regional Alliance?

Table 1-2. (DWR Table 2-3) Agency Identification	
Type of Agency (select one or both)	
✓	Agency is a wholesaler
	Agency is a retailer
Fiscal or Calendar Year (select one)	
✓	UWMP Tables Are in Calendar Years
	UWMP Tables Are in Fiscal Years
Units of Measure Used in UWMP (select one)	
✓	Acre Feet (acre-feet or AF)
	Million Gallons (MG)
	Hundred Cubic Feet (HCF)

1.3 Coordination and Outreach

The Act requires the District to coordinate the preparation of its UWMP with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies to the extent practicable. The District has provided their Urban Contractors with identification and quantification of the existing and planned sources of water available from the District to the Urban Contractor during the various water year types described in Section 5. **Table 1-3** provides a summary of the UWMP coordination with the appropriate agencies.

Table 1-3. (DWR Table 2-4) Wholesale: Water Supplier Information Exchange	
	Supplier has informed more than 10 other water suppliers of water supplies available in accordance with CWC 10631
✓	Supplier has informed 10 or fewer other water suppliers of water supplies available in accordance with CWC 10631. Complete the table below.
Water Supplier Name:	
City of Stockton	
California Water Service Company	
San Joaquin County	

1.4 Public Participation and UWMP Adoption

The Act requires the encouragement of public participation and a public hearing as part of the Urban Water Management Plan development and approval process. As required by the Act, prior to adopting this UWMP, the District made the UWMP available for public inspection and held a public hearing. The District notified the city and county within the service area 60 days before the public hearing as shown in **Table 1-4**. Appendix A provides documentation that the cities and counties within which the District provides water supplies were notified at least 60 days prior to the UWMP public hearing. This hearing provided an opportunity for the District’s customers including social, cultural, and economic community groups to learn about the water supply situation and the plans for providing a reliable, safe, high-quality water supply for the future. The hearing was an opportunity for people to ask questions regarding the current situation and the viability of future plans. The hearing included an adoption of the updated UWMP and updated Water Shortage Contingency Plan (WSCP), which is included in Appendix F of this document.

Table 1-4. (DWR Table 10-1) Wholesale: Notification to Cities, Counties, and Other Agencies		
	Supplier has notified more than 10 cities or counties in accordance with CWC 10621 (b) and 10642. Include a separate list of the cities and counties that were notified. Location of this list is in the UWMP.	
✓	Supplier has notified 10 or fewer cities or counties. Complete the table below.	
City name	60-day notice	Notice of public hearing
City of Stockton	X	X
County name	60 day notice	Notice of public hearing
San Joaquin County	X	X

Per the requirements of Government Code Section 6066, a Notice of Public Hearing was published twice in the Stockton Record newspaper to notify all customers and local governments of the public hearing, and copies of the draft UWMP were made available for public inspection at the District’s offices and on the District website: <http://www.sewd.net/>. A copy of the published Notice of Public Hearing is included in Appendix B. California Water Service Company provided written comments on the UWMP. The District responded at the hearing that most of their comments were already adequately addressed in the UWMP and some others would require extensive assumptions due to lack of data or information. No changes were made to the UWMP based on the comments, but they may be addressed in the future as part of separate studies.

The UWMP was adopted by the District’s Board of Directors on June 8, 2021. A copy of the adopted resolution is provided in Appendix C. The adopted UWMP will be provided to DWR, the appropriate city and county, and the California State Library within 30 days of adoption in hard copy and electronically. Copies of the transmittal of the document to these agencies are provided in Appendix A. The adopted UWMP will also be available for public review during normal business hours at the District’s office. The District coordinated the preparation of this UWMP with its Urban Contractors. **Table 1-5** provides a summary of the District’s coordination efforts with the appropriate agencies.

Table 1-5. Coordination with Appropriate Agencies					
Coordinating agencies	Noticed of UWMP update at least 60 days prior to public hearing (city and county)	Was sent a copy of the draft UWMP	Participated in UWMP preparation	District provided retail customers with information regarding water supplies available to the retailer from the wholesaler	Was sent a copy of the adopted UWMP
City of Stockton	X	X	X	X	X
California Water Service Company	X	X	X	X	X
San Joaquin County	X	X	X	X	X
General public		District website			District website
USBR		X			X
California Department of Water Resources					X
California State Library					X

1.5 UWMP Organization

This section provides a summary of the sections in this Plan.

- Section 2 provides a description of the service area, climate, and population.
- Section 3 presents water demands.
- Section 4 describes the water supplies.
- Section 5 describes water supply reliability.
- Section 6 describes the water shortage contingency planning.
- Section 7 summarizes demand management measures.
- Section 8 provides a list of references.
- Appendices provide relevant supporting documents.

DWR has provided a checklist of the items that must be addressed in each UWMP based upon the Act. This checklist makes it simple to identify exactly where in the UWMP each item has been addressed. The checklist is completed for this UWMP and provided in Appendix D. It references the sections and appendices where specific items can be found.

1.6 Lay Description of Urban Water Management in Stockton East Water District

This 2020 Urban Water Management Plan (UWMP) is being prepared for the Stockton East Water District (SEWD or District), a wholesale supplier of urban water and direct supplier of agricultural water. This document describes SEWD's water supply, water demands, water reliability, and water conservation efforts for the Stockton metropolitan area. This document is an update to the District's 2015 UWMP.

The District provides wholesale treated drinking water to three Urban Contractors: City of Stockton, San Joaquin County, and California Water Service Company. The District also provides raw water to agricultural customers. The District obtains their water from three sources: New Hogan Reservoir (Calaveras River), New Melones Reservoir (Stanislaus River), and groundwater. The water supplies are treated to drinking water standards and delivered to the Urban Contractors. The District only provides some of the water needed in these urban areas, and the local agencies also have other sources of water to meet customer demands.

The groundwater supply in SEWD is considered to be overdrafted, meaning more is being withdrawn than recharged each year. To combat this issue, the District recharges groundwater with surface water that is not used by urban or agricultural customers. This process is called water banking. During dry years, banked water can be pumped to help meet water demands. SEWD plans to increase the amount of water banked by building more recharge basins in the region. The District owns wells that serve as a backup supply to for urban demands. The wells are typically only used in severe droughts or during operational emergencies.

The District's surface water supplies can be reduced in droughts, especially if the drought lasts several years. In these situations, however, the District can still generally meet the urban water demands through groundwater pumping, water conservation, or purchasing water from other water agencies.

Measures have been taken to protect current and future water supplies; however, it is just as important for customers to conserve water. To connect with the public on this issue, SEWD has invested in the Stockton



Area Water Suppliers Water Conservation Education program. The program has staff that offer educational programs and attend community events to promote water conservation.

2 System Description

This section describes the District's water system. It contains a description of the service area and its climate and the District's projected population.

2.1 Description of Service Area

The District was formed in 1948 under the 1931 Water Conservation Act of the State of California. The District was originally organized as the Stockton and East San Joaquin Water Conservation District, an independent political subdivision of the state government. As such, the District is responsible for acquiring a supplemental water supply and developing water use practices that will preserve groundwater supplies. The District has an elected Board of Directors representing seven Divisions within the District. From its inception until 1962, the District's financial structure was dependent upon property taxes. In 1963, the Governor of California signed a bill establishing the District's right to levy groundwater use fees and surface water charges. About this time, the District began registering wells within the District, while check dams were built on the Calaveras River, Mormon Slough, and Mosher and Potter Creeks to control surface irrigation water and promote groundwater recharge. The District also became actively involved in the pursuit of projects to mitigate significant groundwater issues, which included declining aquifer levels, pumping depressions under urban Stockton, and the continuing threat of saline intrusion in wells near the Delta.

The District encompasses approximately 143,300 acres and provides surface water for both agricultural and urban uses. By providing surface water for agricultural irrigation, the District supports San Joaquin County's agricultural industry, which is the area's leading economic activity. The District also supplies wholesale treated drinking water, which is retailed to Stockton area customers by Cal Water, the City of Stockton, and San Joaquin County, collectively referred to as the Urban Contractors. San Joaquin County operates multiple small water systems within the District boundary. Two of those small systems which receive water from the District are the Lincoln Village and Colonial Heights Systems. The District currently has approximately 235 surface water agricultural customers outside the urban area.

The District's service area, location of the Dr. Joe Waidhofer Water Treatment Plant (DJW WTP), the District's connection points to the Urban Contractors located at the DJW WTP site, and the service areas of the three Urban Contractors are shown on **Figure 2-1**.

2.2 Service Area Climate

The District is located in the heart of the fertile Central Valley of California. Based on the historical data obtained from the California Irrigation Management Information System (CIMIS) and the Western Regional Climate Center (WRCC), the District's service area average minimum and maximum monthly temperature ranges from 36 to 93 °F. Average annual rainfall is normally approximately 12 to 15 inches. **Table 2-1** summarizes the District's climate conditions in representative areas based on the CIMIS and WRCC databases based on monthly averages of historic information.

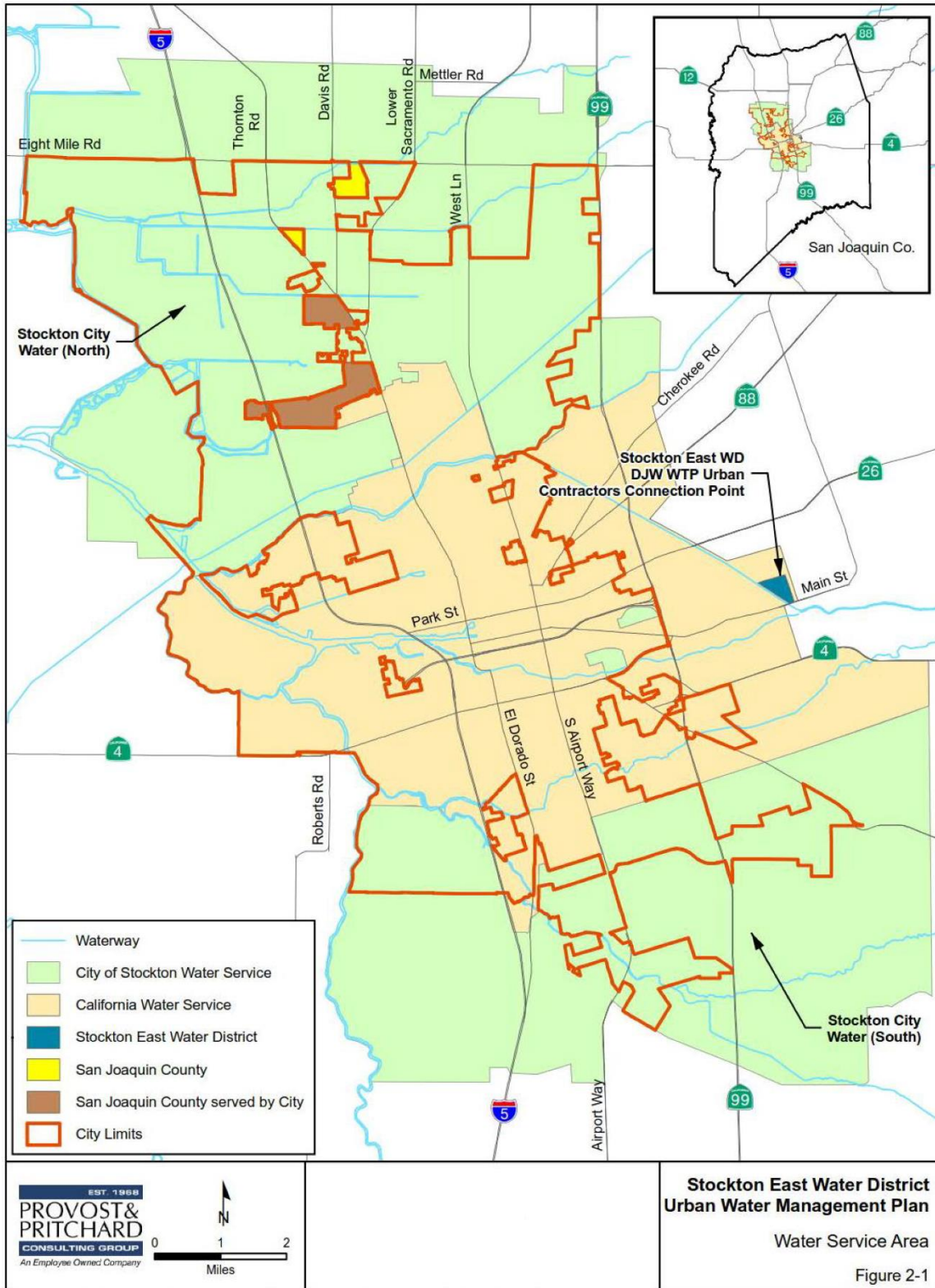


Figure 2-1. Water Service Area



Table 2-1. Monthly Average Climate Data Summary

Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Manteca (CIMIS Station No. 70, WRCC Station No. 045303) ^(a)	Elevation: 33 ft												
Standard average ETo, in	1.1	1.9	3.5	5.0	6.8	7.6	8.0	7.1	5.2	3.5	1.8	1.1	52.6
Maximum temperature, °F	56	63	68	73	79	86	91	90	86	78	65	56	74
Minimum temperature, °F	38	40	42	46	50	55	57	57	53	47	42	37	47
Total rainfall, in	2.6	2.0	1.8	1.0	0.5	0.1	0.0	0.0	0.1	0.6	1.3	2.1	12.2
Stockton Fire Station 4 (WRCC Station No. 048560) ^(b)	Elevation: 10 ft												
Standard average ETo, in	NA												
Average maximum temperature, °F	54	61	67	73	81	88	93	91	88	79	66	55	74
Average minimum temperature, °F	36	39	41	45	49	54	56	55	53	47	40	36	46
Total rainfall, in	3.1	2.7	2.2	1.3	0.5	0.1	0.0	0.0	0.2	0.8	1.8	2.7	15.4
Average total snowfall, in	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

^(a) Period of record is 11/1987 to 11/2020

^(b) Period of record is 3/3/1906 to 01/20/2016

2.3 Service Area Population and Demographics

Historical and projected population estimates for the service area are presented in **Table 2-2** and **Figure 2-2**. They are based on information from the Urban Contractors. The City of Stockton and Cal Water both expect moderate population growth. San Joaquin County expects no long-term increase in population in the two maintenance districts served water.

Table 2-2. (DWR Table 3-1) Wholesale: Population – Current and Projected						
Urban Contractors	2020	2025	2030	2035	2040	2045
City of Stockton	181,862	194,076	207,110	221,019	235,862	251,702
Cal Water	173,676	177,038	180,504	184,079	187,766	191,464
San Joaquin County	8,184	8,184	8,184	8,184	8,184	8,184
Total population	363,722	379,298	395,798	413,282	431,812	451,350

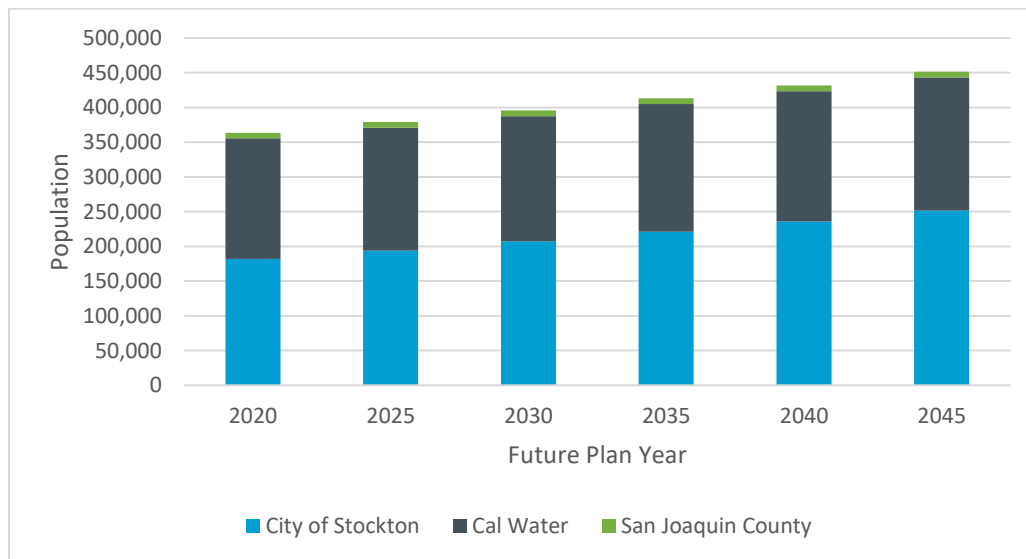


Figure 2-2. Estimated Population Growth

In the past, economic factors have played a role in estimating future population growth and per capita water use. The recession that started in 2008 and the accompanying slowdown in the construction of dwelling units during the 2010 and 2015 plan years resulted in slower rates of population growth than previously estimated. However, since then construction has increased and led to higher rates of population growth. While population growth has increased in recent years, water use per capita has not increased at the same rate. The adoption of per capita demand targets in 2010 along with the mandated demand reductions announced by the Governor in 2015 due to the drought have resulted in a significant decline in per capita water use.

3 System Water Use

This section describes urban water system demands and projections for future system water use for the District.

3.1 Water Use

The District provides wholesale treated drinking water to its Urban Contractors, which then sell water directly to different water user categories, including single-family, multi-family, commercial, irrigation/agricultural, industrial, institutional/governmental, and landscape. The District’s raw water is used for agriculture and stored in the groundwater basin (surface water - banked) for use when needed in the future. This section presents the historical and projected water uses of the District’s water supplies in five-year increments through 2045.

SEWD deliveries to the Urban Contractor have ranged from approximately 23,000 ac-ft/yr to 59,000 ac-ft/yr from 2007 through 2020, as shown on **Figure 3-1**.

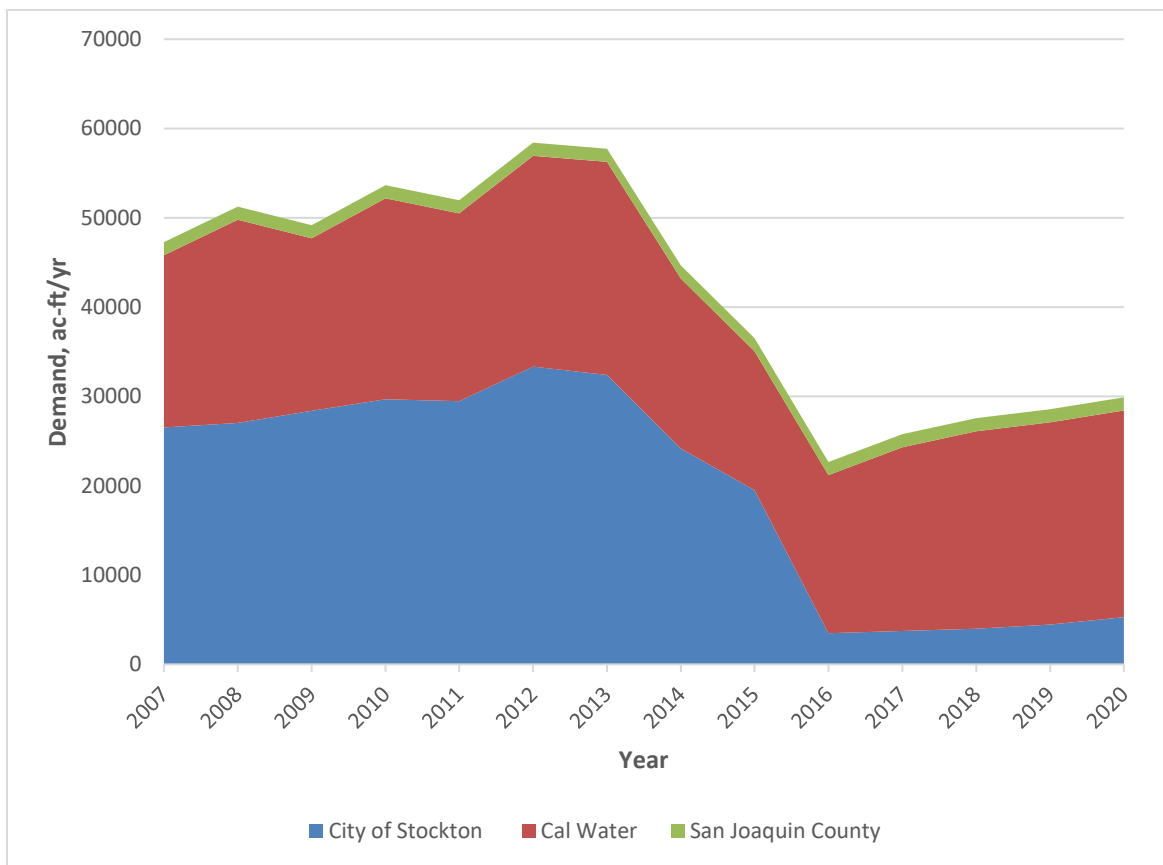


Figure 3-1. Urban Contractors Total Historical Water Demands

The 2020 water supplied from the District to its Urban Contractors and raw water customers is shown in **Table 3-1**.

Table 3-1. (DWR Table 4-1) Wholesale: Demands for Potable and Raw Water - Actual			
Use type	2020		
	General description of 2020 Uses	Level of treatment	Volume, ac-ft
Sales to other agencies	City of Stockton	Drinking water	5,288
Sales to other agencies	Cal Water	Drinking water	23,146
Sales to other agencies	San Joaquin County	Drinking water	1,476
Transfers to other agencies	--	--	0
Exchanges to other agencies	--	--	0
Groundwater Recharge ^(a)	Conveyance Recharge	--	10,632
Saline water intrusion barrier	--	--	0
Wetlands or wildlife habitat	--	--	0
Other ^(b)	Surface water - banked	--	9,407
Total Urban Demands	--	--	49,949
Agricultural - Surface Water	--	Raw water	25,457
Agricultural - Groundwater	--	Raw water	144,543
Total District Demands	--	--	219,949

(a) Stream seepage during conveyance of M&I flows

(b) Groundwater recharge in ponds near the Water Treatment Plan

The District coordinated with its Urban Contractors as they developed population and water demand projections through 2045 as part of their urban water management plan and/or water master plan. Details regarding demand projections are provided in each of the Urban Contractor's UWMPs. The Urban Contractor UWMPs also contain their analysis of low-income water demand projections, water use by sector, and per capita demand baselines and targets as defined by SBX7-7.

To identify the portion of future water demand that the District, as a wholesaler, has available to supply to the Urban Contractors, the District presented the Urban Contractor's total water demand projections from 2025 through 2045, as developed by the Urban Contractor, in **Table 3-2**. Water is supplied according to the Second Amended Contract among the District, Cal Water, City of Stockton, and the San Joaquin County Maintenance Districts (Colonial Heights and Lincoln Village). The contract is provided for reference in Appendix E. The agricultural irrigation demand that can be met with the District's supplies, as well as the District's projected surface water to be banked, are also shown in **Table 3-2**. The District estimated the supplies of water available to the District that could be used for urban and agricultural supply, as described in **Section 5**.

Use type	Additional description	2025, ac-ft	2030, ac-ft	2035, ac-ft	2040, ac-ft	2045, ac-ft
Sales to other agencies	City of Stockton	34,584	37,673	42,956	48,240	52,100
Sales to other agencies	Cal Water	24,000	24,000	24,000	24,000	24,000
Sales to other agencies	San Joaquin County	1,609	1,609	1,609	1,609	1,609
Transfers to other agencies	--	0	0	0	0	0
Exchanges to other agencies	--	0	0	0	0	0
Groundwater recharge	Conveyance Recharge	21,321	22,418	24,293	26,169	27,539
Saline water intrusion barrier	--	0	0	0	0	0
Wetlands or wildlife habitat	--	0	0	0	0	0
Other	Surface water - banked	11,288	12,417	13,659	15,025	16,527
Total	Total Urban Demands	92,802	98,117	106,517	115,043	121,775
Agricultural ^(a)	Agricultural customers	170,000	170,000	170,000	170,000	170,000
Total	Total District Demands	262,802	268,117	276,517	285,043	291,775

(a) Agricultural water includes surface water delivered by the District and groundwater pumped by the farmers.

A summary of water demands is shown in **Table 3-3**.

	2020	2025	2030	2035	2040	2045
Potable and Raw Water ^(a)	49,949	92,802	98,117	106,517	115,043	121,775
Agricultural Water	170,000	170,000	170,000	170,000	170,000	170,000
Recycled water demand	0	0	0	0	0	0
Total water demand	219,949	262,802	268,117	276,517	285,043	291,775

(a) Potable and raw water demand from Table 3-1 and 3-2.

3.2 Climate Change Impacts on Water Use

The impacts of climate change on local water resources were evaluated in the Eastern San Joaquin Groundwater Subbasin Sustainability Plan (GBA, 2019). The analysis was based on the DWR 2070 Central Tendency Climate Change Scenario and the Eastern San Joaquin Water Resources Model (ESJWRM), a model using past, present, and projected data from organizations across the region. The model included data on hydrologic, hydrogeologic, topographic and soil conditions, land use and cropping patterns, urban and agricultural water demand, urban and agricultural water supplies, surface water conveyance and distribution systems, groundwater

infrastructure and extraction, and irrigation practices. All the data was compiled and analyzed using the DWR’s Integrated Water Flow Model and used to create projections of climate change and water budget in the region.

The model simulated conditions through the year 2070 and found there will be increases in temperatures, precipitation, and ET_o in the region. Climate change is expected to impact water demands through increases in temperature and hence plant evapotranspiration. This will impact both urban landscape and crop water demands.

With higher evapotranspiration, landscape demands for the Urban Contractors will increase. Landscaping represents a large portion of water use by the local municipalities. However, urban agencies are managing their water based on per capita consumption goals. If outdoor water use increases, then the water users will need to conserve water either indoor or outdoor, or broad changes will need to be made, such as modifying the types of plants grown or reducing landscaped areas. With these efforts it is assumed that overall demands will not change, and per capita goals will be maintained. As a result, demand for SEWD wholesale water is not expected to change based on climate change. Refer to the UWMPs for the Urban Contractors for more details on their climate change analyses and how they estimated it will impact their water demands.

Higher temperatures will also impact demands for crops grown in SEWD. Since the District provides both urban and agricultural water, this needs to be considered in the overall evaluation of water demands. Higher crop evapotranspiration would have little to no impact to annual crops since their planting date could be modified to earlier in the year. However, permanent crops, such as trees and vines, could be impacted and there is a current trend towards permanent crops in the area. Nevertheless, the higher crop water demands are expected to be partially offset by conversion of cropland to urban land and agricultural water conservation. In addition, some growers will also increase groundwater pumping to meet the higher demands. However, this is expected to be balanced by the District’s groundwater recharge efforts. SEWD’s long-term strategy is to offset any increase of private groundwater pumping with intentional recharge of unused water supplied by New Hogan and New Melones reservoirs.

3.3 Distribution System Water Losses

The District’s Urban Contractors are served at the site of the District’s DJW WTP. There is less than 50 feet of pipe between the DJW WTP and the urban contractor connection points. Because the District does not have a distribution system, the analysis to calculate system losses is not applicable to the District. Essentially zero water loss exists between the DJW WTP and the Urban Contractor connection points, as shown in **Table 3-4**.

Table 3-4. (DWR Table 4-4) Wholesale: Water Loss Summary	
Reporting period start date (month/year)	Loss
January/2020	0 ^(a)

^(a) The District’s Urban Contractors connection point for District wholesale treated water is located at the site of the DJW WTP; therefore, there is zero water loss between the District’s and the Urban Contractors’ connection points.

4 System Supplies

This section describes sources of available water, quantities, and future sources of water. The District's supplies consist of purchased surface water and groundwater.

4.1 Purchased Water

The District's purchased water supplies consist of water from New Melones Reservoir and New Hogan Reservoir. Until 1977, groundwater was the sole source of supply for domestic water users in the Stockton area. A supplemental surface water supply was established when the DJW WTP began operation in 1977. The DJW WTP began operation at 30 million gallons per day (mgd) and is now permitted to 65 mgd. The District receives surface water through agreements with the United States Bureau of Reclamation (USBR) for water from two sources: New Hogan Reservoir and New Melones Reservoir.

4.1.1 New Hogan

The District receives water from the New Hogan Project pursuant to an August 25, 1970 Contract among the USBR, the District and Calaveras County Water District (CCWD) (Allocation Contract). The Allocation Contract provides for repayment and conservation use of the New Hogan Project. This contract allocates all water available at the reservoir to the two districts, subject only to storage and release of water for flood control. The allocation of water between the District and CCWD is subject to the Allocation Contract providing for the use, repayment, and administration of water from the New Hogan Project. The Allocation Contract allocates 56.5 percent of the yield from New Hogan Reservoir to the District, and the remaining 43.5 percent to CCWD. The total annual supply available is approximately 84,100 AF/Y in normal water years. The Allocation Contract also provides that any water not used by CCWD can be used by the District. At the current level of CCWD use, the District can rely on about 83,000 ac-ft/yr of supply from the New Hogan Project in normal water years under safe yield operation. If CCWD maintains its percentage entitlement (43.5 percent) and exercises it, the District's share would be reduced. Based upon the CCWD 2015 Urban Water management Plan and current use numbers, it is assumed for this analysis that the reasonably available volume to the District for all purposes is 80,000 ac-ft/yr through 2030, and 75,000 thereafter.

New Hogan Reservoir receives its water supply primarily from rain runoff. The water storage capacity is 317,000 ac-ft. The New Hogan Reservoir was constructed in 1964. It is located on the Calaveras River and is located approximately 30 miles east of Stockton, south of State Highway 26 in Calaveras County. The District is the water master and controls dam releases for irrigation and municipal use for the District and CCWD during non-flood control periods. The United States Army Corps of Engineers (USACE) operates the dam for flood control. The New Hogan supply is transmitted from the reservoir through a series of creeks, diversion structures, and a dedicated pipeline to be treated at the DJW WTP, as shown on **Figure 4-1**.

4.1.2 New Melones

The District receives water from the New Melones Project pursuant to a December 1983 Contract with USBR allocating the District 75,000 acre-feet annually. The New Melones supply is transmitted from the reservoir through a series of creeks, diversion structures, canals, and a pipeline to be treated at the DJW WTP, as shown on **Figure 4-2**.

New Melones Reservoir is a part of the Central Valley Project (CVP), receives its water from rain and snowmelt runoff, and has a capacity of 2.4 million ac-ft. It is located approximately 40 miles east of Stockton, north of State Highway 120 in Stanislaus County. Central San Joaquin Water Conservation District (CSJWCD) also has

a water supply contract with USBR for the New Melones Project. Together the District and CSJWCD are entitled to up to 155,000 ac-ft of water from New Melones Reservoir annually. Water allocation amounts are based on the March-September water forecast and the February end of month storage in the New Melones Reservoir each year to be used for municipal and industrial or agricultural use.

4.2 Surface Water

The District has filed several water rights applications to divert excess wet weather flow from Calaveras River, Littlejohns Creek, and other tributaries. Environmental Review of the applications is still on-going, and a hearing will likely be required before the State Water Resources Control Board before permits are issued.

4.3 Groundwater

The District currently has five wells located at the DJW WTP site used only for emergency municipal deliveries. The District has not historically pumped groundwater to provide municipal and industrial water unless there is a severe drought or operational emergency. As discussed below, the District started pumping groundwater in summer of 2015 to offset reduced surface water supplies. The District also pumped groundwater in diminishing amounts in 2016. When groundwater is pumped, it is blended with the District's surface water for processing through the DJW WTP and subsequently delivered to the City of Stockton, County of San Joaquin, and Cal Water.

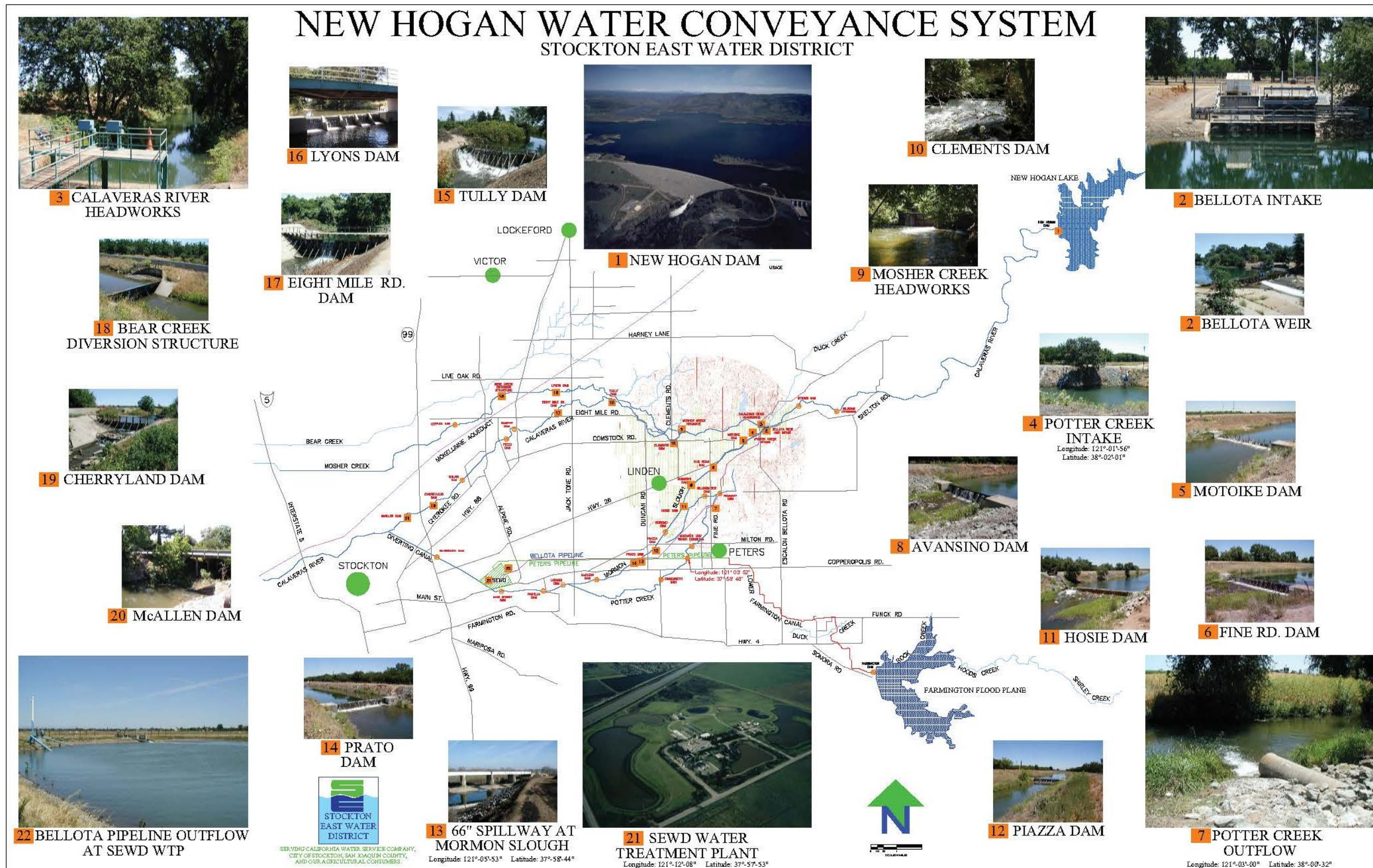


Figure 4-1. New Hogan Supply Map

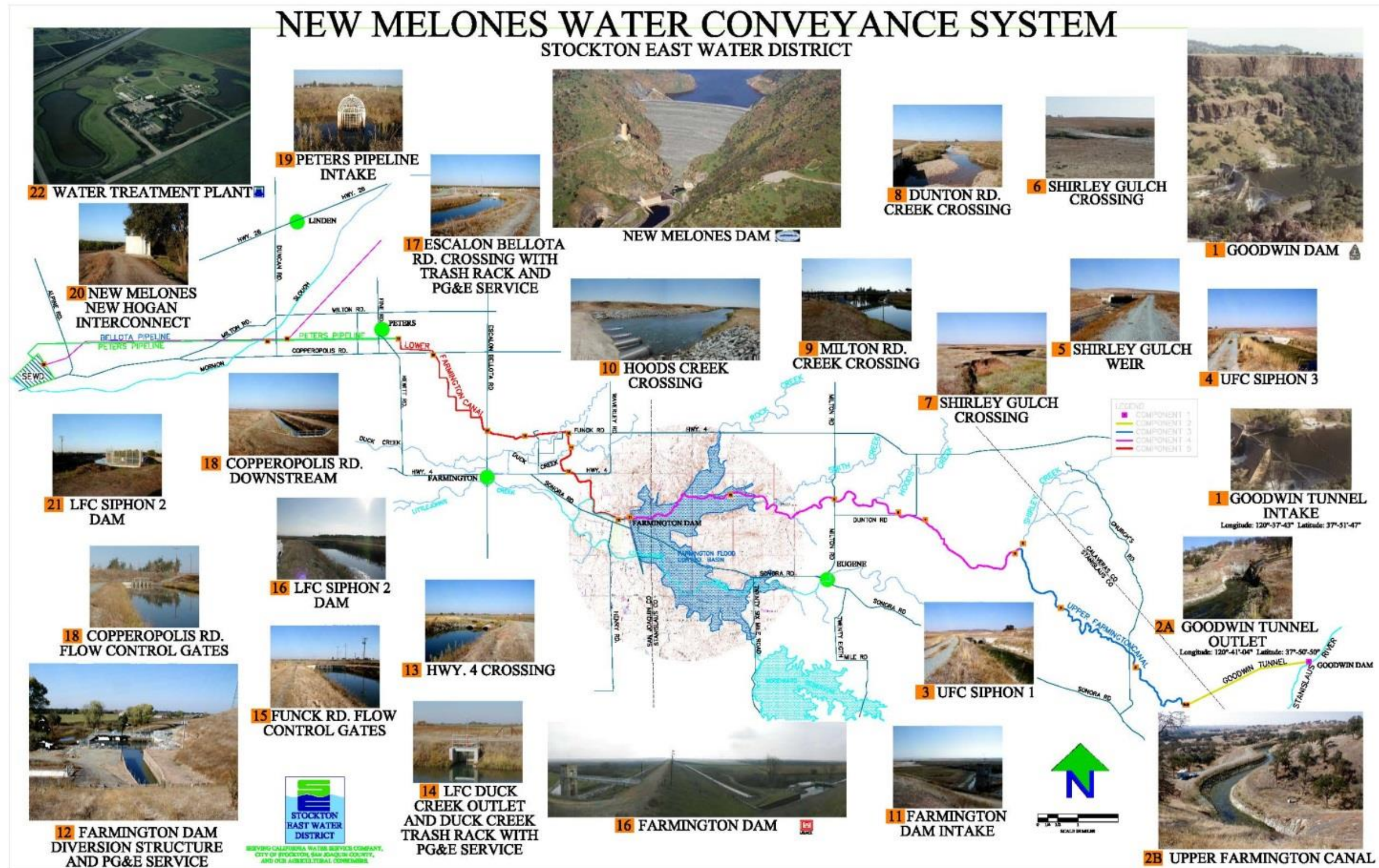


Figure 4-2. New Melones Supply Map

4.3.1 Basin Description

The groundwater basin underlying the District is the San Joaquin Valley Basin, Eastern San Joaquin Subbasin (5-22.01), as shown on **Figure 4-3**. The Eastern San Joaquin Subbasin is not adjudicated and is defined by the areal extent of unconsolidated to semi-consolidated sedimentary deposits that are bounded by the Mokelumne River on the north and northwest; San Joaquin River on the west; Stanislaus River on the south; and consolidated bedrock on the east. The Eastern San Joaquin Subbasin is drained by the San Joaquin River and several of its major tributaries namely, the Stanislaus, Calaveras, and Mokelumne Rivers. The San Joaquin River flows northward into the Sacramento and San Joaquin Delta and discharges into the San Francisco Bay. Water bearing formations of significance in the Eastern San Joaquin Subbasin consist of the Alluvium and Modesto/Riverbank Formations, Flood Basin Deposits, Laguna Formation, and Mehrten Formation. The Mehrten Formation is considered to be the oldest fresh water-bearing formation on the east side of the basin, even though the underlying Valley Springs Formation produces minor quantities (DWR, 2006).

Other known groundwater users or potential groundwater users in the Subbasin include the following agencies:

- City of Escalon Water Service Agency
- City of Lathrop
- City of Lodi
- City of Manteca
- City of Ripon
- City of Stockton
- Calaveras County Water District
- California Water Service Company
- Central Delta Water Agency
- Central San Joaquin Water Conservation District
- Lockeford Community Services District
- North Delta Water Agency
- North San Joaquin Water Conservation District
- Oakdale Irrigation District
- Reclamation District No. 828
- River Junction Reclamation District No. 2064
- Rock Creek Water District
- South Delta Water Agency
- South San Joaquin Irrigation District
- Stockton East Water District
- Woodbridge Irrigation District



Figure 4-3. Alluvial Groundwater Basins and Subbasins within the San Joaquin River Hydrologic Region

4.4 Groundwater Levels

Groundwater levels within the basin are monitored, tracked, and presented in semi-annual Groundwater Reports prepared by the San Joaquin County Flood Control and Water Conservation District (SJCFCWCD). The SJCFCWCD semi-annual Groundwater Reports also provide a brief summary of the data which are presented here for Spring 2015, 2016, 2017, and 2018 (the latest version). Overall summaries of the water levels presented in the fall Groundwater Reports can be found online on the SJCFCWCD website (<http://www.sjwater.org/Groundwater/Groundwater-Reports>).

As presented in the Spring 2015 Groundwater Report, one-hundred twenty-eight (128) wells are monitored in the Flood Control and Water Conservation District in San Joaquin County. Of the sixty-nine (69) wells that were able to be compared, fifty-six (56) wells decreased in groundwater levels. Nine (9) wells show increases in groundwater levels, and four (4) wells had no change in groundwater elevations (San Joaquin County Flood Control and Water Conservation District, 2015).

The Spring 2016 Groundwater Report indicates by spring 2016 that one-hundred and sixty-one (161) wells were monitored in SEWD. Water Level data from ninety (90) of these wells were able to be compared. From these ninety (90) wells, sixty-two (62) wells decreased in groundwater levels, twenty-six (26) wells showed increases in water levels, and two (2) had no change in water levels (San Joaquin County Flood Control and Water Conservation District, 2016).

The Spring 2017 Groundwater Report summary shows that one-hundred seventy-one (171) wells were monitored in SEWD. Of the 171 wells, data from seventy-nine (79) wells were able to be compared. Fifteen (15) of those wells showed decreases in groundwater levels, sixty-three (63) wells showed increases in groundwater levels, and one (1) well had no change in groundwater elevations (San Joaquin County Flood Control and Water Conservation District, 2017).

The Spring 2018 Groundwater Report summary indicates that one-hundred fifty (150) wells were monitored in that year. Of the 150 wells that were monitored, fifty-three (53) had data that could be compared. Twenty-seven (27) of these wells showed decreases in water levels, twenty-two (22) wells showed increases in water levels, and two (2) showed no change in water levels (San Joaquin County Flood Control and Water Conservation District, 2018).

The Spring 2018 Groundwater Report illustrates the changed groundwater levels along several water level profile cross-sections from the south county line to the north county line. **Figure 4-5** shows wells along the Highway 99 alignment from Spring 1986, Fall 1992, and Spring 2018. The cross-section locations are shown on **Figure 4-4** and groundwater levels profiles from the Spring 2018 Groundwater Report are shown on **Figure 4-5**. For the most part, the Spring 2018 water level profile is lower than the Spring 1986 water level profile with the exception of areas near the Mokelumne River and around Highway 4 where these cross-section profiles show minimal differences. Both the Spring 2018 and Spring 1986 cross section profiles are higher overall than the Fall 1992 cross section profile with an area between about Peltier road and the north county limit having about the same water levels (**Figure 4-5**).

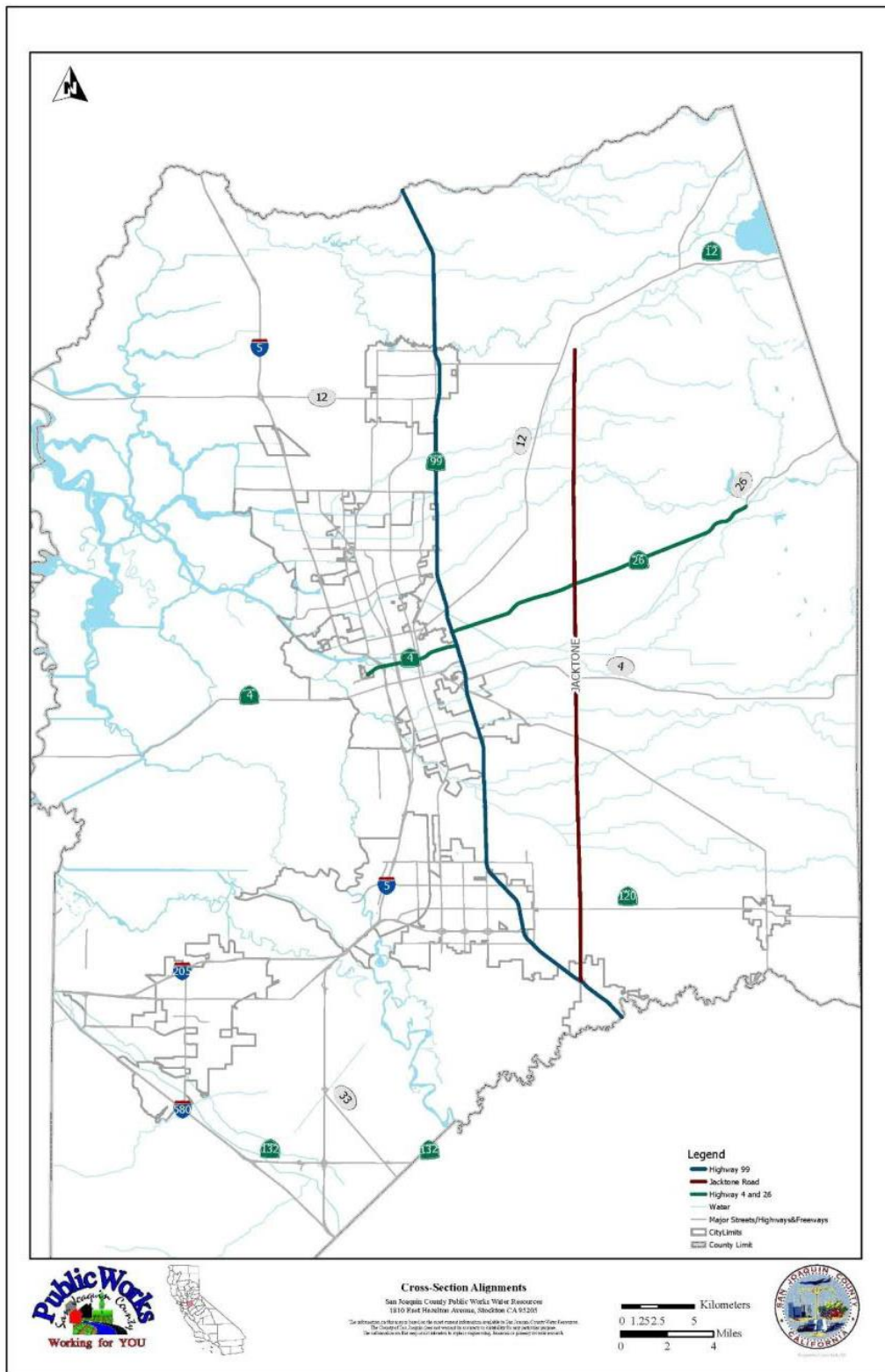


Figure 4-4. Groundwater Well Cross-Section Alignments

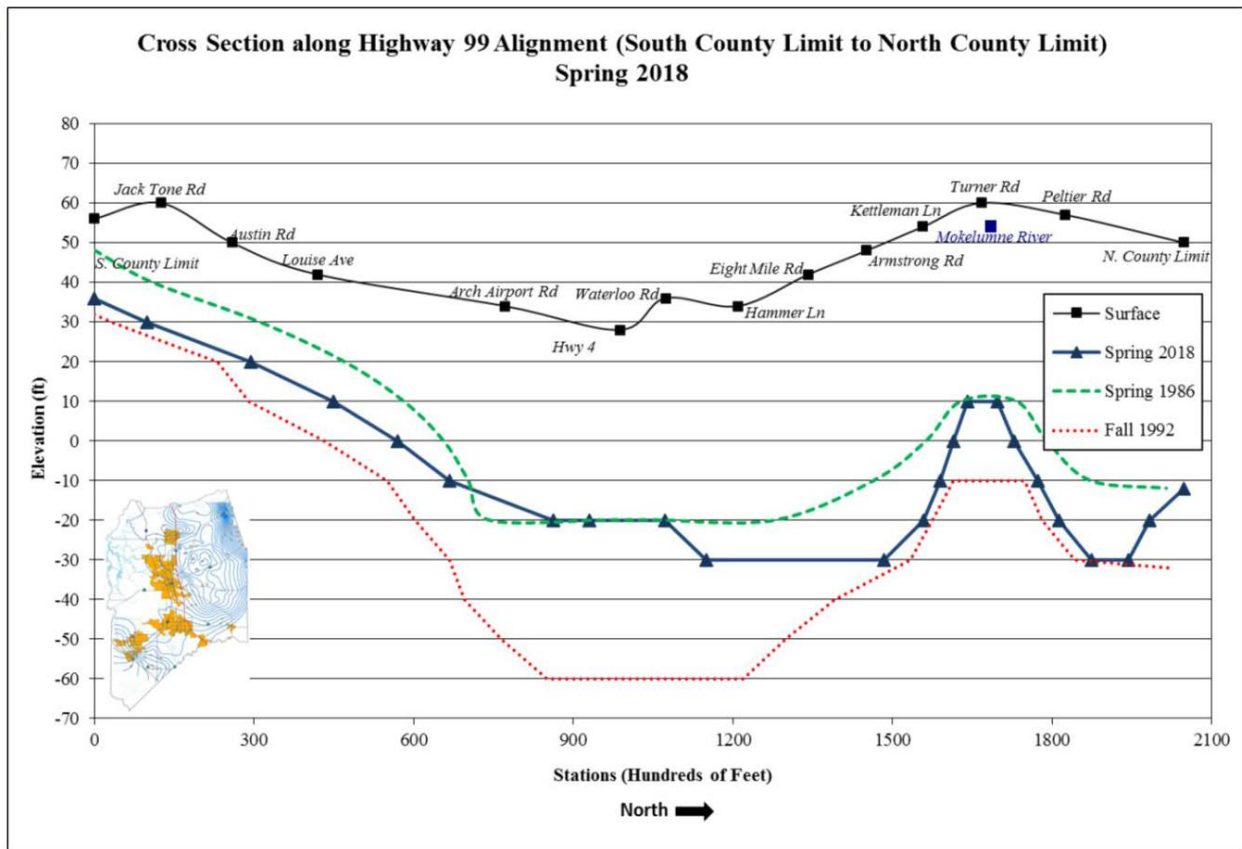


Figure 4-5. Highway 99 Cross Section: Groundwater Levels

4.4.1 Groundwater Overdraft

The Eastern San Joaquin Groundwater Subbasin has experienced groundwater overdraft for many decades. The DWR confirmed that the Subbasin remains on the list of critically overdrafted basins on the SGMA Basin Prioritization Dashboard (phase 2 final) and the DWRs 2018 SGMA Basin Prioritization Process and Results (May 2018). Groundwater level depressions within San Joaquin County have historically induced intrusion of highly saline groundwater from western aquifer regions and resulted in land subsidence within the affected area. In 2001, the San Joaquin County Flood Control and Water Conservation District Water Management Plan Phase I (CDM, 2001) concluded that the Basin was overdrafted by an average of 150,000 ac-ft/yr. The Eastern San Joaquin County GSA GSP, November 2019, estimates that groundwater pumping offsets and/or recharge on the order of 78,000 ac-ft/yr may be required to achieve sustainability. This amount of groundwater pumping offset and/or recharge is more than the estimated 34,000 ac-ft/yr of overdraft from the projected conditions scenario due to the integrated nature of the groundwater basin. The GSP also estimates that for the 20-year period from 1996-2015 the change in groundwater storage was about 41,000 ac-ft/yr, and from 1969 to 2018 the average change in groundwater storage was 48,000 ac-ft/yr.

SEWD’s surface water deliveries to the Urban Contractors are an important component in the efforts to reduce groundwater overdraft and prevent saline water intrusion. SEWD is also developing a larger program to recharge groundwater and plans to utilize available surface water more fully for crop irrigation.

4.4.2 Groundwater Quality

In general, groundwater quality within the Eastern San Joaquin Subbasin is suitable for municipal, industrial, and agricultural supplies. However, as discussed in Bulletin 118, because of declining water levels, poor quality water has been moving east along a 16-mile front on the east side of the Delta. The degradation was particularly evident in the Stockton area where the saline front was moving eastward at a rate of 140 to 150 feet per year. Data from 1980 and 1996 indicate that the saline front has continued to migrate eastward up to about one mile beyond its 1963 extent. Large areas of elevated nitrate in groundwater exist within the subbasin located southeast of Lodi and south of Stockton and east of Manteca extending towards the San Joaquin – Stanislaus County line (DWR, 2006). It is expected that additional surface water from New Melones Reservoir and other sources used in groundwater recharge efforts described in Section 4.3.3.2 will stabilize the movement of the saline water.

In an attempt to mitigate for reduced surface water supplies available for urban use, the District pumped banked surface water in 2015 and 2016. Starting in July 2015, the District pumped from five wells located on District property at a total continuous pumping rate from 4,000 to 7,500 gpm.

4.4.3 Groundwater Management

The District has been proactive in protecting and preserving groundwater supplies. This section describes the District’s groundwater recharge efforts and activities pertaining to the Sustainable Groundwater Management Act (SGMA).

4.4.3.1 Groundwater Recharge

The District has utilized the groundwater basin as a storage basin to recharge surface water supplies through several methods: (1) the District actively recharges the basin through surface water percolation through natural watercourses, (2) the District recharges groundwater through in-lieu recharge by utilizing surface water “in-lieu” of pumping groundwater for agricultural and urban purposes, and (3) the District actively recharges the basin through groundwater basins located on District property. The District intends to fully mitigate groundwater overdraft and declining water levels through a series of groundwater recharge projects. These efforts will result in a sustainable groundwater supply and satisfy the requirements of SGMA discussed below.

4.4.3.2 Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act requires certain groundwater basins to develop a Groundwater Sustainability Plan that addresses seawater intrusion, land subsidence, groundwater depletion, and/or long-term lowering of groundwater levels. Agencies in the Eastern San Joaquin Groundwater Subbasin developed a Groundwater Sustainability Plan in 2019 (GBA, 2019) to meet these requirements. A copy of the GSP can be found at <http://www.esjgroundwater.org/>. SEWD was an integral part of this effort and has developed long-term plans and goals to reach groundwater sustainability, especially through more effective use of available surface water and increased groundwater recharge.

SEWD has several projects listed in the GSP to achieve sustainability. Three projects are planned to be completed and online prior to 2040. These are:

- Project 1 – Lake Grupe In-lieu Recharge, expected groundwater demand reduction = 3,100 acre-feet per year,
- Project 2 – SEWD Surface Water Implementation Expansion, expected groundwater demand reduction = 19,000 acre-feet per year, and,

- Project 8 – Long Term water transfer to SEWD and CSJWCD, expected groundwater demand reduction = 45,000 acre-feet per year.

The GSP also identifies a potential project for SEWD called the Farmington Dam Rehabilitation Project, which if implemented may reduce groundwater demand by 30,000 acre-feet per year.

4.4.4 Historical Pumping

District groundwater pumping from 2016 to 2020 to meet urban demands is shown in **Table 4-1**. In 2016, groundwater was pumped due to a severe drought. In 2017 and 2018 small amounts were pumped as part of maintenance and testing procedures.

Table 4-1. (DWR Table 6-1) Wholesale: Groundwater Volume Pumped						
<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater type	Location or basin name	2016	2017	2018	2019	2020
Alluvial Basin	San Joaquin Valley Basin, Eastern San Joaquin Subbasin (5-22.01),	2,722	16	8	0	0
Total		2,722	16	8	0	0

4.5 Stormwater

There are no plans to divert stormwater runoff as a water source.

4.6 Wastewater and Recycled Water

The District does not provide recycled water within its service area and does not provide supplemental treatment to recycled water prior to its distribution. Recycled water is not currently or planned to be used with the planning horizon of this UWMP in the District’s Urban Contractors’ service areas.

The City of Stockton owns the Stockton Regional Wastewater Control Facility (RWCF) which collects, treats, and discharges municipal wastewater that is generated and treated within the District’s Urban Contractors’ service areas, as shown in **Table 4-2**. The collection, treatment, and disposal of treated wastewater (i.e., non-recycled) is discussed in each of the Urban Contractors’ individual urban water management plans.

Table 4-2. Wastewater and Recycled Water Agencies		
Name of Agency	Wastewater Role	Recycled Water Role
Stockton Regional Wastewater Control Facility	Collect, treat, discharge wastewater	N/A

4.7 Desalinated Water Opportunities

The District has no sources of ocean water, brackish water, or groundwater that provide viable opportunities for development of desalinated water as a long-term supply or a future supply source.

4.8 Exchanges or Transfers

In 2014, the District entered into an agreement with Central San Joaquin Water Conservation District (Central) by which Central permanently assigned to the District, for the benefit of the City of Stockton and Cal Water, the first 15,000 ac-ft/yr of firm water Central is entitled to receive under its existing contract with the USBR (Contract No. 4-07-20-W0330, dated December 19, 1983, as amended) and to any renewal of that contract or subsequent contract with the USBR that provides for delivery of water from New Melones Reservoir. Under the existing Central Valley Project contracts from New Melones Reservoir held by the District and Central, Central is entitled to take the first 80,000 ac-ft of water from the project before any of the District's water is to be delivered. By this agreement, the District assures to the Urban Contractors that they will receive the first 15,000 ac-ft allocated from New Melones Reservoir in most years. For this UWMP analysis, it is assumed that 15,000 ac-ft of Central supply from New Melones Reservoir is available in all year types except during some years in a multi-year drought.

SEWD may also purchase water from other agencies to supplement supplies during droughts. For instance, the District purchased 10,000 ac-ft from Oakdale Irrigation District in 2016. These purchases are typically performed with short-term annual contracts and may be limited in quantity and often only at high costs.

4.9 Surface Water Banked

The District stores surface water underground via direct recharge into percolation ponds located on District property. Since 2003, the District has directly recharged and stored about 82,426 ac-ft of surface water underground, after pumping has been subtracted. Between 2016 and 2020, the District stored an average of 4,600 ac-ft/yr. The District will be increasing groundwater recharge as additional sources of supply become available and with construction of additional percolation basins.

In addition, the District has stored surface water underground as a result of the in-lieu recharge undertaken by the District since 1976 when surface water deliveries replaced groundwater pumping in both the agricultural and urban area. The District has not yet quantified the total underground storage available from in-lieu recharge, so it is not included as a supply source in this UWMP.

4.10 Historical Use of Water Supplies

Figure 4-6 shows the historical use of the District's three main water supplies (New Hogan Reservoir, New Melones Reservoir, and groundwater) for urban deliveries since 2010. New Melones water is typically the main supply and is supplemented with New Hogan water. However, in dry years, water from the more reliable New Hogan Reservoir constitutes a higher percentage of the water. The District's wells are typically only used during severe droughts and operational emergencies. They were used in 2015 and 2016 due to a serious multi-year drought.

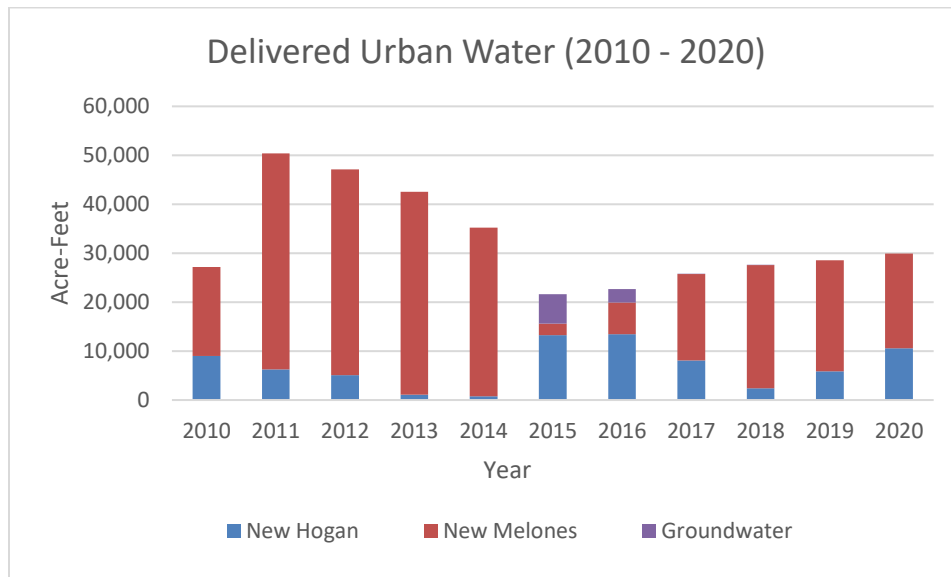


Figure 4-6. Delivered Urban Water

4.11 Climate Change Impacts on Water Supplies

Climate change was evaluated as part of the local Groundwater Sustainability Plan developed in 2019 (GBA, 2019), and the analysis is discussed in more detail in Section 3.2. A hydrologic model predicted future increases in temperature, precipitation, and ET_o. The region is expected to have higher precipitation. However, this is not expected to impact total water supplies to SEWD. GBA (2019) stated that “*Despite there being higher flows in streams, the monthly timing of flows meant that surface water diversions were not expected to change due to both availability of water in the streams and water rights agreements limiting diversion months*” (Section 2.3.7.4). Temperatures would also increase potentially reducing snowpack storage. This would particularly impact New Hogan Dam, since the watershed is at a relatively low elevation, and relies largely on rainfall runoff. While New Melones reservoir could be impacted by a reduction in snowpack storage, SEWD also plans to increase recharge of high flows, helping to offset any potential impacts to the timing of water supplies.

4.12 Energy Intensity

Energy intensity is defined as the amount of energy used to collectively divert, store, convey, treat, and distribute each unit volume of water and herein is reported as kilowatt hours per acre-foot (kW-hr/ac-ft). The analysis was performed using data for 2017, which had the best overall energy use records between 2016 and 2020.

As previously mentioned, to supply their customers SEWD has three sources for water including New Melones Reservoir, New Hogan Reservoir, and pumped groundwater. Energy data was acquired from several meters at the District wells, water treatment plant, and diversion facilities. A description of the various system components and their energy usage follows:

Extraction (Wells): The District has five wells for urban use. Although the district does not pump the wells often, in 2017, a small volume was pumped for testing and maintenance.

Diversion: Trashracks along the waterways utilize a small amount of energy for cleaning and operations.

Storage: There are no major storage facilities in the urban water system.

Conveyance: Water from the two reservoirs is delivered using a series of earth lined canals and streams to gravity feed the water treatment plant. Therefore, there is no energy consumed during water conveyance.

Treatment: The largest consumption of energy was at the water treatment plant, where all surface water and groundwater are treated to meet drinking water standards.

Distribution: Water is sent to the Urban Contractor from the water treatment plant by gravity. The Urban Contractors use energy to distribute water in their own system, but that is not considered in this analysis.

Water Volume: The water volume used in the analysis was based on the volume treated and delivered to urban customers in 2017 and did not include SEWD water use for agricultural deliveries or groundwater recharge.

The energy intensity analysis is shown below in **Table 4-3**. The calculated energy intensity is 310 kWh/AF.

Table 4-3. Energy Intensity (Year 2017)							
Description	Water Management Process						
	Extraction (wells)	Diversion	Storage	Conveyance	Treatment	Distribution	Total Utility
Volume of Water Entering Process (AF)	16	25,762	0	0	25,778	0	25,778
Energy Consumed (kWh)	11,961	4,380	0	0	7,962,522	0	7,978,863
Energy Intensity (kWh/AF)	747	0.2	0	0	309		310

4.13 Future Water Projects

The District has a long-term goal to increase water supplies and improve water reliability through development of various projects. A summary of the District's proposed projects over the next five years is shown in **Table 4-4**.

Table 4-4. (DWR Table 6-7) Wholesale: Expected Future Water Supply Projects or Programs					
<input type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.				
<input type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in narrative format. LOCATION OF THE NARRATIVE _____				
Name of future projects or programs	Joint project with other agencies?	Description	Planned implementation year	Planned for use in year type	Expected increase in water supply to agency
Bellota Weir	No	Weir and intake modifications to provide improvements to fisheries and preserve water reliability	2022-2023	All	No increase to water supply but could make supply more reliable
Disinfection system	No	Automate disinfection system	2020-2025	All	No increase
Groundwater wells	No	One additional groundwater well every 5 years	2020-2045	Emergency	2,400 AF/year/well
La Grupe In-lieu Recharge	No	Surface water deliveries to reduce groundwater pumping	Unknown	All	3,100 AF/year
Surface Water Implementation Expansion	No	Surface water deliveries to reduce groundwater pumping	Unknown	All	19,000 AF/year
Long-term water transfer to SEWD and CSJWCD	No	Water transfer	Unknown	All	45,000 AF/year
Farmington Dam Rehabilitation	No	Groundwater Recharge	Unknown	All	30,000 AF/year

4.14 Summary of Existing and Planned Sources of Water

A summary of current water supply sources and the actual volume used by source in 2020 is shown **Table 4-5**. The projected water supply sources and quantities are provided in Error! Reference source not found.

Table 4-5. (DWR Table 6-8) Wholesale: Water Supplies – Actual, ac-ft/yr				
Water supply	Additional detail on water supply	2020		
		Actual volume	Water quality	Total right or safe yield
Purchased water	USBR-New Melones	21,144	Raw water	75,000
Purchased water	New Hogan	34,241	Raw water	80,000
Groundwater (a)	Eastern San Joaquin Subbasin 5-22.01	0	Raw water	13,710
Recycled water		0		0
Desalinated water		0		0
Stormwater use		0		0
Transfers	Central-New Melones	0	Raw water	15,000
Exchanges		0		0
Total		55,385		183,710

Note: A normal year is assumed.

^(a) Estimated pumping capacity for current wellfield, based on continuous pumping at 8,500 gpm year-round.

Table 4-6. (DWR Table 6-9)

Wholesale: Water Supplies –Projected, ac-ft/yr

Water supply	Additional detail on water supply	2025		2030		2035		2040		2045	
		Reasonably available volume	Total right or safe yield	Reasonably available volume	Total right or safe yield	Reasonably available volume	Total right or safe yield	Reasonably available volume	Total right or safe yield	Reasonably available volume	Total right or safe yield
Purchased water	USBR-New Melones ^(a)	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
Purchased water	New Hogan	80,000	80,000	80,000	80,000	75,000	80,000	75,000	80,000	75,000	80,000
Groundwater ^(b)	Eastern San Joaquin subbasin 5-22.01	16,130	16,130	18,550	18,550	20,969	20,969	23,389	23,389	25,808	25,808
Recycled water											
Desalinated water											
Stormwater use											
Transfers											
Total		186,130	186,130	188,550	188,550	185,969	190,969	188,389	193,389	190,808	195,808

Note: A normal year is assumed.

^(a) 90,000 ac-ft/yr includes the Central-New Melones allocation of 15,000 ac-ft/yr.

^(b) 2020 estimated pumping capacity for current wellfield, based on continuous pumping at 8,500 gpm. 2025 through 2045 estimated pumping capacity based on an additional 1,500 gpm well added every five years. It should be noted that while this amount is listed to be available in each year, the District's policy is to utilize groundwater supplies only in a drought or other emergency.

5 Water Supply Reliability Assessment

This section describes factors impacting long term reliability of water supplies, provides a comparison of projected water supplies and demand projections, and identifies shortage expectations. According to the agreement between SEWD and the Urban Contractors, SEWD shall make available to the contractors a minimum of 20,000 acre-feet of treated water annually, and may make available additional quantities of water, and the contractors shall use their best efforts to accept both the base supply and additional amounts of treated water (see Appendix E – Second Amended Contract). SEWD has been able to make available the minimum contractual amount of 20,000 in all years since the treatment plant began operations. In short years, SEWD has supplemented surface water supplies with well water and water transfers and mitigated through urban water conservation. These programs are discussed in the following Section 6 - Water Shortage Contingency Plan. The analysis below shows that SEWD has a reliable water supply, but some cutbacks can be experienced in multiple drought years.

5.1 Constraints on Water Sources

A description of vulnerabilities and potential constraints on the District’s water supplies are described in this section.

5.1.1 New Hogan Reservoir

As described in Section 4.1.1, the contract and Memorandum of Understanding (MOU) between the District, CCWD, and USBR allow the agencies to maximize yield by taking the water when it is available. Water supplies from New Hogan Reservoir are the most reliable supply from the District and have typically been available even during prolonged droughts.

5.1.2 New Melones Reservoir

As described in Section 4.1.2, the District’s full water supply allocation from New Melones has not been available in every year type. Because of high demands on the project yield, current projections of availability show that the District and CSJWCD will receive full allocations in all but dry years based on inflow to New Melones.

5.1.3 Groundwater

Section 4 provides a description of the District’s groundwater levels and planned actions and water management strategies for groundwater recharge to reduce constraints on the District’s groundwater supplies. The District has recently expanded efforts to recharge surface water and plans to expand recharge efforts into the future. The District also plans to more fully utilize surface water for agricultural demands when available, to help preserve groundwater resources. These efforts are expected to result in a long-term sustainable groundwater supply.

5.1.4 Plans for Supplemental Supplies

The District has filed water right applications with the State Water Resources Control Board to divert wet weather flows on Littlejohns and the Calaveras River and other tributaries. These applications are still being reviewed and processed. The District is also willing to consider purchased water opportunities when they are economically feasible, such as from Oakdale Irrigation District and South San Joaquin Irrigation District.

5.2 Reliability by Type of Year

This section identifies historical years that are considered representative of normal, single-dry, and multiple-dry years. The surface water supply for each of those year types is also presented for use in water supply and demand assessments.

The basis of the water year data is provided in **Table 5-1** for New Melones USBR and Central supply and **Table 5-2** for New Hogan supply. The “volume available” shown in the tables represents the quantity of water supply expected if there were to be a repeat of the hydrology from that type of year. The definitions of the three water year types as described by DWR (2021) are provided below.

1. Average year is a year or an average range of years in the historical sequence that most closely represents median water supply availability to the agency. Normal year and average year are used interchangeably.
2. Single dry year is the year with the lowest water supply availability to the agency.
3. Multiple-dry year period is the lowest average water supply availability to the agency for a consecutive multiple year period (five years) for a watershed since 1903.

Year type	Base year	Volume available, ac-ft/yr	Percentage of average supply
Average year	2018	90,000	100%
Single dry year (a)	2015	15,000	17%
Multiple-dry years 1 st year	2013	90,000	100%
Multiple-dry years 2 nd year	2014	55,000	61%
Multiple-dry years 3 rd year	2015	0	0%
Multiple-dry years 4 th year	2016	0	0%
Multiple-dry years 5 th year	2017	90,000	100%

- (a) During a multiple dry year period, 2015 had a zero allocation. This was partly a result of a preceding dry year. It is assumed that if 2015 was a stand-alone dry year, and was preceded by a normal year, then the 15,000 AF allocation from Central would be available.

Table 5-2. (DWR Table 7-1) Wholesale Basis of Water Year Data – New Hogan Reservoir			
Year type	Base year	Volume available	Percentage of average supply
Average year	2018	80,000	100%
Single dry year	2015	38,478	48%
Multiple-dry years 1 st year	2013	80,000	100%
Multiple-dry years 2 nd year	2014	66,300	83%
Multiple-dry years 3 rd year	2015	38,478	48%
Multiple-dry years 4 th year	2016	66,300	83%
Multiple-dry years 5 th year	2017	80,000	100%

5.3 Supply and Demand Assessment

This section provides an assessment of the District’s water supply reliability for normal (average), single-dry, and multiple-dry water years. Water demands are addressed in Section 3: water supplies are addressed in Section 4, Section 5.1, and Section 5.2. Agricultural water demands that can be met with District supplies are met with any remaining water and are therefore adjusted for each year type based on urban demands.

Following are tables showing water supplies and demands during an average year, single-dry year, and multiple-dry year period (covering 5 years). The following should be noted about these tables.

1. The sales shown for the Urban Contractors are based on actual historical use made during similar year types. These are less than the total demands of the Urban Contractors reported in those years. It is assumed the difference between total demand and wholesale water provided is met with other supplies available to the Urban Contractors and water conservation by the Urban Contractors.
2. The District’s contract with the Urban Water Suppliers ends in 2035. Hence, no sales to the Urban Contractors are shown from 2035 to 2045.

The normal water year current and projected water supplies are compared to the current and projected demand for the District in **Table 5-3**.

**Table 5-3. (DWR Table 7-2)
Wholesale: Normal Year Supply and Demand Comparison, ac-ft/yr**

	2025	2030	2035	2040	2045
Supply					
New Melones (USBR and	90,000	90,000	90,000	90,000	90,000
New Hogan	80,000	80,000	75,000	75,000	75,000
Groundwater	0	0	0	0	0
Supply total	170,000	170,000	165,000	165,000	165,000
Demand					
City of Stockton	34,584	37,673	0	0	0
Cal Water	24,000	24,000	0	0	0
San Joaquin County	1,609	1,609	0	0	0
Conveyance Recharge	10,859	10,859	0	0	0
Surface water - banked	11,288	12,417	13,659	15,025	16,527
Demand total (a)	82,340	86,558	13,659	15,025	16,527
Remaining Supply (available for agriculture) (b)	87,660	83,442	151,341	149,975	148,473

(a) The treatment plant has a maximum production capacity of 72,800 AF/Y. Urban Contractor demand in excess of the treatment plant capacity will be met by other Urban Contractor supplies.

(b) Based on ET_0 values, crop water demands are 170,000 AF/Y. Agricultural – Surface Water is water that can be supplied by the district to farmers and is calculated by subtracting Urban Contractor demands and Conveyance Recharge from supply total. The remainder crop water demands must be supplied by groundwater pumped by farmers. The agricultural demand may decline gradually over time as agricultural land is urbanized.

The current and projected water supplies are compared to the demands for a single-dry year for the District in Table 5-4.

Table 5-4. (DWR Table 7-3) Wholesale: Single-Dry Year Supply and Demand Comparison, ac-ft/yr					
	2025	2030	2035	2040	2045
Supply					
New Melones (USBR & Central)	15,000	15,000	15,000	15,000	15,000
New Hogan	38,478	38,478	38,478	38,478	38,478
Transfers (a)	10,000	13,541	18,280	23,020	27,760
Groundwater	16,129	18,548	20,968	23,387	25,806
Supply total	79,607	85,567	92,726	99,885	107,044
Demand					
City of Stockton	34,584	37,673	0	0	0
Cal Water	24,000	24,000	0	0	0
San Joaquin County	1,609	1,609	0	0	0
Conveyance Recharge	8,211	8,211	0	0	0
Surface water - banked	0	0	0	0	0
Demand total (b)	68,404	71,493	0	0	0
Remaining Supply (available for agriculture) (c)	11,203	14,074	92,726	99,885	107,044

- (a) The District will purchase transfer water from other agencies during severe droughts, when available.
- (b) In addition to District provided supplies the Urban Contractors may supplement with other available Urban Contractor supplies and decrease demand through conservation. Supply not taken by the Urban Contractors will be made available to agricultural customers.
- (c) Based on ETo values, crop water demands are 170,000 AF/Y. Agricultural – Surface Water is water that can be supplied by the District to farmers and is calculated by subtracting Urban Contractor demands and Conveyance Recharge from supply total. The remainder crop water demands must be supplied by groundwater pumped by farmers. The agricultural demand may decline gradually over time as agricultural land is urbanized.

The projected water supplies are compared to the demands for multiple dry years for the District in **Table 5-5** below.

Table 5-5. (DWR Table 7-4)

		2025	2030	2035	2040	2045
First year	Supply					
	New Melones (USBR & Central)	90,000	90,000	90,000	90,000	90,000
	New Hogan	80,000	80,000	75,000	75,000	75,000
	Groundwater	0	0	0	0	0
	Transfers (a)	0	0	0	0	0
	Supply total	170,000	170,000	165,000	165,000	165,000
	Demand					
	City of Stockton	34,584	37,673	0	0	0
	Cal Water	24,000	24,000	0	0	0
	San Joaquin County	1,609	1,609	0	0	0
	Conveyance Recharge	14,603	14,603	0	0	0
	Surface water – banked	4,000	4,000	4,000	4,000	4,000
	Demand total (b)	78,796	81,885	0	0	0
Remaining Supply (available for agriculture) (c)	91,204	88,115	161,000	161,000	161,000	
Second year	Supply					
	New Melones (USBR & Central)	55,000	55,000	55,000	55,000	55,000
	New Hogan	66,300	66,300	66,300	66,300	66,300
	Groundwater	16,129	18,548	20,968	23,387	25,806
	Transfers (a)	10,000	10,000	10,000	10,000	10,000
	Supply total	147,429	149,848	152,268	154,687	157,106
	Demand					
	City of Stockton	34,584	37,673	0	0	0
	Cal Water	24,000	24,000	0	0	0
	San Joaquin County	1,609	1,609	0	0	0
	Conveyance Recharge	10,644	10,644	0	0	0
	Surface water – banked	0	0	0	0	0
	Demand total (b)	70,837	73,926	0	0	0
Remaining Supply (available for agriculture) (c)	76,592	75,922	152,268	154,687	157,106	
Third year	Supply					
	New Melones (USBR & Central)	0	0	0	0	0
	New Hogan	38,478	38,478	38,478	38,478	38,478
	Groundwater	16,129	18,548	20,968	23,387	25,806
	Transfers (a)	10,000	10,000	10,000	10,000	10,000
	Supply total	64,607	67,026	92,726	99,885	107,044
	Demand					
	City of Stockton	34,584	37,673	0	0	0
	Cal Water	24,000	24,000	0	0	0
	San Joaquin County	1,609	1,609	0	0	0
	Conveyance Recharge	8,222	8,222	0	0	0
Surface water – banked	0	0	0	0	0	

	Demand total (b)	68,415	71,504	0	0	0
	Remaining Supply (available for agriculture) (c)	-3,808	-4,478	92,726	99,885	107,044
Fourth year	Supply					
	New Melones (USBR & Central)	0	0	0	0	0
	New Hogan	66,300	66,300	66,300	66,300	66,300
	Groundwater	16,129	18,548	20,968	23,387	25,806
	Transfers (a)	10,000	10,000	10,000	10,000	10,000
	Supply total	92,429	94,848	97,268	99,687	102,106
	Demand					
	City of Stockton	34,584	37,673	0	0	0
	Cal Water	24,000	24,000	0	0	0
	San Joaquin County	1,609	1,609	0	0	0
	Conveyance Recharge	8,037	8,037	0	0	0
	Surface water – banked	0	0	0	0	0
	Demand total (b)	68,230	71,319	0	0	0
	Remaining Supply (available for agriculture) (c)	24,199	23,529	97,268	99,687	102,106
	Fifth year	Supply				
New Melones (USBR & Central)		90000	90000	90000	90000	90000
New Hogan		80000	80000	75000	75000	75000
Groundwater		0	0	0	0	0
Transfers (a)		0	0	0	0	0
Supply total		170,000	170,000	165,000	165,000	165,000
Demand						
City of Stockton		34,584	37,673	0	0	0
Cal Water		24,000	24,000	0	0	0
San Joaquin County		1,609	1,609	0	0	0
Conveyance Recharge		9,483	9,483	0	0	0
Surface water – banked	4,600	4,600	4,600	4,600	4,600	
Demand total (b)	74,276	77,365	4,600	4,600	4,600	
Remaining Supply (available for agriculture) (c)	95,724	92,635	160,400	160,400	1604,000	

- (a) The District will purchase transfer water from other agencies during severe droughts, when available
- (b) The treatment plant has a maximum production capacity of 72,800AF/Y. Urban Contractor demand in excess of the treatment plant capacity will be met by other Urban Contractor.
- (c) Based on ET_o values, crop water demands are 170,000 AF/Y. Agricultural – Surface Water is water that can be supplied by the district to farmers and is calculated by subtracting Urban Contractor demands and Conveyance Recharge from supply total. The remainder crop water demands must be supplied by groundwater pumped by farmers. The agricultural demand may decline gradually over time as agricultural land is urbanized. .Based on ET_o values, crop water demands are 170,000 AF/Y. Agricultural – Surface Water is water that can be supplied by the district to farmers and is calculated by subtracting Urban Contractor demands and Conveyance Recharge from supply total. The remainder of ET_o must be supplied by groundwater pumped by the farmer. An imbalance of supply and demand will be mitigated through the Urban Contractor's other supplies and through Urban Contractor conservation strategies.
- (d) While the fifth year (2017) was considered a wet year and the District received full contract allocations, data for Table 5-5 is from the driest 5-year period.

5.4 Drought Risk Assessment

A drought risk assessment was completed to evaluate the District’s ability to meet a 5-year drought if it occurred over the next five years. The assessment looks at current demands and effectiveness of water augmentation and water use reduction measures.

The assessment simulates the same 5-year drought (2013-2017) evaluated in Section 5.3 - Supply and Demand Assessment. This drought is simulated using estimated water demands over the next 5 years (2021-2025). The following procedure was used in developing the Drought Risk Assessment:

1. Water demands were interpolated between current (2020) usage and anticipated 2025 demands.
2. Water supplies are based on the values presented in Table 5-5. Each supply was evaluated and quantified separately and then summed.
3. Water augmentation measures included the District’s wells, which are used during severe drought and operational emergencies. The yield was based on the current capacity of the wells in 2020.
4. Water supplies could also be augmented through water transfers. However, any such transfer would likely be on a temporary annual basis. While SEWD may seek such transfers in future droughts, they are not guaranteed so they were not included in the analysis.
5. Water use reduction savings could potentially come from the District’s water conservation efforts through the Stockton Area Water Users (see Section 7). However, the impact of water conservation education on usage is difficult to predict and is not accounted for here.
6. A primary method of water use reduction includes reduced surface water deliveries to agricultural water users. This method has been successfully used in the past. The growers practice conjunctive use and rely on groundwater to supplement surface water, especially during dry periods. SEWD performs both in-lieu and direct recharge to sustain groundwater levels and is developing a long-term recharge program that will help ensure sustainable groundwater supplies. This will allow growers to accommodate reduced surface water deliveries in dry years with higher groundwater pumping. This method is often used; however, the District still strives to meet all of the urban and agricultural water demands each year and tries to minimize surface water cutbacks to growers.

The results of the Drought Risk Assessment are shown in **Table 5-6** below.

Table 5-6. Five-Year Drought Risk Assessment, ac-ft/yr					
Description	2021	2022	2023	2024	2025
Gross Water Use	228,520	237,090	245,661	254,231	262,802
Total Supplies	170,000	147,429	78,408	92,429	170,000
Surplus/Shortfall w/o WSCP Action	-58,520	-89,661	-167,253	-161,802	-92,802
Planned WSCP Actions					
WSCP - supply augmentation benefit (a)	16,129	16,129	16,129	16,129	16,129
WSCP - use reduction savings benefit (b)	42,391	73,532	151,124	145,673	76,673
Revised Surplus/(shortfall)	0	0	0	0	0
Resulting % Use Reduction from WSCP action	19%	31%	62%	57%	29%

(a) Pumping from District wells

(b) Reductions in surface water deliveries to growers who can use groundwater

The Drought Risk Assessment shows that supply augmentation and water use reduction savings can adequately address water shortage in the simulated drought and allow urban water needs to be met.

5.5 Regional Supply Reliability

The District utilizes water management tools to maximize the efficient use of water resources including water conservation and conjunctive use. The District has been working with its Urban Contractors to implement conservation measures. The District is a member of the Stockton Area Water Suppliers (SAWS). Members of SAWS include the District, the City of Stockton, the County of San Joaquin, and Cal Water.

The District is an active member agency of the Eastern San Joaquin Groundwater Basin Authority (GBA). The GBA is the regional water management group responsible for the development and implementation of the 2014 Eastern San Joaquin Integrated Regional Water Management Plan (IRWMP) Update. The District participated in the 2014 Eastern San Joaquin IRWMP which is an update and expansion of the 2007 IRWMP prepared for the Eastern San Joaquin Region (GEI, 2014). The purpose of the IRWMP is to define and integrate key water management strategies to establish the protocols and course of action for implementation of the Eastern San Joaquin Integrated Conjunctive Use Program. As described in Section 4, the District is in the process of increasing regional supply reliability through their groundwater recharge and banking efforts as part of the Farmington Project.

The District is also involved in groundwater management activities with the GBA through the development of the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan (GBA, 2019). Section 4.3 includes more information on the District’s groundwater, as well as local and regional groundwater management.

The District is also a member of several other state-wide and regional groups including the Eastern Water Alliance, the American Water Works Association, the Association of California Water Agencies, the California Farm Water Coalition, the California Special Districts Association, the Central Valley Project Water Association, the Central Valley Salinity Alternatives for Long-Term Sustainability (Lower San Joaquin River Committee), the Greater Stockton Chamber of Commerce, the San Joaquin Council of Governments, the San Joaquin County Farm Bureau Federation, and the Water Education Foundation.

5.6 Climate Change Impact on Water Supply Reliability

Water reliability is not expected to be significantly impacted by climate change based on an evaluation in the 2019 Eastern San Joaquin Groundwater Sustainability Plan (GBA, 2019) and operational changes and new management practices expected in SEWD and local urban areas. GBA predicted that climate change would cause an overall increase in precipitation. However, this is not expected to impact total water supplies to SEWD. GBA (2019) stated that “Despite there being higher flows in streams, the monthly timing of flows meant that surface water diversions were not expected to change due to both availability of water in the streams and water rights agreements limiting diversion months”. Temperatures would also increase potentially reducing snowpack storage. This would particularly impact New Hogan Dam, since the watershed is at a relatively low elevation, and relies largely on rainfall runoff. While New Melones reservoir could be impacted by a reduction in snowpack storage, SEWD also plans to increase recharge of high flows, helping to offset any potential impacts to the timing of water supplies.

5.7 Other Water Reliability Issues

SEWD is evaluating a potential merger with Central San Joaquin Water Conservation District (CSJWCD), located just south of SEWD. CSJWCD provides agricultural water and has a contract for surface water on the



Stanislaus River. They do not provide an urban water supply. If the merger occurred, it would have no impact on water supplies or water reliability for the Stockton area Urban Contractors.

The District is planning to make improvement to the Bellota Weir on the Calaveras River to improve fish passage and benefit the river fishery. This is part of a larger voluntary program to help fisheries and prevent impacts to water supplies/water contracts from environmental issues. This project will help to preserve the District's water supply and water reliability on the Calaveras River.

6 Water Shortage Contingency Planning

The District’s Urban Water Shortage Contingency Plan (WSCP) is included in Appendix F. It was updated in 2021 based on new requirements in the California Water Code. Certain components of the WSCP requirements are not applicable to wholesale agencies, such as enforcing water restrictions, which is the responsibility of retail water agencies. The primary objective of this WSCP is to document a process for evaluating water supplies, declaring a water shortage, and mitigation options to enhance, when possible, the supply to the Urban Contractors. The District’s Urban Contractors each have their own Water Shortage Contingency Plans that include water use restrictions and water conservation measures. Following is a summary of some components of the WSCP; refer to Appendix F for more details and the full WSCP.

6.1 Procedure for Annual Water Supply Assessment

The District policy has been to provide as much treated surface water to the urban area as possible to reduce the use of groundwater because of the danger of saline intrusion into the groundwater basin from the Delta; however, since 2013 the demand of the urban contractors for SEWD treated surface water has been severely reduced.

The following general process is performed in assessing water supplies and demands and determining urban water deliveries:

1. Urban Contractors provide their estimated demands for a calendar year each preceding fall.
2. Annual crop water demands are estimated from the District’s previous Annual Crop Report.
3. Estimated surface water allocations are provided for the New Melones Reservoir, New Hogan Reservoir, and District’s agreement with Central San Joaquin Water Conservation District by the spring each year.
4. Groundwater capacity is estimated by the number of operational wells and recent pumping data.
5. Per agreement with Urban Contractors, the first 20,000 ac-ft/yr is used for urban demands.
6. If total supplies are not adequate to meet all urban and agricultural demands, agricultural deliveries may be reduced, as long as there are adequate groundwater supplies to meet demands while maintaining a sustainable groundwater supply.
7. If demands are significantly higher than supplies, then groundwater wells and water transfers may be used to augment supplies.

6.2 Stages of Action

Table 6-1 summarizes four supply reduction conditions that align with the District’s mitigation actions described in the following section:

Table 6-1. Water Shortage Stages			
Stage	Period	Supply Reduction	Water Supply Condition
1	Long-term	0%-50%	Water Supply Shortage
2	Long-term	50%-75%	Severe Water Supply Shortage
3	Long-term	75+%	Critical Water Supply Shortage
4	Short-term	>50%	Severe Water Supply Shortage

6.3 Shortage Response Actions

The District is a wholesaler of treated water and has no authority over mandatory prohibitions on water use. Any resolution or ordinance to end users would be issued by the Urban Contractors. The District, however, can take a few actions during water shortages to improve water supply conditions. These are described below.

1. **Water Conservation Education.** The District funds and supports water conservation education through the Stockton Area Water Suppliers group. These education programs could potentially be expanded or re-focused on specific topics during a water shortage.
2. **Reduce Agricultural Water Deliveries.** A primary method to reduce surface water use is to decrease water deliveries to agricultural customers. This method has been successfully used in the past. The growers practice conjunctive use and rely on groundwater to supplement surface water, especially during dry periods. SEWD performs both in-lieu and direct recharge to sustain groundwater levels and is developing a long-term recharge program that will help ensure sustainable groundwater supplies. This will allow growers to accommodate reduced surface water deliveries in dry years through higher groundwater pumping. This method is often used; however, the District still strives to meet all of the urban and agricultural water demands each year and tries to minimize surface water cutbacks to agricultural customers.
3. **Pump Groundwater.** The District has five wells that are only used during operational emergencies or severe droughts. They were used in 2015 and 2016 due to a serious multi-year drought. The well water is delivered to the water treatment plant and conveyed to the Urban Contractors.
4. **Water Transfer Purchases.** Water supplies could be augmented through water transfers. However, any such transfer would likely be on a temporary annual basis. While SEWD may seek such transfers in future droughts, they are not guaranteed.

The table below lists the Response Actions that can be taken during each stage of the Water Shortage Stages.

Stage	Response Actions
1	Expand/re-focus water conservation education Reduce deliveries to agricultural customers
2	Expand/re-focus water conservation education Reduce deliveries to agricultural customers Pump groundwater from District wells
3	Expand/re-focus water conservation education Reduce deliveries to agricultural customers Pump groundwater from District wells Water transfer purchases
4	Expand/re-focus water conservation education Reduce deliveries to agricultural customers Pump groundwater from District wells

6.4 Revenue and Expenditure Impacts

Each year a budget is adopted at a public hearing to determine the amount of revenue needed from the Urban Contractors to meet treatment plant related expenses for the succeeding year. Revenue requirements are adjusted for over or under collection from the previous year which are generally related to the amount of water treated. At the end of each year, budgeted expenditures are compared with actual expenditures. Credits are applied to retailer accounts in the event that actual expenditures are less than budgeted expenditures.

6.4.1 Use of Financial Reserves

To assure adequate operating budget, the District strives to maintain dry year reserves. One reserve account is provided for agricultural supply and another account is provided for municipal and industrial supply. Each year a contribution is made to each reserve fund based upon the quantity of water delivered in that year to irrigators and Urban Contractors. The amount in the reserves is limited based on the District’s enabling legislations. These reserve accounts help to keep the District financially viable during droughts when water sales are lower.

6.4.2 Other Measures

Each year a review is conducted to compare increases in District expenses to revenues, in order to determine if rate adjustments may be necessary to help ensure an adequate budget for operations and maintenance expenses.

6.5 Resolution or Ordinance

A copy of the Urban Water Shortage Contingency Plan is included in Appendix F. On March 30, 2021, the District Board of Directors adopted the District’s Urban Water Shortage Contingency Plan and updated Urban Water Shortage Contingency Plan.

6.6 Seismic Risk Assessment and Mitigation

The San Joaquin County Hazard Mitigation Plan (San Joaquin County, 2017) states that there have been “*no earthquakes in last 100 years on local fault lines*” (pg. 12). As a result, the County did not conduct a seismic analysis, nor did they include a chapter on seismic risks in the Hazard Mitigation Plan. Furthermore, the plan includes a fault map that shows no faults in the Stockton East Water District’s service area. The District has no major facilities outside of San Joaquin County and, therefore, has little risk of seismic activity. Despite this, the District has taken some precautionary measures in the event of an earthquake at their Water Treatment Plant. The SEWD Emergency Action Plan (Kazarrians & Associates, 2020) states that “*SEWD has made every reasonable effort to ensure that the buildings, equipment and stored materials at the Facility are properly constructed, tied down, or positioned to minimize the risk of injury from an earthquake*” (pg A-4).

6.7 Minimum Supply Next Three Years

An estimate of the District’s minimum supply for the next three years, 2021, 2022, and 2023, is shown in **Table 6-3**. This estimate reflects the combined availability of all water supply sources assuming the same hydrology as was noted during the historical multiple-dry year period in **Section 5**.



Table 6-3. (DWR Table 8-4) Three-Year Minimum Water Supply, ac-ft/yr			
	2021	2022	2023
Available water supply	170,000	147,429	78,408

7 Demand Management Measures

This section provides narrative descriptions of the District’s metering, public education and outreach, water conservation program coordination and staffing support, and other demand management measures. Also provided is a narrative of asset management and wholesale supplier assistance programs.

7.1 Metering

The District is fully metered and meters the connections to its three Urban Contractors. The accuracy of these meters is verified and calibrated annually.

7.2 Public Education and Outreach

The Stockton Area Water Suppliers (SAWS) is a partnership between SEWD, California Water Service Company, the City of Stockton, and San Joaquin County that jointly funds the water education program in the Stockton urban area. The SAWS are dedicated to providing quality water education programs for local residents, especially the youth. To this end, the SAWS partners offer stimulating, age-appropriate water education presentations for public and private school classrooms within the Stockton Metropolitan Area. Special event presentations are also available. The SAWS water education programs align with the California Content/NGSS Standards and are designed to coordinate with teachers’ lesson plans.

Through these programs, the SAWS partners are seeking to reach out to youth to promote an understanding of the scientific and social principles related to water resource conservation. SEWD’s goal is that this outreach effort will build a progressive knowledge base within the community that will promote sound water resource decisions in the future. SAWS plans to continue sponsoring and participating in these outreach efforts in the coming years.

While water conservation outreach initially occurred as scheduled in the 2019/2020 school year, classroom presentations and event outreach were discontinued in March 2020 when schools closed, and all community events were cancelled due to the pandemic. During the pandemic, Kristin Coon, the SAWS Water Conservation Coordinator, has been working with the San Joaquin County Office of Education’s Community Partners for Environmental Literacy and the Department of Water Resources Education Committee to conduct webinars. These webinars give environmental educators avenues for virtual outreach to the community.

Specific programs of the SAWS Water Education Program included the following:

- **In-Class Water Education Presentations:** In the 2019/2020 school year, the SAWS Water Education Program visited 45 Stockton area schools, presenting in 246 classrooms and staffing booths at community events for 16,115 students and citizens. This was in-class and in-person outreach performed before March 13, 2020.
- **School-wide Assembly Program:** On behalf of SAWS, Kristin Coon Consulting contracted with Zun, an environmental education assembly program, to perform three “Water Beat” assemblies in one Stockton area school, reaching 658 students. These assemblies were performed in-person, at the school, before March 13, 2020.
- **San Joaquin County AgVenture - Three Events:** South County: November 2019, Stockton: January 2020, Lodi: February 2020. The SAWS Water Education Program staffed a booth featuring hands-on activities and a prize wheel at each of the three AgVenture events in the 2019/2020 school

year. The participation in AgVenture allows promotion of SAWS sponsored in-class, after school, and assembly programs while sharing the message of water awareness and conservation with thousands of third grade students and their teachers. Each AgVenture event hosts between 2,500 and 4,000 San Joaquin County third graders. SAWS/SEWD supports this event with a \$1,000 annual donation. SAWS will continue to participate in these events in the coming school years when students return for in-person instruction.

- **Manteca Unified School District’s Farm Days:** SAWS sponsors an activity booth at these agricultural learning events, held annually at Great Valley Elementary School in South Stockton.
- **Stockton’s Earth Day Festival (April 2019):** SAWS was a principal sponsor of this popular annual festival at Victory Park in Stockton. The SAWS Water Education Program hosted a booth offering free SAWS tote bags, water conservation materials, hose nozzles, shower timers, crayons, and children’s activity books. The 2020 Stockton Earth Day Festival was postponed due to the pandemic.
- **Manteca Unified School District’s Summer Camp (June 2019)** Similar to Manteca Unified’s Farm Days, this event focuses on agriculture and natural resources in our communities. SAWS staffed an activity booth for attendees.
- **Stockton Rotary Read-In (February 2020)** The Coordinator participates annually in the Stockton Rotary Read-In event.
- **Stockton’s Black Family Day (August 2019):** SAWS donated tote bags for this community event.
- **Lincoln Unified School District “Window on Your Future” (February 2020):** The Coordinator participated in mock job interviews designed to prepare Lincoln High School students for entry into the job market. This event presents an opportunity for staff to share career path outreach with potential job seekers. The Coordinator reached approximately 30 Lincoln High School juniors and seniors at this event.
- **San Joaquin County Science Fair Judging:** The Coordinator participates annually in exhibit judging at this county-wide event.
- **Water Treatment Plant Tours:** The SAWS Water Education Program and SEWD staff host tours of the Dr. Joe Waidhofer Drinking Water Treatment Plant for Grade 5 and above. Tours scheduled after March 13, 2020 were cancelled due to the pandemic.
- **DWR Water Education Committee:** The SAWS Water Conservation Coordinator attended one meeting of the DWR Water Education Committee in the summer of 2019, joining water educators from all over California to share resources and ideas for water conservation education and outreach. Since March 2020, the DWR Water Education Committee Meetings have been conducted on Zoom once monthly. In December 2020, the Coordinator presented a demonstration of the SAWS Water Conservation Education Program’s Distance Learning Outreach Program for water educators attending DWR Water Education Committee Meeting on Zoom.
- **SAWS Water Conservation Education Distance Learning Program:** During the summer of 2020, the Coordinator developed a distance learning program for the SAWS Water Conservation Education Program. Using the distance learning software *Padlet*, a collection of virtual water education videos, links, websites, and activities were assembled and offered to teachers. This format allows teachers to share the media with students during online classroom sessions or as remote assignments/homework.

The material focuses on water science, the water cycle, water conservation, and other water-related topics appropriate for each grade level. Teachers able to physically share materials with students are provided with send home packets that include pencils, crayon packs, activity books, and water cycle bracelet kits. In the fall of 2020, these packets were distributed to 121 teachers in 41 Stockton area schools for 3,009 students. The SAWS Water Conservation Program will continue to offer this distance learning program in 2021 and plans to use the program as pre-teaching and/or follow-up material when in-person learning resumes in Stockton area schools.

7.3 Water Conservation Program Coordination and Staffing Support

Through SAWS, the District contracts for a full-time Water Conservation Coordinator and two Water Conservation Helper positions for developing and implementing a comprehensive public outreach and water conservation education program. The program is funded as part of the rate structure for the Urban Contractors.

The contact information for the water conservation coordinator is:

Kristin Coon, Water Conservation Coordinator
Stockton East Water District
(209) 444-3126
kcoon@sewd.net

7.4 Asset Management

The connections to the three Urban Contractors are located at the DJW WTP site. The connections include three short pipelines, three meters, and several valves. The pipelines are periodically inspected while the meters are calibrated annually by qualified outside vendors. Although a valve exercise program does not exist, the valves are used frequently to control the flows to the Urban Contractors, so periodic valve exercising is typically not needed.

7.5 Wholesale Supplier Assistance Programs

The District's participation in SAWS and its implementation and support of public education and outreach efforts described in Section 7.2 helps its Urban Contractors achieve their SBX7-7 water use reduction targets. The District will continue to participate in SAWS and outreach efforts to support the Urban Contractors in meeting their established targets.

8 References

- California Irrigation Management Information System. Web-Site. (www.cimis.water.ca.gov/cimis/welcome.jsp). 2020.
- CDM. *San Joaquin County Flood Control and Water Conservation District Water Management Plan Phase 1*. October 2001.
- Davids Engineering, Inc. *Stockton East Water District 2019 Water Management Plan*. August 2019.
- Department of Water Resources (DWR). *Bulletin 118*. January 20, 2006.
- DWR. *CASGEM Basin Summary*. May 30, 2014.
- DWR. *CASGEM Groundwater Basin Prioritization for the San Joaquin Basin*. <http://water.ca.gov/groundwater/casgem/prioritymap.cfm>. Website accessed January 2016.a
- DWR. *Guidebook to Assist Urban Water Suppliers to Prepare a 2020 Urban Water Management Plan*. May 2021.
- DWR. *2018 SGMA Basin Prioritization Process and Results*. May 2018.
- Eastern San Joaquin Groundwater Authority. *Eastern San Joaquin Groundwater Subbasin – Groundwater Sustainability Plan*. November 2019.
- GEI. *2014 Eastern San Joaquin Integrated Regional Water Management Plan Update, Eastern San Joaquin County Groundwater Basin Authority*. June 2014.
- Kazarians and Associates, Inc. *Stockton East Water District Emergency Action Plan*. September 2020.
- Northeastern San Joaquin County Groundwater Banking Authority (GBA). *Eastern San Joaquin Integrated Regional Water Management Plan*. 2007.
- San Joaquin County. *Local Hazard Mitigation Plan*. Revised 2017.
- San Joaquin County Department of Public Works. *Eastern San Joaquin Groundwater Basin Groundwater Management Plan*. September 2004.
- San Joaquin County Flood Control and Water Conservation District. *Groundwater Report*. Spring 2015.
- San Joaquin County Flood Control and Water Conservation District. *Groundwater Report*. Spring 2016.
- San Joaquin County Flood Control and Water Conservation District. *Groundwater Report*. Spring 2017.
- San Joaquin County Flood Control and Water Conservation District. *Groundwater Report*. Spring 2018.
- Western Regional Climate Center. Web-Site: *Western U.S. Climate Historical Summaries, Climatological Data Summaries*, (www.wrcc.dri.edu). 2020.

STOCKTON EAST WATER DISTRICT

2020 URBAN WATER MANAGEMENT PLAN

**APPENDIX A – DOCUMENTATION OF
CITY/COUNTY NOTIFICATION**



**STOCKTON
EAST WATER
DISTRICT**

PROVIDING SERVICE SINCE 1948
www.sewd.net

DIRECTORS

Richard Atkins
Vice President
Division 1

Andrew Watkins
President
Division 2

Alvin Cortopassi
Division 3

Melvin Panizza
Division 4

Paul Sanguinetti
Division 5

Loralee McGaughey
Division 6

Thomas McGurk
Division 7

STAFF

Scot A. Moody
General Manager

Justin M. Hopkins
Assistant General Manager

LEGAL COUNSEL

Jeanne M. Zolezzi
General Counsel

Phone 209-948-0333
Fax 209-948-0423

E-mail sewd@sewd.net

6767 East Main Street
Stockton, CA 95215

Post Office Box 5157
Stockton, CA 95205

**NOTICE OF PREPARATION
Urban Water Management Plan**

The Urban Water Management Planning Act (Act) requires that the Stockton East Water District (District) update its Urban Water Management Plan (UWMP) by July 1, 2021. The District's current plan was last updated in 2016 and is being reviewed and updated per the requirements of the Act.

The District will make proposed revisions to the UWMP available for public review and will hold a public hearing for public review and comment. The public review period will begin Tuesday, March 16, 2021. The public hearing to receive comments on the UWMP will be proposed to be scheduled for the March 30, 2021, as part of the Regular Board of Directors Meeting held at 12:30 p.m., at the District office, located at 6767 East Main Street, Stockton CA 95215.

The District will receive written comments up to the end of the public hearing on March 30, 2021.

Copies of the draft UWMP will be made available during the public review period at the District office and on the District's web site, www.sewd.net.

If you are unable to attend the scheduled public meeting, but want to provide comments regarding the draft Urban Water Management Plan, you may send your comments in writing via mail or email to:

Manuel Verduzco
Stockton East Water District
P.O. Box 5157
Stockton CA 95205
mverduzco@sewd.net

Should you have any questions, please call Manuel at 209.444.3131.

Very truly yours,

Scot A. Moody
General Manager

Stockton East Water District - 2020 Urban Water Management Plan Update

60-day Notification Distribution List

Name/Email	Organization
Jeremiah Mecham/ jmecham@calwater.com	Cal Water
planninginfo@calwater.com	Cal Water
Mel Lytle/ mel.lytle@stocktonca.gov	City of Stockton
Fritz Buchman/ fbuchman@sjgov.org	San Joaquin County
Matt Zidar/ mzidar@sjgov.org	San Joaquin County

STOCKTON EAST WATER DISTRICT

2020 URBAN WATER MANAGEMENT PLAN

**APPENDIX B – NOTICE OF PUBLIC
HEARING**

**THE RECORD
PROOF OF PUBLICATION**

STATE OF CALIFORNIA
COUNTY OF SAN JOAQUIN

THE UNDERSIGNED SAYS:

I am a citizen of the United States and a resident of San Joaquin County; I am over the age of 18 years and not a part to or interested in the above-entitled matter. I am the principal clerk of the printer of THE RECORD, a newspaper of general publication, printed and published daily in the City of Stockton, County of San Joaquin by the Superior Court of the County of San Joaquin, State of California, under the date of February 26, 1952, File No. 52857, San Joaquin County Records; that the notice of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published each regular and entire issue of said newspaper and not in any supplement thereof on the following dates,
To wit,
May 15 2021

I declare under penalty of perjury that the foregoing is true and correct.
Executed on May 15, 2021 In Stockton California



Delailah Little,
The Record

0000235707

NOTICE OF PUBLIC HEARING

**BEFORE THE BOARD OF
DIRECTORS OF THE STOCKTON
EAST WATER DISTRICT**

The Board of Directors of the Stockton East Water District will hold a public hearing on Tuesday, June 8, 2021 at 12:30 pm to accept comments and consider the District's 2020 Urban Water Management Plan for adoption. The public hearing will be held at the District's office, 6767 East Main Street, Stockton, California and will be held pursuant to and in accordance with California Government Code Section 6066. The draft 2020 Urban Water Management Plan is available for inspection at the District office or on the District's website at www.sewd.net.

Scot A. Moody, General Manager
Stockton East Water District
#235707 5/15/21

STOCKTON EAST WATER DISTRICT

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX C – ADOPTION RESOLUTION

RESOLUTION NO. 21-22-04

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE
STOCKTON EAST WATER DISTRICT
2020 URBAN WATER MANAGEMENT PLAN UPDATE**

The Board of Directors of Stockton East Water District does hereby resolve as follows:

WHEREAS, the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et seq., known as the Urban Water Management Planning Act) during the 1983-1984 Regular Session, and as amended subsequently, which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, prepare an Urban Water Management Plan, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the District is an urban wholesale supplier providing more than 3,000 acre feet of drinking water annually (usually over 50,000 acre-feet), and

WHEREAS, the Plan shall be periodically reviewed at least once every five years, and that the District shall make any amendments or changes to its plan which are indicated by the review; and

WHEREAS, the Plan must be adopted by July 1, 2021 after public review and hearing, and filed with the California Department of Water Resources within thirty days of adoption; and

WHEREAS, Stockton East Water District has therefore, prepared and circulated for public review a draft Urban Water Management Plan and properly noticed the public hearing regarding said Plan on March 29, 2021 & May 15, 2021; and

WHEREAS, Stockton East Water District held a Public Hearing on Tuesday, June 8, 2021 to receive comments and accept the District's Urban Water Management Plan; and

WHEREAS, Stockton East Water District did prepare and shall file said Plan with the California Department of Water Resources by July 1, 2021; and

WHEREAS, the District's plan carefully analyzes and balances the tension between water conservation goals and the District's legislative directive to increase the use of surface water within the District for the benefit of the groundwater basin;

NOW, THEREFORE, BE IT RESOLVED by Stockton East Water District as follows:

1. The 2020 Urban Water Management Plan is hereby adopted;
2. The General Manager is hereby authorized and directed to file the 2020 Urban Water Management Plan with the California Department of Water Resources within 30 days after this date;

3. The General Manager is hereby authorized and directed to implement the Water Conservation Programs as set forth in the 2020 Urban Water Management Plan, which includes water shortage contingency analysis and recommendations to the Board regarding necessary procedures, rules, and regulations to carry out effective and equitable water conservation and conjunctive management programs;
4. In a water shortage, the General Manager is hereby authorized to declare a Water Shortage Emergency and implement necessary elements of the Plan;
5. The General Manager shall recommend to the Board additional procedures, rules, and regulations to carry out effective and equitable allocation of water resources, including the conjunctive use of surface and groundwater supplies.

PASSED AND ADOPTED at the regular meeting of the Board of Directors of Stockton East Water District on June 8, 2021 by the following vote:

Ayes: Atkins, Cortopassi, McGaughey, McGurk, Panizza, Sanguinetti, Watkins
Noes: None
Absent: None
Abstain: None



Andrew Watkins, President
Board of Directors

ATTEST:



Scot A. Moody
Secretary of the Board



STOCKTON EAST WATER DISTRICT

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX D – DWR UWMP CHECKLIST

Appendix D: UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Section 4 and Section 7
x	x	Chapter 1	10630.5	Each plan shall include a simple description of the supplier’s plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	Section 1.6
x	x	Section 2.2	10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Not applicable
x	x	Section 2.6	10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 1.3

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan Preparation	Section 1.3 and 1.4
x		Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	Not Applicable
	x	Section 2.6	10631(h)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 1.4 Table 1-5
x	x	Section 3.1	10631(a)	Describe the water supplier service area.	System Description	Section 2.1
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 2.2
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 2.3
x	x	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 2.3

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Section 2.3
x	x	Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Section 3.1
x	x	Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 3.1
x	x	Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 3.3
x	x	Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	System Water Use	Not Applicable
x	x	Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	Not Applicable
x	optional	Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Not Applicable
x	optional	Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Not Applicable
x	x	Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Section 3.2 and 5.6

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x		Chapter 5	10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Not Applicable
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Not Applicable
	x	Section 5.1	10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 7.5
x		Section 5.2	10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Not Applicable
x		Section 5.5	10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5-year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Not Applicable

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x		Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form.	Baselines and Targets	Not Applicable
x	x	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	Section 5.2 and 5.3
x	x	Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, <i>including changes in supply due to climate change.</i>	System Supplies	Section 5.3 and 5.4
x	x	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	Section 4
x	x	Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Section 4.13
x	x	Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	Section 4.14

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 4.3
x	x	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 4.4.3.2
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 4.3.1
x	x	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 4.3
x	x	Section 6.2.2.1	10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	System Supplies	Section 4.4.1, 4.4.3.2 and 4.4.3.2
x	x	Section 6.2.2.4	10631(b)(4)(C)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 4.4.4

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Section 4.14
x	x	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 4.8
x	x	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 4.6
x	x	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 4.6
x	x	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 4.6
x	x	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 4.6

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 6.2.5	10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 4.6
x	x	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 4.6
x	x	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 4.7
x	x	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	System Supplies (Recycled Water)	Section 4.6
x	x	Section 6.2.8, Section 6.3.7	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.	System Supplies	Section 4.13
x	x	Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Suppliers, Energy Intensity	Section 4.12

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 1.4, 4.4.2, 5.1 and Table 4-5
x	x	Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 5.5
x	x	Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 5.3
x	x	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	Section 5.4
x	x	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	Section 5.4

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Section 5.3
x	x	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	Section 5.3
x	x	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Sections 5.6 and 5.7
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Section 6 and Appendix F
x	x	Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Section 6 and Appendix F
x	x	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	Section 6.1 and Appendix F

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Appendix F
x	x	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier’s water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	Section 6 and Appendix F
x	x	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Section 6.2 and Appendix F
x	x	Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	Not Applicable
x	x	Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	Section 6.3

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Not Applicable
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix F
x	x	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	Not Applicable
x	x	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	Appendix F
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Section 6.6
x	x	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Appendix F
x	x	Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Appendix F

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x		Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Not Applicable
x	x	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Appendix F
x	x	Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Appendix F
x	x	Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	Appendix F
x	x	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Section 6.4
x	x	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Section 6.4
x		Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	Not Applicable

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x		Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	Not Applicable
x		Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	Not Applicable
x	x	Sections 8.12 and 10.4	10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 1.4
x	x	Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	Section 1.4
	x	Sections 9.1 and 9.3	10631(e)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Section 7

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x		Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Not Applicable
x		Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	Not Applicable
x	x	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.	Plan Adoption, Submittal, and Implementation	Section 1.4 Appendix A
x	x	Section 10.4	10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	Section 1.4
x	x	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.	Plan Adoption, Submittal, and Implementation	Section 1.4

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 10.2.2	10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Section 1.4
x	x	Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Appendix C
x	x	Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 1.4
x	x	Section 10.4	10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 1.4
x	x	Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Section 1.4
x	x	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 1.4

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 1.4
x	x	Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	Not Applicable
x	x	Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	Appendix F and Section 1.4

STOCKTON EAST WATER DISTRICT

2020 URBAN WATER MANAGEMENT PLAN

**APPENDIX E – SECOND AMENDED
CONTRACT**

**SECOND AMENDED
CONTRACT**

SECOND AMENDED CONTRACT

AMONG THE STOCKTON EAST WATER DISTRICT, THE CALIFORNIA WATER SERVICE COMPANY, THE CITY OF STOCKTON, THE LINCOLN VILLAGE MAINTENANCE DISTRICT, AND THE COLONIAL HEIGHTS MAINTENANCE DISTRICT PROVIDING FOR THE SALE OF TREATED WATER

TABLE OF CONTENTS

PARAGRAPH		PAGE
1	Definitions	4
1A	Acquisition and Construction Fund	4
1B	Agricultural Water	5
1C	Annual Audit	5
1D	Annually	5
1E	Base Monthly Payment	5
1F	Base Supply of Raw Water	5
1G	Base Supply of Treated Water	5
1H	Bond Resolution	5
1I	Bond Reserve Account	5
1J	Bond Sinking Fund Account	5
1K	Contractors	5
1L	Conveyance and Storage Facilities	6
1M	Debt Service	6
1N	Debt Service Surcharge	6
1O	Initial Delivery Date	6
1P	Initial Delivery of Water	6
1Q	Intake Facilities	6
1R	Municipal and Industrial Share	6
1S	Municipal and Industrial Water	6
1T	New debt service	7
1U	New debt service surcharge	7
1V	New Hogan Contracts	7
1W	New Hogan Dam	7
1X	New Melones Contract	7
1Y	New Melones Dam	7
1Z	New Service Area	7
1AA	Nominal Capacity	7
1BB	North Stockton Aqueduct	8
1CC	Noticed Public Hearing	8
1DD	Prime Rate	8
1EE	Parties	8
1FF	Produced Water	8
1GG	Raw Water	8
1HH	Raw Water Transmission Line	8

PARAGRAPH

PAGE

1II	Southern Water System	8
1JJ	Surplus Account	9
1KK	Treated Water	9
1LL	Water Fund	9
1MM	Water Treatment Facilities	9
1NN	Water Treatment Facilities Advances	9
1OO	Water Treatment Facilities Bonds	9
1PP	Water Treatment Plant	9
1QQ	Year	10
2	Term	10
2A	Effective Date of Second Amended Contract	10
2B	Replacement of Original Contract	10
3	Renewal; Continued Services	10
3A	Renewal	10
3B	Continued Service	10
3C	One Contractor May Renew	11
4	Water to be Furnished to the Contractors	11
4A	Obligation of Stockton East	11
4B	Water to be Made Available	11
4C	Emergency Conditions	12
4D	Additional Water	12
4E	Acceptance of Treated Water	13
4F	Scheduling of Maintenance	14
4G	Standard of Operation	14
4H	Calculation of Percentage	14
4I	Minimum Amount	14
4J	Lack of Availability of Raw Water	15
4K	Failure of System to Accept Water	15
4L	Inability to Deliver Treated Water	16
4M	Allocation of Deficiency	16
5	Payment by Contractors	16
5A	Amount to be Paid Annually	16
5B	Credit	19
5C	Audit	20
5D	Allocation of Charges	20
5E	Payment Adjustments	20
5F	Further Adjustments	21
5G	Failure to Continue Service	21
6	Time and Manner of Payment	21
6A	Monthly Payments	21
6B	Proration	22
6C	Procedures for Audit	22

PARAGRAPH

PAGE

6D	Establishing Base Monthly Payment	22
6E	Public Hearing on Base Monthly Payment	23
6F	Final Payments	23
7	Repair and Replacement Reserve Account	23
7A	Maintenance of Repair and Replacement Reserve Account	23
7B	Amount of Annual Payment	24
7C	Adjustment of Payment and Use of Account	24
8	Water Deficiency Reserve Fund	24
9	Water Treatment Facilities Reserve Fund	25
9A	Debt Service	25
9B	Operation and Maintenance	25
9C	Replacement and Expansion	25
10	Scheduling of Water	25
11	Measurement	26
12	Quality	26
13	Other Contractors	26
14	Operations	26
15	Construction of New Facilities	26
16	Attorneys Fees and Costs	27
17	Successors	27
18	Default and Remedies	27
18A	Interest	28
18B	Remedies	28
19	Notices	28
20	Subject to Bond Resolution	28
21	Specific Performance	29
22	Severability	29
23	Entire Agreement	29
24	Remedies Not Exclusive	29
25	Waiver	29
26	Titles	29
27	Gender, Number	30
28	Amendment	30
29	Controversies	30
30	Interest Received on Reserve Funds	30
31	Modification of Bond Resolution	30
32	Subject to United States Bureau of Reclamation Contract	30
33	Conduct of Public Hearings	34
34	Adjudication of Ground Water Basin	34
35	Stockton East as Contractor	34

PARAGRAPH		PAGE
36	Temporary Use of Funds	34
37	Allocation of Surplus Water Fund	35
38	Resolutions and Execution	35
39	Subject to Opinion	36
40	Subject to Removal of <u>San Marcos</u> Decision Strictures	36

LIST OF EXHIBITS

EXHIBIT	DESCRIPTION
A	Amortization Schedule
B	Water Delivery Points
C	Water Treatment Facilities Advances
D	Major Repair and Replacement Schedule
E	Resolution of Board of Directors of Stockton East
F	Resolution of Board of Directors of Cal-Water
G	Resolution of the City Council of the City of Stockton
H	Resolution of the Board of Supervisors Relative to Lincoln
I	Resolution of the Board of Supervisors Relative to Colonial

The original contract ("Original Contract") was made the 11th day of February, 1975, among Stockton East Water District, a political subdivision of the State of California, hereinafter referred to as Stockton East, the California Water Service Company, a California corporation, hereinafter referred to as Cal-Water, the City of Stockton, a municipal corporation of the State of California, hereinafter referred to as City, the Lincoln Village Maintenance District, a political subdivision of the State of California, governed by the Board of Supervisors of San Joaquin County, hereinafter referred to as Lincoln, and the Colonial Heights Maintenance District, a political subdivision of the State of California, governed by the Board of Supervisors of San Joaquin County, hereinafter referred to as Colonial. This Second Amended Contract is made this _____ day of _____, 19____, by and among all the same parties as were parties to the Original Contract.

WITNESSETH THAT:

WHEREAS, Stockton East contemplated the construction of water treatment facilities which would permit treatment of raw water available to Stockton East and in turn make the same available for municipal and industrial use within Stockton East through Cal-Water, City, Lincoln and Colonial, which operate "municipal" water distribution systems within that portion of Stockton East commonly known as the Stockton Metropolitan Area; and

WHEREAS, it was anticipated that said water treatment facilities would have a nominal capacity to treat and distribute 20,000 acre feet of water per year and would be physically capable of treating additional quantities of water annually; and

WHEREAS, in order to construct said water treatment facilities, pursuant to authority granted to it by an affirmative vote at an election held on March 5, 1974, Stockton East sold revenue bonds pursuant to the Revenue Bond Law of 1941, which bonds have a maximum amortization period of not to exceed 30 years from the date of their issue; and

WHEREAS, said water treatment facilities have been constructed; and

WHEREAS, the purpose of constructing and operating the water treatment facilities was to assist in alleviating severe ground water overdraft problems especially in the western portion of Stockton East underlying the Stockton Metropolitan Area, and particularly to stop, or slow the

rate of, falling ground water tables and related saline intrusion from the west; and

WHEREAS, Stockton East with the concurrence of City, Cal-Water, and the Board of Supervisors of San Joaquin County has heretofore had prepared, approved and adopted a "Master Water Plan" and a "Contingency Water Plan" and an "Environmental Impact Report dated October, 1973" to serve as guidelines to Stockton East in solving the water problems of Stockton East and in providing solutions in the problems of ground water overdraft and saline intrusion, which plans, among other things, contemplated the construction of water treatment facilities; and

WHEREAS, since the construction of the water treatment facilities, there has been completed the Eastern San Joaquin Groundwater Study; and

WHEREAS, that Study demonstrates that an additional annual minimum of 30,000 acre feet of supplemental surface water must be imported into the Stockton Metropolitan Area in order to meet the needs of that area by the year 2020; and

WHEREAS, it is the desire and intention of all of the parties that said water treatment facilities, and the distribution of water treated by them, will be operated and conducted at all times in a manner which will have the most beneficial effect possible in reducing ground water overdraft, reducing the rate of lowering of underground water levels and of reducing saline intrusion into the ground water basin underlying Stockton East; and

WHEREAS, under date of August 25, 1970, Stockton East under its prior name of Stockton and East San Joaquin Water Conservation District, entered into contracts with the United States of America and the Calaveras County Water District by which Stockton East obtained a portion of the supply of water developed by New Hogan Dam on the Calaveras River; and

WHEREAS, under date of December 19, 1983, Stockton East entered into a contract with the United States Department of the Interior, Bureau of Reclamation, by which Stockton East obtained the right to a portion of the supply of water developed by New Melones Dam on the Stanislaus River, on an interim basis; and

WHEREAS, Stockton East has allocated a portion of its water supply from New Hogan Dam and New Melones Dam together with such other water supplies as it may have now and in

the future to said water treatment facilities so as to permit said water treatment facilities to produce a minimum of 20,000 acre feet of treated water per year; and

WHEREAS, in order to eliminate the present ground water overdraft and to meet its municipal and industrial and agricultural needs, Stockton East requires additional supplies of water in excess of those which it now obtains from New Hogan Dam and is now endeavoring to obtain the supplies of water which it requires from various sources which may now or in the future be available; and

WHEREAS, in order to make the most beneficial use of the water from New Hogan Dam, New Melones Dam, and any other source, it will be necessary to construct conveyance and storage facilities, and to expand the existing water treatment facilities; and

WHEREAS, a First Amendment to the Original Contract was made May 31, 1977, and expired March 31, 1978; and

WHEREAS, the parties hereto desire to enter into this Second Amended Contract so as to produce the maximum benefit to the underground basin by providing for a mechanism for the financing and construction of such conveyance, storage and expanded water treatment facilities as may be necessary, and by altering the method of payment of the base monthly payment under the Original Contract so as to provide maximum incentive for use of treated water in a cost effective and/or energy efficient manner thereby reducing the use of water produced from the underground basin; and

WHEREAS, Stockton East will perform studies necessary to provide recommendations to the Contractors intended to optimize energy efficiency; and

WHEREAS, it is the intent of the parties hereto that this Second Amended Contract shall apply to all treated water produced by the water treatment facilities, regardless of the source of raw water so treated;

Now, Therefore, It Is Agreed As Follows:

1. DEFINITIONS: When used herein, unless otherwise indicated expressly to the contrary, the following words, terms and phrases shall have the following meanings:

1A. "Acquisition and Construction Fund" means the fund having such name established and defined by the Bond Resolution.

1B. "Agricultural water" means water used primarily in the commercial production of agricultural crops or livestock, including domestic use incidental thereto, on tracts of land operated in units of more than 2 acres.

1C. "Annual Audit" means the audit to be undertaken each year, by a certified public accountant selected by Stockton East, in accordance with subparagraphs 5C and 6C.

1D. "Annually" refers to the 12-month period commencing on April 1 and ending on the next succeeding March 31st.

1E. "Base monthly payment" means the basic payment which each Contractor shall pay and which the Contractors together shall pay, the amount of which shall be calculated on an annual basis pursuant to Paragraph 5 and shall be paid on a monthly basis pursuant to Paragraph 6.

1F. "Base supply of raw water" means the minimum supply of raw water provided by Stockton East from various sources to meet the needs of the water treatment facilities, which base supply of raw water shall be 20,000 acre feet per year except as provided in subparagraphs 4J, 4K, and 4L.

1G. "Base supply of treated water" means the minimum supply of treated water which Stockton East will furnish from the water treatment facilities to Contractors in the manner set forth in this Second Amended Contract, which base supply of treated water shall be 20,000 acre feet per year except as provided in subparagraphs 4J, 4K, and 4L.

1H. "Bond Resolution" means the resolution adopted by Stockton East on February 20, 1975, identified as Resolution No. 74-75-21.

1I. "Bond Reserve Account" means the account held as a reserve fund by Stockton East, and used by Stockton East in accordance with the Bond Resolution.

1J. "Bond Sinking Fund Account" means the account having such name established and defined by the Bond Resolution.

1K. "Contractors" means the parties to this Second Amended Contract, other than Stockton East, or any other parties who may hereafter take water in accordance with Paragraph 13 and who further agree to be bound by all of the terms of this Second Amended Contract as the same now exists or as it may have been amended at the time such additional Contractors agree to take water and who agree in

writing to be bound by this Second Amended Contract or this Second Amended Contract as amended.

1L. "Conveyance and Storage Facilities" means those facilities not at present constructed which Stockton East intends to construct in order to acquire, store and convey raw water to the water treatment facilities from sources other than New Hogan Dam.

1M. "Debt service" means the payments required to be made during each year for principal, interest and other charges to the holders of the water treatment facilities bonds, all in accordance with the schedule attached hereto as Exhibit "A", provided that debt service shall not include premiums on water treatment facilities bonds required to be called under the Bond Resolution except to the extent that any such premium in any year exceeds interest earned in such year on the Bond Sinking Fund Account.

1N. "Debt service surcharge" means an annual sum equal to 20% of annual debt service.

1O. "Initial delivery date" means March 10, 1977, the date of first delivery of treated water from the water treatment facilities into the distribution facilities of Cal-Water under the Original Contract.

1P. "Initial delivery of water" means the actual first delivery of treated water from the water treatment facilities into the distribution facilities of any one or more of the Contractors.

1Q. "Intake facilities" means the facilities constructed as a part of the water treatment facilities at Bellota, San Joaquin County, California, to divert water into the raw water transmission line.

1R. "Municipal and industrial share" means the percentage of the cost of acquisition of supplemental surface water from any source other than New Hogan Dam, including the cost of acquisition of such water and the cost of construction of conveyance and storage facilities which is allocated as municipal and industrial water by Stockton East as set forth in Paragraph 15. Such share shall be paid from the time the first payment becomes due regardless of whether all the municipal and industrial allocated water is in fact used for municipal and industrial purposes.

1S. "Municipal and industrial water" means water used for other than agricultural purposes.

1T. "New debt service" means the payments required to be made during each year, for principal, interest and other charges to the holders of any bonds which may be issued hereafter to finance expansion, additions to, or replacements of the water treatment facilities; and, in the event any bonds are issued to finance the acquisition, location or construction of Conveyance and Storage Facilities if any portion of the raw water conveyed or stored by such facilities is used by the Contractors as municipal and industrial water, new debt service shall include the municipal and industrial share of the payments required to be made during each year for principal, interest and other charges to the holders of such bonds.

1U. "New debt service surcharge" means an annual sum equal to the percentage of annual new debt service required as a surcharge by the controlling debt documents.

1V. "New Hogan Contracts" means the two contracts entered into under date of August 25, 1970, one between the United States of America and the Stockton and East San Joaquin Water Conservation District (now Stockton East) and the Calaveras County Water District, and the other between the Calaveras County Water District and the Stockton and East San Joaquin Water Conservation District (now Stockton East) which contracts together provide for a supply of water to Stockton East from New Hogan Dam.

1W. "New Hogan Dam" means the dam, reservoir and related facilities constructed in Calaveras County on the Calaveras River pursuant to the Act of Congress of December 22, 1944 (58 Stat. 887).

1X. "New Melones Contract" means that contract entered into under date of December 19, 1983, between Stockton East and the United States Department of the Interior, Bureau of Reclamation, by which Stockton East obtained the right to a portion of the supply of water developed by New Melones Dam, on an interim basis.

1Y. "New Melones Dam" means the dam, reservoir and related facilities constructed on the Stanislaus River pursuant to the Flood Control Acts of December 22, 1944 (58 Stat. 887) and October 23, 1962 (76 Stat. 1173).

1Z. "New Service Area" means an area not presently served by any of the Contractors.

1AA. "Nominal capacity" means the capacity of the water treatment plant to produce treated water under normal operating conditions. The water treatment plant construct-

ed pursuant to the plans and specifications described in subparagraph 5A of the Original Contract has a nominal capacity of 20,000 acre feet per year.

1BB. "North Stockton Aqueduct" means a pipeline extending from the water treatment plant to the approximate location of the intersection of Hammer Lane and Southern Pacific Railroad right-of-way in City, sufficient in size to serve that portion of the urban area north of the Calaveras River, together with a branch extending westerly along March Lane to El Dorado Street, and a branch extending westerly along Hammer Lane to West Lane.

1CC. "Noticed public hearing" means a public hearing held by the Board of Directors of Stockton East following at least 10 days notice given to each of the Contractors and further published at least once in a newspaper of general circulation published within Stockton East.

1DD. "Prime rate" means, during any year, the prime interest rate, as announced by the Bank of America, N.T.&S.A. or its successor, in effect on April 1 of that year for the best credit risks of said Bank or its successor.

1EE. "Parties" means all of the parties to this Second Amended Contract or as the parties may hereafter be modified by the addition or subtraction of one or more contractors.

1FF. "Produced water" means water extracted from the underground by Stockton East or water otherwise developed or made available by Stockton East and not purchased from another agency or entity.

1GG. "Raw water" means the supply of untreated water made available to the water treatment facilities.

1HH. "Raw water transmission line" means the pipeline constructed as a part of the water treatment facilities extending from the intake facilities at Bellota, San Joaquin County, California, to the water treatment plant.

1II. "Southern Water System" means that water supply and distribution system operated by San Joaquin County which provides municipal and industrial water to the Airport, AirMetro Industrial Park, and surrounding Airport facilities; San Joaquin General Hospital, the County Jail Complex and Juvenile Justice Center, three migrant labor camps, County facilities in the Mathews Road area, and such

other areas as may be added to the system from time to time by action of the Board of Supervisors.

1JJ. "Surplus Account" means the account having such name established and defined by the Bond Resolution.

1KK. "Treated water" means water processed by the water treatment plant or other water meeting the requirements of Paragraph 12 made available in accordance with this Second Amended Contract to the Contractors by Stockton East.

1LL. "Water Fund" means the fund having such name established and defined by the Bond Resolution.

1MM. "Water treatment facilities" means (a) the water treatment plant, (b) the raw water transmission line, (c) all related facilities constructed by Stockton East pursuant to bond authorization obtained at an election held on March 5, 1974, and pursuant to all statutory authority including, but not limited to, Sections 53540 and 53541 of the Government Code, as amended, and further in accordance with the plans and specifications described in subparagraph 5A, of the Original Contract, and (d) those measuring devices selected, installed and maintained by Stockton East pursuant to paragraph 11 of this Second Amended Contract; all as they have been constructed or installed pursuant to the Original Contract and as they may be expanded, added to, or replaced after the commencement of the term of this Second Amended Contract.

1NN. "Water treatment facilities advances" means the total sum of money Stockton East advanced under the Original Contract from funds other than the proceeds of the water treatment facilities bonds, to the cost of the water treatment facilities, namely, the sum of \$614,073.46, as set forth in the schedule attached hereto as Exhibit "C".

1OO. "Water treatment facilities bonds" means the bonds heretofore issued by Stockton East pursuant to the Revenue Bond Law of 1941.

1PP. "Water treatment plant" means the water treatment plant built by Stockton East generally in the vicinity of East Main Street and the Stockton Diverting Canal, near Stockton, San Joaquin County, California, as a part of the water treatment facilities, pursuant to the Original Contract, as such plant may be expanded, added to, or replaced after the commencement of the term of this Second Amended Contract.

100. "Year" means each 12-month period commencing on April 1 and ending on the next succeeding March 31.

2. TERM.

2A. Effective Date of Second Amended Contract. This Second Amended Contract shall be effective immediately upon its execution by the last of the parties hereto to execute said Contract except that for all purposes the provisions of the Original Contract shall continue to control until the North Stockton Aqueduct has been placed in service, at which time the terms of this Second Amended Contract shall become operative. Notwithstanding the previous sentence, City shall construct and place in service the North Stockton Aqueduct on or before October 31, 1988. This Second Amended Contract shall remain in effect until April 1, 2035.

2B. Replacement of Original Contract. This Second Amended Contract shall replace the Original Contract as soon as it shall take effect, except that where in this Second Amended Contract reference is made to provisions of the Original Contract, those provisions so referred to shall remain in effect. Those back sums referenced in Paragraphs 13 and 14 of the Original Contract shall continue to be due and shall be paid, until paid in full, as though the Original Contract were still in effect.

3. RENEWAL: CONTINUED SERVICE:

3A. Renewal: Each Contractor shall have the right, upon written notice to Stockton East given not less than six months prior to expiration of the initial or any renewal term of this Second Amended Contract, to extend the term of this Second Amended Contract for such term and upon such terms and conditions as Stockton East and the Contractor giving such notice shall agree upon in writing. Promptly after receipt of such notice Stockton East and such Contractor shall negotiate as to the terms and conditions of such renewal contract for such renewal term. The terms and conditions of any such renewal contract shall not be more favorable to one Contractor than those of any such renewal contract between Stockton East and another Contractor.

3B. Continued Service: After the expiration of the initial or any renewal term of this Second Amended Contract, each Contractor shall be entitled to continued service under the following conditions:

3B(1). Service of water in annual percentage amounts determined in accordance with the provisions set forth in Paragraph 4.

3B(2). Service of water shall be at charges to be mutually agreed upon by the parties, provided, however, that if such charges cannot be agreed upon, then service shall be continued at charges calculated in the same manner as applicable during the preceding initial or renewal term, as the case may be.

3B(3). Other terms and conditions of continued service shall be reasonable and equitable and shall be mutually agreed upon, provided, however, that if the parties cannot agree upon such other terms and conditions, continued service shall be in the manner and under all the terms and conditions applicable during the preceding initial or renewal term, as the case may be.

3B(4). If a Contractor shall have given Stockton East written notice of its election to enter into a renewal contract as provided in subparagraph 3A, and if upon expiration of the initial or extended term of this Second Amended Contract, as the case may be, the parties shall not have executed such renewal contract, then such Contractor shall be entitled to continued service under the provisions of this subparagraph 3B.

3C. One Contractor May Renew: The failure of one or more Contractors to enter into a renewal contract or to receive continued service pursuant to the provisions of subparagraph 3A or 3B, as the case may be, shall not prevent any other Contractor from exercising its right to enter into a renewal contract or to receive such continued service, as the case may be.

4. WATER TO BE FURNISHED TO THE CONTRACTORS:

4A. Obligation of Stockton East: Stockton East shall undertake all steps necessary to permit it to operate and maintain the water treatment facilities in order to meet the obligations of Stockton East under this Second Amended Contract. Stockton East shall only be excused from the performance of its obligations under this subparagraph 4A in the event of its performance being prevented by conditions beyond its control, such as, but not limited to an inability to raise sufficient funds to construct said water treatment facilities.

4B. Water to be Made Available: Subject to the provision of subparagraphs 4J, 4K, 4L and 5G, Stockton East

shall make available to the Contractors a minimum of 20,000 acre feet of treated water during each year of the term of this Second Amended Contract. Water shall be allocated among the Contractors in the following manner: Each Contractor shall have the right to take on a continuing monthly basis an amount of treated water equal to the current percentage applicable to such Contractor calculated by Stockton East in accordance with Paragraph 4H hereof multiplied by the aggregate amount of treated water delivered by Stockton East during such month. Nothing in this paragraph will prohibit any Contractor from taking more than its percentage of entitlement at any time to the extent that any other Contractor is not able to use its applicable percentage of entitlement. However, each of the parties hereto agrees to exert its best efforts to use its full proportional water entitlement and to cooperate to see that each Contractor, to the extent possible, receives its full entitlement, both in an energy-efficient and/or cost-effective manner.

4C. Emergency Conditions. In the event of the occurrence of an emergency or other condition beyond the control of a Contractor which requires such Contractor to use more than the percentage of treated water to which it is then entitled hereunder in order to meet the health or safety needs of its consumers, and in the event there is no unused treated water then available, the remaining Contractors ("Remaining Contractors") agree to make available on a temporary basis upon written request therefor from the Contractor so in need (the "Requesting Contractor"), sufficient water to meet such health or safety needs provided that the Requesting Contractor shall pay the Remaining Contractors within 60 days of written demand therefor any actual extra costs, including the cost of replacing the water so provided, and a 15% surcharge for overhead and administration, incurred by the Remaining Contractors by reason of making such treated water available to the Requesting Contractor. The Requesting Contractor shall diligently prosecute all reasonable corrective measures to restore full service independent of water so made available by the Remaining Contractors.

4D. Additional Water: To the extent Stockton East so determines, it will make available to Contractors through the water treatment facilities quantities of water in addition to the base supply of treated water annually. Such additional water shall be made available on a pro-rata basis to the Contractors in accordance with percentages currently allocated to each Contractor pursuant to this Paragraph 4. It is understood that the ability of Stockton East to deliver such additional water on a pro-rata basis

will be dependent upon various factors involving the combined operations of the water treatment facilities and the distribution systems of each of the Contractors. However, the parties agree that they shall together use their best efforts to permit the utilization of such additional water, as well as the base supply, on such pro-rata basis.

4E. Acceptance of Treated Water: The Contractors shall use their best efforts to accept treated water, including both the base supply under Paragraph 4B and any additional water under Paragraph 4D, made available to the Contractors to the extent of the physical capacity of the combined systems and the physical capacity of each Contractor to take and use such water at the times that it is made available, and each Contractor shall undertake all reasonable methods of operation necessary to permit the use of such water, rather than water pumped from the underground, within their respective systems when such water is made available, whether as a part of the base supply or as additional water. Each Contractor shall either construct necessary physical systems to facilitate the taking of water provided to it under this Second Amended Contract or shall arrange through wheeling agreements for the use of the physical systems of other Contractors. The City will construct and place in service the North Stockton Aqueduct (as defined herein) on or before October 31, 1988. Each of the parties hereto agrees to cooperate, to the extent feasible in the operation of its system, to the end that each Contractor receives its full entitlement of treated water in an energy efficient and/or cost effective manner, provided, however, that (unless otherwise mutually agreed) each Contractor shall bear its fair share of the cost of any joint use or jointly owned facility and the expense of operation and maintenance thereof. To this end, the Contractors shall, as necessary, enter into wheeling agreements, subject to all the provisions of this Second Amended Contract. In the event agreement as to the terms of any such wheeling agreement cannot be reached within ninety (90) days of opening of negotiations on any such wheeling agreement, any party to such wheeling agreement negotiation may initiate binding arbitration in accordance with the California Arbitration Act (Code of Civil Procedure §§1280 and following), with the following provisions: Each party shall appoint one arbitrator, who may be any person; the arbitrators so appointed shall appoint a neutral arbitrator, who may be any person and who shall be the sole decision-maker; the scope of arbitration shall be limited to the terms to be included in the wheeling agreement. Nothing in this Paragraph 4E contained shall, however, be deemed to obligate any Contractor to make its facilities, or any part thereof, available for use of any other Contractor unless

there is adequate capacity available in such facilities for such use of the second Contractor. No Contractor shall extend service to a new service area relying on the conveyance facilities of any other Contractor except by mutual agreement. No Contractor shall be under any obligation to dedicate all or any portion of its facilities to the use of any other Contractor hereunder. The foregoing provisions of this Paragraph 4E shall not limit the mutual undertakings of the Contractors set forth in Paragraph 4C to make water available on a temporary basis to a Requesting Contractor in the event of an emergency or other condition beyond the control of the Contractor.

4F. Scheduling of Maintenance: Any repairs, maintenance, replacement, or other work which will necessitate taking all or a portion of the water treatment facilities out of operation shall, to the extent practical, be undertaken each year between November and February, inclusive.

4G. Standard of Operation: Stockton East shall, at all times during the term hereof, operate and maintain the water treatment facilities in accordance with good and accepted waterworks practices.

4H. Calculation of Percentage: On or before September 1 of each year, each Contractor shall provide to Stockton East, in form designated by Stockton East, data, sufficient in Stockton East's determination, to enable Stockton East to calculate the total amount of water produced by that Contractor during the previous Year from all sources, whether from wells, Stockton East, or other providers or sources. On or before the October 1 next succeeding the provision of such data, Stockton East shall calculate for each Contractor a percentage determined by dividing the total amount of water produced by each Contractor, as calculated by Stockton East from the data provided to Stockton East, by the sum of such totals for all Contractors, and multiplying by 100. Such percentage so determined for each Contractor shall be the percentage applicable for each Contractor respectively in accordance with paragraphs 4 and 5, for the Year next succeeding such calculation and Stockton East shall promptly notify the Contractors of each such percentage. Stockton East's determination of the percentages shall be final.

4I. Minimum Amount: Notwithstanding any other provision of the Original Contract or of this Second Amended Contract, in consideration of the consent by Cal Water to a reduction in its minimum allocation of 18,500 acre feet of treated water yearly from the existing 20,000 acre feet nominal capacity of the water treatment plant set forth in

the Original Contract to an amount based on its total water production from all sources as a percentage of all Contractors' total water production from all sources as determined in Paragraph 4 hereof, Stockton East hereby agrees to deliver to Cal Water (on a monthly basis) during each Year a minimum of not less than one-half of the total treated water available for delivery to all Contractors. The Contractors other than Cal Water hereby agree and consent to such agreement by Stockton East regardless of whether, as a result of such deliveries to Cal Water pursuant to such agreement, the amount of treated water delivered to such other Contractors, or any of them, during any Year may be less than the amount determined under Paragraph 4B by use of the applicable percentage determined under Paragraph 4H hereof and regardless of whether the amount of treated water may be insufficient in any Year to meet the allocation of such other Contractors so determined under Paragraph 4B by use of the applicable percentage determined under Paragraph 4H after first meeting the allocation of Cal Water. After so meeting such allocation of Cal Water, the remaining treated water shall be allocated on a pro-rata basis among such other Contractors based on their respective applicable percentages determined under Paragraph 4H. The provisions of this Paragraph shall remain in effect until Conveyance and Storage Facilities have been constructed which deliver to the water treatment plant raw water sufficient in amount to increase the annual nominal capacity of that plant from 20,000 acre feet to 30,000 acre feet.

4J. Lack of Availability of Raw Water: Subject to subparagraph 5G, Stockton East shall be excused from its obligation to deliver annually a minimum of 20,000 acre feet of treated water, without Contractors being excused from making their respective payments to Stockton-East required by this Second Amended Contract during any Year in which there is available to Stockton East, from all sources, less than a total for all uses of 20,000 acre feet of raw water. In such event Stockton East shall during such a Year deliver as much water as it does have available but shall have no liability for its failure to deliver more.

4K. Failure of System to Accept Water: Subject to subparagraph 5G, Stockton East shall also be excused from its obligation to deliver a minimum of 20,000 acre feet of water in any Year during which the combined systems of Contractors fail to accept a full 20,000 acre feet of water due to operational or physical limitations and in such event Stockton East shall deliver as much water as is operationally possible but shall not be obligated to deliver the full 20,000 acre feet of water during such a Year, and in

such event the Contractors shall not be excused from making their respective payments to Stockton, East required by this Second Amended Contract.

4L. Inability to Deliver Treated Water: Subject to subparagraph 5G, Stockton East shall also be excused from its obligation to deliver water without the Contractors being excused from payment during any period, not exceeding 18 months, of failure by Stockton East to deliver treated water for any reason. In the event of a failure by Stockton East to deliver treated water to Contractors, then to the extent practical and to the extent of the capacity of the water treatment facilities, the availability of raw water, and the ability of Contractors' systems to accept water, Stockton East shall subsequently during the Year of such a failure, make up any quantity required to be delivered as a part of the base supply of treated water.

4M. Allocation of Deficiency: Any deficiency resulting due to conditions mentioned in subparagraphs 4J, 4K and 4L shall be allocated among the Contractors on a proportional basis in accordance with the percentages currently allocated to each Contractor pursuant to this Paragraph 4.

5. PAYMENT BY CONTRACTORS.

5A. Amount to Be Paid Annually: In exchange for Stockton East agreeing to make available to Contractors treated water in the manner set forth in Paragraph 4 and otherwise operating in accordance with this Second Amended Contract, the Contractors together shall pay annually, in equal monthly installments estimated, computed, and paid as set forth in Paragraph 6, to Stockton East, regardless of the amount of water actually delivered to Contractors and regardless of whether any water is delivered at all, subject to subparagraph 5G, the sum of the following:

5A(1). Debt service and the debt service surcharge for the subject Year together with 30 equal annual payments calculated to amortize the total water treatment facilities advances with interest at the average interest rate applicable to the water treatment facilities bonds, provided, that, there shall be deducted from the amount of the water treatment facilities advances the aggregate of the sums which have been applied to the water treatment facilities advances either directly from the proceeds of the water treatment facilities bonds or from sums made available pursuant to Paragraph 4 of the Original Contract.

5A(2). New debt service and the new debt service surcharge.

5A(3). A sum equal to the aggregate of the following:

(a) the cost of expansion of, additions to, or replacements of, the water treatment facilities,

(b) the municipal and industrial share of the cost of acquisition of supplemental surface water from any source other than New Hogan Dam, and

(c) the municipal and industrial share of the cost of construction and acquisition of Conveyance and Storage Facilities, less the aggregate of all payments on account of such costs heretofore made by the Contractors, and plus interest at the prime rate for one Year on the remaining balance of such costs, divided by the number of Years remaining in the term of this Second Amended Contract, provided, however, that those costs itemized in the preceding clauses (a), (b) and (c) shall be included only if and to the extent that they have not been financed by the issuance of bonds and/or paid for from reserves established and maintained by Stockton-East pursuant to the provisions of the Bond Resolution, the Original Contract or this Second Amended Contract.

5A(4). The annual adjusted price of the raw water delivered to the water treatment plant including both the base supply of raw water and any additional water which may be delivered to and accepted by the Contractors. The adjusted price of raw water shall be determined annually for each applicable Year as follows:

5A(4)(a). From the total actual cost of all water purchased in any Year by Stockton East there shall be deducted any charges of any kind imposed by a purveyor of raw water to Stockton East on the use or required scheduling of municipal and industrial water, as opposed to agricultural water.

5A(4)(b). The amount so obtained pursuant to subparagraph 5A(4)(a) shall then be multiplied by a fraction, the numerator of which shall be the amount of raw water delivered to the water treatment plant during the year and the denominator of which shall be all water purchased or produced by Stockton East during the year. For purposes of the denominator, water shall be measured as follows:

5A(4)(b)(i) Water purchased from New Hogan Dam shall be the amount of water released from New Hogan

Dam less the amount of water diverted within Calaveras County as such diversions within Calaveras County are measured or determined from time to time by agreement between Stockton East and the Calaveras County Water District.

5A(4) (b) (ii) In measuring surface water from sources other than New Hogan Dam the water shall be measured at the point at which such water is measured for purposes of payment by Stockton East to the purveyor of such water.

5A(4) (b) (iii) Produced water shall be measured at the point of production.

5A(4) (c). It is understood by the parties that the provisions of this subparagraph 5A(4) shall not be deemed to control the present or future agricultural water rates or charges of Stockton East.

5A(4) (d). To the amount so obtained there shall then be added, in order to obtain the adjusted price of raw water, all charges, of any kind imposed by a purveyor of raw water to Stockton East on the use or required scheduling of municipal and industrial water as opposed to agricultural water, but excluding any minimum payments made for municipal and industrial water not used in order to make such water available in the future, but including interest charges payable by Stockton East under the New Hogan Contracts, the New Melones Contract, or any other contract for the purchase of raw water by Stockton-East in the future.

5A(4) (e). In the event that in the future water is delivered by Stockton East to water treating facilities in addition to the water treatment plant, then the adjusted price for raw water shall be calculated for all water delivered to water treating facilities and shall then be apportioned among the various water treating facilities on an equal per acre foot basis.

5A(5). The actual operation, maintenance, repair and replacement costs directly attributable to the water treatment facilities for the annual production of the base supply of treated water less sums drawn against the Repair and Replacement Reserve Account pursuant to the provisions of Paragraph 8 of the Original Contract. It is understood that no item for depreciation shall be included in the sums calculated and paid pursuant to Paragraphs 5 and 6.

5A(6). An amount equal to the actual cost of administrative services attributable to the operation of the water treatment facilities and the administration of this Second

Amended Contract including, but not limited to, management time and required legal, accounting, and consulting engineering services, and the actual cost of paying agents or other services which Stockton East requires in processing and making payments on the water treatment facilities bonds, or any other related bonds.

5A(7). The actual cost of insurance for the water treatment facilities, and Conveyance and Storage Facilities, including, but not limited to, casualty and liability and including fire, and extended coverage, at full replacement value, but excluding "loss of revenue" insurance.

5A(8) A sum equal to the actual cost of operation, maintenance, and repair of the wells, pumps, conduits, and related facilities enumerated in Paragraph 8, including both costs arising on account of actual operation and costs arising on account of necessary standby facilities for use in future Years when such production facilities may be required.

5A(9) The annual payments required by Paragraphs 7 and 8 into the reserve funds established by Paragraphs 7 and 8.

5A(10) The sum of \$100,000, to be paid into the Water Treatment Facilities Reserve Fund established by Paragraph 9; said sum of \$100,000 to be adjusted from time to time by Stockton East, provided that:

5A(10) (a) Prior to any initial or subsequent adjustment in said sum of \$100,000, Stockton East shall obtain a written report, or reports, from one or more registered civil engineers as to the need for funds to meet expenditures described in subparagraph 9C.

5A(10) (b) Prior to any initial or subsequent adjustment upward in said sum of \$100,000, the Board of Directors of Stockton East shall hold a noticed public hearing to consider such upward adjustment.

5A(10) (c) Said sum of \$100,000 shall in no event be reduced below \$100,000 and shall only be adjusted above \$100,000 for the purpose of meeting expenditures described in subparagraph 9C.

5B. Credit: Against the sums due under subparagraph 5A there shall be allowed as a credit, a sum calculated in a manner established by resolution of the Board of Directors of Stockton East for the use of the raw water transmission line and intake facilities for delivery of water to

users and uses other than the water treatment plant, provided that prior to initially adopting or thereafter altering said method of calculation the Board of Directors of Stockton East shall first hold a noticed public hearing relative to such method of calculation.

5C. Audit: The annual amount of operations, maintenance, repair and replacement, the cost of necessary and desirable improvements, and modifications to the treatment facilities, the cost of acquisition of surface water from any source other than New Hogan Dam, the cost of construction of Conveyance and Storage Facilities and the cost of necessary and desirable improvements and modifications thereto, the cost of administrative services, charges for raw water, and the amount of all other variable costs, charges, credits, and funds shall be determined each year by Stockton East and thereafter audited and reported upon by an independent certified public accountant selected by Stockton East as set forth in subparagraph 6C.

5D. Allocation of Charges: The charges imposed by this Paragraph 5 shall be allocated among the contractors annually in proportion to the percentage currently allocated to each contractor pursuant to Paragraph 4.

5E. Payment Adjustments: Notwithstanding any other provision of this Second Amended Contract, City shall pay an estimated sum of \$5,856,586 and Lincoln Village and Colonial Heights Maintenance Districts combined shall pay an estimated sum of \$582,690 to Stockton East as consideration for the purchase of water entitlements, which entitlements had been previously allocated under the Original Contract to Cal-Water. The sums shall be paid in equal monthly installments commencing at the date the Second Amended Contract becomes operative and extended thereafter for 15 years.

As and for consideration to Cal Water to terminate the Original Contract and enter into the Second Amended Contract, the base monthly payment which Cal Water would otherwise be obligated to pay under this Paragraph 5 shall be reduced by an estimated sum of \$6,439,276 which credit shall be applied in equal monthly installments on a monthly basis during each month commencing at the date the Second Amended Contract becomes operative and extended thereafter for 15 years. The above-mentioned estimated sums shall be adjusted to the actual amounts applicable to each Contractor as of the date that the North Stockton Aqueduct is placed in service, in accordance with Paragraph 2A of this Second Amended Contract. Such actual amounts shall be determined by Stockton East.

Notwithstanding any other provision of this Second Amended Contract to the contrary, Lincoln Village and Colonial Heights Maintenance Districts shall make payment to Stockton East solely on the basis of a charge per acre foot of water computed by Stockton East to be applicable to the Lincoln Village and Colonial Heights Maintenance Districts for their allocation of surface water as computed under Section 4H, which charge shall be equal to the unit cost per acre foot payment made by any other Contractor pursuant to the payment provisions within this Second Amended Contract with the exception of payments made under Section 5E. The payment of the charge will be made on a monthly basis.

5F. Further Adjustments: It is agreed that in the year 2016, and each tenth (10th) Year thereafter, the contractors will review the payment of capital costs with bonded indebtedness as compared to water allocation and make such adjustments to future payments as appropriate to adjust any inequities.

5G. Failure to Continue Service: Following any period of 18 months during which Stockton East fails to make available to Contractors at least 7,500 acre feet of treated water, the Contractors shall be excused from making the payments required pursuant to this Second Amended Contract until such time as Stockton East is prepared to, and has, restored the normal service contemplated by this Second Amended Contract. In the event of any failure of the raw water supply, damage or destruction of all or a portion of the water treatment facilities, or any other cause preventing Stockton-East from making available to Contractors the quantities of water contemplated by this Second Amended Contract, Stockton East shall use its best efforts to restore full service promptly. In the event of damage to or destruction of the water treatment facilities, any insurance proceeds shall be applied to repair and reconstruction. In the event that all or a portion of the water treatment facilities are taken or damaged by condemnation by, or conveyed by Stockton East to avoid or compromise any condemnation proceeding to, a public agency not assuming the obligations of this Second Amended Contract, then Stockton-East shall use any proceeds from such a condemnation or conveyance in the manner required by the Bond Resolution.

6. TIME AND MANNER OF PAYMENT:

6A. Monthly Payments: Payment of the annual sum due pursuant to Paragraph 5 shall be as set forth in this Paragraph 6. There shall be a base monthly payment made as set

forth in this Paragraph 6. Payment shall be made monthly on the first day of each month.

6B. Proration: During the term of this Second Amended Contract payments which cover less than a full month or which cover less than a full Year's service shall be prorated accordingly.

6C. Procedures for Audit: Actual and variable costs and other items subject to audit shall be audited and reported upon by an annual audit as set forth in subparagraph 5C. The audit shall be commenced each Year not later than July 1 next following the close of each Year. The annual audit shall be completed not later than December 31 succeeding the close of the Year being audited. Each audit shall cover a full Year commencing on April 1 and ending on March 31. In the event that an annual audit discloses a necessary adjustment or correction in any amount or fund, then such adjustment or correction shall be applied to the base monthly payment to be paid during the Year next succeeding the completion of such an annual audit. Three copies of the annual audit report shall be furnished to each Contractor without expense promptly after receipt by Stockton East.

6D. Establishing Base Monthly Payment. The base monthly payment shall be calculated annually as follows:

6D(1) On or before the first day of October annually Stockton-East shall announce a new base monthly payment to be applicable during the next succeeding Year.

6D(2) The base monthly payment which shall be announced annually pursuant to subparagraph 6D(1) shall be an estimate, which estimate shall be made by Stockton East to include the following:

6D(2) (a) Debt service, the debt service surcharge, new debt service, new debt service surcharge, and any payment toward water treatment facilities advances required by subparagraph 5A(1) for the subject Year and for costs established in subparagraph 5A(3).

6D(2) (b) A sum based on an estimate of the actual cost of variable items as anticipated for the forthcoming Year during which said base monthly payment will be applicable. The estimate so made is to be made following a survey of current and anticipated costs of the subject items and in consideration of information disclosed by the last available required audit and records of Stockton East for the immediately preceding Year.

6D(2)(c) The application of any credit which it is estimated may be due the Contractors.

6D(2)(d) A sum necessary to make any corrections because of overpayments or underpayments arising because of variance between estimates and actual experience during the preceding Year and any corrections or adjustments disclosed as necessary by the last available audit.

6D(2)(e) A deduction for all sums collected pursuant to Paragraph 6D(3), for the previous year, in excess of that amount required for the groundwater production fund, as determined by Stockton East.

6D(3) Stockton East shall annually levy a municipal groundwater assessment, pursuant to its enabling legislation such that the cost of groundwater use is equivalent to the cost of surface water use. That portion of such assessment which is deducted pursuant to paragraph 6D(2)(e) shall be paid to meet costs set forth in paragraph 6D(2)(a) and 6D(2)(b).

6E. Public Hearing On Base Monthly Payment: Annually prior to announcing the base monthly payment for the next Year the Board of Directors of Stockton East shall hold a noticed public hearing to consider the amount of said base monthly payment.

6F. Final Payments: During the 12 months next following the availability of the audit of the last 12 months preceding the cessation of service pursuant to this Second Amended Contract, and any extension, continuation, or renewal thereof, 12 final monthly payments shall be made which together shall adjust any differences among the parties between the last base monthly payment and actual experience during the last 12 months as confirmed by audit of operations for the last 12 months.

7. REPAIR AND REPLACEMENT RESERVE ACCOUNT:

7A. Maintenance of Repair and Replacement Reserve Account: Stockton East has established and shall maintain during the term of this Second Amended Contract a reserve account for the purpose of covering the cost of repairs and replacement of items scheduled pursuant to subparagraph 7B which are required during the life of the Second Amended Contract in order to maintain the water treatment facilities in good order and at all times able to meet efficiently the production of the water to be supplied pursuant to this Second Amended Contract. The account identified in

this Paragraph 7 is the same as the Repair and Replacement Reserve Account established by the Bond Resolution.

7B. Amount of Annual Payment: There is attached hereto as Exhibit "D" a major repair and replacement schedule which schedule has been prepared with the assistance of the engineers who designed the water treatment facilities and which sets forth an estimate of such anticipated major repair and replacement expenses during the life of the Second Amended Contract and the amount of level annual payments sufficient to provide a reserve account adequate to meet the expenses anticipated by said schedule.

7C. Adjustment of Payment and Use of Account: Payment shall be made by the Contractors annually as a part of the total payment required by Paragraph 5 into the Repair and Replacement Reserve Account in accordance with the payment schedule established by Exhibit "D". Payments to be made into the reserve fund shall be adjusted from time to time, by Stockton East to meet actual operating experience, provided that prior to any such adjustment the Board of Directors of Stockton East shall first hold a noticed public hearing. Any sums drawn against the Repair and Replacement Reserve Account shall be deducted from the actual charge for operation, maintenance, and replacement made pursuant to subparagraph 5A(5).

8. WATER DEFICIENCY RESERVE FUND: It is recognized that pursuant to the New Hogan Contracts Stockton East in some years may be required to take a 25% deficiency in its New Hogan Dam water supply. In order to furnish Contractors with a minimum of a full 20,000 acre feet of water per year Stockton East agrees that it will purchase water, or construct, install, or acquire such wells, pumps, conduits, and related facilities as may from time to time be required to permit Stockton East to take such water from the underground annually as may be necessary to augment an annual deficiency of as much as 25% in the base supply of raw water. In order to place itself in a position to meet the obligations of this Paragraph 8 Stockton East has established a Water Deficiency Reserve Fund into which it shall deposit annually a sum set by the Board of Directors of Stockton East. The amount so deposited shall not in any Year exceed an amount equal to ten cents multiplied by the total number of acre feet of water delivered to the water treatment plant during the subject Year. Funds in said Water Deficiency Reserve Fund may be applied by Stockton East at such time as Stockton East may from time to time determine is appropriate to the construction or other acquisition of such wells, pumps, conduits, and related facilities, and to do any other acts necessary on the part of

Stockton East in its judgment to furnish the base supply of treated water to Contractors annually. In the event that during the term hereof Stockton East by act of the California legislature is granted special powers to levy taxes or assessments for the purposes specified herein and such taxes or assessments are applicable to the treated water which is the subject of this Second Amended Contract, then this Paragraph 8 shall be inapplicable and of no force and effect.

9. WATER TREATMENT FACILITIES RESERVE FUND: Stockton East has established and shall maintain during the term of this Second Amended Contract a Water Treatment Facilities Reserve Fund. There shall be deposited in that fund at the end of each Year the sums paid to Stockton East pursuant to subparagraphs 5A(10). Stockton East may, at any time, make withdrawals from said Water Treatment Facilities Reserve Fund and expend such funds as Stockton East determines, provided that such expenditures are limited to the following purposes:

9A. Debt Service: Debt service, including the call and redemption of bonds prior to fixed maturity date.

9B. Operation and Maintenance: Operation, maintenance, and repair of the water treatment facilities including the items listed in subparagraphs 5A(4) through 5A(8).

9C. Replacement and Expansion: Necessary or desirable replacement, expansion, improvement, modification, and increase in the capacity of the water treatment facilities.

10. SCHEDULING OF WATER: From time to time as is necessary and convenient, and at least once each year during the month of March representatives of the Contractors and Stockton East shall meet and confer as to available raw water and the scheduling of the delivery of treated water to the Contractors. Following such conferences Stockton East shall, from time to time announce schedules for the delivery of treated water to Contractors and to each Contractor. The schedules so announced, from time to time, shall be developed in a manner to permit making maximum use of the treated water which may be available subject to the respective demands of Contractors' systems. It is also understood that schedules announced pursuant to this Paragraph 10 shall be goals toward which Stockton East and the Contractors shall work in operating the water treatment facilities and the respective distribution systems of Contractors, but it is understood that such goals may not in every instance be achieved.

11. MEASUREMENT: Necessary measurement of water to permit compliance with this Second Amended Contract shall be by recording measuring devices selected by Stockton East and installed and maintained by Stockton East and subject to inspection at all times by the Contractors.

12. QUALITY: Stockton East has obtained and shall maintain in effect during the term of this Second Amended Contract a permit to operate the water treatment facilities from the California Department of Health Services. At all times Stockton East will use its best efforts to the end that the quality of water delivered by it pursuant to and in satisfaction of this Second Amended Contract meets or exceeds requirements as to water for human consumption of the Department of Public Health of the State of California, the United States Environmental Protection Agency and their respective successors. The Contractors shall likewise use their best efforts to meet or exceed such requirement with respect to water delivered by the Contractors to their respective customers or users.

13. OTHER CONTRACTORS: It is recognized that another Contractor, not a party hereto at this time, could take water. The parties hereto agree that no such Contractor shall be furnished water on terms more favorable than those made available to the Contractors at the date such a new Contractor agrees to take water and to be bound by this Second Amended Contract. No additional Contractors will be added to this Second Amended Contract without the express written consent of all the existing Contractors, which consents shall not be unreasonably withheld. Notwithstanding the provisions herein, the Southern Water System may become a Contractor under this Second Amended Contract, upon written notice to the other parties hereto.

14. OPERATIONS: Stockton East shall at all times make all reasonable efforts to operate the water treatment facilities in a manner in accordance with the currently applicable schedule adopted as set forth in Paragraph 10. In so operating Stockton East will endeavor to meet the full water demand of the systems of the Contractors during periods of low demand. During periods of high demand it is understood that all systems may be required to operate ground water pumps in order to meet peak loads. Water will be delivered into the systems of Contractors by delivery to Cal Water at the point shown on Exhibit "B". Such water delivery points may later be changed, and new delivery points may be created.

15. CONSTRUCTION OF NEW FACILITIES: The parties recognize that in order to meet the increased demand for treated

water in the Stockton Metropolitan Area it will be necessary for Stockton East to acquire water from sources other than New Hogam Dam and in order to transport such water to the water treatment facilities it will be necessary to construct Conveyance and Storage Facilities. The cost of acquiring such additional water, the cost of the Conveyance and Storage Facilities, and the respective agricultural share and municipal and industrial share of such costs are presently unknown. Since the Contractors will be the parties ultimately responsible for payment of such municipal and industrial share, the engineering feasibility of such project and the cost thereof are matters of vital interest to them. Accordingly, Stockton East agrees that it will consult with the Contractors on any such proposed acquisition or construction, together with engineering details and details as to the cost thereof, the municipal and industrial share of all such costs to be allocated to the Contractors, the proposed financing plan, the financial impact on the Contractors, and other pertinent aspects of the overall project. If all Contractors approve the plan in writing, then Stockton East may proceed in accordance with law. If any Contractor shall not approve within thirty days of a request for approval by Stockton East, the proposed plan shall be submitted to a vote of the electors of Stockton East, and the results of such vote shall be final and binding on all Contractors.

16. ATTORNEYS FEES AND COSTS: In any case where court action is instituted by one or more parties against one or more other parties to interpret this Second Amended Contract, the rights of the respective parties hereunder, or to enforce a right or obligation created by this Second Amended Contract, the prevailing party or parties shall receive costs and reasonable attorneys fees to be set by the court.

17. SUCCESSORS: This Second Amended Contract shall bind and inure to the legal successors of the parties and is not made for the benefit of any other parties. Any Contractor may assign all or any part of this Second Amended Contract to a public agency having the power of eminent domain. In the event of any such assignment of all of a Contractor's interest in this Second Amended Contract, the Contractor so assigning shall be relieved from all further obligations under this Second Amended Contract. In the event of such an assignment of a part of a Contractor's interest under this Contract the Contractor so assigning shall remain obligated for the remainder of its obligations under this Second Amended Contract.

18. DEFAULT AND REMEDIES:

18A. Interest: Any sum due hereunder and not paid when due shall bear interest at the prime rate until paid in full.

18B. Remedies: If any Contractor shall fail to cure or correct any default, including, but not limited to payment of any sum when due, then following 10 days written notice of such default to the defaulting Contractor, Stockton East shall have, without further notice or demand and without one remedy excluding any other, all remedies at law, in equity, or as set forth below:

18B(1). The discontinuance of service until the default is remedied and in the event of such a discontinuance of service Contractor shall continue to be liable for the accrual of the base monthly payment or payments accruing during such period of discontinued service. In the event of a discontinuance of service to any Contractor, written notice of such cessation shall be given by Stockton East to all of the Contractors and, if discontinuance of service requires a cessation of wheeling, the Contractors providing wheeling shall cease wheeling, and Stockton East shall, and hereby agrees to, hold harmless and indemnify any Contractor from liability which might arise following such a written notice of the cessation of wheeling.

18B(2). The collection by suit of any sums due, it being understood that the collection by suit of any sums due shall not waive or terminate a Contractor's continuing obligation to make all required payments to Stockton East.

19. NOTICES: Notices required or permitted to be given under this Second Amended Contract shall be made by all parties as provided herein. Mail shall be deposited in a United States Post Office mail box first class postage prepaid addressed as shown by the respective addresses following the signature block for each of the parties hereto. Notices so posted shall be deemed delivered on the second day following said posting. Changes in these addresses shall be given in writing by the method specified herein.

20. SUBJECT TO BOND RESOLUTION: This Second Amended Contract and the relationship between Contractors and Stockton East, and the respective obligations and privileges of each of the parties shall, in all respects, be subject to and bound by the Bond Resolution. In the event of any conflict between the Bond Resolution and this Second Amended Contract the Bond Resolution shall prevail.

21. SPECIFIC PERFORMANCE: By reason of the specialized nature of the water service to be rendered, and for the further reason that the extent of any damage caused to any party by another by reason of any breach of this Contract may be extremely difficult to determine, it is agreed by the parties hereto that an action for damages is an inadequate remedy for any breach, and that specific performance, without precluding any other remedy available in equity or at law, will be necessary to furnish any party hereto with an adequate remedy for the breach by any other party hereto of any covenant or obligation for the benefit of the aggrieved party.

22. SEVERABILITY: If any term, provision, covenant, or condition of this Second Amended Contract is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

23. ENTIRE AGREEMENT: This instrument constitutes the sole and only agreement of the parties hereto relating to the rights and obligations granted and assumed herein. Any prior agreements, promises, negotiations, or representations not expressly set forth in this Second Amended Contract are of no force or effect, except as set forth in paragraph 2B of this Second Amended Contract.

24. REMEDIES NOT EXCLUSIVE: Any remedy granted to a party by this Second Amended Contract is not exclusive and any party may elect any remedy granted by this Second Amended Contract, or otherwise, at law, by statute, or in equity, or any combination thereof.

25. WAIVER: No waiver of any default shall constitute a waiver of any other breach or default, whether of the same or any other term, covenant, or condition. No waiver, benefit, privilege, or service voluntarily given or performed by either party shall give the other any contractual right by custom, estoppel, or otherwise. The subsequent acceptance of any payment pursuant to this Second Amended Contract shall not constitute a waiver of any preceding default by any party other than default in the payment of the particular payment so accepted, regardless of a party's knowledge of the preceding breach at the time of accepting the payment.

26. TITLES: The table of contents of this Second Amended Contract and the captions of the various articles and paragraphs of this Second Amended Contract are for convenience and ease of reference only and do not define,

limit, augment, or describe the scope, content, or intent of this Contract or of any part or parts of this Second Amended Contract.

27. GENDER, NUMBER: The neuter gender includes the feminine and masculine, the masculine includes the feminine and neuter, and the feminine includes the masculine and neuter, and each includes corporation, partnership, or other legal entity when the context so requires. The singular number includes the plural and the plural the singular whenever the context so requires.

28. AMENDMENT: This Second Amended Contract may only be amended by agreement of all the parties.

29. CONTROVERSIES: No dispute or controversy between any two or more of the parties hereto shall affect the rights of any party or parties not involved in such dispute or controversy.

30. INTEREST RECEIVED ON RESERVE FUNDS: All interest income received by Stockton East by virtue of the investment of funds on hand in any reserve fund or account to the extent any such fund is funded out of payments made pursuant to this Second Amended Contract, shall be added to the respective reserve fund generating such interest and shall be expended for the purposes of such reserve fund.

31. MODIFICATION OF BOND RESOLUTION: There shall be no modification of the Bond Resolution nor the adoption of a supplemental or additional resolution which affects the obligations of any Contractor or increases or changes their respective payment obligations without the prior written consent of each Contractor.

32. SUBJECT TO UNITED STATES BUREAU OF RECLAMATION CONTRACTS: It is understood that this Second Amended Contract and the rights and obligations of the parties hereunder are subject to the terms of the New Hogan Contracts and the New Melones Contract and by execution hereof each of the Contractors agrees to be bound by the provisions of said contracts, including, but not limited to, the provisions of Article 32 of the contract entered into under date of August 25, 1970 between the United States of America and the Stockton and East San Joaquin Water Conservation District (now Stockton East) and the Calaveras County Water District, and Article 17 of the New Melones Contract and pursuant to the provisions of subdivision (g) of said Article 32 and of subdivision (7) of said Article 17, the provisions of subdivision (a) through (g) of said Article 32 and of said Article 17 are hereinafter set forth:

EQUAL OPPORTUNITY

32. During the performance of this Contract, the Districts agree as follows:

(a) The Districts will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Districts 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 Districts agree 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 Equal Opportunity clause.

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

(c) The Districts will send to each labor union or representative of workers with which they have a collective bargaining agreement or other Contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the labor union or workers' representative of the Districts' commitments under this Equal Opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Districts 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.

(e) The Districts will furnish all information and reports required by said Executive Order and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to their books, records, and accounts by the contracting agency and the Secretary of Labor for purpose of investigation to ascertain compliance with such rules, regulations and orders.

(f) In the event of the Districts' noncompliance with the Equal Opportunity clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part, and the District declared ineligible for further Government contracts in accordance with procedures authorized in said Executive Order, and such other sanctions may be imposed and remedies invoked as provided in said Executive Order, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Districts will include the provisions of subdivisions (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of said Executive Order so that such provisions will be binding upon each subcontractor or vendor. The Districts will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event the Districts become involved in, or are threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Districts may request the United States to enter into such litigation to protect the interests of the United States.

EQUAL OPPORTUNITY

17. During the performance of this Contract, the Contractor agrees as follows:

(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.

(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.

(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.

(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.

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

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

(7) The Contractor will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of said amended Executive Order, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will

take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

Stockton East covenants and agrees to perform all of its obligations under the provisions of said Article 32 and of said Article 17.

33. CONDUCT OF PUBLIC HEARINGS: Whenever Stockton East is required by this Second Amended Contract to hold a noticed public hearing such noticed public hearing may be consolidated with any other noticed public hearing required by this Second Amended Contract. A notice of a public hearing required by this Second Amended Contract need not set forth in detail the item or items to be considered but will be sufficient if it describes generally the subject matter to be considered at the public hearing.

34. ADJUDICATION OF GROUND WATER BASIN: In the event of a future adjudication of rights to extract water from the ground water basin underlying Stockton East, the parties agree and stipulate among themselves that use of water delivered under this Second Amended Contract shall constitute a reasonable beneficial use of ground water to the extent that such use results in a reduction in ground water extraction below the level of such extraction prior to the initial delivery date. The parties further agree that in the event of an adjudication, the respective positions they assert, whether in judicial proceedings or stipulated settlement, will be in accordance with the provisions of this Paragraph 34.

35. STOCKTON EAST AS CONTRACTOR: In the event that while service is continued hereunder to any Contractor Stockton East undertakes, by purchase, other acquisition, or by contract, the operation of all or any part of the distribution system of any Contractor, then in such capacity, as the operator of a distribution system, Stockton East shall not extend to such a system or the water users of such a system any benefit, right, or preference, not extended to the other Contractors, unless such benefit, right, or preference is also extended to all other Contractors.

36. TEMPORARY USE OF FUNDS: In the event that during any year Stockton East has a shortage of funds to meet

anticipated or unanticipated costs and charges arising under subparagraphs 5A(4) through 5A(8) then Stockton East may, in its discretion, use any funds it may have on hand in the Water Treatment Facilities Reserve Fund for such purposes. In the event that Stockton East does use funds in the Water Treatment Facilities Reserve Fund pursuant to the preceding sentence, then Stockton East may withdraw from the Surplus Account at the end of the current Year, and at the end of any necessary succeeding Years, sufficient funds to reimburse the Water Treatment Facilities Reserve Fund for the money used pursuant to this Paragraph 36 from the Water Treatment Facilities Reserve Fund.

37. ALLOCATION OF SURPLUS TO WATER FUND: At the time of setting the amount of the annual payments to be made by the Contractors pursuant to Paragraphs 5 and 6, an estimate shall be made of that amount of money which will remain in the Surplus Account at the end of the current Year which will be in excess of the amount required to meet all allocations and payments to Stockton East in the current Year provided for by Paragraphs 8, 9 and 36, and subparagraph 5A(1). The sums to be paid by the Contractors pursuant to Paragraphs 5 and 6 for the coming Year shall be reduced by such amount estimated to be remaining in the Surplus Account. At the end of the current Year, all moneys remaining in the Surplus Account which are in excess of the amounts required to meet all allocations and payments to Stockton East provided for by Paragraphs 8, 9 and 36 and subparagraph 5A(1) for such current Year shall be deposited in the Water Fund and used as therein provided.

38. RESOLUTIONS AND EXECUTION: There are attached hereto the following: as Exhibit "E" a certified copy of a resolution of the Board of Directors of Stockton East authorizing execution of this Second Amended Contract; as Exhibit "F" a certified copy of a resolution of the Board of Directors of Cal-Water authorizing execution of this Second Amended Contract; as Exhibit "G" a certified copy of a resolution of the City Council of City authorizing execution of this Second Amended Contract; as Exhibit "H" a certified copy of a resolution of the Board of Supervisors of the County of San Joaquin acting on behalf of Lincoln authorizing execution of this Second Amended Contract; and as Exhibit "I" a certified copy of a resolution of the Board of Supervisors of San Joaquin County acting on behalf of Colonial authorizing execution of this Second Amended Contract. The parties shall execute ten originals of this Second Amended Contract.

39. SUBJECT TO OPINION: Notwithstanding any other provision of this Second Amended Contract, it shall not become effective until there has been obtained, from Messrs. Orrick, Herrington & Sutcliffe, the bond counsel who issued the original opinion for the bonds issued pursuant to the Bond Resolution, an opinion stating that any and all requirements of the Bond Resolution, the bonds issued pursuant thereto, and the laws authorizing and governing the issuance of such bonds, with respect to execution of this Second Amended Contract have been met.

40. SUBJECT TO REMOVAL OF SAN MARCOS DECISION STRICTURES: Notwithstanding any other provision of this Second Amended Contract, it shall not become effective until each of the Contractors, upon advice of their respective attorneys, agrees in writing that the strictures imposed upon the payment by public agencies of certain capital costs, by the California Supreme Court in the case of San Marcos Water District v. San Marcos Unified School District (1986) 42 Cal. 3d 154, have been lifted either by remedial legislation or further judicial decision.

Executed on the day and year first above written at Stockton, California.

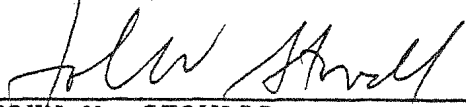
STOCKTON EAST WATER DISTRICT
a political subdivision of the
State of California

By: 
ROGER M. HUCKINS, PRESIDENT

ATTEST:

APPROVED AS TO FORM:


EDWARD M. STEFFANI
SECRETARY


JOHN W. STOVALL
GENERAL COUNSEL

Address for Notice to
Stockton East:
Post Office Box 5157
Stockton, California 95205

CALIFORNIA WATER SERVICE
COMPANY
a California Corporation

By *C. H. Stump*
C. H. STUMP, PRESIDENT

ATTEST:

APPROVED AS TO FORM:
McCutchen, Doyle, Brown
& Enersen

Lester E. Saxe
LESTER SAXE
SECRETARY

A. Crawford Greene
A. CRAWFORD GREENE
ATTORNEYS

Address for Notice to Cal-Water:
Post Office Box 1150
San Jose, California 95108

CITY OF STOCKTON, a municipal
corporation of the State of
California

By *Barbara Fass*
BARBARA FASS, MAYOR

ATTEST:

APPROVED AS TO FORM:

Frances Hong
FRANCES HONG
CITY CLERK

R. Thomas Harris
ROBERT THOMAS HARRIS
CITY ATTORNEY

Address for Notice to City:
c/o City Clerk, City Hall
Stockton, California 95202

LINCOLN VILLAGE MAINTENANCE
DISTRICT, a political subdivi-
sion
of the State of California
governed by the Board of Super-
visors of San Joaquin County

By *George Barber*
GEORGE BARBER
CHAIRMAN, Board of Super-
visors
County of San Joaquin

State of California

ATTEST:

APPROVED AS TO FORM:

JORETTA J. HAYDE
CLERK OF THE Board
of Supervisors of the
County of San Joaquin,
State of California



BY:

Joretta J. Hayde
DEPUTY CLERK

John Cheadle
JOHN CHEADLE
COUNTY COUNSEL

Address for Notice to Lincoln:
c/o Board of Supervisors
Courthouse
222 E. Weber Avenue
Stockton, California 95202

COLONIAL HEIGHTS MAINTENANCE
DISTRICT, a political subdivi-
sion of the State of
California
governed by the Board of Super-
visors of San Joaquin County

BY:

George L. Barber
GEORGE BARBER, CHAIRMAN
Board of Supervisors
County of San Joaquin
State of California

ATTEST:

APPROVED AS TO FORM:


JORETTA J. HAYDE
CLERK OF THE Board
of Supervisors of the
County of San Joaquin,
State of California



BY:

Joretta J. Hayde

~~DEPUTY~~ CLERK


JOHN CHEADLE
COUNTY COUNSEL

Address for Notice to Colonial:
c/o Board of Supervisors
Courthouse
222 E. Weber Avenue
Stockton, California 95202

Exhibit "A"

AMORTIZATION SCHEDULE

Year	Payments			Bond Years	Cumulative Bond Years
	Interest (/sales)	Principal (1,000s)	Total		
1975	-	-	-	-	-
1976	\$1,386,000	-	\$1,386,000	-	-
1977	1,386,000	-	1,386,000	-	-
1978	1,386,000	-	1,386,000	-	-
1979	1,386,000	\$ 250	1,636,000	1,000	1,000
1980	1,368,500	275	1,643,500	1,375	2,375
1981	1,349,250	300	1,649,250	1,800	4,175
1982	1,328,250	325	1,653,250	2,275	6,450
1983	1,303,500	350	1,655,500	2,800	9,250
1984	1,281,000	375	1,656,000	3,375	12,625
1985	1,254,750	400	1,654,750	4,000	16,625
1986	1,226,750	425	1,651,750	4,675	21,300
1987	1,197,000	450	1,647,000	5,400	26,700
1988	1,165,300	475	1,640,500	6,175	32,875
1989	1,132,250	500	1,632,250	7,000	39,875
1990	1,097,250	550	1,647,250	8,250	48,125
1991	1,058,750	600	1,653,750	9,600	57,725
1992	1,016,750	650	1,666,750	11,050	68,775
1993	971,250	700	1,671,250	12,600	81,375
1994	992,250	750	1,672,250	14,250	95,625
1995	869,750	800	1,669,750	16,000	111,625
1996	813,750	850	1,663,750	17,850	129,475
1997	754,250	900	1,654,250	19,800	149,275
1998	691,250	950	1,641,250	21,850	171,125
1999	624,750	1,025	1,649,750	24,600	195,725
2000	553,000	1,100	1,653,000	27,500	223,225
2001	476,000	1,175	1,651,000	30,550	253,775
2002	393,750	1,250	1,643,750	33,750	287,525
2003	306,250	1,350	1,656,250	37,800	325,325
2004	211,750	1,450	1,661,750	42,050	367,375
2005	110,250	1,575	1,685,250	47,250	414,625

/ 15,125,000/
term maturity

\$19,800,000 27 yr. average: 414,625
 \$1,654,287
 Average life: 20.94 years.

Exhibit "A"

\$15,125,000 dated 2005; minimum mandatory calls starting in 1991 as per schedule.

Dated 4/1/75.

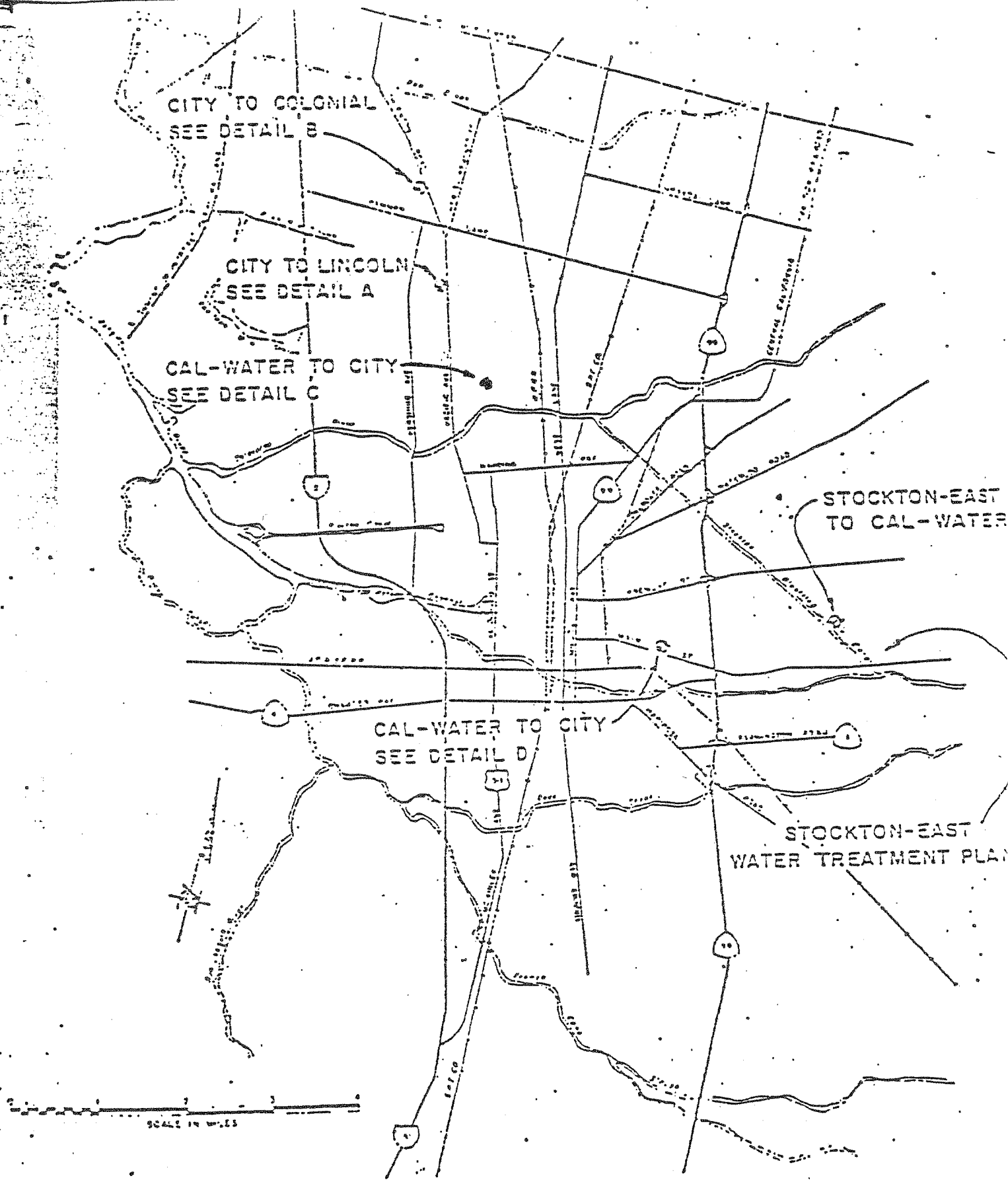
Call premiums:

<u>Premium</u>	<u>Redemption Year</u>
2-1/2 ³	1991
2-1/4	1992
2	1993
1-3/4	1994
1-1/2	1995
1-1/4	1996
1	1997
3/4	1998-1999
1/2	2000-2001
1/4	2002-2004
0	2005

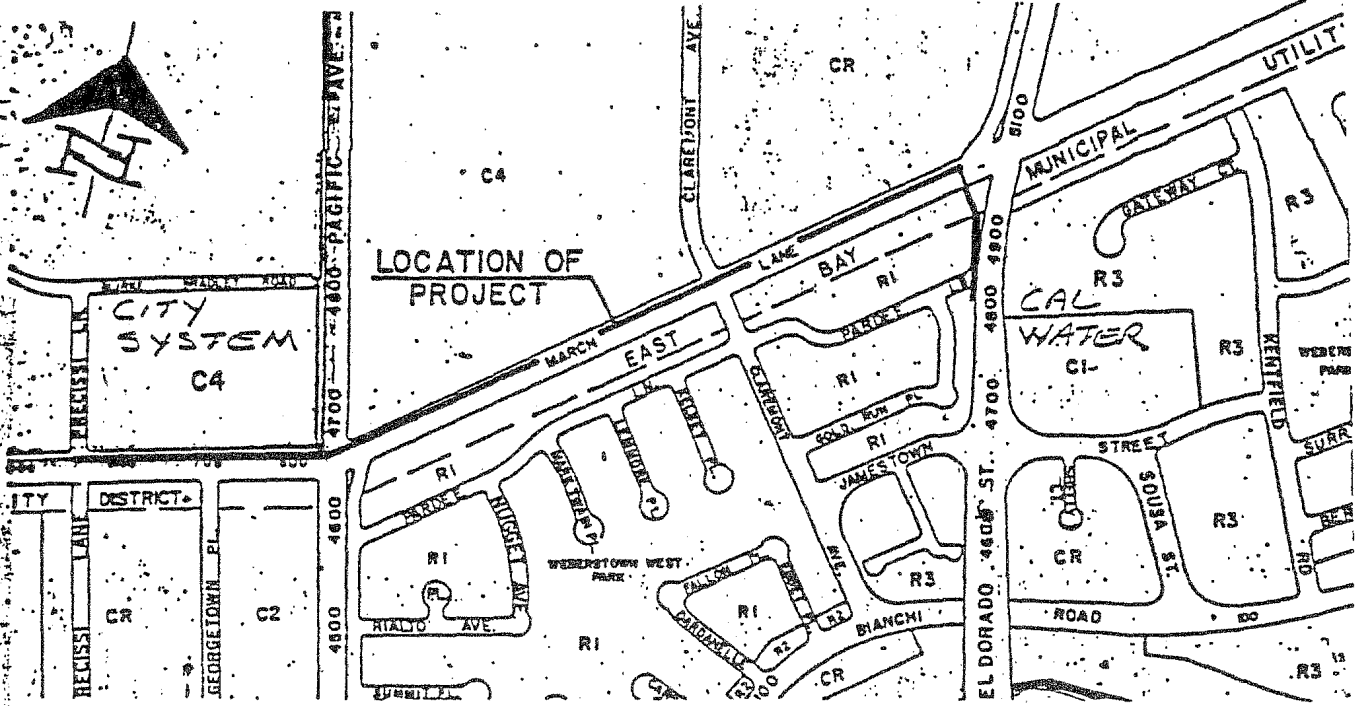
Paying Agent:

Bank of America,
National Trust and
Savings Association

The foregoing schedule is an example only based on interest at 7%.

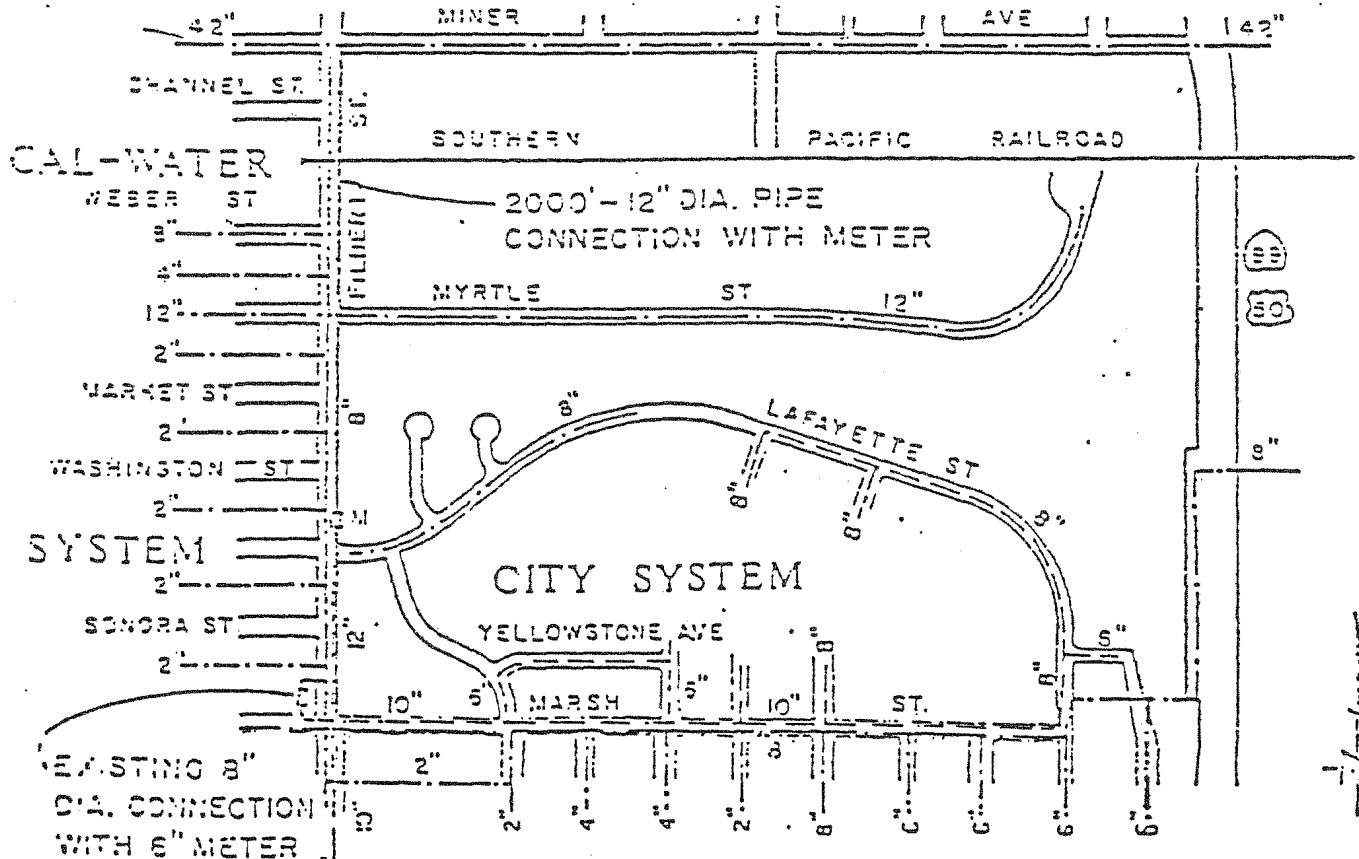


WATER DELIVERY POINTS



DETAIL - C

CAL-WATER CONNECTION TO CITY (NORTH)



DETAIL - D

CAL-WATER CONNECTION TO CITY (DIAMOND D-WALNUT)

EXHIBIT C

WATER TREATMENT FACILITIES ADVANCES

1.	Feasibility Study of Master Water Plan Recommendations	\$ 24,510.01
2.	Financial Consultant's Services	24,612.72
3.	Design Engineering, Pipeline	46,212.05
4.	Surveys, Pipeline and Treatment Plant	31,718.43
5.	Soil Studies, Pipeline and Treatment Plant	17,358.29
6.	Design Engineering, Treatment Plant	105,660.32
7.	Architectural Design Services	14,707.38
8.	Contingency Water Plan	13,974.00
9.	P.L. 984 Loan Application	40,893.60
10.	Environmental Impact Report	11,521.13
11.	Legal Services	35,960.00
12.	Bond Election	25,817.21
13.	Lands, Easements and Rights of Way	209,094.22
	TOTAL	<u>\$602,039.36</u>

The foregoing items were expended prior to November 30, 1974. There shall be added to said sum of \$602,039.36 an additional sum in the amount of \$12,034.10 for items similar to those enumerated above expended between December 1, 1974 and the date that funds became available from the sale of the Water Treatment Facilities Bonds.

EXHIBIT D

MAJOR REPAIR AND REPLACEMENT SCHEDULE

The following schedule of major repairs and replacements is the schedule mentioned in subparagraph 7B of the Contract.

Estimated Costs of Major Repairs and Replacements During Five-Year Periods Shown (Based on 1974 Costs in \$1000)

<u>Item</u>	<u>0-5</u>	<u>5-10</u>	<u>10-15</u>	<u>15-20</u>	<u>20-25</u>	<u>25-30</u>	<u>30-35</u>
Chemical Feeders	5	15	25	25	25	25	25
Electrical and Instrumentation	10	40	60	60	60	60	60
Natural Gas Engines	5	20	5	20	5	20	5
Chemical Mixers	3	6	6	6	6	6	6
Pumps and Motors	30	40	50	50	50	50	50
Chlorine Equipment	5	10	10	10	10	10	10
Air Conditioning	-	-	8	-	-	8	-
Flocculators	5	10	14	14	14	14	14
Valves	4	8	8	8	8	8	8
Miscellaneous	5	11	11	11	11	12	12
Sub-total	72	160	197	204	189	213	190
Total	=		\$1,225,000.00				
Cost Per Year	=		\$ 35,000.00				

Ed Steffan
Stockton-East Water Dist
PO Box 5157
Stockton CA 95205

Before the Board of Supervisors

County of San Joaquin, State of California

B- 87-1419

RECEIVED
SEP 24 1987

MOTION: SOUSA/CARTER

STOCKTON-EAST
WATER DISTRICT

SECOND AMENDED CONTRACT FOR SALE OF TREATED WATER

IT IS HEREBY RESOLVED that the Board of Supervisors approve the Second Amended Contract between Stockton East Water District, California Water Service Company, City of Stockton, and Lincoln Village and Colonial Heights Maintenance Districts and authorize the Chairman of the Board to execute the Contract.

SEP 15 1987

I HEREBY CERTIFY that the above order was passed and adopted on _____ by the following vote of the Board of Supervisors, to wit:

AYES: WILHOIT, COSTA, SOUSA, CARTER, BARBER

NOES: NONE

ABSENT: NONE

ABSTAIN:

Copies to:

JORETTA J. HAYDE
Clerk of the Board of Supervisors
County of San Joaquin
State of California



JORETTA J. HAYDE

RESOLUTION NO. 87-88-10

RESOLUTION OF THE BOARD OF DIRECTORS OF THE STOCKTON-EAST WATER DISTRICT APPROVING AND AUTHORIZING EXECUTION OF SECOND AMENDED CONTRACT WITH CITY OF STOCKTON, LINCOLN VILLAGE MAINTENANCE DISTRICT, COLONIAL HEIGHTS MAINTENANCE DISTRICT, AND CALIFORNIA WATER SERVICE COMPANY.

IT IS HEREBY RESOLVED that the Second Amended Contract between the Stockton-East Water District, the California Water Service Company, the City of Stockton, the Lincoln Village Maintenance District, and the Colonial Heights Maintenance District providing for the sale of treated water, for a term extending until April 1, 2035, be, and it hereby is, approved.

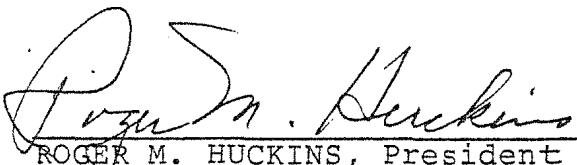
BE IT FURTHER RESOLVED that the President and Secretary of this Board of Directors be, and they hereby are, authorized and directed to execute said Second Amended Contract on behalf of the STOCKTON-EAST WATER DISTRICT.

PASSED AND ADOPTED this 15th day of September, 1987, by the following vote of the Board of Directors, to wit:

AYES: BOZZANO, DONDERO, HUCKINS, LAVEN, and SOLARI

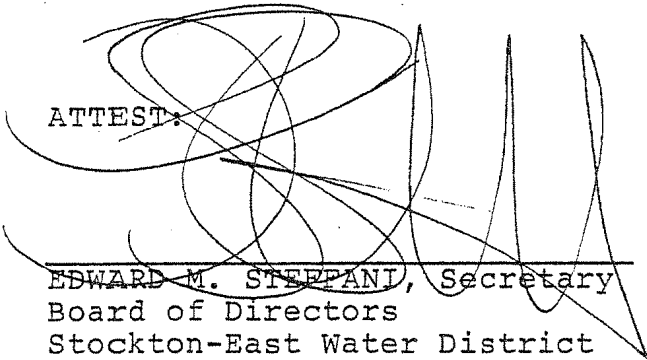
NOES: TONE

ABSENT: MACNEAR



ROGER M. HUCKINS, President
Board of Directors
Stockton-East Water District

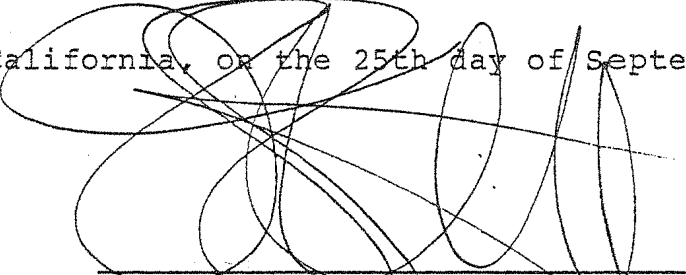
ATTEST:



EDWARD M. STEFFANI, Secretary
Board of Directors
Stockton-East Water District

I hereby certify that I am the Secretary of the Stockton-East Water District and that the foregoing is a true and correct copy of a resolution which was duly adopted by the vote of the Board of Directors of the Stockton-East Water District shown above on September 15th, 1987.

Dated at Stockton, California, on the 25th day of September, 1987.



EDWARD M. STEFFANI, Secretary
Stockton-East Water District

Exhibit "E"
Sheet 1 of 2

STOCKTON CITY COUNCIL

RESOLUTION AUTHORIZING THE EXECUTION OF A SECOND AMENDED CONTRACT FOR THE SALE OF TREATED WATER BETWEEN THE CITY OF STOCKTON, STOCKTON EAST WATER DISTRICT, CALIFORNIA WATER SERVICE COMPANY, LINCOLN VILLAGE MAINTENANCE DISTRICT AND COLONIAL HEIGHTS MAINTENANCE DISTRICT

WHEREAS, in order to meet the water needs of the parties hereto, the original contract was made February 11, 1975, and amended May 31, 1977, allocating certain water entitlements among the parties; and

WHEREAS, such agreements were executed in order to protect the groundwater basin in and around the City of Stockton from overdraft and saline intrusion; and

WHEREAS, in order to further those considerations enunciated in the original contracts, it has become necessary to reapportion certain surface water entitlements, and to make provisions for the expansion of certain water conveyance, storage and treatment facilities; now therefore

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF STOCKTON,
AS FOLLOWS:

That the Mayor is hereby authorized to execute on behalf of the City of Stockton the Second Amended Four Party Contract attached part hereof.

Before the Board of Supervisors
County of San Joaquin, State of California

B- 87-1419

MOTION: SOUSA/CARTER

SECOND AMENDED CONTRACT FOR SALE OF TREATED WATER

IT IS HEREBY RESOLVED that the Board of Supervisors approve the Second Amended Contract between Stockton East Water District, California Water Service Company, City of Stockton, and Lincoln Village and Colonial Heights Maintenance Districts and authorize the Chairman of the Board to execute the Contract.

I HEREBY CERTIFY that the above order was passed and adopted on September 15, 1987 by the following vote of the Board of Supervisors, to wit:

AYES: WILHOIT, COSTA, SOUSA, CARTER, BARBER

NOES: NONE

ABSENT: NONE

ABSTAIN: NONE

JORETTA J. HAYDE
Clerk of the Board of Supervisors
County of San Joaquin
State of California



Joretta J. Hayde

Before the Board of Supervisors
County of San Joaquin, State of California

B- 87-1419

MOTION: SOUSA/CARTER

SECOND AMENDED CONTRACT FOR SALE OF TREATED WATER

IT IS HEREBY RESOLVED that the Board of Supervisors approve the Second Amended Contract between Stockton East Water District, California Water Service Company, City of Stockton, and Lincoln Village and Colonial Heights Maintenance Districts and authorize the Chairman of the Board to execute the Contract.

I HEREBY CERTIFY that the above order was passed and adopted on September 15, 1987 by the following vote of the Board of Supervisors, to wit:

AYES: WILHOIT, COSTA, SOUSA, CARTER, BARBER

NOES: NONE

ABSENT: NONE

ABSTAIN: NONE

JORETTA J. HAYDE
Clerk of the Board of Supervisors
County of San Joaquin
State of California



Joretta J. Hayde

SETTLEMENT AGREEMENT

1 McDONOUGH, HOLLAND & ALLEN
A Professional Corporation
2 RICHARD E. BRANDT, ESQ. (#44893)
3 555 Capitol Mall, Ninth Floor
Sacramento, California 95814
4 Telephone: (916) 444-3900
Telecopier: (916) 325-5844

5 Attorneys for City of Stockton
6

7 OFFICE OF THE CITY ATTORNEY
RICHARD K. DENHALTER, ESQ. (#68824)
8 GUY D. PETZOLD, ESQ. (#90211)
City Hall, 425 N. El Dorado Street
9 Stockton, California 95202
Telephone: (209) 937-8333
10 Telecopier: (209) 937-8898

11 Attorneys for City of Stockton
12

13 IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

14 IN AND FOR THE COUNTY OF SAN JOAQUIN
15

16 CITY OF STOCKTON, a Charter City, and
17 CALIFORNIA WATER SERVICE
COMPANY, a California corporation,
18
19 Plaintiffs,

20 v.

21 STOCKTON EAST WATER DISTRICT;
and DOES 1 THROUGH 30, INCLUSIVE,
22
23 Defendants.

Case No. CV-003963

JUDGMENT ON STIPULATION
FOR ENTRY OF JUDGMENT

Date:

Time:

Dept.: 13

24 In the above entitled case, Plaintiffs City of Stockton and California Water
25 Service Company and Defendant Stockton East Water District, have stipulated that
26 judgment be entered dismissing the Plaintiffs' PETITION FOR WRIT OF
27 MANDATE AND COMPLAINT FOR DECLARATORY AND INJUNCTIVE
28 RELIEF AND DAMAGES, SPECIFIC PERFORMANCE, CONSTRUCTIVE TRUST

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

AND ACCOUNTING without prejudice and ordering the parties to carry out the terms of the Settlement Agreement attached to this Judgment as Exhibit A and incorporated herein by reference

IT IS HEREBY ADJUDGED, ORDERED AND DECREED that judgment be entered dismissing without prejudice the Plaintiffs' PETITION FOR WRIT OF MANDATE AND COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF AND DAMAGES, SPECIFIC PERFORMANCE, CONSTRUCTIVE TRUST AND ACCOUNTING and ordering the parties to carry out the Settlement Agreement attached to this Judgment as Exhibit A. The court retains jurisdiction, at the request of the parties, to enforce the terms of the Settlement Agreement and to allow the refiling of certain claims described in Paragraph 11 of the Settlement Agreement if the conditions set forth in Paragraph 17 of the Agreement are not satisfied by January 1, 2004. . The respective parties shall bear their own costs.

Dated: _____.

JUDGE OF THE SUPERIOR COURT

SETTLEMENT AGREEMENT
AMONG STOCKTON EAST WATER DISTRICT,
AND
THE CITY OF STOCKTON, AND
CALIFORNIA WATER SERVICE COMPANY

This Settlement Agreement ("Agreement") is entered into this 10th day of April, 2001, among the CITY OF STOCKTON, and CALIFORNIA WATER SERVICE COMPANY, (collectively "Plaintiffs") and STOCKTON EAST WATER DISTRICT ("SEWD").

RECITALS

The CITY OF STOCKTON (City) is a charter city duly organized and Existing as a political subdivision of the State of California; and

The CALIFORNIA WATER SERVICE COMPANY (Cal Water) is a corporation organized under the laws of the State of California, doing business in San Joaquin County; and

The STOCKTON EAST WATER DISTRICT (SEWD) is a political subdivision of the State of California, duly organized, existing, and acting pursuant to the laws thereof, with its principal place of business in San Joaquin County, California.

On September 25, 1987, SEWD and the Plaintiffs entered into the Second Amended Contract providing for the sale of treated water; and

On December 10, 1997, the Plaintiffs filed a Petition for Writ of Mandate and Complaint for Declaratory and Injunctive Relief and Damages, Specific Performance, Constructive Trust and Accounting against SEWD in San Joaquin County Superior Court; and

On February 26, 1998, the parties entered into a Stipulated Preliminary Injunction in the Litigation; and

The parties have been in negotiations to obtain a settlement for several months, and have now reached agreement; and

The parties wish to reach a comprehensive settlement of the matters addressed in the Litigation that will:

Establish an interpretation of the Second Amended Contract that is consistent with its terms and agreeable to the parties,

Allow SEWD to budget expenditures and revenue for the Municipal Division and the district with input from the Plaintiffs; and

Resolve claims for past expenditures raised by the Litigation to the extent set forth herein.

NOW, THEREFORE, the parties agree as follows:

I. DEFINITIONS.

A. *Agricultural Division* shall have the meaning set forth in Section 4(b)(4) of the Special Legislation.

B. *Base Monthly Payment* shall have the definition set forth in Section 1E of the Second Amended Contract.

C. *Bond Documents* shall mean the Official Statement, Installment Purchase Agreement and Trust Agreement for each of the outstanding bonds for the New Melones Project.

D. *Contract Expenses* shall mean those charges to be included in the base monthly payment as specified in Section 5 of the Second Amended Contract.

E. *Contract Payments* shall mean all payments made to SEWD pursuant to the Second Amended Contract, including, but not limited to, Base Monthly Payments and ground water equalization payments described in Paragraph 6D(2) and (3) of the Second Amended Contract.

F. *Contract Revenues* shall mean Contract Payments received by SEWD.

G. *Litigation* means the Petition for Writ of Mandate and Complaint for Declaratory and Injunctive Relief and Damages, Specific Performance, Constructive Trust and Accounting filed by the Plaintiffs on December 10, 1997 in San Joaquin County Superior Court as No. CV-003963.

H. *Municipal Division* shall have the meaning set forth in Section 4(b)(26) of the Special Legislation.

I. *Second Amended Contract* means the Second Amended Contract Among the Stockton East Water District, the California Water Service Company, the City of Stockton, the Lincoln Village Maintenance District, and the Colonial Heights Maintenance District Providing for the Sale of Treated Water dated September 25, 1987.

J. *Section 15 Projects* means those projects being contemplated by the parties pursuant to Section 15 of the Second Amended Contract.

K. *Special Legislation* means the special act of the California Legislature, at Chapter 819, Statutes of 1971, as amended, pursuant to which Stockton East Water District was formed.

L. *Surplus Funds* means the following funds held by San Joaquin County for SEWD: Supplemental Water Development Fund, Fund No. 82, which reports a balance

as of September 30, 2000 equaling Four Million Eight Hundred Sixty Thousand Two Hundred Eighty-one and 55/100 Dollars (\$4,860,281.55) and the Agricultural Debt Service No. 1 Fund, Fund No. 61, which reports a balance as of September 30, 2000 equaling One Million Four Hundred Ninety-Four Thousand, One Hundred Sixteen and 38/100 Dollars (\$1,494,116.38) with accounts receivable of Seven Hundred Twelve Thousand Two Hundred Twenty and 26/100 Dollars (\$712,220.26), and any other surplus fund or portion of surplus fund consisting of funds transferred from the Municipal Division and held for any purpose other than the payment of expenses properly allocated to the Municipal Division.

M. *Urban Contractors* means California Water Service Company, the City of Stockton, the Lincoln Village Maintenance District, the Colonial Heights Maintenance District and San Joaquin County.

2. MATTERS OF AGREEMENT.

A. *Effective Date.* This Agreement shall be effective on the date last executed by a party.

B. *Continuation of Second Amended Contract.* The validity of the Second Amended Contract shall not be affected by this Agreement; this Agreement is intended to interpret the Second Amended Contract among the parties. To the extent that there are inconsistencies between the Second Amended Contract and this Agreement, the terms of this Agreement shall prevail as to the parties hereto.

C. *Settlement of All Matters.* Except as set forth in Paragraphs 11 and 17, the parties intend this Agreement as a settlement of all claims as specified in the Litigation.

3. USE OF CONTRACT PAYMENTS.

The parties agree that Contract Payments shall be used only to meet Contract Expenses. No loans shall be made from Second Amended Contract Revenues under the authority of the District's Special Legislation unless authorized in writing by the Urban Contractors. The Contract Expenses defined as the "cost of administrative services attributable to the operation of the water treatment facilities and the administration of this Second Amended Contract. . . ." as set forth in Section 5(A)6 of the Second Amended Contract shall include, but are not limited to:

A. An equitable allocation of general overhead expenses to the administrative services described in Section 5A(6) of the Second Amended Contract. These general overhead expenses include, but are not limited to:

(1) Legal fees for general district matters (attendance at meetings, audit letters, etc.);

(2) District audit;

STOCKTON EAST WATER DISTRICT

2020 URBAN WATER MANAGEMENT PLAN

**APPENDIX F – URBAN WATER SHORTAGE
CONTINGENCY PLAN**

**URBAN WATER SHORTAGE
CONTINGENCY PLAN**

FOR

STOCKTON EAST WATER DISTRICT



March 2021

Prepared By:

Provost & Pritchard Consulting Group



Table of Contents

1 - PURPOSES AND PRINCIPLES OF PLAN1
2 - PROCEDURES FOR CONDUCTING ASSESSMENT1
3 - WATER SHORTAGE STAGES.....3
4 - SHORTAGE RESPONSE ACTIONS3
5 - COMMUNITY OUTREACH5
6 - LEGAL AUTHORITY OF THE PLAN.....5
7 - REVENUE REDUCTIONS AND EXPENSE INCREASES6
8 - MONITORING AND EVALUATING THE PLAN6

List of Tables

Table 1: Water Shortage Stages.....3
Table 2: Response Actions During Water Shortages.....4

1 - PURPOSES AND PRINCIPLES OF PLAN

The purpose of the Stockton East Water District (SEWD or District) Urban Water Shortage Contingency Plan (WSCP) is to provide a methodology for analyzing water supply reliability, establishing water shortage stages, identifying appropriate response actions, and documenting protocols for implementing the WSCP. This WSCP was prepared according to requirements in Sections 10632 & 10635 of the California Water Code. Certain components of the WSCP, such as water use restrictions and enforcement, are not applicable to SEWD since they provide wholesale water. The District's Urban Contractors also have their own Water Shortage Contingency Plans applicable to their customers.

2 - PROCEDURES FOR CONDUCTING ASSESSMENT

Decision Making Process

The District provides wholesale treated water to the City of Stockton, California Water Service Company, and San Joaquin County, collectively called the Urban Contractors. The District policy has been to provide as much treated surface water to the urban area as possible because of the danger of saline intrusion into the groundwater basin from the Delta. The percentages and amounts of entitlements to each Urban Contractor are calculated annually. When the District declares a supply shortage, all Urban Contractors receive a uniform percentage reduction from their contractual allocation. The District can only deliver what is available. Any deficiencies in treated water deliveries from the treatment plant are reflected in additional groundwater pumping by the contractors to make up the difference. It is the Urban Contractors' responsibility to implement water use restrictions from their customers during a water shortage.

The following general process is performed in assessing water supplies and demands and determining urban water deliveries.

1. Urban Contractors provide their estimated demands for a calendar year each preceding fall.
2. Annual crop water demands are estimated from the District's previous Annual Crop Report.
3. Estimated surface water allocations are provided for the New Melones Reservoir, New Hogan Reservoir, and District's agreement with Central San Joaquin Water Conservation District by the Spring each year.
4. Groundwater capacity is estimated by the number of operational wells and recent pumping data.
5. Per agreement with Urban Contractors, minimum of 20,000 ac-ft/yr is used for urban demands.
6. If total supplies are not adequate to meet all urban and agricultural demands, agricultural deliveries may be reduced, as long as there are adequate groundwater supplies to meet demands while maintaining a sustainable groundwater supply.
7. If demands are significantly higher than supplies, then groundwater wells and water transfers may be used to augment supplies.

Quantification of Water Supply

The District has three water supplies: New Hogan Reservoir, New Melones Reservoir, and groundwater. Following are discussions on how available water supplies are quantified.

New Hogan Reservoir (Calaveras River)

The District receives water from the New Hogan Project pursuant to an August 25, 1970 Contract among the USBR, the District, and Calaveras County Water District (CCWD). The Contract allocates 56.5 percent of the yield from New Hogan Reservoir to the District, and the remaining 43.5 percent to CCWD. The total annual supply available is approximately 84,100 ac-ft/yr in normal water years. The Allocation Contract also provides that any water not used by CCWD can be used by the District. At the current level of CCWD use, the District can rely on about 83,000 ac-ft/yr of supply from the New Hogan Project in normal water years under safe yield operation. If CCWD maintains its percentage entitlement (43.5 percent) and exercises it, the District's share would be reduced. The District is the water master and controls New Hogan Dam releases for irrigation and municipal use for the District and CCWD during non-flood control periods. The United States Army Corps of Engineers (USACE) operates the dam for flood control.

New Melones Reservoir (Stanislaus River)

The District receives water from the New Melones Project pursuant to a December 1983 Contract with USBR allocating the District 75,000 ac-ft annually. New Melones Reservoir is a part of the Central Valley Project (CVP), receives its water from rain and snowmelt runoff, and has a capacity of 2.4 million ac-ft. It is located approximately 40 miles east of Stockton, north of State Highway 120 in Stanislaus County. Central San Joaquin Water Conservation District (CSJWCD) also has a water supply contract with USBR for the New Melones Project. Together the District and CSJWCD are entitled to up to 155,000 ac-ft of water from New Melones Reservoir annually. Water allocation amounts are based on the March-September water forecast and the February end of month storage in the New Melones Reservoir each year. This water is subject to cutbacks based on the USBR's overall CVP operations.

In 2014, the District entered into an agreement with Central San Joaquin Water Conservation District (Central) by which Central permanently assigned to the District, for the benefit of the City of Stockton and Cal Water, 15,000 ac-ft per year of firm water Central is entitled to receive under its existing contract with the USBR. Central takes their 80,000 ac-ft contract amount before SEWD receives its allocated 15,000 ac-ft, but this occurs in all years except some years of a multi-year drought.

Groundwater

The District has five wells that are only used during operational emergencies or severe droughts. The capacity of the wells was estimated to be 13,700 ac-ft/yr in 2020. The capacity available each year is based on the number of wells operational and recent pumping data.

Existing Infrastructure Constraints

Primary infrastructure includes a 65-MGD water treatment plant, five groundwater wells, New Melones Dam and New Hogan Dam, and conveyance facilities that bring water from the dams to the water treatment plant.

Water Treatment Plant. The Water Treatment Plant has six backup generators so it can continue operating during a power outage. The Water Treatment Plan may temporarily be down in case of malfunction or other operational problem.

Groundwater Wells. The District operates five wells for use during severe droughts or operational emergencies related to the dams or conveyance facilities.

Dams. New Hogan Dam and New Melones Dam are owned and managed by the Federal government. Consequently, infrastructure problems at either facility are outside of the control of SEWD. If problems at either facility restricts water supplies, then the District can use their wells to provide a temporary water supply.

Conveyance Facilities. All surface water is delivered to the water treatment plant and to the Urban Contractor connections by gravity through a series of creeks, diversion structures, and canals. No power is needed for conveyance. If the conveyance facilities experience damage or malfunctions that limit water deliveries, then the District can use their wells as a temporary water supply.

3 - WATER SHORTAGE STAGES

The Water Code lists six standard Water Shortage Stages for use in WSCPs, each increasing gradually by 10% up to the highest level which is a 50+% reduction. These stages are generally not applicable to SEWD since they provide a wholesale supply and have limited mitigation options. Further, due to a reliable water supply, aggressive responses are only needed in extreme water shortages.

Table 1 summarizes four supply reduction conditions that align better with the District's response actions described in the following section:

Table 1: Water Shortage Stages

Stage	Period	Supply Reduction	Water Supply Condition
1	Long-term	0%-50%	Water Supply Shortage
2	Long-term	50%-75%	Severe Water Supply Shortage
3	Long-term	75+%	Critical Water Supply Shortage
4	Short-term	>50%	Severe Water Supply Shortage

Notes:

1 – Short term conditions occur for 45 days or less and may be attributed to infrastructure, water quality, or power issues, as well as hydrologic conditions. Long-term conditions are greater than 45 days and are typically due to hydrologic conditions.

4 - SHORTAGE RESPONSE ACTIONS

Response Actions by Water Shortage Stage

The District is a wholesaler of treated water and has no authority over mandatory prohibitions on water use. Any resolution or ordinance to end users would be issued by the Urban Contractors. The

District, however, can take a few actions during water shortages to improve water supply conditions. These are described below.

1. **Water Conservation Education.** The District funds and supports water conservation education through the Stockton Area Water Suppliers group. These education programs could potentially be expanded or re-focused on specific topics during a water shortage.
2. **Reduce Agricultural Water Deliveries.** A primary method to reduce surface water use is to decrease water deliveries to agricultural customers. This method has been successfully used in the past. The growers practice conjunctive use and rely on groundwater to supplement surface water, especially during dry periods. SEWD performs both in-lieu and direct recharge to sustain groundwater levels and is developing a long-term recharge program that will help ensure sustainable groundwater supplies. This will allow growers to accommodate reduced surface water deliveries in dry years through higher groundwater pumping. This method is often used; however, the District still strives to meet all of the urban and agricultural water demands each year and tries to minimize surface water cutbacks to agricultural customers.
3. **Pumping Groundwater.** The District has five wells that are only used during operational emergencies or severe droughts. They were used in 2015 and 2016 due to a serious multi-year drought. The well water is delivered to the water treatment plant and conveyed to the Urban Contractors.
4. **Water Transfer Purchases.** Water supplies could be augmented through water transfers. However, any such transfer would likely be on a temporary annual basis. While SEWD may seek such transfers in future droughts, they are not guaranteed.

Table 2 lists the Response Actions that can be taken during each Water Shortage Stage.

Table 2: Response Actions During Water Shortages

Stage	Period	Supply Reduction	Response Actions
1	Long-term	0%-50%	Expand/re-focus water conservation education Reduce deliveries to agricultural customers
2	Long-term	50%-75%	Expand/re-focus water conservation education Reduce deliveries to agricultural customers Pump groundwater from District wells
3	Long-term	75+%	Expand/re-focus water conservation education Reduce deliveries to agricultural customers Pump groundwater from District wells Water transfer purchases
4	Short-term	>50%	Expand/re-focus water conservation education Reduce deliveries to agricultural customers Pump groundwater from District wells

Locally Appropriate Supply Augmentation Actions

Locally appropriate supply augmentation actions are pumping groundwater from District wells and water transfer purchases. These are discussed above.

Locally Appropriate Operational Changes

During a drought, operational changes to the water treatment plant may be needed to accommodate different mixtures of the three water supplies (New Hogan, New Melones, and groundwater). In addition, the District may reduce intentional groundwater recharge to preserve water for customer demands.

Gap Between Supply and Demand

Wells. The District's wells have an annual capacity of about 13,700 ac-ft as of 2020. The District also plans to construct one new well every five years, adding an additional 2,400 ac-ft/yr capacity with each new well.

Water Transfers. The supply from a water transfer will vary based on the amount purchased. Surplus waters are often limited in supply or not available at reasonable costs during droughts. However, in 2016, SEWD did purchase 10,000 ac-ft from Oakdale Irrigation District during a severe drought.

5 - COMMUNITY OUTREACH

Current and Predicted Shortages

If a water shortage occurs, SEWD will inform the Urban Contractors as soon as feasible. The Urban Contractors are responsible for notifying local residents of specific water use restrictions, water waste penalties, and water conditions specific to their individual agency.

Shortage Response Actions

SEWD notifies the Urban Contractors on a regular basis about the availability of water supplies. They will generally be notified if wells or water transfers are used to augment supplies and how it will impact their deliveries.

6 - LEGAL AUTHORITY OF THE PLAN

This WSCP adheres with the California Water Code 10632. This document is also required by State law as outlined in the Water Code, which states that, "Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan..." (WC 10632). As an established California Water District, SEWD has the authority to implement the WSCP, declare water shortages, and implement shortage response actions.

Declaring a Water Shortage Emergency

SEWD will follow the protocols outlined in this Plan should it become necessary to declare a water shortage emergency. The process will follow the pertinent sections of the California Water Code and be noticed for a public hearing, typically at a Board of Directors meeting.

Supplier Coordination

The District Manager or designated staff will be available and responsible for coordinating with the Urban Contractors if there will be a proclamation of a water shortage.

7 - REVENUE REDUCTIONS AND EXPENSE INCREASES

The various revenue sources available to the District during droughts include, but are not limited to water sales, assessments, and other non-operating revenues such as grant funding when available. In addition, special outside funding sources may be made available to water agencies during a water emergency or drought.

Each year a budget is adopted at a public hearing to determine the amount of revenue needed from the Urban Contractors to meet treatment plant related expenses for the succeeding year. Revenue requirements are adjusted for over or under collection from the previous year, which are generally related to the amount of water treated. At the end of each year, budgeted expenditures are compared with actual expenditures. Credits are applied to retailer accounts in the event that actual expenditures are less than budgeted expenditures.

Each year a review is conducted to compare increases in District expenses to revenues, in order to determine if rate adjustments may be necessary to help ensure an adequate budget for operations and maintenance expenses.

Potential Revenue Reductions and Expense Increases

Potential revenue reductions in droughts may include but are not limited to:

- Decreased water sales to the Urban Contractors
- Decreased water sales to agricultural customers

Potential expense increases in droughts may include but are not limited to:

- Additional costs for groundwater pumping
- Purchases of higher priced transfer water

Mitigation Actions

To assure adequate operating budget, the District strives to maintain dry year reserves. One reserve account is provided for agricultural supply and another account is provided for municipal and industrial supply. Each year a contribution is made to each reserve fund based upon the quantity of water delivered in that year to irrigators and Urban Contractors. The amount in the reserves is limited based on the District's enabling legislations. The reserve accounts help to keep the District financially viable during droughts when water sales are lower.

8 - MONITORING AND EVALUATING THE PLAN

The District first adopted their WSCP in 1991. This WSCP has been updated to incorporate new requirements established in 2020, as well as important lessons learned during the historic drought of 2013-2016. The WSCP will be re-evaluated at least every five years and at the end of each drought period to assess its performance. If deemed necessary, it will be modified and improved based on lessons learned. The Plan may also be updated in the middle of a drought year if needed.