



2020 Agricultural Water Management Plan

Prepared Pursuant to Water Code Section 10826
and Executive Order B-29-15

Belridge Water Storage District (BWSD)

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Section I: Preparation and Adoption

This Agricultural Water Management Plan (AWMP) represents the 2020 Plan prepared for the Belridge Water Storage District (BWSD or District) by the Westside Water Authority to comply with the requirements of the 2018 Water Conservation Legislation (AB 1668 and SB 606). The District has, however, been involved in other water management efforts, as itemized below.

A. Description of Previous Water Management Activities

On March 7, 2006 the District Board of Directors adopted a Water Management Plan prepared in compliance with AB 3616 Agricultural Water Suppliers Efficient Water Practices Act of 1990, in accordance with the January 1, 1999 Memorandum of Understanding Regarding Efficient Water Management Practices by Agricultural Water Suppliers in California. The Water Management Plan was endorsed by the Agricultural Water Management Council in January 2007.

In 2012, the District prepared and submitted the “2012 Agricultural Water Management Plan” in compliance with SB X7-7. The objectives of the AWMP were to evaluate the District’s current water management practices and identify areas where significant improvements have been made, identify areas to improve the efficiency of water use within the District, and consider past and future water management strategies to increase the reliability of water deliveries to the District. The 2012 report concluded that the District had fully implemented all of the critical and the applicable conditional EWMPs.

In 2015, an update was made to the 2012 AWMP to incorporate the requirements from the Governor’s April 1, 2015 Executive Order (B-29-15) to include in the AWMP a detailed drought management plan in addition to quantification of water supplies and demands for the 2013, 2014, and 2015 years to the extent data is available. The update also included information that identified areas to improve the efficiency of water use within the districts and to continue to evaluate the District’s water management practices. The 2015 update also considered past and future water management strategies to increase the reliability of water deliveries to the Districts.

This 2020 AWMP is being written in response to the 2018 Water Conservation Legislation (AB 1668 and SB 606). Additionally, it will provide updated information regarding water management practices in the district.

The Westside Water Authority (WWA) was officially formed in April of 2020 in aid in the joint management of operations, contracts, administration, and water transactions for the Lost Hills Water District, Belridge Water Storage District, Dudley Ridge Water District, and the Berrenda Mesa Water District. Although the WWA manages aspects of the districts, the 4 districts will submit their own AWMP’s to capture the various intricacies of each district. In the future they may be combined to one AWMP as described in water code 10829.

B. Coordination Activities

1. Notification of AWMP Preparation

Table 1. summarizes the agencies and parties notified regarding the coordination, adoption, and submittal activities of the AWMP.

BWSD solicited public input by inviting oral and written comments prior to and during the BWSD Board of Directors public hearing on April 7th, 2021.

Table 1. Summary of Coordination, Adoption, and Submittal Activities for BWSD						
Potential Interested Parties	Notified of Plan Preparation	Requested Copy of Draft (Optional)	Commented on Draft/Action Taken by Supplier (Optional)	Notified of Public Meetings	Attended Public Meetings (Optional)	Copy of Adopted Plan/ Amendment Sent
Local County(s)						
Kern County						X
Groundwater Management Entity						
Urban Water Supplier(s)						
Lost Hills UD						
City or County Library						X
Local Agency Formation Commission						
DWR	X					X
Local Newspaper/ Equivalent Process						
Bakersfield Californian						
Other Local Government Agency						
Other Special Districts						
Berrenda Mesa Water District (BMWWD)	X					
Lost Hills Water District (LHWD)	X					X
Dudley Ridge Water District (DRWD)	X					
Semitropic Water Storage District (SWSD)	X					
Regional Agency						
Kern County Water Agency (KCWA)	X					X
Environmental Citizen Group						
Land Use Agencies						
Business Group						
Social Citizen Group						
Other State Government Agency						
Federal Government Agency						
Other (identify)						
District Landowners /Water Users						
Ag Water Management Council						
Website						Plan to post by May 1, 2021

2. Public Participation

The District provided notice of public meeting to review and adopt the AWMP in the Bakersfield Californian on *March 15, 2021* (Appendix 1). This notice included the notification of preparation and the notification of the date of the public meeting to be held to review and consider adopting the AWMP.

The District did not receive any responses or comments from the public or landowners regarding the AWMP via email, phone calls, and meetings.

C. AWMP Adoption, Submittal, and Availability

1. AWMP Adoption

The District is submitting the 2020 AWMP included in this document in accordance with AB 1668 and SB 606 requirements and which has been adopted by the Board of Directors on April 7, 2021. Resolution of Plan Adoption by the Board is included in Appendix 2.

2. AWMP Submittal

Copies of the finalized AWMP have been sent to the following agencies:

- DWR
- Kern County
- California State Library

3. AWMP Availability

The AWMP will be posted on the District's web site on or before *May 01, 2021* and can be viewed in the following link: <http://www.belridgewsd.com>.

D. AWMP Implementation

Plan implementation began with Board adoption on *April 01, 2021* and will continue until the next update. Further details on water use efficiency implementation schedule and documentation are described in Sections VII and VIII.

Section II: Description of the Agricultural Water Supply and Service Area

A. Physical Characteristics

1. Size of service area

The District is located in western Kern County and encompasses 99,819 acres of land (

Appendix 3). The District currently owns and operates an irrigation distribution system that is shown in Appendix 4. Of the 99,819 acres in the District, 88,223 acres are farmable (District acreage less acres in Industrial Zone), although not all this acreage is currently being farmed. The net cropped acreage in 2020 was 34,461 acres. The overall District history and size is summarized in Table 2. BWSD has the infrastructure to deliver water to approximately 46,130 acres of land.

Table 2. Water Supplier History and Size	
District	BWSD
Date of Formation	21-Feb-62
Source of Water	Applicable sources
Local Surface Water	
Local Groundwater	Limited
Wholesaler	Kern County Water Agency (KCWA)
USBR	
SWP	Via California Aqueduct
Service Area Acreage	93,589 acres
Non-Service Area Acreage	6,230 acres

The District primarily supplies agricultural water to growers within its boundaries. The District supplies no municipal water. The industrial water supplied makes up less than one percent of the District's normal annual water deliveries. SWP water is the primary water supply for the District. All of the water delivered by the District is delivered to the District through the California Aqueduct (Figure 1).

As shown on Table 3, currently there are no plans to change the BWSD service area.

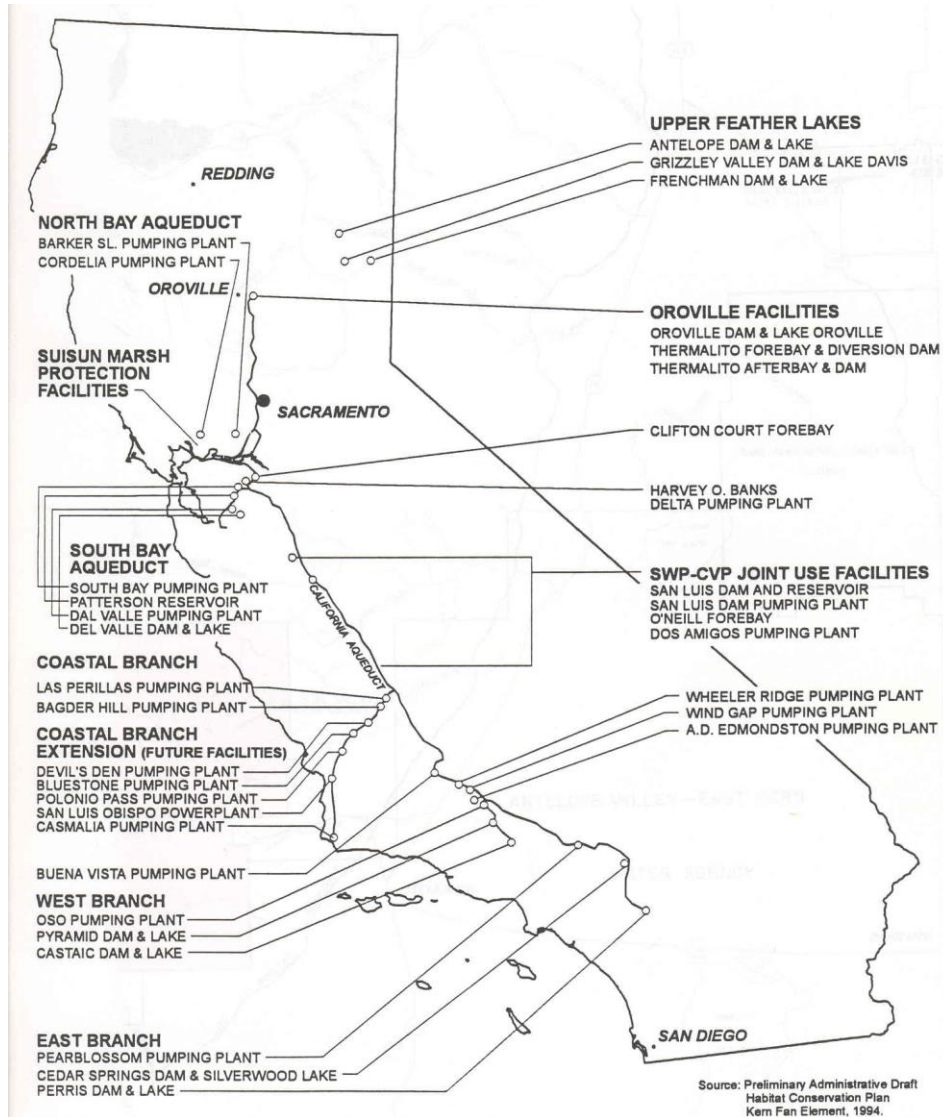


Figure 1. SWP Facilities

Table 3. Expected Changes to Service Area		
Change to Service Area	Estimate of Magnitude	Effect on the Water Supplier
Reduced Service Area Size	0	None anticipated
Increased Service Area Size	0	No expansion plans at this time
Other		
- Cropping Changes	0	None anticipated
- Reduced Irrigated Land	0	None anticipated

2. Location of the service area and water management facilities

~~As previously mentioned, BWSD is located in the San Joaquin Valley about 40 miles northwest of the City of Bakersfield (~~

Appendix 3). BWSD is located in the northwestern corner of Kern County on the eastern edge of the Temblor Range. State Highway 46 is located at the very North end of the District and Highway 33 passes through the western portion of the District. Adjacent districts include the Berrenda Mesa Water District and Lost Hills Water District to the north, a part of West Kern Water District to the south, and Buena Vista Water Storage District to the east.

BWSD distributes SWP water via a network of facilities (Appendix 4): three (3) main canals, pipelines, pump stations, and control structures. BWSD's first project as a public entity was the construction of facilities to serve lands west of the Aqueduct (i.e. Units of

Construction 1 and 2). This project was completed in February 1968 in conjunction with initial deliveries on the CA Aqueduct by DWR. Construction of two additional penstocks (Unit of Construction 6-1) was completed in 1972. Although seven turnouts from the Aqueduct were planned, only three are actually operational. The remaining four turnouts (Bel 2, Bel 4, Bel 6, and Bel 7) were partially completed at the Aqueduct but, never activated. Bel 1A was constructed to replace Bel 1/BV 1 which was shared with neighboring Buena Vista Water Storage District. A long-term joint use agreement for Bel 1/BV 1 could not be reached between the two districts,

Privately owned irrigation facilities that served lands in Zone of Benefit 5 (Zone 5) via an unlined earthen ditch were purchased by the District in 1979. In 2001, the District secured a Proposition 204 loan from DWR to replace approximately 3.5 miles of the unlined canal in Zone of Benefit 5-2 with a large diameter pipeline. In 2004, the District lined all but about 1 mile of the remaining portion of the unlined canal with high-density polyethylene (HDPE) liner. The remaining 1 mile of unlined canal was abandoned in 2010. Table 4 provides a summary of existing irrigation facilities in BWSD. The District's two main canals located west of the Aqueduct were designed to follow the 415 ft and 500 ft contour elevations. As such, they are referred to as the 415 Canal and 500 Canal, respectively. Once pumped uphill approximately 115 feet from the Aqueduct, by Pump Station 1A, water flows into a regulating reservoir (415 Reservoir) at the head-works of the 415 Canal. From there water is delivered by gravity through the concrete lined 415 Canal to the North, the South and a portion is diverted to a second pump station (Pump Station 1B) to lift water to the second regulating reservoir (500 Reservoir). Through the concrete lined 500 Canal, water deliveries are gravity flow to the North only. Gravity pipeline laterals feed lands that are lower in elevation than the canals. Lands that are located higher in elevation than the 415 and 500 Canals are served by a mixture of landowner owned and District owned facilities. Since 2012, the District has installed automatic gate controls at canal check structures on both the 415 and 500 Canals. This equipment allows operators to (1) adjust water levels in the canals remotely via an internet connection (2) react more quickly to changes in water levels in the canals and (3) reduces the number of trips necessary to adjust the gates manually. All of which lead to more safe and efficient water management. Lateral pipelines are District owned, but landowners supply their own booster pumps (and pay the accompanying energy charges).

The District owns and operates two lined reservoirs (415 Reservoir and 500 Reservoir) and two unlined reservoirs at the terminus of the 415 Canal and 500 Canal (415 Terminal Reservoir and 500 Terminal Reservoir). The canals are operated so that little or no water spills into the unlined Terminal Reservoirs (Table 4). Occasionally, the Terminal Reservoirs are utilized; however, the little water that is lost can be recovered and pumped back into the canals, as necessary.

There are twenty-two (22) small lined and thirteen (13) small unlined pits used to capture filter back-flush and fifty-three (53) small lined reservoirs owned by District landowners (Table 5). Nearly all of the pits and reservoirs are lined. Filter back-flush operations occur up to four (4) times a day during the peak irrigation season (generally May through August) producing approximately 4,800 gallons of back-flush water per day at each filter

station location. Over the course of a “typical” irrigation season approximately 216,000 gallons of back-flush water is produced from a single filter station nearly all of which is captured and recycled through the system.

The District’s two main reservoirs (415 Reservoir and 500 Reservoir) are used primarily for short-term regulation of the District’s two main pump stations (Pump Station 1A & 1B, respectively). Because of their relatively small storage capacities, long-term storage of surplus water is generally not applicable. To minimize pumping costs and energy bills during the summer peak energy period (noon to six) the combined storage of the 415 and 500 Reservoirs provides only one to two hours of curtailment pumping. In 2002, Provost & Pritchard Engineering Group (P&P) calculated the cost to expand the 415 and 500 Reservoirs to provide sufficient storage capacity to perform load-shifting operations during peak energy periods. The estimated cost to provide an additional 60 acre-ft of reservoir storage capacity was approximately \$1.13 million with a simple payback of 8.8 years. All factors considered, the benefit-cost ratio for additional storage in the District does not appear economical under current conditions. However, should grants, low interest financing or other funding sources become available, BWSD will investigate additional storage facilities to expand load-shifting capability, regulation, and/or surplus water storage capabilities.

Table 4. Water Conveyance and Delivery System	
System Used	Number of Miles
Unlined Canal	0
Lined Canal	38
Pipelines	50
Drains	0.0
Regulation Reservoirs	65 AF

The BWSD water delivery system was designed to deliver irrigation water to growers mainly by gravity or in some cases by pumping. All turnouts are designed to serve 160 acres at a flow rate of two and one-half cubic feet per second (2.5-cfs). Lateral turnouts will deliver water at a higher rate of up to 5-cfs during low total demand periods.

All lands that are currently farmed in the District employ micro-irrigation or sprinklers that do not necessitate tailwater return. The vast majority is micro-irrigation.

The District distribution system is shown on Appendix 4. An inventory of the District distribution system facilities currently in use is shown in (Table 7).

Table 5. Water Supplier Reservoirs	
Number	2

BWSD 415 Reservoir and 500 Reservoir	65 AF
Berrenda Mesa Project and Pioneer Project – Groundwater Banks (Outside District)	0 AF
End of system reservoirs	0 AF
Total Capacity	65 AF

Table 6. Tailwater/Spill Recovery System	
System	Yes/No
District Operated Spill Recovery	Yes
Grower Operated Tailwater Recovery	No
Grower Operated Back flush water Recovery	Yes

Table 7. Water Distribution System Inventory

Supply Points - Active California Aqueduct Turnouts						
Description	Pump or Gravity	Capacity	Meter Type	Aqueduct Milepost		
Belridge 1A	Gravity	100	Venturi	209.71		
Belridge 3	Gravity	90	Parshall Flume	214.11		
Belridge 5	Gravity	610	Venturi	217.13		
Miscellaneous Distribution System Components						
Service Area	Water Meters	Pump Stations			Reservoirs	Radio Telemetry Units
		Name	Number of Pumps	HP		

1	82	P.S.-1A	8	9750	415	1
2	21	P.S. 1A & 1B	14	13875	500	2
3	18	P.S. 1A	8	9750	415	1
4	Not in Use	N/A	0	N/A	N/A	N/A
5	31		0			1
6	35	P.S. 1A & 1B	14	13875	500	2
7	26	P.S. 1A & 1B	14	13875	500	2

The District's distribution system can be classified as a fixed duration-restricted arranged system with deliveries arranged in advance and a normal duration in 24-hour time intervals.

Growers within BWSD utilize sprinkler, micro irrigation and solid-set sprinklers system types. Furrow irrigation is no longer used in the District because of the topography and water cost. In the early years of the District, sprinkler and furrow irrigation were the predominate irrigation types used to irrigate crops. As technology advanced, micro irrigation systems were installed on some of the permanent crop acreage. By the 1980's, many of the permanent crops were converted from furrow or sprinkler systems to micro irrigation systems, either drip or fan-jet irrigation. All of the recent permanent crop plantings have been installed with micro irrigation systems. Sprinklers are used to a minimal extent when row crops are grown. Currently, pressurized micro irrigation systems (drip and fan-jet systems) account for 100% of the irrigated permanent crop acreage. The permanent crop acreage irrigated with micro irrigation has increased from 5,400 acres in 1990 to nearly 35,000 acres in 2020.

SWP Water is among the most expensive surface water supplies in the State. Water costs to landowners in BWSD are further impacted by the District's location and topography. About 80% of the lands currently taking delivery of SWP water in BWSD are located west of and at a higher elevation than the CA Aqueduct. When reduced water supplies are received, the costs increase dramatically. This alone is incentive enough for most growers to efficiently manage their water allocation. BWSD is a progressive district, and along with its water users, uses the best available technology for conveying water to crops.

~~BWSD participates in water banking projects with the District and is just southwest of the City of Bakersfield.~~

Appendix 3 shows the location of the banking facilities with respect to the District boundary. The Pioneer Project and Berrenda Mesa Project are discussed in the groundwater recharge section.

3. Terrain and soils

Topography in BWSD is gentle, with foothills lying at the western edge. Elevations range from 250 feet above sea level in the east-southeast to 1,000 feet in the west. Typical slopes range from 25 to 30 feet per mile in the central portion of BWSD. Table 8 summarizes the topography impacts to the irrigation of the land.

BWSD is mostly underlain with Quaternary alluvium, which in turn is underlain with the Tulare Formation of Pliocene/Pleistocene age.

The United States Department of Agriculture, Natural Resource Conservation Service (NRCS) (formerly the Soil Conservation Service), issued a soil survey of the northwestern portion of Kern County in the fall of 1988. This detailed soil survey included the Belridge Water Storage District area. A general soils map of the District taken from the NRCS soil survey is included in Appendix 5.

Table 8 gives the general characteristics of the major soil types within the District and accompanies

Soils within BWSD can be characterized as deep clay, sandy loam and saline-alkali soils. The soils all formed in alluvium derived primarily from sedimentary and granite rock. Most soils found in the District are well drained and formed on low terraces, alluvial fans, and plains. Reports prepared during design and construction of district facilities indicate soils in the district contain high concentrations of sulfates and other salts and therefore classify the soils as moderately to very severely corrosive.

Soils that formed in and along the margins of creeks and washes; or soils considered moisture deficient; are often highly collapsible when saturated. Approximately 6 miles of the District's 35 miles of canals have been impacted by localized soil collapse resulting in elevation decrease of more than 2 feet in places. Damage to the concrete liner of the canals varies from small cracks to catastrophic liner failure depending upon the localized magnitude of collapse. Due to the variability and widespread extent of the collapse however, no one-soil series has been identified as the source. While the impact to operations has been relatively minor, significant funds and effort have been expended to raise canal banks and extend the concrete canal liner to compensate for the collapse and maintain a minimum freeboard and hydraulic flow-line.

Sandy loam soils found in BWSD include the Kimberlina, Milham, and Elk Hills series (Table 9). Clay soils found in BWSD include Twisselman, Lokern and Panoche series (Table 10). Saline-alkali soils found in BWSD include the Lokern clay, Yribaren loam and Panoche clay loam (Table 11). Soil erosion hazard within BWSD is considered slight to moderate. The Kimberlina sandy loam and Milham sandy loam are classified as prime farmland soils by the U.S. Department of Agriculture. Approximately 90 percent of the soils within BWSD are considered prime for agricultural activities and well drained.

The streambeds and channels of the three named seasonal streams that flow into BWSD from the west (Salt, Chico Martinez, and Santos) have been redirected or destroyed by past development and are nearly unrecognizable and/or non-existent. The limited runoff in these streams is sporadic, at best, and occurs only during extreme rain events. Surface water quality data from creeks in BWSD is limited and the limited data suggests that the surface waters have high concentrations of calcium-sulfate due to leaching from surrounding soils. Due to limited volumes and the poor water quality, these seasonal streams do not provide either irrigation water, nor are they utilized to transport irrigation water.

Table 8. Landscape Characteristics

Topography Characteristic				% of the District				Effect on Water Operations and Drainage
Sloping Land				100% of Irrigated land				Requires micro-irrigation or sprinkler irrigation for efficient application
Soil Unit	Soil Name / Characteristic / Classification	Description	Total Area (acres)	Percent of District	Depth (in)	Clay (%)	Permeability (in/hr)	Effect on Water Operations and Drainage
146	Elkhills sandy loam, 9-50% slopes, eroded	Deep, well-drained soil is primarily on uplifted, dissected old areas of valley fill. Formed in alluvium derived dominantly from sedimentary and granitic rock.	533.6	0.57	0-29	5-18	1.98 - 5.95	No irrigation operations impact
					29-49	5-18	1.98 - 5.95	
					49-65	5-18	1.98 - 5.95	
147	Elkhills gravelly sandy loam, 9-15% slopes	Deep, well-drained soil is in areas of uplifted, dissected old valley fill. Formed in alluvium derived dominantly from sedimentary and granitic rock.	57.1	0.06	0-29	5-18	1.98 - 5.95	No irrigation operations impact
					29-49	5-18	0.57 - 1.98	
					49-65	5-18	1.98 - 5.95	
174	Kimberlina fine sandy loam, 0-2% slopes	Deep, well-drained soil on alluvial fans and plains. Formed in alluvium derived dominantly from granitic and sedimentary rock.	19010.1	20.46	0-9	6-18	1.98 - 5.95	No irrigation operations impact
					9-45	10-18	1.98 - 5.95	
					45-71	10-25	0.57 - 1.98	
175	Kimberlina sandy loam, 2-5% slopes	Deep, well-drained soil on alluvial fans and plains. Formed in alluvium derived dominantly from granitic and sedimentary rock.	4257.9	4.58	0-9	6-18	1.98 - 5.95	No irrigation operations impact
					9-45	10-18	1.98 - 5.95	
					45-71	10-25	0.57 - 1.98	
176	Kimberlina sandy loam, 5-9% slopes	Deep, well-drained soil on alluvial fans and plains. Formed in alluvium derived dominantly from granitic and sedimentary rock.	1581.3	1.70	0-9	6-18	1.98 - 5.95	No irrigation operations impact
					9-45	10-18	1.98 - 5.95	
					45-71	10-25	0.57 - 1.98	
177	Kimberlina gravelly sandy loam, 2-5% slopes	Deep, well-drained soil on alluvial fans and plains. Formed in alluvium derived dominantly from granitic and sedimentary rock.	1888.1	2.03	0-25	6-18	1.98 - 5.95	No irrigation operations impact
					25-60	6-18	1.98 - 5.95	
					178	Kimberlina gravelly sandy loam, 5-9% slopes	Deep, well-drained soil on alluvial fans and plains. Formed in alluvium derived dominantly from granitic and sedimentary rock.	
25-60	6-18	1.98 - 5.95						
185	Lewakib, saline alkali-Miham-Kimberlina complex, 0-5% slopes	Deep, well-drained soil on low terraces, alluvial fans and plains. Formed in alluvium derived dominantly from sedimentary and granitic rock.	1841.5	1.98				0-23
					23-40	6-18	0.06 - 0.2	
					40-65	6-18	0.06 - 0.2	
187	Lokem clay, drained	Deep, somewhat poorly drained soil in basins. Formed in alluvium derived dominantly from mixed rock sources, dominantly granitic rock.	0.7	0.00	0-7	40-55	0.06 - 0.2	No irrigation operations impact
					7-21	40-60	0.06 - 0.2	
					21-48	40-60	0.57 - 1.98	
					48-66	10-26	0.57 - 1.98	
188	Lokem clay, saline-alkali, drained	Deep, somewhat poorly drained soil in basins. Formed in alluvium derived dominantly from mixed rock sources, dominantly granitic rock.	68.0	0.07	0-7	40-55	0.06 - 0.2	No irrigation operations impact
					7-21	40-60	0.06 - 0.2	
					21-48	40-60	0.57 - 1.98	
					48-66	10-26	0.57 - 1.98	
189	Lokem clay, saline-alkali, partially drained	Deep, somewhat poorly drained soil is on basins. Formed in alluvium derived from mixed rock sources, mainly granitic rock. Slope is 0-2 percent.	88.8	0.10	0-7	40-55	0.06 - 0.2	No irrigation operations impact
					7-21	40-60	0.06 - 0.2	
					21-48	40-60	0.57 - 1.98	
					48-66	10-26	0.57 - 1.98	
196	Miham sandy loam, 0-2% slopes	Deep, well-drained soil on alluvial fans, plains, and low terraces. Formed in alluvium derived dominantly from granitic and sedimentary rock.	24505.6	26.38	0-10	5-20	1.98 - 5.95	No irrigation operations impact
					10-49	20-35	0.2 - 0.57	
					49-60	5-25	0.57 - 1.98	
197	Miham sandy loam, 2-5% slopes	Deep, well drained soil on alluvial fans, plains, and low terraces. Formed in alluvium derived dominantly from granitic and sedimentary rock.	5157.9	5.55	0-10	5-20	1.98 - 5.95	No irrigation operations impact
					10-49	20-35	0.2 - 0.57	
					49-60	5-25	0.57 - 1.98	
198	Miham sandy loam, 5-9% slopes	Deep, well drained soil on alluvial fans, plains, and low terraces. Formed in alluvium derived dominantly from granitic and sedimentary rock.	515.0	0.55	0-10	5-20	1.98 - 5.95	No irrigation operations impact
					10-49	20-35	0.2 - 0.57	
					49-60	5-25	0.57 - 1.98	
211	Panoche clay loam, 0-2% slopes	Deep, well-drained soil on alluvial fans and plains. Formed in alluvium derived dominantly from granitic or sedimentary rock.	28984.0	31.20	0-16	27-35	0.57 - 1.98	No irrigation operations impact
					16-60	18-35	0.57 - 1.98	
212	Panoche clay loam, 2-5% slopes	Deep, well-drained soil on alluvial fans and plains. Formed in alluvium derived dominantly from granitic or sedimentary rock.	2028.9	2.18	0-16	27-35	0.57 - 1.98	No irrigation operations impact
					16-60	18-35	0.57 - 1.98	
214	Panoche clay loam, saline-alkali, 0-2% slopes	Deep, well drained soil on alluvial fans and plains. Formed in alluvium derived dominantly from granitic or sedimentary rock.	1116.1	1.20	0-16	27-35	0.57 - 1.98	No irrigation operations impact
					16-60	18-35	0.57 - 1.98	
235	Twisselman clay, 0-2% slopes	Deep, well-drained soil on alluvial fans. Formed in alluvium derived dominantly from sedimentary rock.	862.2	0.93	0-14	40-60	0.06 - 0.2	No irrigation operations impact
					14-60	35-60	0.06 - 0.2	
251	Yitbarren loam, 0-2% slopes	Deep, well drained soil on alluvial fans and plains. Formed in alluvium derived dominantly by sedimentary rock.	395.2	0.43	0-7	20-27	0.57 - 1.98	No irrigation operations impact
					7-19	35-55	0 - 0.06	
					19-22	15-35	0 - 0.06	
					22-60	15-30	0.2 - 0.57	

Land use within BWSD is primarily for agriculture and petroleum production. 34,461 acres are in agricultural production with the most common crops being almonds, pistachios and citrus. Other crops include carrots, and persimmons. **Table 9.** below shows the water year 2020 land use in the District. Approximately 9,173 acres in the District are used to support petroleum production. The balance of the acreage in the District is used for grazing or is not farmed.

Table 9. 2020 Water Year Land Use	
Crop	Acreage
Almonds	14,547
Pistachios	13,747
Citrus	3,609
Carrots	2,558
Total Irrigated Acreage	34,461
Non-Irrigated	62,935
Total	97,396

4. Climate

BWSD is characterized by a Mediterranean type climate with dry, hot summers and mild, semi-arid winters with little rainfall and normally low humidity. Average daily maximum temperature in BWSD ranges from 91 to 97 degrees Fahrenheit in the summer, and from 58 to 69 degrees in the winter. The area is classified as a hot desert where precipitation is less than half of the potential evaporation. The rain season typically occurs from November to April, and ranges from 2.9 to 9.3 inches per year, with an average of 5.1 inches per year, where nine-tenths of the rainfall occurs from November through April. Effective precipitation averages about 2.6 inches (50% of rainfall) annually. The rainfall is sufficient for grazing purposes, but not sufficient for intensive agricultural purposes. Historical average climatology is presented in Table 10 and Table 11.

The growing season runs from May through October, although various crops are grown year-round. Reference evapotranspiration ranges from 52.4 to 62.8 inches per year with an average of 58.3 inches per year. The length of the growing season (frost-free period) is about nine months, or around 250 days per year that are available for growing most agricultural crops. The crops must be sustained by irrigation during the hot, dry summers.

Table 10. Summary Climate Characteristics

	#054 Blackwells Corner, 2006-2020
Climate Characteristic	Value
Average Annual Evapotranspiration (inches)	5.5
Average Annual Precipitation (inches)	0.4
Annual Minimum Precipitation (inches)* (2016)	(0) 0
Annual Maximum Precipitation (inches)* (2018)	(1.98) 1.8
Average Annual Minimum Temperature (°F)	49.1
Average Annual Maximum Temperature (°F)	76.7
Average Minimum Temperature (°F) (January)	34.4
Average Maximum Temperature (°F) (July)	97.2
Average Minimum Temperature Range (°F) (November-April)	39.3
Average Maximum Temperature Range (°F) (May-October)	89.3
Note:	
* Annual minimum and maximum precipitation correspond to the total minimum and maximum value recorded in the corresponding years.	

Table 11. Detailed Climate Characteristics

	CIMIS Station #054 - Blackwells Corner, 2006-2020			
Month/Time	Average Precipitation, Inches	Average Reference Evapotranspiration (ET ₀), Inches	Average Minimum Temperature, °F	Average Maximum Temperature, °F
January	1.09	1.71	34.39	56.25
February	0.71	2.52	35.87	61.86
March	0.99	4.28	42.41	67.85
April	0.51	6.11	46.55	74.72
May	0.44	8.20	52.86	82.56
June	0.01	9.19	60.46	91.67
July	0.02	9.90	66.15	97.21
August	0.02	8.78	64.58	95.83
September	0.08	6.49	59.45	90.03
October	0.14	4.32	50.19	78.69
November	0.44	2.42	41.17	66.79
December	0.67	1.60	35.30	57.01
Wet Season* (Nov-Apr)	0.74	3.13	39.33	64.17
Dry Season* (May-Oct)	0.71	46.89	58.95	89.33
Extreme Conditions (if applicable) [e.g., 100-year event]	NA	NA	NA	NA
Other	NA	NA	NA	NA
Notes:				
Wet season is defined for November through April. Dry season is defined for May through October.				
NA = Not applicable				

B. Operational characteristics

1. Operating rules and regulations

Belridge Water Storage District Rules and Regulations for Distribution and Use of Water (April 13, 1999 revision (Appendix 6) are used as a guideline for the operation and delivery of water to the Water Users. Appendix 7 includes the Standard Provisions that are incorporated into each Water Supply Contract. The rules contain procedures to distribute irrigation water in a fair and equitable manner to the Water Users. The Standard Provisions establish, among other things, the formula to calculate the Water User's unit cost per AF of SWP water in the District, District billing procedures, and provides governance for the interpretation of Water Supply Contracts between the District and Water Users. The Standard Provisions also define a "Water User" as it relates to BWSD matters. Water Supply Contracts are the mechanism by which Water Users obtain a water supply from the District. The Water Supply Contract establishes, among other things, a Water User's Annual Entitlement of SWP water, a point-of-delivery (i.e., turnout), and delivery schedule.

BWSD follows the same general procedure for water ordering with its Water Users that KCWA requires of its Member Units, as well as what DWR requires of KCWA. Water Users are required to submit weekly orders showing the delivery rate (a 24-hour continuous uniform flow in gpm), required at each of the designated turnouts. District staff then converts Water Users cumulative orders from gpm to cfs prior to placing orders with KCWA. Change orders must be requested 48 hours in advance. Table 12 shows the variation of water orders and shut-off lead times. BWSD is also a member of the Westside District Water Authority (WDWA), who manages SGMA compliance and its landowners are members of the Westside Water Quality Coalition (WWQC), who manages compliance with the Irrigated Lands Regulatory Program (ILRP).

BWSD operates a centralized water ordering system. Water orders are placed via telephone, fax or email to the District office and are entered by either the O&M Superintendent or Administrative Assistant daily. Water Orders are then processed and a Water Project Report is generated and given to the canal operator (personnel who manage the water delivery to the Water Users), who coordinates deliveries based on demand and water flow capacity of the distribution system. The District operates a flexible "arranged demand" water delivery system, thus the canal operators' duties become less routine and more Water User oriented. There are no restrictions on how often a grower can request water, but the quantity of water taken during a season is restricted to the grower's water allocation (Table 13). The only restriction on maximum flowrate is the limitation of the delivery structures. At the discretion of the superintendent and/or manager, Water Users may operate their own turnouts given that instructions have been specified on the proper operation of valves. The privilege of operating turnouts will be withdrawn from any Water User who makes unauthorized turn-ons or turn-offs, sets delivery rate at turnouts different from that ordered, makes changes at times others than those prearranged in the Rules. Improper operation of turnouts would result in turnouts being locked and operated by District personnel only.

Water Users with micro irrigation systems may request irrigation water on an arranged demand (availability of water on request as consumed by the crop - typically from daily to every 2-3 days). Therefore, water order lead times may vary depending on the time of year, system capacity to move the water, and where water is needed in the system. For example, Water Users close to the water source, next to a large canal, and early in the season would have a greater probability of receiving water on short notice than Water Users at the end of the canal, away from the water source, and in the middle of the summer. The District's goal is to supply water to the Water User when the water is needed for the crop. As summarized in Table 12, BWSD delivers water to its Water Users using an on-demand and arranged demand schedule.

Table 12. Supplier Delivery System		
Type	Check if Used	Percent of System Supplied
On Demand		
Modified Demand		
Rotation		
Other (flexible arranged demand schedule)	x	100

Table 13. Water Allocation Policy					
	(Check if applicable)			Allocation	
Basis of Water Allocation	Flow	Volume	Seasonal Allocations	Normal Year	Percent of Water Deliveries (%)
Area within the service area					
Amount of land owned					
Riparian rights					
Other (Water supply contract amount)	*	x		2020	20% SWP Table A
Note: * Some turnouts can be prorated on some days based upon delivery capacity of facilities serving them. Available delivery capacities of distribution facilities are shared in proportion to water supply contract amounts held by turnout operators.					

Table 14. Actual Lead Times	
Operations	Hours/Days
Water orders	0-48 hours
Water shut-off/changes	2 hours

2. Water delivery measurements or calculations

BWSD employs a variety of water measurement methods (**Table 15**). DWR operates and maintains the venturi flowmeters installed at each of District's three SWP delivery points (Bel 1A, Bel 3 and Bel 5). Measurements are recorded daily. Deliveries from District facilities are metered at each lateral and measured at each individual turnout by propeller flowmeters. The propeller meters read in both instantaneous flow and totalizer readings for volume. The District flowmeters are read at least twice a week and correlated to the daily flow rate and monthly total volume measured by DWR for the same time period.

Table 15. Water Delivery Measurements				
Measurement Device	Frequency of Measurement (Days)	Frequency of Calibration (Months)	Frequency of Maintenance (Months)	Estimated Level of Accuracy (%)
Orifices (meter gates)				
Propeller Meters	cfs twice a week / AF monthly	As needed	As needed	<4%
Weirs				
Flumes				
Venturi Meters (i.e, DWR)	cfs and AF daily	As needed	As needed	<2%
Pump, Run Time				
Pump, KWH				
Other (e.g., some land owner operators have propeller meters)	cfs and AF daily	As needed	As needed	<4%

The District maintains software that allows the District to track daily water deliveries and water transactions within the District, calculate water costs and provide for a more standardized billing process. The software has also created a database of landowner information including cropping patterns, water transfers, water usage, property ownership, water contract information, and historical water use.

In 1995, the District installed and implemented a **Supervisory Control and Data Acquisition (SCADA)** system on its pump stations, Aqueduct Turnouts and at various locations along its distribution canals. The SCADA system gathers information, such as high water levels in the canals, transfers the information back to a central site, alerting the home station and operators that a problem has occurred. SCADA allows District staff to monitor and manage water levels within its distribution canals and in forebays of pumping plants thus minimizing spills and overflows. An added benefit is collecting, displaying, and storing real time pump efficiency (kwh/AF) and motor information (temperature, vibration, etc).

The DWR-owned **California Irrigation Management Information System (CIMIS)** weather station located at Blackwell's Corner (CIMIS station (#54), gives landowner's real time and historical data reports. Data is retrieved each day including reference Evapotranspiration (ETo), solar radiation, net radiation, air temperature, soil temperature,

vapor pressure/relative humidity, precipitation, and wind speed which can be viewed at anytime. Station #54 has been operational since October 19, 1986 and continues to gather data. CIMIS has helped farmers with irrigation scheduling, duration, quantity and other important factors since its development.

The District maintains delivery records for each turnout being used and maintains records of daily water orders made to the SWP. A grower's water use to date and remaining allocation is maintained and calculated in the District computerized water information system.

DWR maintains records of daily diversions to the District and records of all diversions, water quality, and storage operations related to the SWP. Operational reports are distributed weekly and monthly to the District and published annually in DWR Bulletin 132.

On average, operational losses account for less than 1% of the total deliveries in the District. Five (5) percent of the District's total annual contract supply (Table A) is withheld as "Operations Water" to cover operational losses. BWSD expended considerable resources in the early 2000s to purchase and install new open-flow and in-line flow meters at District facilities. This program decreased measured losses and metering accuracy considerably. Operations Water that exceeds actual annual operations losses is either sold to water users in the District or banked by the District to cover losses in dry years when the SWP allocation is low.

3. Water rate schedules and billing

A Water User's or "Buyer's" annual payment obligation for Entitlement water (Table 16) is comprised of several components. The components can be put into two general categories: 1) the cost of water, and 2) the cost to deliver water in the District. The cost of water is established for each acre-foot of water under a Water Supply Contract and varies slightly depending upon the Aqueduct Turnout from which deliveries are made (Table 17 and Table 18). Simply put, it is the cost of SWP water including SWP variable costs. The current base water toll rate is about \$95-100 per AF.

The charge to deliver water in the District varies depending upon location in the District and includes, fixed costs, such as capital, O&M, etc., and variable costs such as District pumping (i.e., power) costs. District power costs range from about \$20 to \$37 per AF. SWP variable costs are about \$24 per AF at the Aqueduct Turnout.

The unit cost per AF is dependent upon point-of-delivery location, capital obligations, and pumping lift. Current unit rates range from approximately \$125 per AF to \$180 per AF.

In October, the District establishes water tolls for the ensuing year based upon the costs and charges the District expects to incur in delivering water. Notice of the Water User's annual payment obligation for the ensuing year is sent out on or before November 15th. Sixty-five percent of the annual obligation is payable by December 15. The remaining

thirty-five percent is due on May 15th of the ensuing year. Adjustments related to prior years deliveries and Water Charges are performed independent of the annual billings.

Table 16. Water Rate Basis			
Water Charge Basis	Check if Used	Percent of Water Deliveries (%)	Description
Volume of Water Delivered			
Rate and Duration of Water Delivered			Per AF basis
Acre			
Crop			
Land Assessment			
Other			
Landowner contract by ac-ft	x	100	AF

Table 17. Rate Structure		
Type of Billing	Check if Used	Description
Declining		
Uniform		
Increasing Block Rate		
Other (Variable rate)	x	\$/AF (based on point-of-delivery location, capital obligations, and pumping lift)

Table 18. 2020 Belridge Water Storage District Entitlement Water Charges

Entitlement Per Acre-Foot												
	Zone 1	Zone 2	Zone 3	Zone 5-2A1	Zone 5-2A2	Zone 5-2B1	Zone 5-2B2	Zone 5-3	Zone 6	Zone 7	Industrial	
Capital	\$ -	\$ -	\$ -	\$ 18.63	\$ 14.81	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
KCWA	\$ 131.76	\$ 131.76	\$ 131.76	\$ 123.84	\$ 123.84	\$ 123.84	\$ 123.84	\$ 123.84	\$ 131.76	\$ 131.76	\$ 123.84	\$ -
State VAR	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ -
OVERHEAD	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ -
O&M	\$ 15.68	\$ 15.68	\$ 15.68	\$ 2.27	\$ 2.27	\$ 6.01	\$ 6.01	\$ 6.01	\$ 15.68	\$ 15.68	\$ -	\$ -
P.S. 1-A	\$ 24.24	\$ 24.24	\$ 24.24	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 24.24	\$ 24.24	\$ -	\$ -
P.S. 1-B	\$ -	\$ 16.52	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 16.52	\$ 16.52	\$ -	\$ -
Total	\$ 206.09	\$ 222.61	\$ 206.09	\$ 179.15	\$ 175.33	\$ 164.26	\$ 164.26	\$ 164.26	\$ 222.61	\$ 222.61	\$ 158.25	\$ -
Top Contract Water Per Acre-Foot												
	Zone 1	Zone 2	Zone 3	Zone 5-2A1	Zone 5-2A2	Zone 5-2B1	Zone 5-2B2	Zone 5-3	Zone 6	Zone 7	Industrial	
Capital	\$ -	\$ -	\$ -	\$ 18.63	\$ 14.81	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
KCWA	\$ 131.76	\$ 161.76	\$ 131.76	\$ 123.84	\$ 123.84	\$ 123.84	\$ 123.84	\$ 123.84	\$ 131.76	\$ 131.76	\$ -	\$ -
State VAR	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ 22.49	\$ -	\$ -
OVERHEAD	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ 11.92	\$ -	\$ -
O&M	\$ 15.68	\$ 15.68	\$ 15.68	\$ 2.27	\$ 2.27	\$ 6.01	\$ 6.01	\$ 6.01	\$ 15.68	\$ 15.68	\$ -	\$ -
P.S. 1-A	\$ 24.24	\$ 24.24	\$ 24.24	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 24.24	\$ 24.24	\$ -	\$ -
P.S. 1-B	\$ -	\$ 16.52	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 16.52	\$ 16.52	\$ -	\$ -
Total	\$ 206.09	\$ 252.61	\$ 206.09	\$ 179.15	\$ 175.33	\$ 164.26	\$ 164.26	\$ 164.26	\$ 222.61	\$ 222.61	\$ -	\$ -

Table 19. Frequency of Billing	
Frequency	Check if Used
Weekly	
Biweekly	
Monthly	
Bimonthly	
Semiannually (35% by Dec 15, 65% by May 15)	x
Annually	

4. Drought Management Plan and Water Shortage Allocation Policy

As described in Section IV the District relies on water transfers, supplemental water purchases, and groundwater banking programs as its primary mechanism for enduring periods of drought. Unlike farmers in other areas who can fallow lands during periods of drought, farmers in the District have permanent plantings (trees and vines) that require a minimum water supply to keep alive. In water short years these farmers use deficit irrigation (the application of water below full crop-water requirements) to reduce irrigation water use. This can result in reduced crop yields and, if taken to the extreme, no crop yield and long-term damage.

Determining Drought Severity

The District's primary water source is imported surface water supplies from the SWP. In the fall of each year, DWR operations staff review current Project storage and projected deliveries through the end of the year, and develop allocation projections for the following year based on a range of forecasted hydrology. DWR declares the initial allocation forecast for the following year at the end of November; this allocation is adjusted up or down as hydrology dictates.

District management maintains a close relationship with Kern County Water Agency and DWR operations staff and uses these allocation projections to determine water supply availability and level of drought severity. These projections are conveyed to District landowners for use in planning their farming operations and projecting supplemental water needs.

Water Shortage Allocation

In water- short years (less than 100% allocation), a water user's annual entitlement will be reduced pro-rata in the proportion the water user's annual entitlement bears to the District's total. Table 20 summarizes how decreased water supplies are allocated.

Alternative Water Supplies

As discussed in Section IV, the District relies on banking, transfers, and exchanges to supplement its annual water supply. At all but the higher SWP water allocations, the District is proactive in seeking and securing supplemental water supplies. Since 2009, the District has collaborated in securing additional water with four other agricultural water districts that also rely heavily on the SWP for their water supplies. The other districts are Berrenda Mesa Water District, Dudley Ridge Water District, Lost Hills Water District, and Wheeler Ridge–Maricopa Water Storage District. Due to their common location on the Westside of the southern San Joaquin Valley, the five districts are informally referred to at the Westside Districts or Westside 5.

Coordination and Collaboration

In addition to the Westside 5, the District coordinates with neighboring local districts where there are common landholders to utilize limited supplies in the most beneficial manner.

Revenues and Expenditures

The majority of the District's expenses are DWR charges that are due regardless of the amount of water delivered. As the SWP allocation gets reduced, the actual cost of the water to the water users increases proportionately. For example, the District spent \$13,190,844 million for its 2020 SWP water supply. At 100% allocation, this would equate to approximately \$156/AF, but at the 2020 allocation of 20%, the unit charge rises to over \$661/AF.

In addition, at lower SWP allocations, the market for supplemental water becomes more active, which results in higher unit costs to the water users.

Table 20. Decreased Water Supplies Allocations	
Allocation Method	Check if used
By crop	
Area in district	
Other	
Decrease Allocated Water	x
No specific policy	

Waste of water is addressed in the Rules (Appendix 6). In general, the District will stop deliveries to Water Users that are found to be wasting water. Deliveries will not resume until the conditions that are found to be the cause of said waste of water are corrected. As stated before, the price of water to BWSD landowners is one of the highest anywhere in the state north of the Tehachapi Mountains. Therefore, Water Users are aware of this and use their water wisely (Table 21).

Table 21. Enforcement Methods of Allocation Policies	
Enforcement Method	Check if used
Fines	
Water Shut-off (Deliveries resume after the cause of waste of water is corrected)	x
Other	
No specific policy	

Section III: Description of Quantity of Water Uses

Water year 2020 is chosen as the representative year for this plan (Table 22), because SWP allocation in 2020 was 20%. For planning purposes, data starts in January 2020 and ends December 2020 (to include a full year of historic data). This “water year” will be the basis to reference the water supplies and water uses that define the water budget in the sections that follow.

Table 22. Representative Year	
	Description
Representative year(s) based upon	2020
First month of representative year	January
Last month of representative year	December

A. Agriculture Water Use

BWSD relies on surface water (**Table 23.**) for irrigation supplies of the many crops grown in the District.

Table 23. Annual Agricultural Water Use (AF)					
Source	2016	2017	2018	2019	2020
Agricultural Water Supplier Delivered					
Surface Water	82,958	89,235	85,445	89,333	83,781
Groundwater	N/A	N/A	N/A	N/A	8,415
Subtotal	82,958	89,235	85,445	89,333	92,196

The primary crops grown within the BWSD service area are trees (mostly almonds and pistachios), citrus and carrots. The evolution of irrigation and changing economic conditions has brought many crop changes to the District. Lands historically used for row crop production, mainly cotton, have been converted to permanent plantings (almonds, pistachios and citrus). As lands are converted, pressurized irrigation systems such as drip and micro sprinkler replace flood and sprinkler irrigation as the predominant method of irrigation. Similarly, the on-farm irrigation water efficiencies improve as the irrigation system conversions materialize.

The overall crop requirement also takes into consideration the leaching requirements and the effective precipitation. The following assumptions were used in the estimates for table 24.

- Crop evapotranspiration (ET_c) was derived from the Irrigation Training and Research Centers (ITRC) ET_c Table for Irrigation District Water Balances, Zone 16 for Typical Year.
- Leaching requirement was developed from Journal of Irrigation and Drainage Division data to maintain 100% yield potential.
- Effective Precipitation was calculated using a 50% effectiveness coefficient for the months of December and January, and a 100% effectiveness coefficient for the remaining months.

Table 24.1 2020 Agricultural Crop Water Needs Etc (in)

Crop	Area (acres)	ET Crop (ac-ft/ac)	Leaching Reqmnt LR (ac-ft/ac)	Effective Precip'n Pe (ac-ft/ac)	Total Crop Water Needs (AF/Ac)	Total Crop Water Needs (ac-ft)
Almonds	14,547	3.72	0.26	0.42	3.56	51,812
Carrots	2558	2.48	0.10	0.42	2.16	5,527
Citrus	3,609	3.42	0.24	0.42	3.24	11,699
Pistachios	13,747	3.44	0.21	0.42	3.23	44,382
Totals	34,461	120,078.38	7,742.33	14401.25		113,419

Table 24.2 2019 Agricultural Crop Water Needs Etc (in)

Crop	Area (acres)	ET Crop (ac-ft/ac)	Leaching Reqmnt LR (ac-ft/ac)	Effective Precip'n Pe (ac-ft/ac)	Total Crop Water Needs (AF/Ac)	Total Crop Water Needs (ac-ft)
Almonds	16,960	3.51	0.25	0.50	3.26	55,239
Carrots	0	0.00	0.00	0.50	0.00	-
Citrus	3,400	3.22	0.23	0.50	2.95	10,036
Pistachios	13,620	3.23	0.19	0.50	2.93	39,873
Totals	33,980	114,440.68	7,570.92	16864.27		105,147

Table 24.3 2018 Agricultural Crop Water Needs Etc (in)

Crop	Area (acres)	ET Crop (ac-ft/ac)	Leaching Reqmnt LR (ac-ft/ac)	Effective Precip'n Pe (ac-ft/ac)	Total Crop Water Needs (AF/Ac)	Total Crop Water Needs (ac-ft)
Almonds	16,960	3.77	0.26	0.33	3.71	62,918
Carrots	1150	2.46	0.10	0.33	2.23	2,568
Citrus	3,400	3.46	0.24	0.33	3.38	11,485
Pistachios	13,260	3.44	0.21	0.33	3.32	44,019
Totals	34,770	124,197.38	8,152.76	11359.36		120,991

Table 24.4 2017 Agricultural Crop Water Needs Etc (in)

Crop	Area (acres)	ET Crop (ac-ft/ac)	Leaching Reqmnt LR (ac-ft/ac)	Effective Precip'n Pe (ac-ft/ac)	Total Crop Water Needs (AF/Ac)	Total Crop Water Needs (ac-ft)
Almonds	14,520	3.86	0.27	0.35	3.77	54,805
Carrots	1870	2.46	0.10	0.35	2.20	4,118
Citrus	3,400	3.54	0.25	0.35	3.44	11,693
Pistachios	12,060	3.58	0.21	0.35	3.44	41,530
Totals	31,850	115,794.80	7,536.16	11185.72		112,145

Table 24.5 2016 Agricultural Crop Water Needs Etc (in)

Crop	Area (acres)	ET Crop (ac-ft/ac)	Leaching Reqmnt LR (ac-ft/ac)	Effective Precip'n Pe (ac-ft/ac)	Total Crop Water Needs (AF/Ac)	Total Crop Water Needs (ac-ft)
Almonds	15,200	4.00	0.28	0.28	4.00	60,776
Carrots	1870	2.56	0.10	0.28	2.38	4,451
Citrus	3,260	3.67	0.26	0.28	3.64	11,862
Pistachios	12,060	3.70	0.22	0.28	3.64	43,875
Totals	32,390	122,196.37	7,963.82	9195.52		120,965

The District encompasses about 97,396 acres. As shown on Table 25, in 2020 surface irrigation water was delivered to 34,461 acres (total acreage). Most of the non-irrigated land (62,755 acres) is not served by District facilities. Other non-irrigated land (9,173 acres) in the District is non-farmable land (oilfields).

Table 25. Irrigated Acres

Represented Year/District	2020	2019	2018	2017	2016
Total Irrigated Acres	34,461	33,980	34,770	31,850	32,390

For purposes of this report, cropped acreage is the same as irrigated acreage. The amount of irrigated land that is not cropped at any point in time during the year is small. Nearly 99% of the cropped land is planted with permanent crops. The remaining land not planted with permanent crops is devoted, to row crops.

Table 26. Multiple Crop Information

Cropping System	2020	2019	2018	2017	2016
Single-Cropped Acres	34,461	33980	34770	31850	32390
Inter-cropping	0	0	0	0	0
Double Cropping	0	0	0	0	0

B. Environmental Water Use

BWSD does not provide any of its Table A contract water to any environmental uses.

C. Recreational Water Use

BWSD does not provide any water to any recreational uses.

D. Municipal and Industrial Use

Water Users in the Industrial Zone own and operate a distribution system that delivers water through a pumping plant located at the forebay of BWSD Turnout No.5 (Bel 5) on the CA Aqueduct via a pipeline (collectively referred to as the Industrial System) to the Industrial Zone of the District. Water delivered through the Industrial System is used primarily to support petroleum recovery activities in the North and South Belridge Oil Fields located along the western portion of the District. No treatment is required prior to use.

As previously mentioned, 5,578 AF of BWSD's annual Table A amount is under contract for industrial use. However, approximately 1,600 AF is actually delivered annually for use in the Industrial Zone. The remaining balance is normally transferred to other Water Users and used for agricultural purposes within the District (Table 27).

Table 27. Municipal/Industrial Water Uses (AF)					
Municipal/ Industrial Entity	2016	2017	2018	2019	2020
Municipal Entity					
None	0	0	0	0	0
Subtotal					
Industrial Entity					
Oil Producers	888	859	1013	1077	587
Ag Processing	0	0	0	0	0
Subtotal	888	859	1013	1077	587
Total	888	859	1013	1077	587

E. Groundwater Recharge Use

There is no active groundwater recharge supported by District supplies within the District.

Table 28. Groundwater Recharge Water Uses (AF)						
Groundwater Basin	Method of Recharge	2016	2017	2018	2019	2020
None	Recharge basins	0	0	0	0	0
Voluntary/Opportunistic						
Other (non-District projects)	Recharge basins	0	0	0	0	0
Pioneer	Recharge basins	0	0	0	0	0
Berrenda Mesa	Recharge basins	0	0	0	0	0
Total		0	0	0	0	0
Notes:						
Amounts shown correlate to 2020 recovery. Recharge occurs opportunistically. A 10% factor is applied to recharge account for banking losses.						

F. Transfer and Exchange Use

The District relies on transfers and exchanges to supplement its annual water supply. In recent years, common landowner transfers into the District account for most of the activity in this section.

G. Other Water Use

BWSD has no other water uses besides those previously described.

Table 29. Other Water Uses (AF)					
Water Use	2016	2017	2018	2019	2020
None	0	0	0	0	0
TOTAL	0	0	0	0	0

Section IV: Description of Quantity and Quality of the Water Resources of the Agricultural Water Supplier

A. Water Supply Quantity

1. Surface Water Supply

Under its enabling legislation, the Kern County Water Agency (KCWA or Agency) was granted, among other things, the primary power to acquire and contract water supplies, and protect groundwater quality in Kern County. KCWA is a State Water Contractor and obtains water from the SWP for delivery to its 13 member districts (a.k.a., Member Units). BWSD is a California Water Storage District formed by interested landowners to provide a vehicle for construction, operation, and maintenance of an irrigation project. The District was formed on February 21, 1962, pursuant to Division 14 of the California Water Code, for the purpose of providing irrigation water from the State Water Project (SWP) to lands within the District. The contract between the District and the Agency was executed on October 4, 1966. After contract execution with the Agency, the District commenced water deliveries in 1968. The District's original contract amount was 163,000 AF.

Prior to construction of SWP, there was no land development except for oil fields. Agricultural activities were limited to sheep grazing on non-irrigated pasture.

BWSD's original 1967 Table A water supply contract with KCWA provided for an annual contract of 163,000 Acre-Feet (AF) of water. Since then, BWSD has permanently transferred a total of 41,492 AF of Table A contract water to other agencies. BWSD chose to transfer a portion of their Table A contract to reduce their SWP costs for a SWP contract supply that exceeded demand in BWSD. The District's annual Table A amount is currently 121,508 AF (water supply). Of the 121,508 AF of Table A water, 111,157 AF is under contract for agricultural use; 5,578 AF is under contract for industrial use and the balance, or 4,773 AF, is held for operational losses. The current water demands are approximately

125,000 AF per year. Presently, the water supply available to the District is inadequate to meet current and future water demands given a nearly 100% allocation from the State. No additional permanent transfers of Table A water outside BWSD are anticipated.

Table 30 shows the District's SWP Table A amounts and the actual allocations from DWR for 2020. BWSD also has the ability to purchase water through various State and locally operated pools, several of which serve as important supplies for groundwater recharge. The availability of these supplies, however, has become scarcer over time.

Table 30. Surface Water Supplies (AF)

Source	Diversion Restriction	2016	2017	2018	2019	2020
Pre-1914 water rights	NA	0	0	0	0	0
CVP class I water contract	NA	0	0	0	0	0
SWP water contract	ESA & Delta BIODs	72,905	103,282	42,528	91,131	24,302
Other Surface Water	ESA & Delta BIODs	-7,956*	69,976	46,117	-2,476	16,553
Banked water recovery	NA	20,428	-69770**	4874	1,738	36,350
Upslope drain water	NA	0	0	0	0	0
Carryover		18350	21627	15,590	22,472	21,899
Other		0	0	0	0	0
Total		103727	125115	109109	112865	99104
Notes:						
ESA = Endangered Species Act						
NA = Not Applicable						
BIOps = Smelt and Salmon Biological Opinions						
*Other surface Water = Surface Imports – Next Year Carryover						
**Negative Number indicates recharged water						

Table 31. Restrictions on Water Sources

Source	Restrictions*	Name of Agency Imposing Restrictions	Operational Constraints
SWP	ESA & Water Quality	NMFS & SWRCB	Restricted Delta Pumping
SWP	Facility maintenance	NA	Restricted Oroville and Delta exports
Notes:			
*ESA = Endangered Species Act protection measures			
*NMFS = National Marine Fisheries Service			
*SWRCB = State Water Resources Control Board			
*Water Quality restrictions relate to maintenance of Delta salinity standards.			

2. Groundwater Supply

A few private groundwater wells have historically supplied limited amounts of water for blending with SWP water. This has become more common-place as the SWP reliability has decreased. BWSD contacted the landowners for pumped groundwater quantities, as these were private wells. The District does participate in the Berrenda Mesa and Pioneer groundwater-banking projects to supplement dry-year water supplies. Annually, the maximum amount BWSD can extract from these banking projects varies based on downstream demand in the Aqueduct. It is limited in dry years, where demand may be lower than typical. Currently, the District has banked a total of about 94,400 AF in these projects on behalf of Water Users and an additional 5,000 AF to cover operational losses (as previously mentioned above) in dry years when the District's annual water supply is not sufficient (from reduced allocations on the SWP). Both banking projects are operated and maintained by KCWA.

3. Sustainable Groundwater Management Act

Belridge Water Storage District is located within the Kern Subbasin. Belridge's SGMA compliance is handled through the Westside District Water Authority (WDWA), which is a member of the Kern Groundwater Authority (KGA), a Groundwater Sustainability Agency in the Kern Subbasin. An initial plan was submitted in early 2020, and the WDWA has been employing the management actions since then. The Management Area Plan (MAP) outlined three management actions to be completed over the course of SGMA implementation. All the management actions identified in the WDWA chapter GSP continue to progress. The three current management actions as stated in the WDWA chapter GSP are:

- Collection and analysis of representative hydrogeologic data to remedy a documented lack of groundwater data in the Westside.
- Water resource coordination – due to poor groundwater quality, Westside landowners rely primarily on surface water. As such to further reduce groundwater use and increase drought resiliency, WDWA Districts and their landowners will continue to work cooperatively in pursuing supplemental surface water opportunities, including trades and purchases both between themselves and with parties outside of the WDWA.
- Conjunctive reuse of brackish water as a new source of water supply is in the feasibility study and economic assessment phase. Sources of brackish water under study for treatment and beneficial reuse include groundwater with TDS above 2,000 mg/L and oilfield produced water.

For more information on Belridge Water Storage District's compliance with SGMA, please see the Kern Groundwater Authority Groundwater Sustainability Plan, and reference the WDWA Management Area Plan.

4. Delta Plan Consistency

To provide “the expected outcome for measurable reduction in Delta reliance”, baseline historic Delta supplies delivered to DRWD were compared to supplies delivered over the past decade. Additionally, Delta supply reduction projections were made for comparison and future planning. For the purposes of comparison, the historic baseline period selected begins in 1996 and ends in 2010 because it is consistent with the typical historic water budget reporting period included in the recently completed Groundwater Sustainability Plans. This period provides a reasonable time frame for assessing average current conditions and to demonstrate consistency with reduced Delta reliance after enactment of the Delta Reform Act (2009). The table below shows projected water supplies from the Delta. The California Water Commission CALSIM 2030 and 2070 climate change scenarios were used to project future water supplies under 2030 and 2070 climate change scenarios. The table and figure below demonstrate reduced Delta reliance. Over the 2015 AWMP period, a 19% reduction in Delta water supplies was observed when compared to the baseline condition discussed above. Over the past decade (combined 2015 and 2020 AWMP period), a 14% reduction was observed. Due to increasing environmental commitments and restrictions on Delta Flows, landowners in the District will continue to experience reductions in Delta supply, likely exceeding the 2030 and 2070 projections.

Table 31. Comparison of Historic Average Annual Delta Supplies vs. Projected Average Annual Delta Supplies					
Value	Baseline Delta Supplies (1995-2010)	2015 Conditions Delta Supplies	2020 Conditions Delta Supplies	2030 Climate Conditions Delta Supplies	2070 Climate Conditions Delta Supplies
Average Annual Supplies	112,000	91,000	96,000	95,000	87,000
Percent of Baseline Supply	n/a	81%	86%	85%	78%
Percent Reduction in Supplies		19%	14%	15%	22%

Figure 2. Historic, 2015 & 2020 AWMP and Projected Delta Supplies

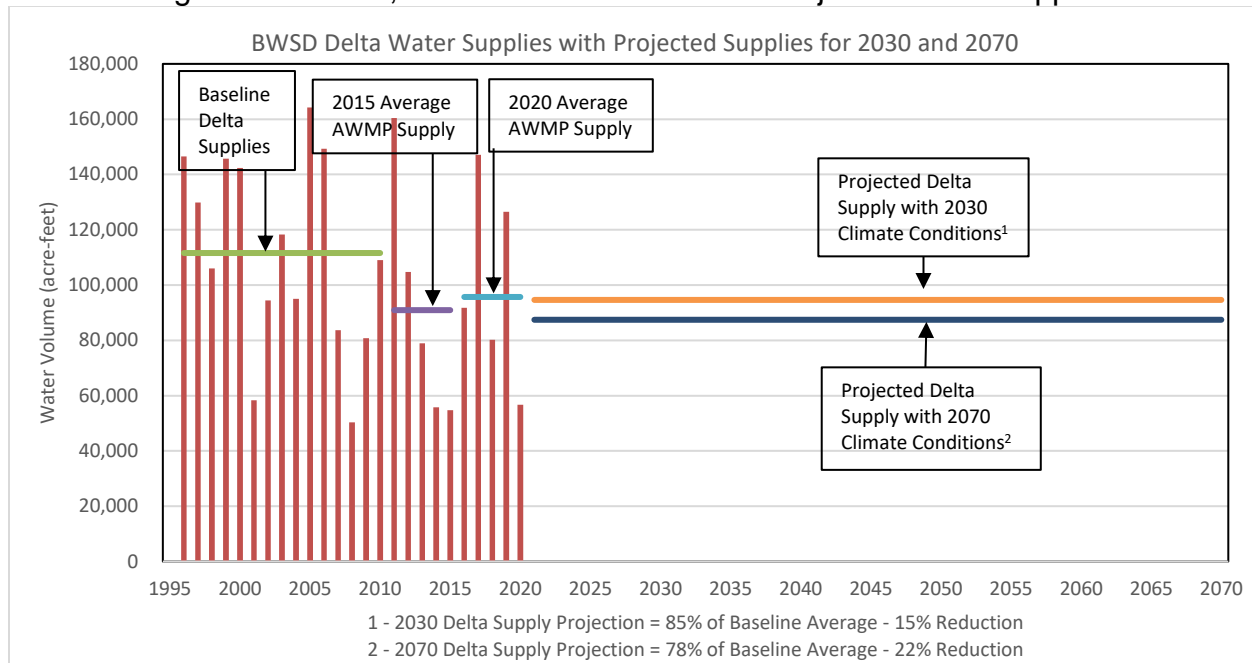


Table 32. Groundwater Basins

Basin Name	Size (Sq. Mi.)	Usable Capacity (AF)	Safe Yield (AF/Yr)
BWSD portion of Kern sub-basin of Tulare Lake basin	152	Unknown and limited	Unknown and limited

Note:
Area of main Tulare Lake Hydrologic Region: 5,149,000 acres = 8,045 sq. mi.
Area of Kern County sub-basin: 1,950,000 acres = 3,047 sq. mi. (37.9% of Tulare Lake Hydrologic Region)
Area of BWSD: 97,396 acres = 152 sq. mi. (5% of Kern County Sub-basin)

Table 33. Groundwater Management Plan

Written By	NA
Year	NA
Is Appendix Attached?	NA

Table 34. Groundwater Supplies (AF)

Groundwater Basin	Diversion Restriction	2016	2017	2018	2019	2020
Water Supplier Direct Pumping	None	N/A	N/A	N/A	N/A	0
Private Pumping	None	N/A	N/A	N/A	N/A	1187
Transfers / Exchanges	None	N/A	N/A	N/A	N/A	0
TOTAL						1187

Note: Table 34 contains private pumping numbers for 2020 only. Due to low water quality, groundwater extraction is extremely limited in BWSD. The District only has groundwater extraction data for 2020, and has begun collecting it annually for the purpose of maintaining SGMA compliance.

5. Other Water Supplies

BWSD has no other water supplies besides those described before.

6. Drainage from the Water Supplier's Service Area

The land serviced by BWSD does not have a subsurface drainage water problem. There are no on-farm subsurface tile drains (Table 35).

On-farm tail water (surface) drainage within the District is also minimal due to the use of pressurized irrigation systems. In the cases where on-farm tail water is generated, the water users typically contain it within the property. So, there are no drainage discharges from the District.

Table 35. Drainage Discharge (AF)						
Surface/ Subsurface Drainage Path	2020	2019	2018	2017	2016	Inside/ Outside Service Area
Subsurface drainage into evaporation pond	0	0	0	0	0	Inside

B. Water Supply Quality

1. Surface Water Supply

There have been no water quality problems that limit the use of the SWP water within the District. The District does not monitor the surface water quality since all of the water delivered by the District is from the SWP. The DWR has an on-going monitoring program that monitors water quality in the Aqueduct on a monthly basis. The water is sampled at several locations along the Aqueduct and analyzed for electrical conductivity, standard minerals, selected trace elements and chemical residue. Table 36 presents historical water quality data for the months of January and June for the years 2010 through 2020. The water quality data shown in Table 36 was collected by DWR at Check 21 in the Aqueduct near Kettleman City, about 40 miles upstream of the District. TDS concentrations in the SWP water provided to BWSD generally ranges from 150 to 400 mg/L, suitable for agricultural use.

Table 36. Surface Water Supply Quality

Selected Laboratory Results		CALIFORNIA AQU NR KETTLEMAN CK-21 (KA017226)													
Station Name/NR															
Parameter	Units	Sample Date													
		1/12/2010	6/15/2010	1/18/2011	6/14/2011	1/17/2012	6/19/2012	1/15/2013	6/18/2013	1/14/2014	6/17/2014	1/20/2015	6/16/2015	1/14/2020	6/16/2020
Alkalinity as CaCO ₃	mg/L	78	76	47	40	77	73	72	72	89	93	95	92	71	76
Aluminum	mg/L	N/A	N/A	N/A	0.173,0.175**	0.077	0.092	0.124	0.048	r	r	0.015	r	0.0441	0.063
Dissolved Ammonia	mg/L	0.04	0.01	0.05	<0.01	0.02	0.01	0.05	r	0.002	0.02	0.08	0.04	<0.05	<0.05
Dissolved Arsenic	mg/L	0.002	0.002	0.001	0.001	0.002	0.002	0.001	0.002	0.001	0.003	0.004	0.002	<0.001	0.002
Arsenic	mg/L	N/A	N/A	N/A	0.001	0.002	0.002	0.002	0.002	0.002	0.003	0.004	0.003	0.0023	0.002
Barium	mg/L	N/A	N/A	N/A	<0.05	0.039	0.033	0.033	0.037	0.031	0.026	0.045	0.039	0.037	0.032
Dissolved Beryllium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	r	r	r	r	r	r	<0.001	<0.001
Beryllium	mg/L	N/A	N/A	N/A	<0.001	<0.001	<0.001	r	r	r	r	r	r	<0.001	<0.001
Dissolved Boron	mg/L	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.151
Dissolved Bromide	mg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.18	0.193
Dissolved Cadmium	mg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	<0.001
Cadmium	mg/L	N/A	N/A	N/A	<0.001	<0.001	<0.001	r	r	r	r	r	r	<0.001	<0.001
Dissolved Calcium	mg/L	22	21	15	12	22	20	22	22	25	25	26	25	18	19
Dissolved Chloride	mg/L	75	70	28	24	109	62	74	76	107	110	116	109	59.5	68
Dissolved Chromium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	r	r	r	r	r	r	<0.001	<0.001
Chromium	mg/L	N/A	N/A	N/A	0.001	0.003	0.001	r	r	r	r	r	r	<0.001	<0.001
Conductance (EC) µS/cm	µS/cm	496	449	259	223	630	426	474	469	624	648	671	645	415	450
Dissolved Copper	mg/L	0.002	0.002	0.008	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	<0.001	0.001
Copper	mg/L	N/A	N/A	N/A	0.002	0.002	0.001	0.002	0.002	0.001	0.002	0.002	0.002	0.003	<0.001
Dissolved Hardness as CaCO ₃	mg/L	112	105	68	53	114	98	113	111	132	135	137	136	93	95
Dissolved Iron	mg/L	<0.005	<0.005	0.017	0.016	0.019	<0.005	0.034	r	0.005	r	r	r	<0.005	0.0132
Iron	mg/L	N/A	N/A	N/A	0.389,0.395**	0.131	0.12	0.14	0.08	0.017	0.017	0.017	0.023	0.099	0.076
Kjeldahl Nitrogen as N	mg/L	0.4	0.4	0.6	0.4	0.4	0.3	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.3
Dissolved Lead	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	r	r	r	r	r	r	<0.001	<0.001
Lead	mg/L	N/A	N/A	N/A	<0.001	<0.001	<0.001	r	r	r	r	r	r	<0.001	<0.001
Dissolved Lithium	mg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Magnesium	mg/L	14	13	8	6	15	12	14	14	17	18	18	18	11	11.6
Dissolved Manganese	mg/L	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	r	0.005	r	0.005	0.01	r	<0.005	<0.005
Manganese	mg/L	N/A	N/A	N/A	0.049,0.05**	0.014	0.021	0.007	0.015	0.008	0.015	0.023	0.017	0.013	0.018
Dissolved Mercury	mg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.0002	<0.0002
Dissolved Molybdenum	mg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Nickel	mg/L	0.001	0.001	0.002	<0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	<0.001	0.002
Nickel	mg/L	N/A	N/A	N/A	0.002	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Dissolved Nitrate	mg/L	3.7	2.5	2.9	2.4	3.8	1.8	4.6	1.6	2.4	0.4	0.2	2	4.6	0.7
Dissolved Nitrate + Nitrite as N	mg/L	0.69	0.54	0.65	0.41	0.87	0.4	1	0.32	0.57	0.09	r	0.49	1.06	0.156
Dissolved Ortho-phosphate as P	mg/L	0.05	0.08	0.08	0.05	0.06	0.06	0.07	0.05	0.05	0.05	0.08	0.08	0.085	0.054
Dissolved Organic Carbon	mg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.5	3.3
Total Organic Carbon	mg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.7	3.2
Phosphorus	mg/L	0.09	0.1	0.12	0.11	0.08	0.08	0.09	0.08	0.07	0.08	0.09	0.1	0.08	0.07
Dissolved Selenium	mg/L	0.001	0.001	0.001	<0.001	<0.001	0.001	r	r	0.001	0.001	0.001	0.001	<0.001	0.001
Selenium	mg/L	N/A	N/A	N/A	<0.001	<0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	<0.001	0.001
Silver	mg/L	N/A	N/A	N/A	<0.001	<0.001	<0.001	r	r	r	r	r	r	<0.001	<0.001
Dissolved Sodium	mg/L	52	50	24	21	68	46	56	54	76	80	79	71	45	48
Total Dissolved Solids	mg/L	275	274	151	124	347	236	270	261	345	367	370	357	230	249
Total Suspended Solids	mg/L	2	11	7	20	2	11	1	3	1	1	r	1	1	2.3
Volatile Suspended Solids	mg/L	1	<1	1	2	<1	3	r	1	1	r	r	r	<1	<1
Dissolved Strontium	mg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Sulfate	mg/L	42	43	26	25	45	35	44	40	52	52	47	52	31	36
Dissolved Zinc	mg/L	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	r	r	r	r	r	r	<0.005	<0.005
Zinc	mg/L	N/A	N/A	N/A	<0.005	<0.005	<0.005	0.005	r	r	r	r	0.007	<0.005	<0.005
pH		8	8.2	7.6	7.7	7.8	8.1	7.6	7.8	8.6	8.7	8	8.2	7.7	8.7
http://www.water.ca.gov/waterdatalibrary/waterquality/station_county/select_station.cfm?URLStation=KA017226&source=map															
mg/L = milligrams per liter															
µS/cm = microSiemens per centimeter															

The SWP water quality is generally very good for irrigation purposes, although even good quality water contains some salt. The evapotranspiration (ET) process returns water to the atmosphere but leaves the salts behind in the soil. To avoid damaging buildup of salt in the crop root zone, water in excess of the crops' ET is required. The amount of excess water needed, known as the leaching requirement, varies with the crop, soil, climate and quality of the applied water and is used as an indicator of the minimum amount of water needed to flush salts from the root zone. Leaching, as described above, is minimal in the District even though native soils contain relatively high concentrations of naturally occurring salts.

2. Groundwater Supply

Groundwater quality has not been monitored on a consistent basis in BWSD. The limited data and historical use indicate that the groundwater is saline. Total dissolved solids (TDS) concentrations have ranged from 500 to over 6,000 mg/L. The groundwater quality of most wells in the District is not generally considered suitable for most agricultural applications unless it is blended with better quality water. By comparison, TDS concentrations in SWP water provided to BWSD generally ranges from 150 to 500 mg/L. In portions of BWSD, the groundwater also contains high boron and sulfate concentrations, which further reduces its suitability for agricultural purposes. Until recently, use of groundwater as a supplemental water supply was thought to be uneconomical. However, because recent reliability studies from DWR indicate reliable supplies on the SWP around 61% of Table A amounts, and given the tolerance of some crops, namely pistachios, to higher concentrations of salts in irrigation water, some landowners have blended a limited amount of groundwater with surface water to supplement their supplies. However, the viability of these sources as long-term supplies is still in question. In recent years, shallow observation wells have been dry, with very few exceptions.

3. Other Water Supplies

Water transferred into the District and/or returned from banking projects has Aqueduct quality (because it is exchanged and conveyed in the Aqueduct).

4. Drainage from the Water Supplier's Service Area

BWSD has no drainage water and therefore there are no drainage reuse effects.

C. Water Quality Monitoring Practices

1. Source Water

DWR conducts monitoring and maintains records of all water diversions, water quality, and storage operations related to the SWP. Operational reports are distributed weekly and monthly to the District and published annually in Bulletin 132. DWR maintains water quality standards for its downstream urban users (Metropolitan Water District of Southern California and Central Coast Water Authority).

DWR maintains an automated sampling station at Check 21 (just upstream from the District turnouts) that records electrical conductivity, water temperature, and turbidity on a daily basis. In addition, grab samples are taken on monthly intervals. Table 37 summarizes sampled constituents and sampling frequency.

Table 37. Water Quality Monitoring Practices			
Water Source	Monitoring Location	Measurement/ Monitoring Method or Practice	Frequency
Surface water	DWR California Aqueduct (Kettleman City) Check 21 Station KA017226	See DWR standards	DWR standards
Groundwater	Various	As required by ILRP and SGMA	As required by ILRP and SGMA
Subsurface drainage water	Pond influent sumps and pond itself	Grab sampling of drainwater at influent sumps and evaporation pond	Quarterly

Table 38. Water Quality Monitoring Programs for Surface/Sub-Surface Drainage

Constituent	Units	Standard
Total Alkalinity as CaCO ₃	mg/L	Std Method 2320 B
Total Aluminum	mg/L	EPA 200.8 (T)
Dissolved Ammonia as N	mg/L	EPA 350.1
Dissolved Arsenic	mg/L	EPA 200.8 (D)
Total Arsenic	mg/L	EPA 200.8 (T)
Total Barium	mg/L	EPA 200.8 (T)
Dissolved Beryllium	mg/L	EPA 200.8 (D)
Total Beryllium	mg/L	EPA 200.8 (T)
Dissolved Boron	mg/L	EPA 200.7 (D)
Total Cadmium	mg/L	EPA 200.8 (T)
Dissolved Calcium	mg/L	EPA 200.7 (D)
Dissolved Chloride	mg/L	EPA 300.0 28d Hold
Dissolved Chromium	mg/L	EPA 200.8 (D)
Total Chromium	mg/L	EPA 200.8 (T)
Conductance (EC)	µS/cm	Std Method 2510-B
Dissolved Copper	mg/L	EPA 200.8 (D)
Total Copper	mg/L	EPA 200.8 (T)
Dissolved Hardness as CaCO ₃	mg/L	Std Method 2340 B
Dissolved Iron	mg/L	EPA 200.8 (D)
Total Iron	mg/L	EPA 200.8 (T)
Total Kjeldahl Nitrogen as N	mg/L	EPA 351.2
Dissolved Lead	mg/L	EPA 200.8 (D)
Total Lead	mg/L	EPA 200.8 (T)
Dissolved Lithium	mg/L	EPA 200.8 (D)
Dissolved Magnesium	mg/L	EPA 200.7 (D)
Dissolved Manganese	mg/L	EPA 200.8 (D)
Total Manganese	mg/L	EPA 200.8 (T)
Dissolved Mercury	mg/L	EPA 200.8 (Hg Dissolved)
Dissolved Molybdenum	mg/L	EPA 200.8 (D)
Dissolved Nickel	mg/L	EPA 200.8 (D)
Total Nickel	mg/L	EPA 200.8 (T)
Dissolved Nitrate	mg/L	EPA 300.0 28d Hold
Dissolved Nitrate + Nitrite as N	mg/L	Std Method 4500-NO ₃ -F (28Day)
Dissolved Ortho-phosphate as P	mg/L	EPA 365.1 (DWR Modified)
Total Phosphorus	mg/L	EPA 365.4
Dissolved Selenium	mg/L	EPA 200.8 (D)
Total Selenium	mg/L	EPA 200.8 (T)
Total Silver	mg/L	EPA 200.8 (T)
Dissolved Sodium	mg/L	EPA 200.7 (D)
Total Dissolved Solids	mg/L	Std Method 2540 C
Total Suspended Solids	mg/L	EPA 160.2
Volatile Suspended Solids	mg/L	EPA 160.4
Dissolved Strontium	mg/L	EPA 200.8 (D)
Dissolved Sulfate	mg/L	EPA 300.0 28d Hold
Dissolved Zinc	mg/L	EPA 200.8 (D)
Total Zinc	mg/L	EPA 200.8 (T)
pH	pH	Std Method 2320 B

Source of data:

http://www.water.ca.gov/waterdatalibrary/waterquality/station_county/select_station.cfm?URLStation=KA017226&source=map

Section V: Water Accounting and Water Supply Reliability

A. Quantifying the Water Supplier's Water Supplies

1. Agricultural Water Supplier Water Quantities

Table 39 shows typical water diversions from the CA Aqueduct during the representative water year (2016-2020).

Table 39.1 Surface and Other Water Supplies for 2020														
Source	Supply	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CVP Class 1 Contracts	0													0
Pre-1914 Rights	0													0
SWP water contract	24,302													24,302
Other Surface Water	16,553													16,553
Banked water recovery	36,350													36,350
Carryover	21,899													21,899
Recycled Water	0													0
Other	0													0
Total Supply														99,104
Monthly Deliveries		971	5006	3108	6278	14043	16571	20551	15704	9545	4752	1444	1131	99,104
Notes: The District doesn't track monthly deliveries by individual water type. The Agency does. Carryover balance is water from 2019														

Table 39.2 Surface and Other Water Supplies for 2019

Source	Supply	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CVP Class 1 Contracts	0													0
Pre-1914 Rights	0													0
SWP water contract	91,131													91,131
Other Surface Water	-2,476													-2,476
Banked water recovery	1,738													1,738
Carryover	22,472													22,472
Recycled Water	0													0
Other	0													0
Total Supply														112,865
Monthly Deliveries		1496	4279	4655	9248	14399	17101	20417	18545	10858	7588	2091	2188	112,865

Table 39.3 Surface and Other Water Supplies for 2019

Source	Supply	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CVP Class 1 Contracts	0													0
Pre-1914 Rights	0													0
SWP water contract	42,528													42,528
Other Surface Water	41356													41356
Banked water recovery	9635													9635
Carryover	15590													15590
Recycled Water	0													0
Other	0													0
Total Supply														109,109
Monthly Deliveries		1,729	5,385	3,334	8,626	15,016	15,913	21,379	16,599	9,828	7,080	2,047	2,173	109,109

Table 39.4 Surface and Other Water Supplies for 2017

Source	Supply	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CVP Class 1 Contracts	0													0
Pre-1914 Rights	0													0
SWP water contract	103,282													103,282
Other Surface Water	69,976													69,976
Banked water recovery	-69770													-69770
Carryover	21,627													21,627
Recycled Water	0													0
Other	0													0
Total Supply	125,115													125,115
Monthly Deliveries		3497	7194	8897	9088	14995	18462	20315	17271	9754	6532	5781	3329	125,115

Table 39.5 Surface and Other Water Supplies for 2016

Source	Supply	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CVP Class 1 Contracts	0													0
Pre-1914 Rights	0													0
SWP water contract	72,905													72,905
Other Surface Water	12,472													12,472
Banked water recovery														
Carryover	18,350													18,350
Recycled Water	0													0
Other	0													0
Total Supply	103,727													103,727
Monthly Deliveries		916	3511	8064	9636	13065	17815	19573	16029	8686	4611	1295	526	103,727

Table 40 summarizes groundwater pumped by BWSD from groundwater banking projects located inside the District's boundaries during the representative year when SWP allocations were normal. There are no groundwater banking projects located inside the District boundaries.

Table 40. Groundwater Supplies Summary for 2020 (AF)							
Month	Pumped by the Water Supplier			Pumped within Service Area by Customers			TOTAL
	Basin 1	Basin 2	Basin 3	Basin 1	Basin 2	Basin 3	
TOTAL	0	0	0				1187

Table 41. Effective Precipitation Summary (AF)										
Month	2020		2019		2018		2017		2016	
	Gross (in)	Effective (AF)*	Gross (in)	Effective (AF)*	Gross (in)	Effective (AF)*	Gross (in)	Effective (AF)*	Gross (in)	Effective (AF)*
January	0.15	215	1.78	2520	1.83	2651	2.09	2774	2.27	3064
February	0	0	1	2832	0.19	551	1.6	4247	0.04	108
March	1.91	5485	1.45	4106	1.55	4491	0.53	1407	0.77	2078
April	2.43	6978	0.21	595	0.08	232	0	0	0.81	2186
May	0.01	29	0.71	2010	0.02	58	0	0	0.02	54
June	0	0	0	0	0.02	58	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0
August	0.04	115	0	0	0	0	0	0	0.23	621
September	0	0	0	0	0	0	0.75	1991	0	0
October	0	0	0	0	0	0	0.14	372	0	0
November	0.38	1091	1.03	2917	1	2898	0.06	159	0.04	108
December	0.34	488	1.33	1883	0.29	420	0.18	239	1.16	1566
Total	5.26	14402	7.51	16863	4.98	11358	5.35	11187	5.34	9784
Note: *Assumes an effectiveness coefficient of 50% for the months of December and January and 100% for the remaining months. Volumes in AF result from multiplying the effective precipitation depth in a given year and the irrigated acreage.										

B. Quantification of Water Uses

Table 43 shows the volume of water delivered to BWSD's irrigation water customers in 2020 for delivery into the Service Area. The water delivered is based on the field personnel water measurements to the customers. During 2020, the volume of water delivered to the customers is within an estimated plus or minus 2% of the actual deliveries. The difference between the applied water versus the allocated water is the amount of water that was recharged or carried over to the next year (see Table 42).

Table 42. Applied Water (AF)					
	2020	2019	2018	2017	2016
Applied Water (from Table 46)	99,104	112,865	109,109	125,115	103,727

Table 43 summarizes the crop water use within the BWSD service area in 2020.

Table 43. Quantify Water Use (AF)					
Water Use	2020	2019	2018	2017	2016
Crop Water Use (from Table 25)					
1. Crop Evapotranspiration*	120078	114441	124197	115795	122196
2. Leaching*	7742	7571	8153	7536	7964
3. Cultural practices	0	0	0	0	0
Conveyance & Storage System					
4. Conveyance seepage	0	0	0	0	0
5. Conveyance evaporation	0	0	0	0	0
6. Conveyance operational spills	0	0	0	0	0
7. Reservoir evaporation	0	0	0	0	0
8. Reservoir seepage	0	0	0	0	0
Environmental Use (consumptive)					
9. Environmental use – wetlands (from Table 27)	0	0	0	0	0
10. Environmental use – Other (from Table 27)	0	0	0	0	0
11. Riparian vegetation (from Table 27)	0	0	0	0	0
12. Recreational use (from Table 28)	0	0	0	0	0
Municipal and Industrial					
13. Municipal (from Table 29)	0	0	0	0	0
14. Industrial (from Table 29)	888	859	1013	1077	587
Outside the District					
15. Transfers or Exchanges out of the service area (not included)	0	0	0	0	0
Conjunctive Use					
16. In-District Groundwater recharge (from Table 30)*	0	0	0	0	0
Other (from Table 31)	0	0	0	0	0
Subtotal	128708	122871	133363	124408	130747
Note:					
* Recharge outside District boundary is not accounted here.					

Table 44. Quantify Water Leaving the District (AF)					
	2020	2019	2018	2017	2016
1. Surface drain water leaving the service area	0	0	0	0	0
2. Subsurface drain water leaving the service area	0	0	0	0	0
Subtotal	0	0	0	0	0

Table 45. Irrecoverable Water Losses (Optional) (AF)					
	2020	2019	2018	2017	2016
Flows to saline sink	0	0	0	0	0
Flows to perched water table	0	0	0	0	0
Subtotal	0	0	0	0	0

C. Overall Water Budget

Table 46 and Table 47, respectively indicate the 2020 water supplies and water budget for the District.

Table 46. Quantify Water Supplies (AF)					
Water Supplies	2020	2019	2018	2017	2016
1. Surface Water (summary total from Table 39)	99,104	112,865	109,109	125,115	103,727
2. Groundwater (summary total from Table 40)	1,187	0	0	0	0
3. Annual Effective Precipitation (summary total from Table 41)	14,402	16,863	11,358	11,187	9,784
4. Water purchases	0	0	0	0	0
Subtotal	114,693	129,728	120,467	136,302	113,511

Table 47. Budget Summary (AF)					
Water Accounting	2020	2019	2018	2017	2016
1. Subtotal of Water Supplies (Table 39)	114,693	129,728	120,467	136,302	113,511
2. Subtotal of Water Uses (Table 43)	128,708	122,871	133,363	124,408	130,747
3. Drain Water Leaving Service Area (Table 44)	-	-	-	-	-
Excess Deep Percolation*	(14,015)	6,857	(12,896)	11,894	(17,236)
(Deficit Irrigation)					
Note:					
*Calculated from lines 2 and 3 subtracted from line 1					

The District as a whole appears to be very efficient with its water supply. Data from Table 47 for year 2020 suggests a Total Water Use Efficiency (TWUE) for the District of approximately 97% under the assumptions used in the calculations. Excess deep percolation and TWUE values vary accordingly with the year type. Crop water use estimates may be high. These results are due to uncertainties in the crop coefficients (might be high) values to estimate crop evapotranspiration and the salt tolerance threshold values to estimate the leaching requirement. These results suggest that growers are performing deficit irrigation in response to a limited, unreliable, and expensive water supply. These results also collaborate mobile lab results which indicate distribution uniformities (DU) for District Water Users ranged between 91% and 97% from 2006 to 2020.

In addition, it is probable that the growers are deficit irrigating in response to multiple years of insufficient water supplies. In 2010, the Table A allotment of 50% yielded a corresponding 97% TWUE. At Table A allotments of 35% in 2013 and 5% in 2014, growers would have been forced to abandon (some 2,000 acres have been taken out of production since 2010) or to under-irrigate their remaining crop.

Water Supply Reliability

The SWP and groundwater banking projects are BWSD's primary source of reliable water. As a participant in the Pioneer and Berrenda Mesa groundwater banking projects, BWSD has been actively banking SWP water when available. Water stored in the water banks is available to supplement SWP supplies, primarily in years of SWP delivery deficiencies. Annually, the maximum amount BWSD can extract from both banking projects varies based on down stream demand in the California Aqueduct. Additional surface storage, well recovery capacity and groundwater recharge capacity are means to improve water reliability.

Another source of reliable water for certain landowners is through access to other groundwater banking projects located outside the District's boundaries.

The water supply reliability for the District is parallel to that of the SWP and is best described by DWR in the following excerpts from "The State Water Project Final Delivery Reliability Report 2011", dated June 2012.

"The 2011 Report shows that the SWP continues to be subject to reductions in deliveries similar to those contained in the State Water Project Delivery Reliability Report 2009 (2009 Report), caused by the operational restrictions of biological opinions (BOs) issued in December 2008 and June 2009 by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) to govern SWP and Central Valley Project operations. Federal court decisions have remanded the BOs to USFWS and NMFS for further review and analysis. We expect that the current BOs will be replaced sometime in the future. The operational rules defined in the 2008 and 2009 BOs, however, continue to be legally required and are the rules used for the analyses supporting the 2011 Report."

Regulatory Restrictions on SWP Delta Exports

"Multiple needs converge in the Delta: the need to protect a fragile ecosystem, to support Delta recreation and farming, and to provide water for agricultural and urban needs throughout much of California. Various regulatory requirements are placed on the SWP's Delta operations to protect special-status species such as delta smelt and spring- and winter-run Chinook salmon. As a result, as described below, restrictions on SWP operations imposed by State and federal agencies contribute substantially to the challenge of accurately determining the SWP's water delivery reliability in any given year."

Biological Opinions on Effects of Coordinated SWP and CVP Operations

"Several fish species listed under the federal Endangered Species Act (ESA) as endangered or threatened are found in the Delta. The continued viability of populations of these species in the Delta depends in part on Delta flow levels. For this reason, the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) have issued several BOs since the 1990s on the effects of coordinated SWP/CVP operations on several species.

These BOs affect the SWP's water delivery reliability for two reasons. Most obviously, they include terms that specifically restrict SWP pumping levels in the Delta at certain times under certain conditions. In addition, the BOs' requirements are based on physical and biological phenomena that occur daily while DWR's water supply models are based on monthly data.

The first BOs on the effects of SWP (and CVP) operations were issued in February 1993 (NMFS BO on effects of project operations on winter-run Chinook salmon) and March 1995 (USFWS BO on project effects on delta smelt and splittail). Among other things, the BOs contained requirements for Delta inflow, Delta outflow, and reduced export pumping to meet specified incidental take limits. These fish protection requirements imposed substantial constraints on Delta water supply operations. Many were incorporated into the

1995 Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta (1995 WQCP), as described in the “Water Quality Objectives” section later in this chapter.

The terms of the USFWS and NMFS BOs have become increasingly restrictive in recent years. In December 2008, USFWS issued a new BO covering effects of the SWP and CVP on delta smelt, and in June 2009, NMFS issued a BO covering effects on winter-run and spring-run Chinook salmon, steelhead, green sturgeon, and killer whales. These BOs replaced BOs issued earlier by the federal agencies.

The USFWS BO includes additional requirements in all but 2 months of the year. The BO calls for “adaptively managed” (adjusted as necessary based on the results of monitoring) flow restrictions in the Delta intended to protect delta smelt at various life stages. USFWS determines the required target flow, with the reductions accomplished primarily by reducing SWP and CVP exports. Because this flow restriction is determined based on fish location and decisions by USFWS staff, predicting the flow restriction and corresponding effects on export pumping with any great certainty poses a challenge. The USFWS BO also includes an additional salinity requirement in the Delta for September and October in wet and above-normal water years, calling for increased releases from SWP and CVP reservoirs to reduce salinity. Among other provisions included in the NMFS BO, limits on total Delta exports have been established for the months of April and May. These limits are mandated for all but extremely wet years.

The 2008 and 2009 BOs were issued shortly before and shortly after the Governor proclaimed a statewide water shortage state of emergency in February 2009, amid the threat of a third consecutive dry year. NMFS calculated that implementing its BO would reduce SWP and CVP Delta exports by a combined 5% to 7%, but DWR’s initial estimates showed an impact on exports closer to 10% in average years, combined with the effects of pumping restrictions imposed by BOs to protect delta smelt and other species. The 2008 USFWS and 2009 NMFS BOs have been subject to considerable litigation. Recent decisions by U.S. District Judge Oliver Wanger changed specific operational rules for the fall/ winter of 2011–2012, and both the USFWS BO and NMFS BO have been remanded to the agencies for further review and analysis. However, the operational rules specified in the 2008 and 2009 BOs continue to be legally required and are the rules used in the analyses presented in Chapters 5, 6, and 7 of this report. Chapter 5 presents a comparison of monthly Delta exports as estimated for this 2011 Report with those estimated for the 2005 Report, illustrating how the 2008 and 2009 BOs have affected export levels from the Delta.

The California Department of Fish and Game (DFG) issued consistency determinations for both BOs under Section 2080.1 of the California Fish and Game Code. The consistency determinations stated that the USFWS BO and the NMFS BO would be consistent with the California Endangered Species Act (CESA). Thus, DFG allowed incidental take of species listed under both the federal ESA and CESA to occur during SWP and CVP operations without requiring DWR or the U.S. Bureau of Reclamation to obtain a separate State-issued permit.

Specific restrictions on Delta exports associated with the USFWS and NMFS BOs and their effects on SWP pumping levels are described further in Chapter 5, “SWP Delta Exports,” of this report.”

Water Quality Objectives

“Because the Delta is an estuary, salinity is a particular concern. In the 1995 WQCP, the State Water Board set water quality objectives to protect beneficial uses of water in the Delta and Suisun Bay. The objectives must be met by the SWP (and federal CVP), as specified in the water right permits issued to DWR and the U.S. Bureau of Reclamation. Those objectives—minimum Delta outflows, limits on SWP and CVP Delta exports, and maximum allowable salinity levels— are enforced through the provisions of the State Water Board’s Water Right Decision 1641 (D-1641), issued in December 1999 and updated in March 2000.

DWR and Reclamation must monitor the effects of diversions and SWP and CVP operations to ensure compliance with existing water quality standards. Monitoring stations are shown in Figure 4-1.

Among the objectives established in the 1995 WQCP and D-1641 are the “X2” objectives. D-1641 mandates the X2 objectives so that the State Water Board can regulate the locations of the Delta estuary’s salinity gradient during the months of February–June. X2 is the position in the Delta where the electrical conductivity (EC) level, or salinity, of Delta water is 2 parts per thousand. The location of X2 is used as a surrogate measure of Delta ecosystem health. For the X2 objective to be achieved, the X2 position must remain downstream of Collinsville in the Delta (shown in Figure 4-1) for the entire 5- month period, and downstream of other specific locations in the Delta on a certain number of days each month from February through June. This means that Delta outflow must be at certain specified levels at certain times—which can limit the amount of water the SWP may pump at those times at its Harvey O. Banks Pumping Plant in the Delta. Because of the relationship between seawater intrusion and interior-Delta water quality, meeting the X2 objective also improves water quality at Delta drinking-water intakes; however, meeting the X2 objectives can require a relatively large volume of water for outflow during dry months that follow months with large storms.

The 1995 WQCP and D-1641 also established an export/inflow (E/I) ratio. The E/I ratio, presented in Table 3 of the 1995 WQCP (SWRCB 1995:18– 22), is designed to provide protection for the fish and wildlife beneficial uses in the Bay-Delta estuary (SWRCB 1995:15). The E/I ratio limits the fraction of Delta inflows that are exported. When other restrictions are not controlling, Delta exports are limited to 35% of total Delta inflow from February through June and 65% of inflow from July through January.”

In addition to these potential reductions, the District's ability to deliver a reliable water supply to its landowners is further impacted by capacity issues on the Coastal Branch of the Aqueduct. Not only is DWR responsible for maintaining facilities, it is also responsible for controlling aquatic weed growth. Often during peak irrigation demand (May-

September) the dense growth of aquatic weeds impacts DWR's ability to convey an adequate supply through the Coastal Branch. This forces the District to allocate capacity and reduce the amount of water available to landowners during the most critical growing period.

Climate Change

Within the five year horizon of this Plan, the District is much more concerned regarding the current reliability (or lack thereof) of the State Water Project (SWP) than it is about climate change. However, the potential effects of climate change, which will impact both the District's local area and result in statewide changes that could affect the State Water Project and its water supplies in the longer term, are a substantial concern beyond the planning horizon of this Plan.

DWR estimates indicate that by 2050 the Sierra Nevada snowpack, which provides 65 percent of California's water supply, will be significantly reduced. Much of the precipitation is expected to fall as rain instead of snow during winter and cannot be stored in our current water system for later use. The climate is also expected to become more variable and extreme, bringing more droughts and floods. Thus the District will need to be prepared to adapt to greater variability in weather patterns.

D. Potential Climate Change Effects

Within the next 20 years, DWR expects that water supplies, water demand, sea level, and the occurrence and increased severity of floods will be affected by climate change. Some of these potential changes are presented below.

The District will consider the following climate change effects, many of which are already documented in California, and reviewed in the latest State Water Project Reliability Report prepared by DWR.

1. Water Demand

Predicted results of climate change, such as, shorter winters, more hot days and nights, and a longer irrigation season could potentially increase water demand in the District, and increase competition for water by others, if the affects of climate change occur.

2. Water Supply and Quality

Reduced snowpack, shifting spring runoff to earlier in the year has the potential to impact water supply and quality, if they should occur.

3. Sea Level Rise

The Delta, which is in the hub of the SWP, could be at greater risk to increased salinity should sea level rise occur. Sea level could continue to rise if warming of the oceans continues. This could also affect Delta levee stability in low-lying areas.

4. Disaster

Disasters may become more frequent if climate change continues as some scientists believe.

E. Specific Points to Consider

As the District continues to address near-term periods of water deficiency from the State Water Project during the five years of this planning cycle, it will consider the following potential climate change impacts projected by DWR in its longer term plans and work with DWR and State Water Contractors in planning for:

1. Irrigation Demand

Irrigation demand may increase if temperatures rise and rainfall becomes more variable.

2. Permanent Crops

Permanent crops, which make up the majority in the District, may be adversely affected by climate change and may be more difficult to shift to alternative crops, causing reduced flexibility for adapting to changing climatic conditions.

3. Flooding Risk

Flooding risk may increase as a result of more severe rainfall patterns and warmer winter rains. This could affect water supply and conveyance of State and local water distribution facilities.

4. Snowpack

Snowpack may significantly diminish if the climate warms. Diminished snowfall in the mountains and earlier runoff may result in reduced SWP water supply and other sources derived from Sierra Nevada Snowpack.

5. The Sacramento-San Joaquin River Delta

The Sacramento-San Joaquin River Delta could be vulnerable to impacts of climate change, if it occurs. One impact could be sea level rise. Higher sea levels could make it more difficult to export water from the Delta with the existing infrastructure and may result in reduced water deliveries over time.

Section VI: Water Use Efficiency Information

A. EWMP Implementation and Reporting

1. Critical EWMPs

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

All of the turnout deliveries within the District are fully metered with propeller flowmeters which register both instantaneous and totalized flows. Meters are repaired and/or replaced as necessary. The District staff is capable of repairing these meters when required.

The District maintains daily delivery records for each turnout being used and maintains records of daily water orders from the SWP. A grower's water use to date and remaining allocation is maintained by the District's comprehensive database system (Latis) that the District has used for nearly ten years. The system helps manage water orders, water use, water supply, water contract information, and water delivery system information.

Staff measures all flow meters located at turnouts along distribution laterals from the canals. The operations superintendent generates a monthly Water Transaction Report from Latis for Water Users to view. This report shows deliveries and any other water related activity (i.e., transfers, exchanges, recharge, etc.) for water users to view. See Appendix 9 for an example of the monthly Water Transaction Report.

The District's obligation to measure water deliveries ends at the meter. The Latis system is proving to be very effective in assisting staff and management to manage and analyze a variety of water related data with the ultimate goal of efficiently managing District water supplies.

BWSD is confident its existing water measurement devices meet the $\pm 12\%$ accuracy standard, and replacement meters meet the $\pm 5\%$ accuracy standard.

This EWMP is being implemented at a satisfactory level.

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

BWSD's contracts with its Water Users establish a fixed unit pricing (Volumetric Rate Structure - \$/AF) payment structure for SWP water supplies. This pricing structure also includes District fixed and variable costs. Both SWP and District fixed and variable costs are charged on a contract basis (i.e., assuming that full contract amount is available in any year). By July, both SWP and District variable costs for the preceding water year are adjusted to actual usage. This methodology mirrors the payment and adjustment structure

which KCWA applies to its Member Units and which DWR applies to its contractors. Full costs (unsubsidized) are recovered for SWP water supplies.

With the Monterey Agreement, establishment of an Agricultural Rate Management Fund (Fund) helps to convert the relatively high SWP fixed costs, which are charged on a contract basis, into more of a volumetric charge. Portions of agricultural contractor's payments are held in a trust account, to be used whenever SWP allocations are less than 100 percent of contract amount. The Fund is used to pay fixed costs for that portion of water that is unallocated due to water shortages, however, it is not fully funded and can only off-set about a 10%, or less shortage (>90% SWP Allocation) in any year. As an example, if the water supply allocation in a year were 80 percent of contract amount, then the trust fund would pay the fixed costs for 20 percent of Table A contract water (that portion not available for delivery).

The trust fund has reduced the carrying cost for SWP Table A contract water and converted the agricultural repayment system into more of a volumetric charge for both fixed and variable costs.

BWSD is one of the most conservationally advanced agricultural water districts because of the price of water. The water charge is already sufficiently high to encourage the water users to conserve water without imposing additional penalties such as those that might be incurred from a tiered water pricing program. At this time, the District has determined that a tiered water pricing system is not feasible.

2. Conditional EWMPs

(1) Alternate Land Use (Facilitation of alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including problem drainage.)

By a mechanism known as the "Top Contract", Water Users in the Service Area take delivery of and pay for SWP water that cannot be delivered to the lands in portions of the District that are not currently served by District facilities. This has two benefits: 1) it provides a source to fund the District's annual obligation to KCWA to pay for said water; and 2) it allows the water to be put to beneficial use within the District.

The District has also participated in groundwater banking facilities that use lands located south of the District in a different alternative manner. Instead of growing crops, the District is banking water for future use.

BWSD will consider requests for alternative land uses. Most lands in BWSD are considered excellent for agricultural purposes. However, about 50% of the land in the District would require pumping lifts of 300+ feet for deliveries. Lift costs coupled with already high unit cost of water make construction of additional conveyance facilities cost prohibitive.

Another aspect of the Monterey Agreement, which meets the criteria for this AWMP relates to the marketing of up to 130,000 AF of KCWA's SWP agricultural Table A contract water to other SWP urban contractors. To date, all of the 130,000 AF SWP Table A contract water has been permanently transferred to other SWP urban contractors.

Outside of the Monterey Agreement, other permanent transfers of SWP Table A contract water have occurred within Kern County. Generally, KCWA does not object to transfers of SWP Table A contract water among Member Units. (Kern County Water Agency Water Management Plan, October 2001)

Water Users within the District are free to transfer water amongst each other without the consent of the District. However, current BWSD policy requires that any request to transfer water for use outside of the District be submitted to the District in writing and that other Water Users in the District be offered a first-right-of-refusal to purchase said water at full-cost. Once these conditions are met, the transfer is approved.

In summary, the following types of water transfers are allowed by current BWSD policies once certain conditions are satisfied:

- 1) Between neighboring districts and the same owners in each district.
- 2) Between non-neighboring districts and the same owners in each district.
- 3) Between Water Users within the District

This EWMP has been implemented, and will continue to be implemented through the practices described in this section.

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

A considerable amount of oilfield-waste water is produced from petroleum production in BWSD. This water generally contains high total dissolved solids (TDS) and high concentrations of other constituents of concern including boron and selenium. Unfortunately, the cost associated with treating this water to a quality acceptable for agriculture or domestic purposes is prohibitive at this time.

BWSD does not have access to any municipal recycled water sources. However, the potential exists to reuse oil field produced water. The current costs for treatment (such as reverse-osmosis) and water disposal exceed BWSD's customer's ability to pay for them. An arrangement between BWSD (Ag) and an urban agency would be required, or the per AF cost of treated water would need to be comparable to that of SWP water from the CA Aqueduct for such a program to work. One possible plan would be for the urban agency to pay to desalt brines and BWSD would use the oil field produced water for agricultural purposes. In return, BWSD would turn over SWP water to the urban agency. Another possibility would be that the oil field produced water be treated so as to be cost effective for agricultural use.

Adequate funds are currently not available, and are not expected to become available, for this EWMP to be locally cost-effective or technically feasible during the term of the AWMP. Thus this EWMP will not be implemented though the District will continue to evaluate it.

(3) On-Farm Irrigation Capital Improvements (Facilitate financing of capital improvements for on-farm irrigation systems)

BWSD is a progressive district and along with its Water Users already have implemented the best available technology for conveying water to crops. The District could help Water Users secure financing of new irrigation systems through a lending institution; however, most are already efficient in applying water to their fields.

Thus, this EWMP is not technically feasible, and will not be implemented.

(4) Incentive Pricing Structure (Implement an incentive pricing structure that promotes one or more of the following goals: A. “More efficient water use at the farm level such that it reduces waste”; B. “Conjunctive use of groundwater”; D. “Reduction in problem drainage”.)

Water marketing and transfers already occur routinely within the District and frequently outside the District within the KCWA in accordance with adopted policies. Water marketing, transfers and exchanges offer an opportunity to achieve both the reliability of the water supply and costs at levels economically viable for District water users. Through water transfers and/or exchanges, row crop farmers may release their water entitlement in dry years to permanent crop needs.

The District facilitates transfers and exchanges in accordance with the following priorities: 1) in-District transfers, 2) transfers within KCWA, and 3) transfers outside the KCWA. The District relies on these transfers and exchanges with other water entities to provide the necessary flexibility to optimize beneficial use of the water supplies available to the District.

This EWMP has been implemented and will be continued with current practices.

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

BWSD's two main canals are concrete lined although approximately 6 miles of the approximately 35 miles of canal has experienced minor damage due to localized soil collapse. The entire District has lined canals or pipelines. The two regulating reservoirs are lined with a clay liner. The District's two terminal reservoirs are unlined. However, given the way the canals are operated, little if any water spills into the unlined reservoirs. On the rare occasion when a spill occurs, most of the water is recovered and put back

into the canal. Distribution system losses are so low (usually on the order of 1%), and additional improvements to reduce losses have been deemed to be locally cost effective.

The District's two main reservoirs (415 Reservoir and 500 Reservoir) are used primarily for short-term regulation of the District's two main pump stations (Pump Station 1A & 1B, respectively). Because of their relatively small storage capacities, long-term storage of surplus water is generally not applicable. To minimize pumping costs and energy bills during the summer peak energy period (noon to six) the combined storage of the 415 and 500 Reservoirs provides only one to two hours (1-2 hours) of curtailment pumping. As previously mentioned, studies by P&P have shown that the benefit-cost ratio for additional storage in the District is not economical under current conditions. However, should grants, low interest financing or other funding sources become available, BWSD will investigate additional storage facilities to expand load-shifting capability, regulation, and/or surplus water storage capabilities.

Currently, adequate funds (including funds from other beneficiaries of the WMP) are not available, and cannot reasonably be expected to be available, for implementation of the EWMP during the term of the WMP. Proposition 50, a current State-funding source, specifically excludes funding for surface storage projects. There is no other funding available. Also pursuant to a Net Benefit Analysis performed in accordance with Exhibit E, the implementation of the EWMP will not provide any significant financial benefits for the water supplier during the term of the WMP (very low B/C ratio).

BWSD does not plan to implement this EWMP during this planning cycle. But the District will continue to evaluate potential improvements for future plan cycles as technologies and funding opportunities change.

(6) Order/Delivery Flexibility (Increase flexibility in water ordering by, and delivered to, water customers within operational limits)

BWSD already has flexibility in water ordering and delivery. Most water orders and deliveries are based on an arranged demand system where the frequency and duration is flexible. The rate of flow is flexible to the extent that capacity of the delivery system allows. The storage capacities inherent in the California Aqueduct and the District facilities allow BWSD to provide some flexibility in water ordering and delivery.

This EWMP has been implemented at a satisfactory level, and will continue to be implemented by continuing the practices discussed in this section.

(7) Supplier Spill and Tailwater Systems (Construct and operate supplier spill and tail-water systems)

Except in case of emergencies, BWSD does not experience operational spills from their canals or pipelines. Daily deliveries are matched with the ordered demand, utilizing different pumping configurations at Pump Stations 1A and 1B and other downstream control structures in the canal and distribution laterals. In the worst case, emergency spills

at the end of the canal can be gravity fed back into the distribution system for beneficial use.

BWSD has implemented this EWMP previously at a satisfactory level and will continue to implement it by operating its existing canal spill re-capture systems after emergencies.

(8) Conjunctive Use (Increase planned conjunctive use of surface water and groundwater with the supplier service area)

BWSD currently has an active conjunctive use program, primarily through groundwater banking programs outside of the District. In dry years, the District can pump up to 15,000 AF of banked groundwater on behalf of its customers to supplement SWP shortages. And, Westside Mutual Water Company provides similar services to a certain landowner. Given the location of the District, an exchange with local agencies is utilized to return banked water diversions of SWP water for use into BWSD, while other agencies use the groundwater.

The District has practiced conjunctive use of water for many years. Due to the significant amount of acreage planted in permanent crops, demand within BWSD remains relatively constant from year to year. In dry years, when supplies from the SWP are low, supply deficits are augmented with banked supplies and/or through purchases and transfers.

This EWMP has been implemented at a satisfactory level, and will continue to be implemented by the practices described in this section.

(9) Automated Canal Controls (Automate canal control devices)

As the water is lifted from Pump Station 1A, it is discharged into the 415 Reservoir. From there, water can be delivered through the 415 Canal system or diverted to Pump Station 1B and lifted to the 500 Reservoir for delivery through the 500 Canal. At the outlet of each reservoir to the 415 and 500 Canals is a canal gate that isolates the reservoir and canal. Numerous check and canal gate structures that are located at various locations along the canals are used to set water levels and flows in the canal. Canal gates are operated automatically, using the SCADA system or laptop via WiFi connection in the field, to match the desired deliveries for each day. Flow rates through the automated structures are calibrated as a percentage of how far the gate is open. These canal gates were converted to automatic operation, under the prior water conservation plan, after being operated manually since the facilities were constructed in 1966.

This EWMP has been previously been implemented at a satisfactory level. There are no further plans for additional canal automation, as they have been automated already.

(10) Customer Pump Test/Evaluation (Facilitate or promote customer pump testing and evaluation)

The District encourages the proper maintenance and operation of wells, pumps and other landowner facilities.

Customers do have many booster pumps on pressurized irrigation systems supplied with power by Pacific Gas and Electric (PG&E). PG&E provides subsidized pump tests to any customer requesting it through a program administered by Fresno State University (Center for Irrigation Technology).

The District will implement this EWMP by further publicizing PG&E's program by providing a link on the District's website to PG&E's website regarding the program.

(11) Water Conservation Coordinator (Designate a water conservation coordinator)

BWSD has designated the Executive Director of the Westside Water Authority as water conservation coordinator for the purposes of the Memorandum of Understanding for Agricultural Water Suppliers.

Mark Gilkey
Westside Water Authority
Lost Hills Water District
1405 Commercial Way ste. 125
Bakersfield, CA 93309

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(661) 633-9022 (office)
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BWSD considers that it has adequately implemented this EWMP, and will continue to implement it with Greg Hammett serving as water conservation coordinator.

(12) Water Management Services to Customers (Provide for the availability of water management services to water users)

On-farm irrigation and drainage system evaluations

BWSD has contributed to the North West Kern Resource Conservation District's (NWKRCDD), formerly the Pond-Shafter-Wasco Resource Conservation District, mobile lab program for many years, contributing at least \$2,000 annually to the program. This contribution supports the cost to perform numerous irrigation evaluations per year countywide. This program is designed to evaluate irrigation systems on-farm, offering recommendations to improve distribution uniformity and overall system improvements.

NWKRCDD has routinely performed several system evaluations in BWSD for Water User on an annual basis. BWSD will continue to support NWKRCDD efforts and cooperate to perform system evaluations in their District.

Many of the District Water Users perform system evaluations in-house along with irrigation scheduling and other management techniques for water conservation. Other Water Users, if interested would be pointed to the NWKRCDD or equivalent agency.

This EWMP has been implemented at a satisfactory level, and will continue to be implemented through support of NWKRCDD activities.

Agricultural water management educational programs and materials for farmers, staff and the public

KCWA has conducted an in-school water education program for 15 years. The program has been approved by Kern County's Superintendent of Schools as meeting classroom science and history criteria. This program targets children in grades 1-6.

BWSD individually contributes and/or pays annual dues to the following organizations that target water awareness both locally and State-wide:

- Water Education Foundation
- California Water Awareness Campaign
- Kern Teacher Ag Seminar
- Water Association of Kern County

This EWMP has been implemented at a satisfactory level, and will continue to implement it through activities described in this section.

(13) Identify Institutional Changes (Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional change to allow more flexible water deliveries and storage)

BWSD's administrative and O&M office is located in the District. Water Users frequently visit the office to place water orders, discuss maintenance activities and administrative matters. As previously noted, the District is nearly entirely dependent on the State Water Project (SWP) for its water supply. The SWP has historically been, and is expected to continue to be, subject to delivery deficiencies. Contractual obligations are 4.1 million acre-feet (MAF) per year while the average annual water supply is approximately 2.5 MAF. As environmental and urban water demands continue to increase, the reliability of the SWP decreases for all SWP contractors. Delivery deficiencies are related to both the reduced quantity of water available and the increased frequency that shortages are imposed. The District continues to look at ways to further stabilize, or firm up, the reliability of the water supply so that production agriculture can continue to flourish in the District.

One method of stabilizing the water supply that the District has initiated is groundwater banking. The District participates in the following groundwater banking/recovery programs:

- KCWA Pioneer Property
- Berrenda Mesa Spreading Grounds

Through 2020, the District and its water users had approximately 94,400 acre-feet (af) in storage in these projects. One District landowner also participates in groundwater banking activities through the Kern Water Bank.

BWSD has initiated and will continue efforts to develop programs with other agencies that would alleviate the aforementioned problems regarding water supply stability.

In addition as shown below, this EWMP has previously been implemented at a satisfactory level with the following practices, which will be continued:

Regular District Meetings

BWSD holds monthly meetings and distributes a meeting notice to each requesting person by U.S. Mail, email or fax. On average, about 90% of the major Water Users attend each monthly meeting.

Other Meetings

In addition to the monthly meetings, other meetings include:

- The General Manager attends monthly KCWA Member Unit Managers meetings, to discuss pertinent topics and issues.
- The General Manager, Legal Counsel and Board Members attend the annual ACWA conferences.
- The District also holds special meetings to discuss urgent matters on an as needed basis.
- Any meeting can be translated for attendees that wish to hear information in Spanish.

BWSD website

BWSD has an active web site that provides a variety of information about the District and will be updating it as needed. The web address is <http://www.belridgewsd.com>.

Links to KCWA and DWR

Contractually, the only institution to which BWSD is subject is the KCWA. Similarly, contractually, the only institution to which KCWA is subject to is DWR. Nevertheless, policy differences arise nearly every year with respect to water supply and operations of the SWP. Generally, as policy issues arise, they are discussed among the State Water Contractors, Inc. (SWC), a non-profit organization of SWP contractors. Once agreement is reached by the SWC as a whole, then DWR is engaged to seek changes in the subject policies.

SWC holds an annual retreat at which DWR and Contractor policies and issues are reviewed in depth. DWR management staff is invited to these retreats and participate in the discussions. This has been a valuable forum for resolution of issues.

BWSD, along with KCWA, considers the existing arrangement for resolution of policy issues to be successful. DWR and SWC policies are discussed and resolved as they arise, leading to a dynamic resolution process.

This EWMP will continue to be implemented by continuing current practices.

(14) Supplier Pump Improved Efficiency (Evaluate and improve the efficiencies of the supplier's pumps)

In 2001 and 2011, BWSD utilized State grant and PG&E rebates to help fund pump efficiency tests on all District-owned pumps and to help fund selected pump repairs to improve performance. The District intends to keep testing pumps to ensure that these units are operating at peak efficiency. Pumps with low efficiencies will be re-evaluated to determine if newer more efficient units would replace existing less efficient units.

The District installed sensors in Pump Station "1A" for remote control utilizing the SCADA system under the prior Water Management Plan, and similar improvements to Pump Station 1B are being made. A unique feature implemented by the District's electrical technician, displays on a screen each pump's electrical usage in kWh per AF. Over time, if this value (kWh/AF) begins to decrease, it is an indication that the pump or motor is beginning to deteriorate and thus the unit is running inefficiently and needs to be evaluated. The kWh/AF number can be correlated to an overall plant efficiency (OPE).

This EWMP has been implemented at a satisfactory level, and will be continued as described in this section.

Table 47 summarizes the EWMPs implemented and planned, Table 48 summarizes the EWMPs efficiency improvements, and Table 49 summarizes the schedule to implement EWMPs.

Table 49 includes estimates of Water Use Efficiency (WUE) Improvements that occurred since adoption of the prior Water Management Plan (2005). In most cases data was not available to allow quantification.

The prior Plan's water balance calculations indicated very high overall District WUE had been attained by 2005, with little room for improvement.

WUE improvements from EWMPs to continue and/or be implemented are also in Table 49. These also generally have no available data to allow for an estimate. Given the District's current WUE estimate of nearly 100%, little improvement is expected over the next 5-10 years. Rather, maintenance of high WUE is the expectation.

Table 48. Report of EWMPs Implemented/Planned (Water Code §10608.48(d), §10608.48 (e), and §10826 (e))		
EWMP No.*	Description of EWMP Implemented	Description of EWMPs Planned
Critical EWMPs		
1	Water Measurement	Continue current practices
2	Volume-Based Pricing	Continue current practices
Conditionally Required EWMPs (locally cost-effective and technically feasible EWMPs)		
1	Alternate Land Use	Continue current practices
2	Recycled Water Use	No plans to implement but will continue to evaluate
3	On-Farm Irrigation Capital Improvements	Continue current practices
4	Incentive Pricing Structure	Continue current practices
5	Infrastructure Improvements	No further improvements planned
6	Order/Delivery Flexibility	Continue current practices
7	Supplier Spill and Tailwater Systems	Operate current systems. No plans for further improvements
8	Conjunctive Use	Continue current practices
9	Automated Canal Controls	No further plans to automate
10	Customer Pump Test/Eval.	Publicize PG&E's program on the District's website
11	Water Conservation Coordinator	Continue current practice
12	Water Management Services to Customers	Continue current practices
13	Identify Institutional Changes	Continue current practices
14	Supplier Pump Improved Efficiency	Continue current practices
Other Optional EWMPs (as applicable)		
Notes: *EWMP numbers correspond to (Water Code §10608.48(c))		

Table 49. Report of EWMPs Efficiency Improvements (Water Code §10608.48(d), §10608.48 (e), and §10826 (e))			
Corresponding EWMP No.(s)*	EWMP	Estimate of Water Use Efficiency Improvements That Occurred Since Last Report (Quantitative or Descriptive)	Estimated Water Use Efficiency Improvements 5 and 10 years in future (Quantitative or Descriptive)
Critical 1	Water Measurement	No data available to estimate	0%
Critical 2	Volume-Based Pricing	No data available to estimate	0%
Conditional 1	Alternate Land Use	No data available to estimate	0%
Conditional 2	Recycled Water Use	No data available to estimate	0%
Conditional 3	On-Farm Irrigation Capital Improvements	No data available to estimate	0%
Conditional 4	Incentive Pricing Structure	No data available to estimate	No data available to estimate
Conditional 5	Infrastructure Improvements	No data available to estimate	0%
Conditional 6	Order/Delivery Flexibility	No data available to estimate	0%
Conditional 7	Supplier Spill and Tailwater Systems	No data available to estimate	0%
Conditional 8	Conjunctive Use	No data available to estimate	0%
Conditional 9	Automated Canal Controls	No data available to estimate	No data available to estimate
Conditional 10	Customer Pump Test/Eval.	Not applicable (new EWMP)	No data available to estimate
Conditional 11	Water Conservation Coordinator	No data available to estimate	0%
Conditional 12	Water Management Services to Customers	No data available to estimate	No data available to estimate
Conditional 13	Identify Institutional Changes	No data available to estimate	No data available to estimate
Conditional 14	Supplier Pump Improved Efficiency	No data available to estimate	No data available to estimate
Notes: *EWMP numbers correspond to (Water Code §10608.48(c)).			

Table 50. Schedule to Implement EWMPs ((Water Code §10608.56 (d)))				
EWMP	Implementation Schedule	Finance Plan	Budget Allotment	1999 AWMC MOU Demand Measures
Critical				
1. Water Measurement	NA	NA	(1)	C-1
2. Volume-Based Pricing	NA	NA	(1)	No equivalent
Conditional				
1. Alternate Land Use	NA	NA		B-1
2. Recycled Water Use	NA	NA		B-2
3. On-Farm Irrigation Capital Improvements	NA	NA		B-3
4. Incentive Pricing Structure	NA	NA	(1)	C-2
5. Infrastructure Improvements	NA	NA		B-5
6. Order/Delivery Flexibility	NA	NA	(1)	B-6
7. Supplier Spill and Tailwater Systems	NA	NA		B-7
8. Conjunctive Use	NA	NA	(1)	B-8
9. Automated Canal Controls	NA	NA		B-9
10. Customer Pump Test/Eval.	NA	NA		No equivalent
11. Water Conservation Coordinator	NA	NA	(1)	A-2
12. Water Management Services to Customers	NA	NA	(1)	A-3
13. Identify Institutional Changes	NA	NA	(1)	A-5
14. Supplier Pump Improved Efficiency	NA	NA	(1)	A-6
Other EWMPs:				
1999 AWMC MOU A-4: Improve communication and cooperation among water suppliers, users, and other agencies.				
1999 AWMC MOU B-4: Facilitate voluntary water transfers.				
Grand Total all EWMPs				
Note: There is no equivalent AWMC Critical EWMP #2 or Conditional EWMP #10 NA = Not Applicable (1) Budget allocation within District's operation budget				

B. Documentation for Non-Implemented EWMPs

The District has considered, but rejected two conditional EWMPs. The remainder have either been previously implemented, are continuing to be implemented, or will be implemented. Non-implemented EWMP justification/documentation was described previously and is summarized in Table 51.

Table 51. Non-Implemented EWMP Documentation (Water Code §10608.48(d), §10608.48 (e), and §10826 (e))				
EWMP #	Description	<i>(check one or both)</i>		Justification/Documentation*
		Technically Infeasible	Not Locally Cost-Effective	
2	Recycled Water Use	x	x	Salinity of industrial wastewater exceeds safe re-use limit and treatment is cost prohibitive for customers at this time.
3	On Farm Irrigation Capital Improvements	x		Current on-farm efficiencies (>95%). Any further improvement unlikely with current technology.

Notes:
*Justification/Documentation can include summary cost-benefit analysis or engineering determination with reference to the specific study/agency/engineer responsible for making that determination.

Section VII: Supporting Documentation

A. Agricultural Water Measurement Regulation Documentation (as applicable)

The District receives its water deliveries through eight DWR turnouts off of the California Aqueduct. These turnouts have meters which record instantaneous flow rates as well as total quantities delivered. The duration and flow rates for all deliveries are scheduled in advance so that DWR can coordinate water flows to the District.

In addition to the DWR metered turnouts, all in-District deliveries are metered daily during use at individual Water User turnouts. These Water User meters are located at turnouts throughout the District. These turnouts include meter facilities that were originally designed by District consulting engineers who also oversaw construction of the facilities. District Water Users also schedule their deliveries (duration and flow rates) in advance so the District can accurately schedule deliveries from DWR.

District System Operators measure deliveries to individual turnouts daily when they are operating. The System Operators know the requested flow rate at various turnouts as well as the normal flow rate. If there is any variance in these rates or if there is any problem with the meter the O&M Superintendent is immediately notified and repair work is scheduled. The District primarily uses McCrometer flow meters and District maintenance staff has received training at McCrometer's facility. Replacement meters are purchased from McCrometer and include a Certified Test Report (Appendix 10).

District staff compares DWR daily flow rates and deliveries with the sum of individual in-District flow rates and deliveries as another check of meter accuracy. This process enables District staff to document meter accuracy daily and to quickly identify variances and schedule repairs. In addition, DWR total monthly deliveries are compared to the sum of individual in-District deliveries as another check of meter accuracy. During 2012 the sum of individual in-District meters was within about 1% of DWR meter readings, and the meters continue to work at a similar level of accuracy.

1. Legal Certification and Apportionment Required for Water Measurement

Legal certification is not applicable.

2. Engineer Certification and Apportionment Required for Water Measurement

An engineer's certification is not provided because BWSD's water measurement practices as described above, demonstrate compliance with accuracy standards.

3. Description of Water Measurement Best Professional Practices

Best Professional Practices refer to:

- Collection of water measurement data: By staff members trained and supervised by the superintendent.
- Frequency of measurements: Daily while in use. All meters read monthly at a minimum.
- Method for determining irrigated acres: Provided by customers, checked by aerial photographs.
- Quality control and quality assurance procedures:
 - i. Cross check daily flowrate versus customer order. Sum all turnout reading monthly. Investigate and attempt to correct identified differences.
 - i. Sum all running meters daily and compare versus DWR meters by Service Area. Investigate and attempt to correct identified differences. Repair all meters found not functioning properly per manufacturer's recommendations.

All of the turnout deliveries within the District are fully metered with propeller flowmeters which register both instantaneous and totalized flows.

The District maintains daily delivery records for each turnout being used and maintains records of daily water orders from the SWP. A grower's water use to date and remaining allocation is maintained by the District's comprehensive database system (Latis). The system helps manage water orders, water use, water supply, water contract information, and water delivery system information.

4. Documentation of Water Measurement Conversion to Volume

All flowmeters used by BWSD register both instantaneous and totalized flows (volume accrued during a period of time).

5. Device Corrective Action Plan Required for Water Measurement

BWSD is confident its existing water measurement devices meet the $\pm 12\%$ accuracy standard, and replacement meters meet the $\pm 6\%$ accuracy standard. No corrective actions are planned.

B. Other Documents (as applicable)

Tables and appendices have been included as needed to support this AWMP document. Most of the tables follow the format suggested in the template given in the 2020 Ag Water Management Plan guidebook. Additional tables and appendices provide complementary information where needed.

Appendices

**Appendix 1. Typical Notice of Preparation
sent to Agencies listed in Table
1 and copy of Notice of Public
Meeting published in the
Bakersfield Californian on
March 15 and 22, 2021**

Belridge Water Storage District

DIRECTORS

Rob Yraceburu, PRESIDENT
Rod Stiefvater, VICE PRESIDENT
Larry Starrh
Christin L. Faber
Kristen Camarena

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GENERAL MANAGER

MARK A. GILKEY

ASST. to the GENERALMANAGER

MARY KING

REGULATORY MANAGER

KRIS LAWRENCE

LEGAL COUNSEL

JOSEPH D. HUGHES

March 10, 2021

NOTICE is hereby given that Belridge Water Storage District's (the "District") proposed Agricultural Water Management Plan prepared pursuant to Water Code § 10820 et. seq. is available for public inspection. Any person who desires to review the plan may arrange to do so by telephoning the District at (661) 633-9022 and asking to speak to Kris Lawrence, *Regulatory Manager*.

In addition, the District will hold a remote access public hearing on the proposed plan as part of its regularly scheduled Board meeting on April 7, 2021 at 1:00 p.m. After the hearing, the District will adopt the plan as drafted or as modified.

Respectfully,

Kris Lawrence
Regulatory Manager

**NOTICE OF PREPARATION OF AND HEARING ON
BELRIDGE WATER STORAGE DISTRICT
2020 AGRICULTURAL WATER MANAGEMENT PLAN**

NOTICE is hereby given that Belridge Water Storage District's (the "District") proposed Agricultural Water Management Plan prepared pursuant to Water Code § 10820 et. seq. is available for public inspection. Any person who desires to review the plan may arrange to do so by telephoning the District at (661) 633-9022 and asking to speak to Kris Lawrence, *Regulatory Manager*.

In addition, the District will hold a remote access public hearing on the proposed plan as part of its regularly scheduled Board meeting on April 7, 2021 at 1:00 p.m. After the hearing, the District will adopt the plan as drafted or as modified.

Kris Lawrence, Regulatory Manager
Belridge Water Storage District

Appendix 2. Resolution of Plan Adoption

BELRIDGE WATER STORAGE DISTRICT

Resolution 931

**A RESOLUTION OF THE BOARD OF DIRECTORS OF
BELRIDGE WATER STORAGE DISTRICT ADOPTING THE 2020 UPDATE TO THE
AGRICULTURAL WATER MANAGEMENT PLAN**

WHEREAS, pursuant to the Agricultural Water Management Planning Act and the Water Conservation Act of 2009, agricultural water suppliers, such as the Belridge Water Storage District (District), were required to prepare and adopt an Agricultural Water Management Plan (Plan) by December 31, 2012; and

WHEREAS, the District prepared and adopted its original Plan on April 3, 2013; and

WHEREAS, agricultural water suppliers are required to update their respective Plans every five years;

WHEREAS, the District updated its original Plan and adopted the 2015 Plan Update on December 02, 2015; and

WHEREAS, the District must now update its 2015 Plan Update, adopt a 2020 Plan Update, and submit such updated plan to the California Department of Water Resources by May 1, 2021; and

WHEREAS, in preparing its 2020 Plan Update, the District scheduled and held a public hearing on April 07, 2021 to provide the public with an opportunity to offer comments to the District's Board of Directors (Board) on the proposed 2020 Plan Update; and

WHEREAS, the District provided notice of such public hearing as follows:

1. By publishing notice in the Bakersfield Californian on March 15 and March 22. By posting a notice in a freely accessible location at the District's Bakersfield office located at 1405 Commercial Way Ste 125 Bakersfield, CA 93309 on March 10, 2021.
2. By mailing notice to local government agencies and other interested parties.

WHEREAS, the Board reviewed and considered all public comments received and incorporated such comments into the 2020 Plan Update as deemed appropriate by the Board; and

WHEREAS, the Board has reviewed the 2020 Plan Update and considers its adoption to be in the best interest of the District and its landowners.

NOW, THEREFORE, BE IT RESOLVED by the Bord of Directors of the Belridge Water Storage District as follows:

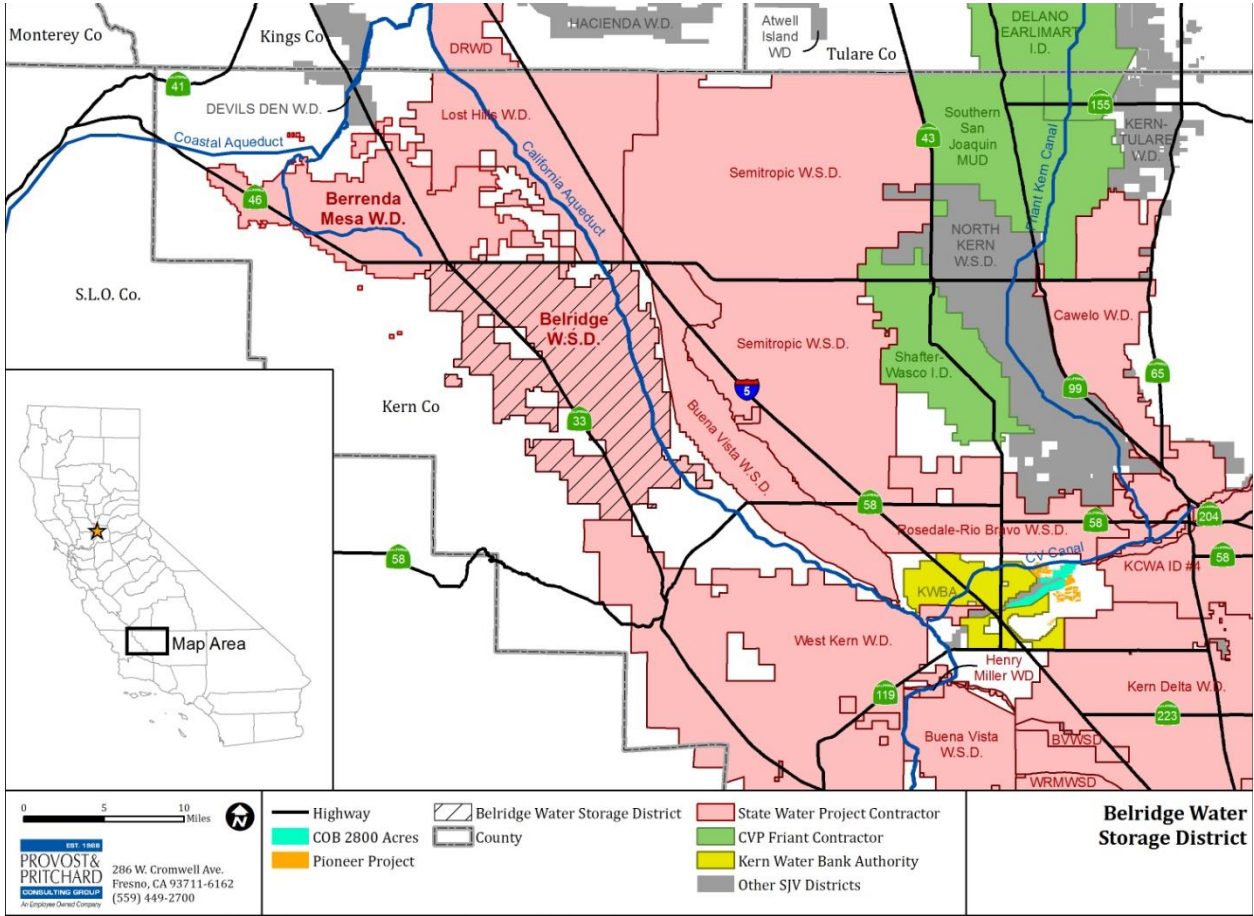
1. The Board of Directors of the Belridge Water Storage District hereby adopt the 2020 Plan Update.
2. The General Manager, or designee, is hereby authorized and directed to prepare and submit the approved 2021 Update to the Agricultural Water Management Plan to the California Department of Water Resources.

A handwritten signature in blue ink, appearing to read "Rob Yraceburu", is written over a horizontal line.

Rob Yraceburu, Board Chair

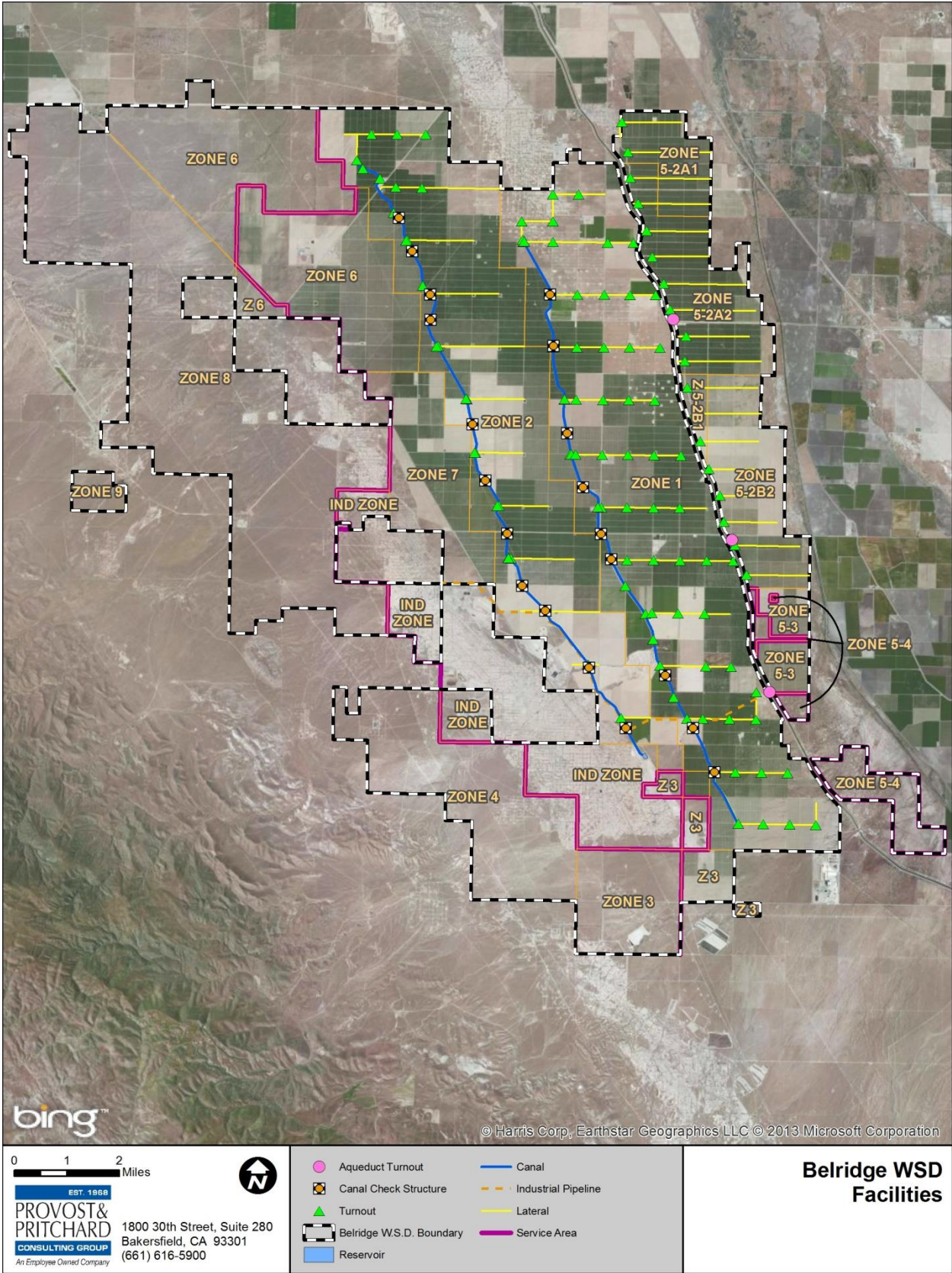
Appendix 3. Location Map

Belridge Water Storage District
2020 Agricultural Water Management Plan



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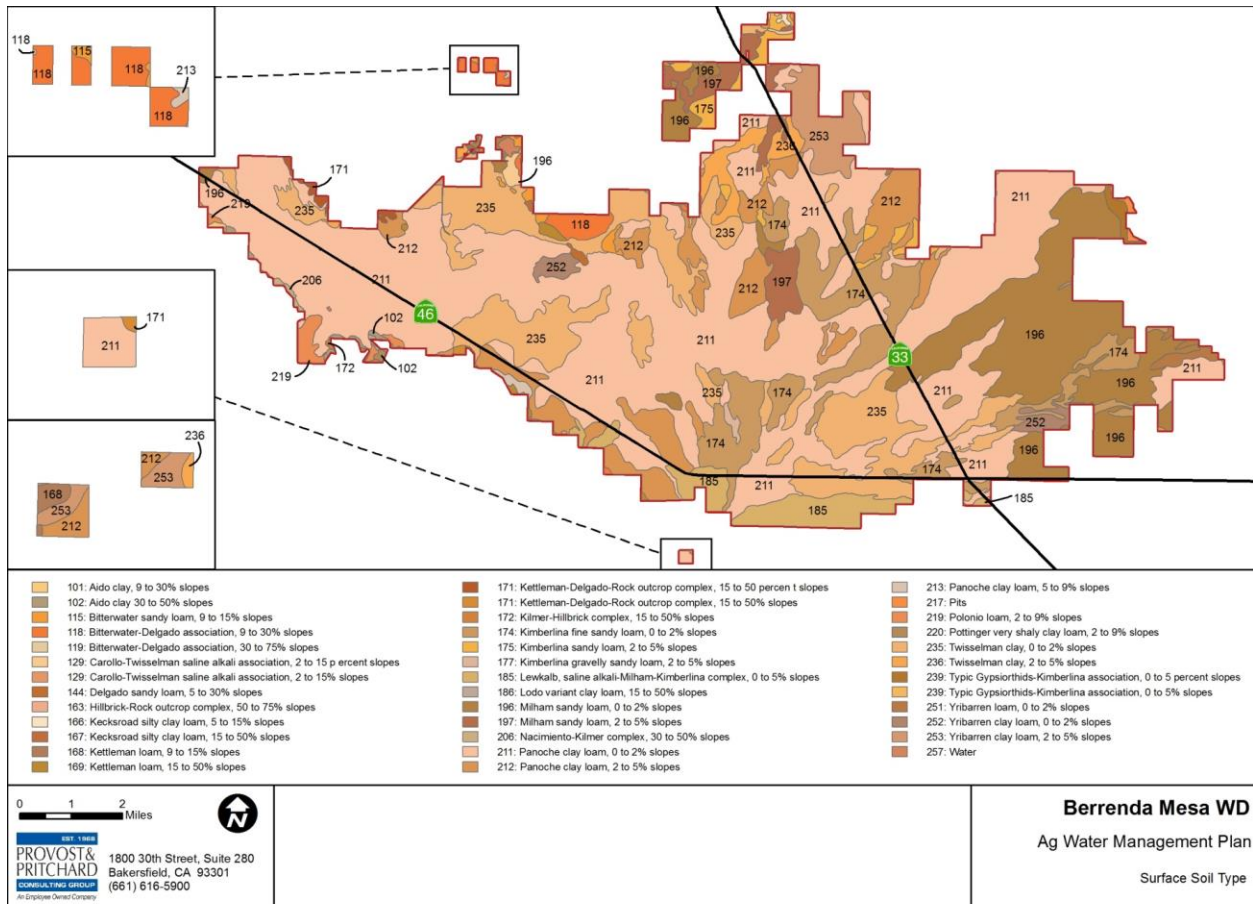
Appendix 4. Irrigation Facilities Map



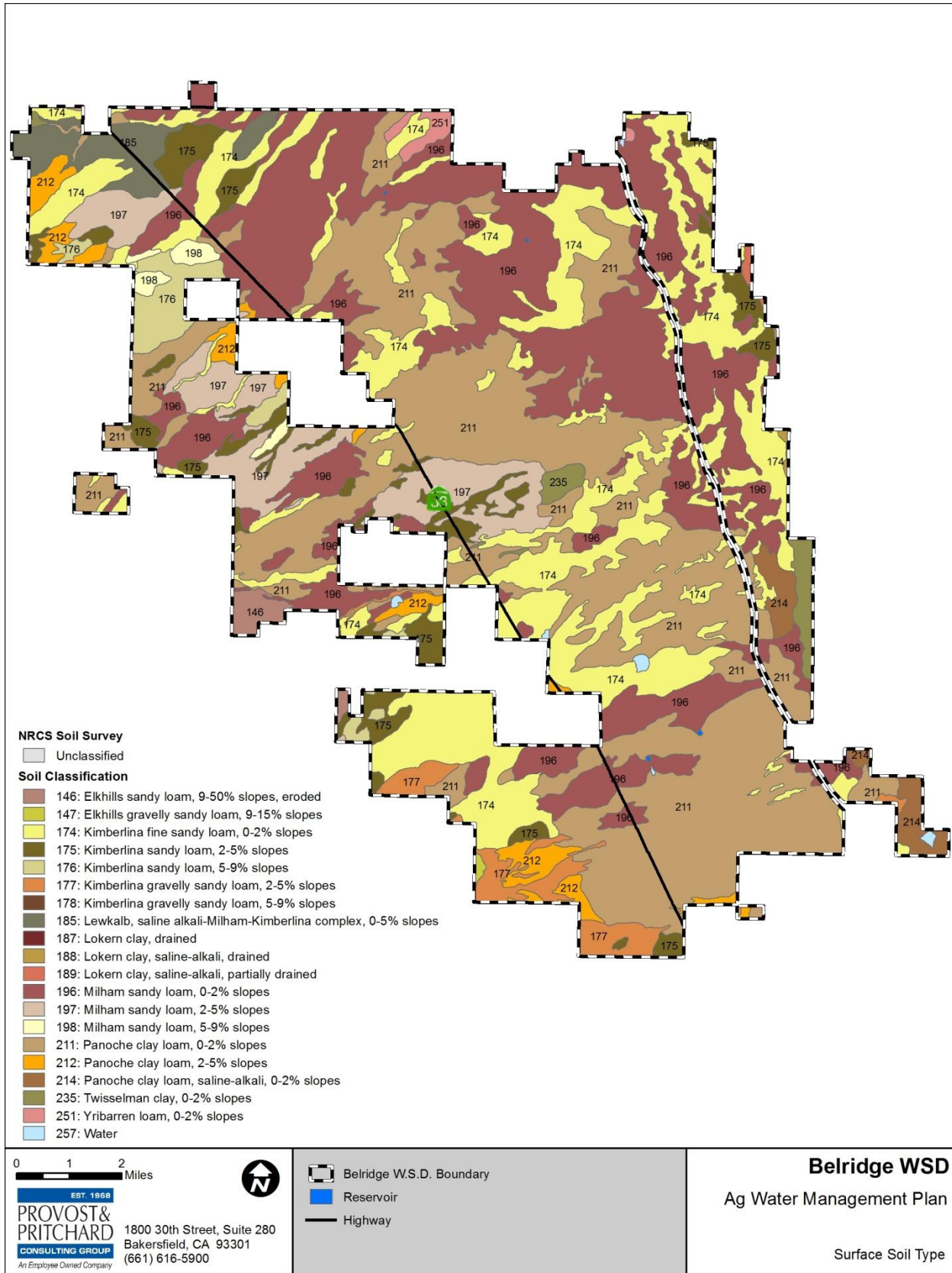
2/13/2013 : \\shotgun\bkf_clients\Clients\Belridge WSD - 1531\153112B2-Ag Water Management Plan\GIS\Map\Facilities.mxd

Appendix 5. Soils Map

Belridge Water Storage District
2020 Agricultural Water Management Plan



3/1/2013 : W:\Clients\Berrenda Mesa WD - 1114\111412B1-Ag Water Management Plan\GIS\Map\Soils.mxd



2/27/2013 : W:\Clients\Belridge WSD - 1531153112B2-Ag Water Management Plan\GIS\Map\BWSD_Soils.mxd

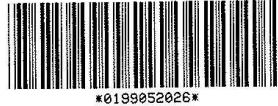
**Appendix 6. Rules and Regulations for
Distribution and Use of Water**

*Belridge Water Storage District
2020 Agricultural Water Management Plan*

James Maples, Assessor-Recorder
Kern County Official Records

JASON
Pages: 25
4/13/1999
8:00:00

DOCUMENT #: 0199052026



RECORDING REQUESTED BY:

Belridge Water Storage District

RECORDED FOR THE BENEFIT OF:

Belridge Water Storage District

WHEN RECORDED MAIL TO:

Kuhs, Parker & Stanton (WCK)
Post Office Box 2205
Bakersfield, CA 93303

Fees....
Taxes...
Other...
TOTAL
PAID..

Stat. Types:1

BELRIDGE WATER STORAGE DISTRICT

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RULES AND REGULATIONS
FOR
DISTRIBUTION AND USE OF WATER

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BELRIDGE WATER STORAGE DISTRICT

AMENDED AND RESTATED
RULES AND REGULATIONS
FOR
DISTRIBUTION AND USE OF WATER

(Wat. Code, § 43003)

The Board of Directors of Belridge Water Storage District hereby publishes the amended and restated rules and regulations for the distribution and use of water within the District.

ARTICLE I.

RULES OF INTERPRETATION

1.00. Introduction.

The rules of interpretation contained in article I hereof shall govern the interpretation of these Rules unless the context otherwise requires.

1.01. Authority.

These Rules are established and published under the authority of Water Code section 43003.

1.02. Effective Date.

These Rules shall become effective on the date of the recordation of a certified copy hereof in the Official Records.

1.03. Purpose.

These Rules are intended to implement the California Water Storage District Law (Division 14 (commencing with section 39000) of the Water Code) and the Water Supply Contracts with respect to the administration, operation and maintenance of the District Project. In the event of any conflict between these Rules and the Water Supply Contracts, the latter shall control.

1.04. Severability.

If any provision of these Rules, or the application thereof to any person or circumstance, is held invalid, no other provision shall be affected.

1.05. Captions.

The captions of articles and sections of these Rules shall not define the scope, meaning or intent of these Rules.

1.06. Definitions.

The definitions contained in article II hereof shall govern the interpretation of these Rules unless the context otherwise requires.

1.07. Amendments.

The reference to any law, agreement, or policy shall include all amendments and additions thereto, heretofore or hereafter made.

1.08. Tenses.

The present tense includes the past and future tenses; and the future tense includes the present.

1.09. Gender.

The masculine, feminine or neuter gender shall include the other.

1.10. Singular; Plural.

The singular or plural number shall include the other.

ARTICLE II.

DEFINITIONS

2.00. Agency.

"Agency" means the Kern County Water Agency.

2.01. Annual Entitlement.

"Annual Entitlement" means the amount of Entitlement Water set forth in section 11.00 of the Water Supply Contract

2.02. Board.

"Board" means the Board of Directors of the District.

2.03. Buyer.

"Buyer" means a holder of title to land who is a party to a Water Supply Contract and any successor in interest of the Buyer in any part of the Buyer's Land.

2.04. Class 1 Land.

"Class 1 Land" means land within the District subject to a Water Supply Contract.

2.05. Class 2 Land.

"Class 2 Land" means land within the District not subject to a Water Supply Contract.

2.06. Connection Service Charge.

"Connection Service Charge" means the charge established from time-to-time by the Board for the construction, acquisition and installation of a turnout.

2.07. Contract Entitlement.

"Contract Entitlement" means the amount of Entitlement Water set forth in Table 1 of the District Contract.

2.08. District.

"District" means Belridge Water Storage District, a California water storage district organized and existing under and by virtue of the provisions of Division 14 (commencing with section 39000) of the Water Code.

2.09. District Contract.

"District Contract" means the agreement between the Agency and the District dated October 4, 1966 as heretofore amended and as may be hereafter amended, supplemented or replaced.

2.10. District Project.

"District Project" means those certain facilities that have been constructed by and are presently being operated and maintained by the District and any future facilities that may hereafter be constructed, or otherwise acquired, and operated and maintained by the District.

2.11. Entitlement Water.

"Entitlement Water" means the water delivered or scheduled to be delivered by the Agency to the District as part of the District's Contract Entitlement and water delivered or scheduled to be delivered by the District to the Buyer as part of the Buyer's Annual Entitlement.

2.12. General Manager.

"General Manager" means the person appointed by the Board to manage the affairs of the District.

2.13. Interruptible Water.

"Interruptible Water" means Project Water available to the District under article 15(e) of the District Contract.

2.14. Master Contract.

"Master Contract" means the agreement between the State and the Agency dated November 15, 1963 as heretofore amended and as may be hereafter amended, supplemented or replaced.

2.15. Non-Service Area Entitlement Water.

"Non-Service Area Entitlement Water" means the difference between 95% of the District's Contract Entitlement in any Year and the aggregate amount of the Entitlement Water scheduled for delivery to Buyers in the Service Area in such Year.

2.16. Official Records.

"Official Records" means the official records in the office of the County Recorder of the County of Kern, State of California.

2.17. Permanent Transfer Policy.

"Permanent Transfer Policy" means the District's duly adopted policy for the permanent transfer of entitlement to Project Water as heretofore amended and as may be hereafter amended, supplemented or replaced.

2.18. Project Water.

"Project Water" means all water made available to the District by the Agency under or because of the District Contract.

2.19. Rules.

"Rules" means the District's Rules and Regulations for Distribution and Use of Water.

2.20. Service Area.

"Service Area" means the geographical area of the District within which (a) the District is obligated to deliver Entitlement Water and (b) the Water Users are obligated to pay for the delivery of Entitlement Water.

2.21. State.

"State" means the State of California, acting by and through its Department of Water Resources.

2.22. Supplemental Water.

"Supplemental Water" means any water acquired by the District from the Agency, other than Project Water, and any other water acquired by the District from any source other than the Agency.

2.23. Turnout.

"Turnout" means the delivery structure installed by the District in accordance with the Water Supply Contract.

2.24. Water Shortage.

"Water Shortage" means a condition during a particular Year when the total amount of Entitlement Water to be made available by the Agency to the District during that Year under the District Contract is less than the District's Contract Entitlement for that Year.

2.25. Water Supply Contract.

"Water Supply Contract" means a contract between the District and a holder of title to land in the District for the purchase and delivery of Project Water.

2.26. Water User.

"Water User" means any holder of title to land in the District with whom the District has executed a Water Supply Contract.

2.27. Year.

"Year" means the twelve month period from January 1 through December 31.

2.28. Zone.

"Zone" means a zone of benefit, the boundaries of which are generally shown on Exhibit A to the Water Supply Contract.

ARTICLE III.

ADMINISTRATION OF DISTRICT

3.00. Board.

The Board shall govern the administration of the District.

3.01. Meetings of Board.

(a) Regular Meeting.

The regular meeting of the Board shall be held without notice at one o'clock in the afternoon on the first Tuesday of each month at the District's Administration and Operations Building in the Southeast Quarter of Section 36, Township 28 South, Range 21 East, M.D.B. & M., Kern County, California, or such other place as the Board may provide by resolution. If

at any time any regular meeting falls on a holiday, such regular meeting shall be held on the next business day. If by reason of fire, flood, earthquake or other emergency, it shall become unsafe to meet at the place designated, the meeting may be held for the duration of the emergency at such place as is designated by the President of the Board.

(b) Adjourned and Special Meetings.

Adjourned meetings and special meetings may be held from time-to-time and at such places and in such manner as is authorized by law.

3.02. Officers.

The officers of the District shall be a President, a Secretary, a Treasurer, and such other officers as may be elected or appointed by the Board from time-to-time to perform such duties as may be designated by the Board. The duties of such officers shall include the following:

(a) President. The President shall:

(1) be the principal executive officer of the District and, unless otherwise determined by the Board, shall preside at all meetings of the Board;

(2) sign deeds, notes, bonds, contracts or other instruments authorized by the Board to be executed, except in cases in which the signing and execution thereof is expressly designated by the Board or by these Rules to some other officer or agent of the District or is required by law to be otherwise signed or executed; and

(3) perform in general all duties incident to the office of President and such other duties as may be prescribed by the Board.

(b) Secretary. The Secretary shall:

(1) keep the minutes of the meeting of the Board in one or more books provided for that purpose;

(2) see that all notices are duly given in accordance with these Rules or as required by law;

(3) be custodian of the District records and of the seal of the District and affix the seal of the District to documents, the execution of which on behalf of the District under its seal is duly

authorized in accordance with the provisions of these Rules; and

(4) perform in general all duties incident to the office of Secretary and such other duties as may be assigned by the Board.

(c) Treasurer.

The Treasurer shall see that all funds and securities of the District are deposited with the District's depository and in general perform all the duties incident to the office of Treasurer and such other duties as from time-to-time may be assigned by the Board.

(d) Other Officers.

Any Vice President shall exercise the authority of the President in the absence or unavailability of the President. Any Assistant Secretary shall exercise the authority of the Secretary in the absence or unavailability of the Secretary. Any Assistant Treasurer shall exercise the authority of the Treasurer in the absence or unavailability of the Treasurer.

3.03. General Manager.

The General Manager shall be responsible for the administration, construction, operation and maintenance of the District Project and is responsible directly to the Board.

3.04. District Employees.

The General Manager shall supervise the activities of all District employees in connection with the operation and maintenance of the District Project and all other activities of the District. District employees and other persons authorized by the General Manager shall have access at all times to all lands being served by the District Project for the purpose of conducting District business which may include the following:

(a) The inspection of the lands upon which Project Water is being applied for the purpose of determining compliance with the terms of the Water Supply Contracts or other agreements for the supply or delivery of water.

(b) The inspection, maintenance, repair or modification of facilities of the District Project.

(c) The determination of improper use or wasting of Project Water.

ARTICLE IV.

ALLOCATION OF WATER

4.00. Introduction.

The District's primary source of water is Project Water, that is, water made available to the District by the Agency under or because of the District Contract. Most of the District's Contract Entitlement has been allocated to Water Users under their Water Supply Contracts. A Water User may apply for more or less than its Annual Entitlement in the manner provided in section 4.01 hereof. The District will attempt to obtain all of the water needed by the Water Users and will allocate such water under section 4.02 hereof. Finally, it may be necessary for the District to allocate or reallocate water when the amount of water available to the District is inadequate to meet the needs of all Water Users and the District will do so under section 4.02(a) hereof.

4.01. Applications.

(a) Requests On or Before September 1.

A request by a Buyer that water be made available in any Year in an amount greater than its Annual Entitlement for that Year or in an amount less than its Annual Entitlement for that Year, made in accordance with the Water Supply Contract, shall be "timely made" if received by the District by four o'clock in the afternoon, local time, on September 1 of the Year preceding the Year during which the Buyer desires more or less than its Annual Entitlement. All timely made requests shall have the same priority in time and shall be deemed made at four o'clock in the afternoon, local time, on such September 1.

A request to purchase additional water shall constitute an offer by the Buyer to purchase the requested water from the District. The request shall be irrevocable until the District accepts the request and agrees to make such water available to the Buyer or until the next December 31, whichever first occurs. The request, to the extent accepted by the District, shall constitute a contract on the part of the Buyer to purchase water from the District at the applicable rate established by the District in the manner provided in article V hereof or, if no such rate has been established, at the rate agreed to by the District and the Buyer. A request received by the District by 4:00 p.m., local time, on September 1 of the Year preceding the Year during which the Buyer desires more than its Annual Entitlement shall no longer be deemed "timely made" after the District accepts the request and agrees

to make such water available to the Buyer or after the next December 31, whichever first occurs.

The District will, from time-to-time as required, notify each Buyer who has requested that water be made available in any Year in an amount less than the Buyer's Annual Entitlement of the District's ability to dispose of such water, the estimated revenue to be derived therefrom, and such other information as the Buyer may reasonably require so that the Buyer may determine whether to attempt to otherwise dispose of such water.

(b) Requests After September 1.

All requests for additional water received by the District after September 1 of a Year prior to the Year of delivery will be considered and acted upon by the District in a fair and equitable manner. Buyers who request additional water will be notified as to the availability of water, the estimated cost thereof, and such other information as may be material so that they may determine whether they wish to purchase additional water. When appropriate, pools will be established and water will be allocated among Buyers pro rata on the basis of each Buyer's Annual Entitlement.

4.02. Allocation of Water
Supply to Class 1 Lands.

(a) Introduction.

If water is not available to the District in an amount sufficient to satisfy the requests of all Buyers for the delivery of water in amounts greater than their Annual Entitlements, the available water shall be allocated first among the Buyers whose requests therefor are timely made and next to Buyers whose requests are not timely received by the District. If the amount of water made available to the District is reduced after the District has made an original allocation thereof, the remaining available supply thereof shall be allocated or reallocated, as the case may be, pursuant to the allocation procedures contained in this section.

(b) Non-Service Area Entitlement Water.

All Non-Service Area Entitlement Water shall be pooled and shall be the first water used to fill the requests of those Buyers requesting that water be made available to them in amounts greater than their allocation of Entitlement Water. If the requests for Non-Service Area Entitlement Water exceed the amount of such water available to the District, the available

water shall be allocated pro rata among Buyers on the basis of each Buyer's Annual Entitlementment.

(c) Pooled Entitlementment Water.

All Entitlementment Water made available to the District as a result of requests timely made for reduced deliveries shall be pooled and shall be the next water used to fill the requirements of those Buyers requesting that water be made available to them in amounts greater than the aggregate of their allocation of Annual Entitlementment Water and their allocation of the Non-Service Area Entitlementment Water. If the requests for pooled Entitlementment Water exceed the amount of such water available to the District, the available water shall be allocated pro rata among Buyers on the basis of each Buyer's Annual Entitlementment.

(d) Supplemental Water.

Water required by the District to satisfy the demands of Buyers desiring the delivery of water in amounts greater than the aggregate of their allocation of Annual Entitlementment Water and their allocation of the pooled Entitlementment Water, shall be obtained by the District, to the extent possible, from the Agency or from any other outside source which may from time-to-time become available. If the requests for Supplemental Water exceed the amount of such water available to the District, the available water shall be allocated pro rata among the Buyers on the basis of each Buyer's Annual Entitlementment.

4.03. Assignment of Entitlementment Water.

A Buyer may assign the right to receive Entitlementment Water under its Water Supply Contract to any person for use on Class 1 Land without the prior written consent of the District. A Buyer may not assign the right to receive Entitlementment Water under its Water Supply Contract to any person for use on Class 2 Land without the prior written consent of the District. A Buyer may not assign the right to receive any other water allocated by the District.

ARTICLE V.

WATER CHARGES, ASSESSMENTS AND CREDITS

5.00. Adoption of District Budget.

The Board shall adopt at its regular meeting in October a District budget for the next Year.

5.01. Establishment of Buyer's
Annual Payment Obligation.

The Board shall determine at its regular meeting in October each Buyer's Agency Charge, District Capital Charge, Delivery Charge, and Overhead Charge for the next Year in accordance with the Water Supply Contract.

5.02. Establishment of Other Water Charges.

(a) Initial Unit Rates.

The Board, to the extent possible, shall establish initial unit rates for additional Project Water and Supplemental Water at the time the District gives each Buyer notice of its annual payment obligation for the next Year. The unit rate for Non-Service Area Entitlement Water shall be the amount determined by dividing (1) the total of (i) the portion of the Buyer's Agency Charge for such Year for Entitlement Water scheduled for delivery in the Zone in which such water is to be delivered, (ii) one-half of the operations, maintenance and replacement component of the Buyer's Delivery Charge for such Year for such Zone, (iii) the energy component of the Buyer's Delivery Charge for such Year for such Zone, unadjusted for any funds on hand at the beginning of the Year, and (iv) one-half of that portion of the Buyer's Overhead Charge which bears the same relationship to the whole thereof as the portion of the Buyer's Annual Entitlement for such Year scheduled for delivery in such Zone bears to the Buyer's Annual Entitlement for such Year by (2) that portion of the Buyer's Annual Entitlement scheduled for delivery in such Zone for such Year. The unit rate for pooled Entitlement Water shall be the unit rate established in the manner provided in section 8.01(b) of the Water Supply Contract. The unit rate for Supplemental Water and Interruptible Water shall be the same as the unit rate for Non-Service Area Entitlement Water except that there shall be no Agency Charge but the Buyer shall pay to the District the amount the District is obligated to pay to the Agency, if any, for such additional water.

(b) Final Unit Rates.

On or before May 15 following the District's notice to each Buyer of its annual payment obligation, the District shall reestablish the unit rate for additional Project Water and Supplemental Water based upon the latest available information as to the availability of such water. The revised unit rates for

additional water shall be established in the manner provided in section 5.02(a) hereof.

5.03. Payment of Water Charges.

(a) Annual Entitlement.

The Buyer shall pay for its Annual Entitlement in the manner and at the times indicated in its Water Supply Contract.

(b) Other Water Charges.

At the time the District gives each Buyer notice of its annual payment obligation for the next Year, the District, to the extent possible, shall bill the Buyer separately for (1) Non-Service Area Entitlement Water, (2) pooled Entitlement Water, and (3) Supplemental Water ordered by the Buyer for the purchase of which the District must obligate itself in advance of delivery and for water which the District is not required to obligate itself in advance of delivery. If it is not possible for the District to bill the Buyer for water at the time the District gives notice to a Buyer of its annual payment obligation for the next Year, the District shall bill the Buyer for such water at the District's earliest opportunity. The amount billed for water for which the District is not required to obligate itself in advance of delivery (1) shall be deposited by the Buyer with the District on or before the date specified by the District, (2) shall be held by the District as trustee for the benefit of the Buyer separate and apart from other funds of the District but may be commingled with other such deposits, (3) shall be transferred by the District to the District's Operations Fund, and (4) shall become the property of the District as needed to pay for water delivered to the Buyer. The Buyer shall not be entitled to any interest on or from the funds so deposited.

5.04. Assessments.

The District has levied assessments for the benefit of Units of Construction 1 and 2, 6-1 and 5-2 and the District Contract. The benefits of these units of construction and the District Contract have been apportioned to the lands in the District under Part 9 (commencing with section 46000) of Division 14 of the Water Code and assessment rolls in connection therewith are on file at the District office. The Board may from time-to-time make orders fixing and calling an assessment in an amount determined by the Board. Any such assessments are in addition to

any payments otherwise due from a Buyer to the District under a Water Supply Contract.

5.05. Credits.

(a) Non-Use of Available Water.

A Buyer who requests and pays for water in any Year and who thereafter fails to use, accept or otherwise dispose of all such water shall be entitled to a credit in an amount equal to the direct costs which the District does not incur or will be refunded as a result of the reduced delivery of such water requested and paid for but not used, accepted or otherwise disposed of, to be determined each Year within each Zone. The "direct costs" which the District does not incur or will be refunded for each acre foot of water not used, accepted or disposed of, shall be as follows:

(1) For the Buyer's Entitlement Water, (i) any credit due from the Agency resulting from the reduced delivery and (ii) the energy component of the Delivery Charge for such Year for the Zone, both expressed in dollars per acre foot;

(2) For pooled Entitlement Water acquired under section 4.02(c) hereof,

(i) any credit due from the Agency resulting from the reduced delivery and the energy component of the Delivery Charge for such Year for such Zone, both expressed in dollars per acre foot, if the cost of such water was established under section 8.01(b)(1) of the Water Supply Contract; or

(ii) any credit due from the Agency resulting from the reduced delivery, one-half the operations, maintenance and replacement component of the Delivery Charge in such Zone for such Year, the energy component of the Delivery Charge in such Year for such Zone, unadjusted for any funds on hand at the beginning of the Year, and one-half of the Overhead Charge for such Year, all expressed in dollars per acre foot, if the cost of such water was established under section 8.01(b)(2) of the Water Supply Contract; and

(3) For Non-Service Area Entitlement Water, Supplemental Water, and Interruptible Water, (i)

any credit due from the Agency resulting from the reduced delivery, (ii) one-half of the operations, maintenance and replacement component of the Delivery Charge for such Year for such Zone, (iii) the energy component of the Delivery Charge for such Year for such Zone, unadjusted for any funds on hand at the beginning of the Year, and (iv) one-half of the Overhead Charge for such Year.

The credit shall be determined by the General Manager as soon as feasible after the end of the Year for which it is to be determined and shall be applied, without interest, against the next payment thereafter becoming due to the District from a Buyer entitled thereto.

(b) Non-Availability of Water.

A Buyer who requests and pays for water other than Entitlement Water in any Year and who thereafter is unable to receive the delivery of any portion thereof because of a reduction in the amount thereof and a reallocation thereof as provided in section 4.02(a) hereof shall be entitled to a credit in an amount equal to the difference between the Buyer's actual total payment for such water and what the Buyer's total payment for such water would have been if determined on the basis of the reduced supply of such water. Any credit shall be applied in the manner provided in section 5.05(a) hereof.

ARTICLE VI.

SCHEDULING OF WATER SERVICE

6.00. Five Year Schedules.

If a Buyer desires to modify a water delivery schedule, the Buyer shall file with the District on or before September 1 a preliminary schedule for each Zone indicating the amount of Entitlement Water to be delivered each month for the succeeding five Years through such Zone. Upon receipt of a preliminary schedule, the District shall review it and, after consultation with the Buyer, shall make such modifications as the District deems necessary to insure that the amounts, times and rates of delivery to the Buyer will be consistent with the District's receipt of Entitlement Water from the Agency and the State, considering the then current delivery schedules of all Water Users.

6.01. Monthly Delivery Schedule.

If a Buyer modifies a water delivery schedule under

section 6.00 hereof, on or before December 30 of the Year prior to the Year of delivery, the District will furnish each Buyer a schedule of monthly deliveries for the next Year. This schedule will conform to the Buyer's requests for water deliveries as nearly as possible. In the event that the dates provided for in the District Contract are changed, the dates provided for in this section shall be changed so that the time span between dates specified in this section and the corresponding dates in the District Contract will remain constant.

6.02. Daily Delivery Schedule.

Prior to nine o'clock in the morning of each Tuesday of each week, each Buyer shall file with the District a daily water use schedule for Wednesday, Thursday and Friday of that week for each Turnout of such Buyer. Prior to nine o'clock in the morning of each Friday of each week, each Buyer shall file with the District a daily water use schedule for Saturday of that week and Sunday, Monday and Tuesday of the next week for each Turnout of such Buyer. Buyers shall be informed by the District if any change is required in their requested schedules. Unless otherwise approved by the District, daily delivery schedules shall be made on the basis of continuous use of water during the 24-hour period commencing at seven o'clock in the morning of one day and ending at seven o'clock in the morning the following day, including Sundays and holidays, and no allowance shall be made in the service to any Buyer for failure to use the water. Daily delivery schedules may be revised by notification to and approval by the District no less than 24 hours prior to the time such revision is to take effect.

ARTICLE VII.

DELIVERY OF WATER

7.00. Installation of Turnouts.

The District shall install and maintain all Turnouts specified in the Water Supply Contracts. The Board shall establish the Connection Service Charge concurrent with the Buyer's written request for the installation of a Turnout.

7.01. Place of Delivery.

All water shall be delivered to and accepted by each Buyer at the Buyer's Turnout unless otherwise agreed in writing by the District.

7.02. Delivery of Water.

Delivery of water to Buyers shall conform to the daily delivery schedules or approved revisions thereof. Unless

otherwise approved by the District, water deliveries shall be made to Buyers on a continuous flow basis in 24-hour increments. Required adjustments in the delivery facilities of the District's project will be made each day beginning at seven o'clock in the morning and will be completed by nine o'clock in the morning or as soon thereafter as practicable. The Buyer's system must be designed to receive water from a Turnout on a continuous flow basis for 24-hour increments. If a Buyer fails to use the water during a period assigned on the schedule, or if the operation under the schedule is begun and then discontinued, the Buyer shall nevertheless be responsible for the water. However, upon notice of emergencies, the District will give such assistance to the Buyer as may be practicable under the circumstances to minimize any water losses.

7.03. Change of Place of Delivery and Use.

The District hereby consents to the change of place of delivery and use of Project Water from any Class 1 Land to any other Class 1 Land, provided that the Buyer first notifies the District in writing of the proposed change of place of delivery and use.

7.04. Delivery to Lands Subject to Outstanding Certificates of Sale.

To the extent that a Buyer is otherwise entitled to the delivery of Entitlement Water from the District, the District will not suspend the delivery of such Entitlement Water under the terms of the Water Supply Contract because the land subject to the Water Supply Contract is also subject to one or more certificates of sale issued pursuant to Water Code section 46761 so long as such Buyer is not delinquent in the payment of its water charges for the Year in which the delivery of Entitlement Water is requested.

7.05. Limitations.

(a) Refusal to Deliver Water.

The District may refuse to deliver water to a Buyer if water is to be delivered through a private facility which the General Manager has determined is not capable of conveying water without creating damage to the District Project, or any portion thereof.

(b) Waste of Water.

Water deliveries will be discontinued to any Buyer found to be wasting water either willfully, carelessly, or on account of defective or inadequate ditches or pipelines or inadequately prepared land or improper

management and water deliveries will not be resumed until such conditions are corrected.

(c) Water Unfit for Domestic Use.

Water furnished by the District will be unfit for human consumption. A Buyer who desires to use such water for incidental domestic use must provide, operate, and maintain water treatment facilities satisfactory to all governmental authorities vested with jurisdiction over domestic water supplies.

(d) Non-Waiver of Lien.

The lien created by the Water Supply Contract on the lands of a Buyer shall not be waived or in any manner modified as a result of the Buyer's changing the place of delivery and use of any water and the District's consent thereto as provided for in section 7.03 hereof, or the disposition of water as provided in article VIII hereof.

7.06. Allocation of Capacity in District Conveyance Facilities.

If the capacity of any District conveyance facility is insufficient to meet the demands of Water Users served by such facility, the capacity thereof shall be allocated among such Water Users pro rata on the basis of the annual entitlements appurtenant to lands served by such facility.

ARTICLE VIII.

DISPOSITION OF WATER

8.00. Entitlement Water, Non-Service Area Entitlement Water, and Pooled Entitlement Water.

If (1) a Buyer is unable to put all of its Entitlement Water to reasonable beneficial use and has either not filed or not timely filed a written request with the District as provided in the Water Supply Contract and section 4.01(a) hereof, (2) a Buyer has been allocated Non-Service Area Entitlement Water but is unable to put all of such water to reasonable beneficial use, or (3) a Buyer has been allocated pooled Entitlement Water hereof but is unable to put all of such water to reasonable beneficial use, the Buyer may dispose of such water to any owner of Class 1 Land within the District for use on such Class 1 Land if the Buyer first notifies the District in writing of the disposition of such water. If a Buyer does not so dispose of such water, upon written request the District will attempt to dispose of such water; provided, however, that such water will be disposed of by

the District only after there has been complete allocation of all Non-Service Area Entitlement Water and all pooled Entitlement Water and after allocation of any other water required to be paid for, whether or not taken. Any funds received by the District for the account of the Buyer shall be credited and applied as provided in section 5.05 hereof.

8.01. Supplemental Water.

If the Supplemental Water requirements of a Buyer are less than the amount of Supplemental Water allocated to the Buyer as provided in section 4.02(d) hereof, the District, upon written request from the Buyer, will attempt to dispose of the excess Supplemental Water for the account of the Buyer. Any funds received by the District for the account of the Buyer shall be credited and applied as provided in section 5.05 hereof. Except as herein provided or as provided in section 5.05(a) hereof, a Buyer who receives an allocation of Supplemental Water shall not sell or otherwise dispose of such Supplemental Water without the prior written consent of the District.

8.02. Permanent Transfer of Annual Entitlement.

If a Buyer elects to permanently transfer any of its Annual Entitlement to any person, including the Buyer, for use outside the boundaries of the District, any such transfer shall be subject to any limitations, conditions, or like provisions contained in the Water Supply Contract and the Permanent Transfer Policy.

ARTICLE IX.

MISCELLANEOUS PROVISIONS

9.00. Operation and Maintenance
of District Project.

The operation and maintenance of all of the District Project shall be within the exclusive control of the District. No person shall be allowed to make any opening in, cut, plow down or otherwise interfere with or weaken any bank of any facility of the District Project.

9.01. Prohibitions.

(a) Pumping Into Canals and Pipelines.

No private pumping into or from District canals or reservoirs shall be permitted. No private pumping into District pipelines shall be permitted, except those pipeline laterals in which a rejection structure has

been installed and the water in the pipeline downstream of the structure is controlled by the Buyer.

(b) Structures.

No structures of any kind whatsoever, shall be placed in, on, or over any District canal or pipeline by anyone, except as such are approved, both as to location and character of construction, by the District.

(c) Nuisances.

No rubbish, swill, garbage, manure or refuse, or dead animal or animal matter from any barnyard, stable, dairy or hog pen shall be placed in or allowed to be emptied into any canal, reservoir, or pipeline of the District.

(d) Waste Waters.

No waste water shall be discharged into District canals or pipelines without the written consent of the District.

(e) Private Interference.

Attention is directed to Penal Code section 592 which provides as follows:

"(a) Every person who shall, without authority of the owner or the managing agent, and with intent to defraud, take water from any canal, ditch, flume or reservoir used for the purpose of holding or conveying water for manufacturing, agricultural, mining, irrigating or generation of power, or domestic uses is guilty of a misdemeanor.

"(b) If the total retail value of all the water taken is more than four hundred dollars (\$400), or if the defendant has previously been convicted of an offense under this section or any former section that would be an offense under this section, or of an offense under the laws of another state or of the United States that would have been an offense under this section if committed in this state, then the violation is punishable by imprisonment in the county jail for not more than one year, or in the state prison."

9.02. Availability of Public Records.

All public records on file with the District shall be made available for review and inspection of landowners within the District, or any other interested party, during the normal business hours of the District. Copies may be procured of all such public records which the District can reproduce at its office upon the payment of reasonable reproduction charges as shall be established by the General Manager. Copies of those public documents which are not capable of being reproduced at the District's office may be procured by making appropriate arrangements with the General Manager for the safe delivery thereof to a person determined by the General Manager to be capable of safely reproducing such documents, and all costs of such reproduction shall be borne by the party requesting the copies.

END OF DOCUMENT

wp60/wck/bwsd/RulesReg.cln

BELDRIDGE WATER STORAGE DISTRICT

SECRETARY'S CERTIFICATE

I, WILLIAM C. KUHS, Assistant Secretary of the Board of Directors of BELDRIDGE WATER STORAGE DISTRICT, hereby certify that:

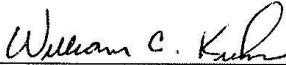
(a) the foregoing is a full, true and correct copy of the Rules and Regulations For Distribution and Use of Water (the "Rules") duly adopted at an adjourned regular meeting of the Board duly and regularly held at the regular meeting place thereof on April 7, 1999;

(b) all directors had due notice of the meeting and a majority thereof were present;

(c) I have compared the foregoing copy of the Rules with the original minutes of the meeting on file and of record in my office and the foregoing is a full, true and correct copy of the original thereof adopted at the meeting and entered in the minutes; and

(d) the Rules have not been amended, modified or rescinded since the date of their adoption, and are now in full force and effect.

WITNESS my hand and the seal of the BELDRIDGE WATER STORAGE DISTRICT this 12th day of April, 1999.



William C. Kuhs, Assistant
Secretary Board of Directors

[SEAL]

**Appendix 7. Standard Provisions for Water
Supply Contracts**

James Maples, Assessor – Recorder
Kern County Official Records
Recorded at the request of
Public

SABRINA
11/06/2002
1:31 PM

RECORDING REQUESTED BY:

Belridge Water Storage District

RECORDED FOR THE BENEFIT OF:

Belridge Water Storage District

WHEN RECORDED MAIL TO:

Kuhs, Parker & Hughes (JDH)
Post Office Box 2205
Bakersfield, CA 93303

DOC#: 0202188125



Stat Types: 1 Pages: 33

Fees	0.00
Taxes	0.00
Others	0.00
PAID	\$0.00

BELRIDGE WATER STORAGE DISTRICT

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FOR
SUPPLY OF STATE WATER PROJECT WATER

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- A. Map of Zones of Benefit.

BELRIDGE WATER STORAGE DISTRICT

**STANDARD PROVISIONS FOR WATER SUPPLY CONTRACTS
FOR SUPPLY OF STATE WATER PROJECT WATER**

THIS DOCUMENT contains the standard provisions to be incorporated by reference in water supply contracts to be subsequently executed between BELRIDGE WATER STORAGE DISTRICT, a California water storage district (the "District"), and Water Users [defined in section 2.26 hereof] in the District for the supply of State Water Project water;

W I T N E S S E T H:

WHEREAS, the District has a Contract Entitlement of 123,727 acre feet of Entitlement Water under the District Contract; and

WHEREAS, the District has entered into long-term water supply contracts under Water Code section 43003 to deliver most of its Contract Entitlement to Water Users; and

WHEREAS, on December 13, 1995, the State and the Agency executed Amendments 23 and 24 to the Master Contract; and

WHEREAS, on November 14, 1995, the Agency and the District executed Amendment 4 to the District Contract to facilitate and implement the changes to the Master Contract as a result of Amendments 23 and 24 thereto and the long-term water supply contracts should be amended to reflect such Amendment 4; and

WHEREAS, the Board has adopted these standard provisions for the long-term water supply contracts and desires to record these standard provisions to reduce the quantity of documents that would otherwise need to be recorded with the County Recorder; and

NOW, THEREFORE, the Board hereby sets forth in the records of the County Recorder the following standard provisions for incorporation by reference in any subsequently executed or amended Water Supply Contract:

ARTICLE I.

INTERPRETATION OF AGREEMENT

1.00. Introduction.

Unless the context otherwise requires, the rules of interpretation set forth in this article I shall govern the interpretation of the Water Supply Contract and all documents executed pursuant thereto.

1.01. Captions.

The captions of articles and sections of the Water Supply Contract do not define the scope, meaning or intent of the Water Supply Contract or any documents executed pursuant thereto.

1.02. Exhibits.

All exhibits referred to in the Water Supply Contract are deemed to be incorporated by reference as though set forth therein.

1.03. Definitions.

Unless the context otherwise requires, the words and phrases defined in articles II and XI hereof shall govern the interpretation of the Water Supply Contract.

1.04. Amendments.

When any reference is made to any law, such reference shall apply to all amendments and additions thereto, heretofore or hereafter made.

1.05. Tenses.

The present tense includes the past and future tenses and the future tense includes the present.

1.06. Gender.

The masculine, feminine or neuter gender shall be deemed to include the other.

1.07. Singular; Plural.

The singular or plural numbers shall be deemed to include the other.

1.08. Civil Code Section 1654.

The normal rule of interpretation that any ambiguity is to be resolved against the drafting party shall not be employed

in the interpretation of the Water Supply Contract or any amendment hereof or exhibit hereto and Civil Code section 1654 shall not be applied to resolve any ambiguity in the Water Supply Contract.

ARTICLE II.

DEFINITIONS

2.00. Agency.

"Agency" means the Kern County Water Agency.

2.01. Annual Entitlement.

"Annual Entitlement" means the amount of Entitlement Water set forth in section 11.00 of the Water Supply Contract.

2.02. Board.

"Board" means the Board of Directors of the District.

2.03. Buyer.

"Buyer" means a holder of title to land who is a party to a Water Supply Contract and any successor in interest of the Buyer in all or any part of the Buyer's Land.

2.04. Buyer's Address.

"Buyer's Address" means the address of the Buyer set forth in section 11.01 of the Water Supply Contract unless changed as provided in section 10.04 hereof.

2.05. Buyer's Agency Charge.

"Buyer's Agency Charge" means the charge computed in the manner provided in section 8.00(b)(1) or 8.00(b)(2) hereof, as the case may be.

2.06. Buyer's District Capital Charge.

"Buyer's District Capital Charge" means the charge computed in the manner provided in section 8.00(c) hereof.

2.07. Buyer's Energy Charge.

"Buyer's Energy Charge" means the charge computed in the manner provided in section 8.00(e) hereof.

2.08. Buyer's Land.

"Buyer's Land" means the real property described in

section 11.02 of the Water Supply Contract.

2.09. Buyer's O&M Charge.

"Buyer's O&M Charge" means the charge computed in the manner provided in section 8.00(d) hereof.

2.10. Buyer's Overhead Charge.

"Buyer's Overhead Charge" means the charge computed in the manner provided in section 8.00(f) hereof.

2.11. Buyer's Turnout.

"Buyer's Turnout" means the District turnout designated in Exhibit B to the Water Supply Contract.

2.12. Contract Entitlement.

"Contract Entitlement" means the amount of Entitlement Water set forth in Table 1 of the District Contract.

2.13. District.

"District" means Belridge Water Storage District, a California water storage district organized and existing under and by virtue of Division 14 (commencing with section 39000) of the Water Code.

2.14. District's Address.

"District's Address" means Post Office Box 711, Bakersfield, California 93302 unless changed as provided in section 10.04 hereof.

2.15. District Contract.

"District Contract" means the agreement between the Agency and the District dated October 4, 1966 as heretofore amended and as may be hereafter amended, supplemented or replaced.

2.16. Entitlement Water.

"Entitlement Water" means water delivered or scheduled to be delivered by the Agency to the District as part of the District's Contract Entitlement and water delivered or scheduled to be delivered by the District to a Buyer as part of the Buyer's Annual Entitlement.

2.17. Master Contract.

"Master Contract" means the agreement between the State and the Agency dated November 15, 1963 as heretofore amended and

as may be hereafter amended, supplemented or replaced.

2.18. Official Records.

"Official Records" means the official records in the office of the County Recorder of the County of Kern, State of California.

2.19. Project Water.

"Project Water" means all water made available to the District by the Agency under or because of the District Contract.

2.20. Rules.

"Rules" means the District's Rules and Regulations for Distribution and Use of Water adopted by the Board on April 7, 1999, and recorded on April 13, 1999 as Document No. 0199052026 in the Official Records, as hereafter amended, supplemented or replaced.

2.21. Service Area.

"Service Area" means a geographical area of the District within which (a) the District is obligated to deliver Entitlement Water and (b) the Water Users are obligated to pay for the delivery of Entitlement Water.

2.22. State.

"State" means the State of California, acting by and through its Department of Water Resources.

2.23. Turnout 1A.

"Turnout 1A" means the District's Turnout No. 1A on the easterly side of Reach 11B of the California Aqueduct.

2.24. Turnout 3.

"Turnout 3" means the District's Turnout No. 3 on the easterly side of Reach 11B of the California Aqueduct.

2.25. Turnout 5.

"Turnout 5" means the District's Turnout No. 5 on the westerly side of Reach 11B of the California Aqueduct.

2.26. Water Shortage.

"Water Shortage" means a condition during a particular Year when the total amount of Entitlement Water to be made available by the Agency to the District during that Year under the District Contract is less than the District's Contract Entitlement for that Year.

2.27. Water Supply Contract.

"Water Supply Contract" means a separate written agreement between the District and the Buyer which incorporates these standard provisions.

2.28. Water User.

"Water User" means any holder of title to land in the District with whom the District has executed a Water Supply Contract and its successors and assigns.

2.29. Year.

"Year" means the twelve month period from January 1 through December 31.

2.30. Zone.

"Zone" means a zone of benefit within the District, the boundaries of which are generally shown on the attached **Exhibit A.**

ARTICLE III.

RELATIONSHIP TO OTHER AGREEMENTS

3.00. Relationship to Master
Contract and District Contract.

The Water Supply Contract is subject to the obligations and limitations imposed by the District Contract which, in turn, is subject to the obligations and limitations imposed by the Master Contract. The Water Supply Contract is intended to be in conformance and harmony with both the District Contract and the Master Contract. The District Contract and the Master Contract are hereby incorporated in these standard provisions by reference as though set forth in full herein. Nothing in the Water Supply Contract shall be deemed to require the District to perform any act in conflict with the District Contract or the Master Contract. The District shall at all times keep and maintain at its office, available for examination by the Buyer, copies of the District Contract and the Master Contract and all amendments thereto.

ARTICLE IV.

TERM

4.00. Term.

The Water Supply Contract shall become effective on the Effective Date stated in section 11.03 of the Water Supply Contract and shall remain in effect throughout the term provided in article 2 of the Master Contract; provided, however, that if the Master Contract or the District Contract is terminated or suspended in any manner and for any cause specified therein, then the Water Supply Contract similarly shall be terminated or suspended.

ARTICLE V.

ANNUAL ENTITLEMENT

5.00. Annual Entitlement.

The District shall sell and the Buyer shall purchase the Annual Entitlement set forth in section 11.00 of the Water Supply Contract under the terms of the Water Supply Contract.

5.01. Deliveries in Excess
of Annual Entitlement.

The Buyer may at any time or times during the term of the Water Supply Contract, by timely written notice to the District, request that water be made available to it in any Year in an amount greater than the Buyer's Annual Entitlement for such Year. With the approval of the District and subject to the District's ability to obtain such additional water and the Buyer's payment therefor, the District shall deliver to the Buyer such additional water.

5.02. Request for Delivery of
Less Than Annual Entitlement.

The Buyer may at any time or times during the term of the Water Supply Contract, by timely written notice to the District, request that Entitlement Water be made available to it in any Year in amounts less than the Buyer's Annual Entitlement. With the approval of the District and subject to the District's ability to dispose of such Entitlement Water elsewhere, the District shall reduce deliveries to the Buyer during such Year by the amounts requested and, in such event, the Buyer's obligation to make payments to the District during the next Year shall be reduced in the manner provided in section 8.03 hereof.

ARTICLE VI.

DELIVERY OF WATER

6.00. Delivery.

Water made available to the Buyer pursuant to the Water Supply Contract shall be delivered to and accepted by the Buyer at the Buyer's Turnout unless the place of delivery is changed in the manner provided in the Rules.

6.01. Operation of Delivery Structures.

No valve or other mechanism on the Buyer's Turnout shall at any time be operated by the Buyer so as to deliver or curtail delivery of water to the Buyer's Land or any portion thereof. Such valves and mechanisms shall be operated only by employees or agents of the District.

6.02. Measuring Devices.

Except as otherwise provided in the Water Supply Contract, the District shall be responsible for the measuring of all water delivered to the Buyer and shall keep or cause to be kept accurate records thereof. The District shall install, operate and maintain at the Buyer's Turnout such measuring devices and equipment as it shall determine. All such measuring devices and equipment shall be regularly examined and serviced and tested, as required, to insure accuracy. The Buyer or any other Water User may inspect such measuring devices and the measurements and records taken therefrom at any time during the regular business hours of the District.

6.03. Delivery Schedules.

The amounts, times and rates of delivery of Entitlement Water to the Buyer during any Year shall be in accordance with a water delivery schedule attached as Exhibit C to the Water Supply Contract unless the schedule is modified in the manner provided in the Rules.

6.04. Capacity.

The District shall not be required to deliver to the Buyer in any one month of any Year a total amount of water greater than 18% of the Buyer's Annual Entitlement for that Year.

ARTICLE VII.

LIMITATIONS ON OBLIGATIONS OF DISTRICT

7.00. Failure of State or Agency to Perform.

The District shall not be liable for failure to perform any portion of the Water Supply Contract to the extent that such failure is caused by the failure of the State to perform any obligation imposed on the State by the Master Contract or by the failure of the Agency to perform any obligation imposed on the Agency by the District Contract; provided, however, that (a) the obligations of the Buyer shall be reduced to the extent that the District is prevented from so performing its obligations and (b) the District shall diligently and promptly pursue all feasible rights and remedies available to it to enforce the right of the District and the Buyer against the State or the Agency, or both, relative to such failure to perform.

7.01. Inadequate Supplies of
Entitlement Water.

(a) Introduction.

The District has contracted to deliver 95% of the District's Contract Entitlement to Water Users, the balance being reserved for operational losses. At times the Agency will be unable to deliver to the District the District's Contract Entitlement and the Water Users will receive less Entitlement Water than provided in the Water Supply Contracts. In a Water Shortage, Entitlement Water shall be apportioned among Water Users as provided in section 7.01(b) hereof.

(b) Apportionment of Entitlement
Water During Water Shortage.

If the Agency makes available to the District Entitlement Water in an amount less than the District's Contract Entitlement, the District shall reduce the delivery of Entitlement Water to the Buyer in an amount which bears the same relation to the total amount of such shortage as the Buyer's Annual Entitlement bears to the total of the Annual Entitlements of all Water Users entitled to receive Entitlement Water in such Year.

(c) No District Liability.

If the Buyer does not receive its Annual Entitlement as a result of a Water Shortage, no liability shall occur against the District or its directors, officers, agents or employees for any damage, direct or indirect, arising therefrom.

7.02. Curtailment of Deliveries
for Maintenance Purposes.

The State or the Agency may temporarily discontinue or reduce the delivery of Project Water for the purposes of maintaining, repairing, replacing, investigating or inspecting any of the facilities necessary for the furnishing and delivery of Project Water to the District, which temporary discontinuance or reduction may result in a similar discontinuance or reduction in deliveries to the Buyer. The District may similarly temporarily discontinue or reduce the delivery of Project Water to the Buyer for the purposes of maintaining, repairing, replacing, investigating or inspecting any of the District's facilities necessary for the delivery of Project Water to the Buyer. Insofar as it is feasible, the District will give the Buyer notice in advance of any such temporary discontinuance or reduction, except in the case of an emergency, in which case notice will be given within a reasonable time after such temporary discontinuance or reduction. In the event of such discontinuance or reduction, the District, upon resumption of service, shall deliver, as nearly as may be feasible, the amount of Project Water which would have been furnished to the Buyer in the absence of such discontinuance or reduction.

7.03. Non-Responsibility for Delivery
and Distribution of Project Water.

Neither the District nor its directors, officers, agents, or employees shall be liable for the control, carriage, handling, use, disposal or distribution of Project Water delivered to the Buyer after the Project Water has passed through the Buyer's Turnout, nor for claims of damage of any nature whatsoever including, but not limited to, property damage, personal injury or death arising out of or connected with the control, carriage, handling, use, disposal or distribution of Project Water beyond the Buyer's Turnout and the Buyer shall indemnify and hold the District and its directors, officers, agents and employees harmless from any such damage or claim of damage.

7.04. Non-Responsibility for Quality of Water.

The District assumes no responsibility with respect to the quality of water to be delivered under the Water Supply

Contract. **THE BUYER IS ADVISED THAT WATER, AS DELIVERED BY THE DISTRICT, WILL BE UNFIT FOR HUMAN CONSUMPTION.**

ARTICLE VIII.

PAYMENT FOR WATER

8.00. Buyer's Annual Payment Obligation.

(a) Introduction.

Annually, at its regular meeting in the month of October, the Board shall establish the charges provided for in this section 8.00. On or before each November 15 of the Year preceding the Year in which Project Water is to be delivered, the District shall give the Buyer written notice of the Buyer's annual payment obligation for the next Year. Sixty-five percent of the amount shown on such notice shall be immediately due and payable and the remaining 35% of such amount shall be due and payable on the May 15th following; provided, however, that if the amount which is immediately due and payable becomes delinquent as provided in section 8.06 hereof, then the remaining amount shown on such notice shall become immediately due and payable. The amount shown on such notice shall constitute water charges under Water Code sections 43006 and 47180. The annual payment obligation for Buyers with Buyer's Turnouts at locations other than Turnouts 1A, 3 and 5 shall be the total of (a) the Buyer's Agency Charge for such Year, computed under section 8.00(b)(1) hereof, (b) the Buyer's District Capital Charge for such Year, (c) the Buyer's O&M Charge for such Year, (d) the Buyer's Energy Charge for such Year, and (e) the Buyer's Overhead Charge for such Year. The annual payment obligation for Buyers with Buyer's Turnouts at Turnout 1A and Turnout 3 shall be the total of (a) the Buyer's Agency Charge for such Year, computed under section 8.00(b)(2) hereof, (b) the Buyer's District Capital Charge for such Year, (c) the Buyer's O&M Charge for such Year, (d) the Buyer's Energy Charge for such Year, and (e) the Buyer's Overhead Charge for such Year. The annual payment obligation for Buyers with Buyer's Turnouts at Turnout 5 shall be the total of (a) the Buyer's Agency Charge for such Year, computed under section 8.00(b)(3) hereof, and (b) the Buyer's Overhead Charge for such Year.

(b) Buyer's Agency Charge.

- (1) For Buyers With Turnouts
Other Than at Turnouts 1A, 3 and 5.

The Buyer's Agency Charge for the next Year for Buyers with Buyer's Turnouts at locations other than Turnouts 1A, 3 and 5 shall be computed by the formula

$$BAC = \frac{DC}{0.95DCE} \times AE$$

where

"BAC" is the Buyer's Agency Charge, expressed in dollars;

"DC" is that portion of the District's annual obligation to the Agency for such Year for the Entitlement Water to be delivered to Buyer's Turnouts at locations other than Turnouts 1A, 3 and 5, expressed in dollars, without regard to any adjustments under article 15(g) of the District Contract; provided, however, that (1) if the District at the time of the regular October meeting of the Board has not received from the Agency a statement of such obligation, "DC" shall be the Board's estimate of such obligation, and (2) if "DC" for any Year is based upon the Board's estimate, "DC" for the next Year shall be adjusted to correct for the difference, if any between such estimate and such obligation;

"DCE" is the District's Contract Entitlement for such Year less the portion thereof to be delivered to Buyer's Turnouts at Turnouts 1A, 3 and 5, expressed in acre feet; and

"AE" is that portion of the Buyer's Annual Entitlement for such Year to be delivered through Buyer's Turnouts at locations other than Turnouts 1A, 3 and 5, expressed in acre feet.

- (2) For Buyers with Turnouts at
Turnouts 1A and 3.

The Buyer's Agency Charge for the next Year for Buyers with Buyer's Turnouts at Turnouts 1A and 3 shall be computed by the formula

$$BAC = \frac{DC}{DCE} \times AE$$

where

"BAC," "DC," "DCE" and "AE" have the same meaning as used in section 8.00(b)(1) hereof except that they shall be that portion of the District's annual obligation to the Agency for such Year for Entitlement Water, that portion of the District's Contract Entitlement for such Year, and that portion of the Buyer's Annual Entitlement for such Year, respectively, relating to Entitlement Water to be delivered to Buyers with Buyer's Turnouts at Turnouts 1A and 3.

- (3) For Buyers With
Turnouts at Turnout 5.

The Buyer's Agency Charge for the next Year for Buyers with Buyer's Turnouts at Turnout 5 shall be computed by the formula

$$BAC = \frac{DC}{DCE} + \frac{AD}{\Sigma AE} \times AE$$

where

"BAC," "DC," "DCE" and "AE" have the same meaning as used in section 8.00(b)(1) hereof except that they shall be that portion of the District's annual obligation to the Agency for such Year for Entitlement Water, that portion of the District's Contract Entitlement for such Year, and that portion of the Buyer's Annual Entitlement for such Year, respectively, relating to Entitlement Water to be delivered to Buyers with Buyer's Turnouts at Turnout 5;

"AD" is the additional charge from the Agency to the District under article 15(g) of the District Contract, expressed in dollars; provided, however, that if the District receives a credit from the Agency under such article 15(g), "AD" shall be such credit and the fraction $\frac{AD}{\Sigma AE}$ shall be subtracted from, not added to, the fraction $\frac{DC}{DCE}$;

and

" ΣAE " is the total of all Annual Entitlements for such Year to be delivered to Buyers with Buyer's Turnouts at Turnout 5, expressed in acre feet.

(c) Buyer's District Capital Charge.

The Board shall estimate the amount of money that will be required during the next Year to meet such part, as the Board shall determine to pay from water charges, of (1) any payments of principal and interest which will become due during such Year on account of then outstanding bonds or repayment contracts, or both, of the District, (2) any payments to repay any project assessment paid during any time the assessment list remains open for payment in the office of the County Treasurer, and (3) the funds required to establish and maintain a bond reserve fund. Such amount shall be apportioned to the several tracts of land in the District according to the ratios established by the apportionments made by the person or persons appointed to assess the costs of the District project. If no Entitlement Water is scheduled for delivery during the next Year to a particular Zone, the portion of that amount, if any, apportioned to tracts within such Zone shall be reapportioned, according to such ratios, to tracts within the Zones to which Entitlement Water is scheduled for delivery by means of works and facilities. The Buyer's District Capital Charge for the next Year for each Zone in which any portion the Buyer's Land is located shall then be computed by the formula

$$BDCC = \frac{DCC}{\Sigma AE} \times BAE$$

where

"BDCC" is the Buyer's District Capital Charge, expressed in dollars;

"DCC" is the amount so estimated by the Board which has been apportioned to the Zone for which the calculation is being made, less any amount determined by the Board to be available from other sources to finance part of such cost, expressed in dollars;

" ΣAE " is the total of all Water Users' Annual Entitlements within the Zone for the next Year, expressed in acre feet; and

"BAE" is Buyer's Annual Entitlement within the Zone for the next Year, expressed in acre feet.

(d) Buyer's O&M Charge.

The Board shall estimate the costs to be incurred during the next Year for operations, maintenance, and replacements in delivering Entitlement Water to each Zone, adjusting each Year to reflect the actual cost of operations, maintenance, and replacements during the previous Year. The Buyer's O&M Charge for the next Year for each Zone shall be computed by the formula

$$\text{BOMC} = \frac{\text{DOMC}}{\Sigma \text{AE}} \times \text{BAE}$$

where

"BOMC" is the Buyer's O&M Charge, expressed in dollars;

"DOMC" is the amount so estimated by the Board, less any amount determined by the Board to be available from other sources to finance part of such cost, expressed in dollars;

"ΣAE" is the total of all Water Users' Annual Entitlements within the Zone for the next Year, expressed in acre feet; and

"BAE" is the Buyer's Annual Entitlement within the Zone for the next Year, expressed in acre feet. If the Buyer's Land is within two or more Zones and the Buyer desires to reschedule all or any portion of its Entitlement Water for a particular Year to Zones on a basis other than that set forth in Exhibit C, the District shall, at the time of such rescheduling, recompute the Buyer's O&M Charge for each Zone on the basis of the new schedule and the Buyer's annual payment obligation shall be adjusted accordingly; provided, however, if such rescheduling occurs after computation of the Buyer's annual payment obligation for a particular Year, then if such recomputations result in an extra charge to the Buyer, such extra charge shall be paid at the time of rescheduling or, if such computation results in a credit, such credit shall be applied as a credit against the Buyer's annual payment obligation for the next Year.

(e) Buyer's Energy Charge.

The Board shall estimate the costs to be incurred during the next Year for energy in delivering Entitlement Water to each Zone. The Buyer's Energy Charge for the next Year for each Zone shall be

computed by the formula

$$BEC = \frac{DEC}{\Sigma AE} \times BAE$$

where

"BEC" is the Buyer's Energy Charge, expressed in dollars;

"DEC" is the amount so estimated by the Board, less any amount determined by the Board to be available from other sources to finance part of such cost, expressed in dollars;

" Σ AE" is the total of all Water Users' Annual Entitlements within the Zone for the next Year, expressed in acre feet; and

"BAE" is the Buyer's Annual Entitlement within the Zone for the next Year, expressed in acre feet. If the Buyer's Land is within two or more Zones and the Buyer desires to reschedule all or any portion of its Entitlement Water for a particular Year to Zones on a basis other than that set forth in Exhibit C, the District shall, at the time of such rescheduling, recompute the Buyer's Energy Charge for each Zone on the basis of the new schedule and the Buyer's annual payment obligation shall be adjusted accordingly; provided, however, if such rescheduling occurs after computation of the Buyer's annual payment obligation for a particular Year, then if such recomputations result in an extra charge to the Buyer, such extra charge shall be paid at the time of rescheduling or, if such computation results in a credit, such credit shall be applied when the Buyer's Energy Charge is adjusted under section 8.01 hereof.

(f) Buyer's Overhead Charge.

The Board shall estimate the amount of money that will be required from Water Users during the next Year to meet costs of the District not included in the computation of the Buyer's Agency Charge, the Buyer's District Capital Charge, the Buyer's O&M Charge and the Buyer's Energy Charge, including but not limited to, the salaries of officers and nonoperating employees and the development and maintenance of such reasonable reserves as, from time-to-time, appear necessary and advisable, adjusting each Year to reflect actual cost experience of the past Year. The Buyer's Overhead

Charge for the next Year shall be computed by the formula

$$\text{BOC} = \frac{\text{DOC}}{\Sigma \text{AE}} \times \text{AE}$$

where

"BOC" is the Buyer's Overhead Charge, expressed in dollars;

"DOC" is the amount so estimated by the Board, less any amount determined by the Board to be available from other sources to finance part of such cost, expressed in dollars;

"ΣAE" is the total of all Water Users' Annual Entitlements for the next Year in the Service Area, expressed in acre feet; and

"AE" is the Buyer's Annual Entitlement for the next Year, expressed in acre feet.

8.01. Adjustment of Buyer's Energy Charge.

Annually, at its regular meeting in the month of February, the Board shall adjust the Buyer's Energy Charge for the previous Year to reflect the actual cost of energy during the previous Year. If the adjustment results in an increase in the Buyer's Energy Charge, the District shall give the Buyer written notice of the amount of such increase on or before February 15 and all of the amount shown on such notice shall be immediately due and payable. The amount shown on such notice shall constitute water charges under Water Code sections 43006 and 47180. If the adjustment results in a decrease in the Buyer's Energy Charge, the Board at its regular meeting in the month of March next following shall approve a refund to the Buyer in the amount of such decrease.

8.02. Payments for Additional Deliveries of Water.

(a) Introduction.

If the Buyer makes a written request for the delivery of water in any Year in an amount greater than the Buyer's Annual Entitlement for such Year under section 5.01 hereof and the District is able to obtain such additional water to fill such request, the Buyer shall pay to the District in advance of the delivery of such water an amount established under section 8.02(b) hereof or section 8.02(c) hereof, whichever is

applicable. If the source of the additional supply is comprised of two or more types of water, the cost for each acre foot of the additional water shall be the weighted average cost thereof using the applicable unit rates established under sections 8.02(b) and 8.02(c) hereof.

(b) Entitlement Water.

If the source of the additional supply is Entitlement Water made available to the District under section 5.02 of the Water Supply Contract of another Buyer, the Buyer shall pay, for each acre foot thereof, the lesser of (1) an amount determined by dividing (i) the total of (a) the portion of the Buyer's Agency Charge attributable to that portion of the Buyer's Annual Entitlement for such Year scheduled for delivery in the Zone in which such water is to be delivered, (b) the Buyer's District Capital Charge for such Year for such Zone, (c) the Buyer's O&M Charge for such Year for such Zone, (d) the Buyer's Energy Charge for such Year for such Zone, and (e) that portion of the Buyer's Overhead Charge which bears the same relationship to the whole thereof as the portion of the Buyer's Annual Entitlement for such Year scheduled for delivery in such Zone bears to the Buyer's Annual Entitlement for such Year by (ii) that portion of the Buyer's Annual Entitlement within such Zone for such Year or (2) an amount equal to (i) the amount that the District could obtain from the Agency or any other person for the use of such Entitlement Water outside of the District, (ii) one-half of the O&M Charge in such Zone, (iii) the Energy Charge in such Zone, unadjusted for any funds on hand at the beginning of the Year, and (iv) one-half of the Overhead Charge, all expressed in dollars per acre foot.

(c) Other Water.

If the source of the additional supply is water other than Entitlement Water made available to the District under section 5.02 of the Water Supply Contract of another Buyer, the Buyer shall pay, for each acre foot thereof, the amount specified in the Rules or, if not so specified, the amount established by the Board.

8.03. Reduction in Payment for
Reduced Deliveries of
Entitlement Water Under
Section 5.02 Hereof.

If, during any Year, the delivery of Entitlement Water to the Buyer is less than the Buyer's allocation of Entitlement Water for such Year at the request of the Buyer made in accordance with section 5.02 hereof, the Buyer's payment obligation for the next Year shall be reduced in an amount equal to (a) the amount received by the District in disposing of such Entitlement Water and (b) an amount equal to the direct costs which the District did not incur or will be refunded as a result of the reduced deliveries, less (c) all delivery charges incurred by the District in delivering the Entitlement Water to the ultimate user thereof.

8.04. Reduction in Payment for
Reduced Deliveries of
Entitlement Water Because
of Water Shortage.

If, pursuant to section 7.01(b) hereof, the Buyer is delivered less Entitlement Water than it is entitled to receive under the Water Supply Contract because of a Water Shortage, the District may either refund to the Buyer an amount equal to the direct costs which the District did not incur as a result of the reduced delivery or apply such amount to reduce the Buyer's payment obligation for the next Year. If no refund is made to the Buyer, no change will be made in the method of computing the Buyer's payment obligation for the next Year since any reduction in the District's annual obligation to the Agency by reason of such reduction in delivery will be reflected automatically in the Buyer's payment obligation by reason of the adjustment made in the factor "DC" used in computing the Buyer's Agency Charge under section 8.00(b) hereof.

8.05. Reduction in Payment for
Other Reduced Deliveries
of Entitlement Water.

If, during any Year, the delivery of Entitlement Water to the Buyer is less than the Buyer's allocation of Entitlement Water for such Year for reasons other than those set forth in sections 8.02 and 8.03 hereof, the Buyer's payment obligation for the next Year shall be reduced in an amount equal to the direct costs which the District did not incur or will be refunded as a result of the reduced deliveries.

8.06. Default and Penalty for Late
Payment of Water Charges.

All charges required to be paid by the Buyer to the District hereunder constitute water charges under Water Code sections 43006 and 47180. All charges shall be due and payable as provided in sections 8.00 and 8.01 hereof. Any charge remaining unpaid for a period of 30 days after it has become due and payable shall thereupon become delinquent and, in accordance with Water Code section 47182, a penalty of ten percent (10%) shall be added thereto and it shall bear interest at the rate of twelve percent (12%) per annum. In accordance with Water Code section 47183, after any such charge becomes delinquent, the Board may file in the Official Records a statement showing:

- (a) The name of the Buyer or of the owner of the Buyer's Land, if known, and, if not known, a statement of that fact;
- (b) A description of the Buyer's Land;
and
- (c) The amount of the delinquent water charges.

Upon the filing of such statement, the water charges so listed, together with the penalties and interest thereon shall become a lien upon the Buyer's Land in the same manner and of the same character as the lien of a District assessment. In accordance with Water Code section 47184, the District may enforce the lien in the manner provided in the enforcement of the lien of a District assessment or direct that proceedings not be taken to enforce the lien and, in place of such proceedings, bring suit against the Buyer or the owner of the Buyer's Land to enforce collection of such delinquent water charges. The District, in the event of any delinquency, may further suspend delivery of water during the period when the Buyer is delinquent in its payment of the water charges herein provided for; provided, however, that during any such period of suspension the Buyer shall remain obligated to make all payments required under the Water Supply Contract.

8.07. Character of Obligations.

The obligations of the Buyer arising out of or pursuant or incidental to the Water Supply Contract shall constitute personal obligations of the Buyer. The Buyer shall be relieved of all or part of the unaccrued obligations under the Water Supply Contract when and to the extent that the Buyer transfers all or any part of the Buyer's Land to a third party and such third party has assumed in writing the obligations of the Buyer under the Water Supply Contract with respect to the land

transferred. The Buyer's failure or refusal to accept delivery of Entitlement Water to which it is entitled under the Water Supply Contract shall in no way relieve the Buyer of its obligation to make payments to the District.

ARTICLE IX.

APPURTENANCY, NON-ASSIGNABILITY, AND LIMITATIONS

9.00. Appurtenancy.

The Water Supply Contract and the Buyer's right to receive Project Water thereunder are appurtenant to the Buyer's Land. Upon the transfer, whether by sale or by operation of law, of all of a parcel of the Buyer's Land, the transferee of the parcel of Buyer's Land shall be substituted for the Buyer under the Water Supply Contract to the same extent and effect as though the transferee had executed the Water Supply Contract as the Buyer with respect to the parcel transferred; provided, however, that unless and until after a lapse of 90 days from the date of any such transfer, such transferee shall have executed a contract for a water supply for the parcel of the Buyer's Land that was transferred, identical in all provisions with the Water Supply Contract, the District may, pending execution of such a contract, suspend delivery of water to the parcel of the Buyer's Land that was transferred, in which event, and notwithstanding such suspension, all charges and payments required under the Water Supply Contract shall continue to accrue, shall constitute a charge against the parcel of the Buyer's Land that was transferred, and shall be secured by the lien. Upon the transfer, whether by sale or by operation of law, of less than all of a parcel of the Buyer's Land on an areal basis, the Water Supply Contract shall be deemed divided and the transferee of a portion of a parcel of the Buyer's Land shall be entitled thereafter to receive that portion of Buyer's Annual Entitlement for such parcel which bears the same relation to the amount of the Buyer's total Annual Entitlement under the Water Supply Contract for the parcel as the acreage transferred bears to the total acreage of the parcel of the Buyer's Land; provided, however, that unless and until, after a lapse of 90 days from the date of any such transfer, such transferee shall have executed a contract for a water supply for the portion of a parcel of the Buyer's Land so transferred, identical in all provisions with the Water Supply Contract, except as to Annual Entitlement and land descriptions, the District, pending execution of such a Water Supply Contract, may suspend delivery of water to the portion of the parcel of the Buyer's Land so transferred, in which event, and notwithstanding such suspension, a pro rata share of all charges and payments required under the Water Supply Contract shall continue to accrue, shall constitute a charge against the portion of a parcel of the Buyer's Land so transferred, and shall

be secured by the lien. The Water Supply Contract to be executed by the transferee of less than all of a parcel of the Buyer's Land shall provide for an Annual Entitlement which bears the same relation to the Buyer's total Annual Entitlement under the Water Supply Contract for such parcel as the acreage transferred bears to the total acreage of the parcel of the Buyer's Land and the "Buyer's Land" under such Water Supply Contract shall be the land so transferred. Upon execution of such Water Supply Contract covering less than all of a parcel of the Buyer's Land by the transferee, the Water Supply Contract of the transferor shall be deemed amended to eliminate from the Buyer's Land the land described in the transferee's Water Supply Contract and to reduce the Buyer's Annual Entitlement by the amount of the Annual Entitlement provided in the transferee's Water Supply Contract. The District, in evidence of such amendment, may execute and record in the Official Records a declaration of such amendment.

9.01. Non-Assignability.

Except as provided in section 9.00 hereof or the Rules, the Buyer shall not, without the prior written consent of the District, assign any right or interest in or to the Water Supply Contract.

9.02. Limitations.

(a) Use of Project Water.

Project Water delivered to the Buyer pursuant to the Water Supply Contract shall not be used for human consumption or any other domestic use without the prior written consent of the District.

(b) Sale or Other Disposition
of Project Water.

Project Water delivered to the Buyer pursuant to the Water Supply Contract shall not be sold or otherwise disposed of by the Buyer for use other than on the Buyer's Land unless authorized in the Rules.

ARTICLE X.

GENERAL PROVISIONS

10.00. Remedies Not Exclusive.

The use by either party of any remedy specified in the Water Supply Contract for the enforcement of the Water Supply Contract is not exclusive and shall not deprive the party using such remedy of or limit the application of any other remedy

provided by law, at equity, or otherwise.

10.01. Amendments.

The Water Supply Contract may be amended at any time by mutual agreement of the parties except insofar as any proposed amendment is in any way contrary to applicable law or inconsistent with the provisions of the District Contract or the Master Contract. The District shall make available to the Buyer at all times during normal business hours, at the District offices, for the Buyer's inspection, copies of all contracts now or hereafter executed by the District with other Water Users and of any amendments thereto.

10.02. Opinion and Determinations.

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

10.03. Waiver of Rights.

Any waiver at any time by either party hereto of its rights with respect to a default or any other matter arising in connection with the Water Supply Contract shall not be deemed to be a waiver with respect to any other default or matter.

10.04. Notices.

Any notice to be given by the District to the Buyer shall be deemed given and delivered if delivered personally to the Buyer or if enclosed in an envelope addressed to the Buyer at the Buyer's Address and deposited in the United States mail. Any notice to be given by the Buyer to the District shall be deemed given and delivered if delivered personally to an officer of the District at the District's office or if enclosed in an envelope addressed to the District at the District's Address and deposited in the United States mail. Either party may at any time and from time-to-time, by proper notice to the other, change its address of receipt of notice.

10.05. Execution of Documents.

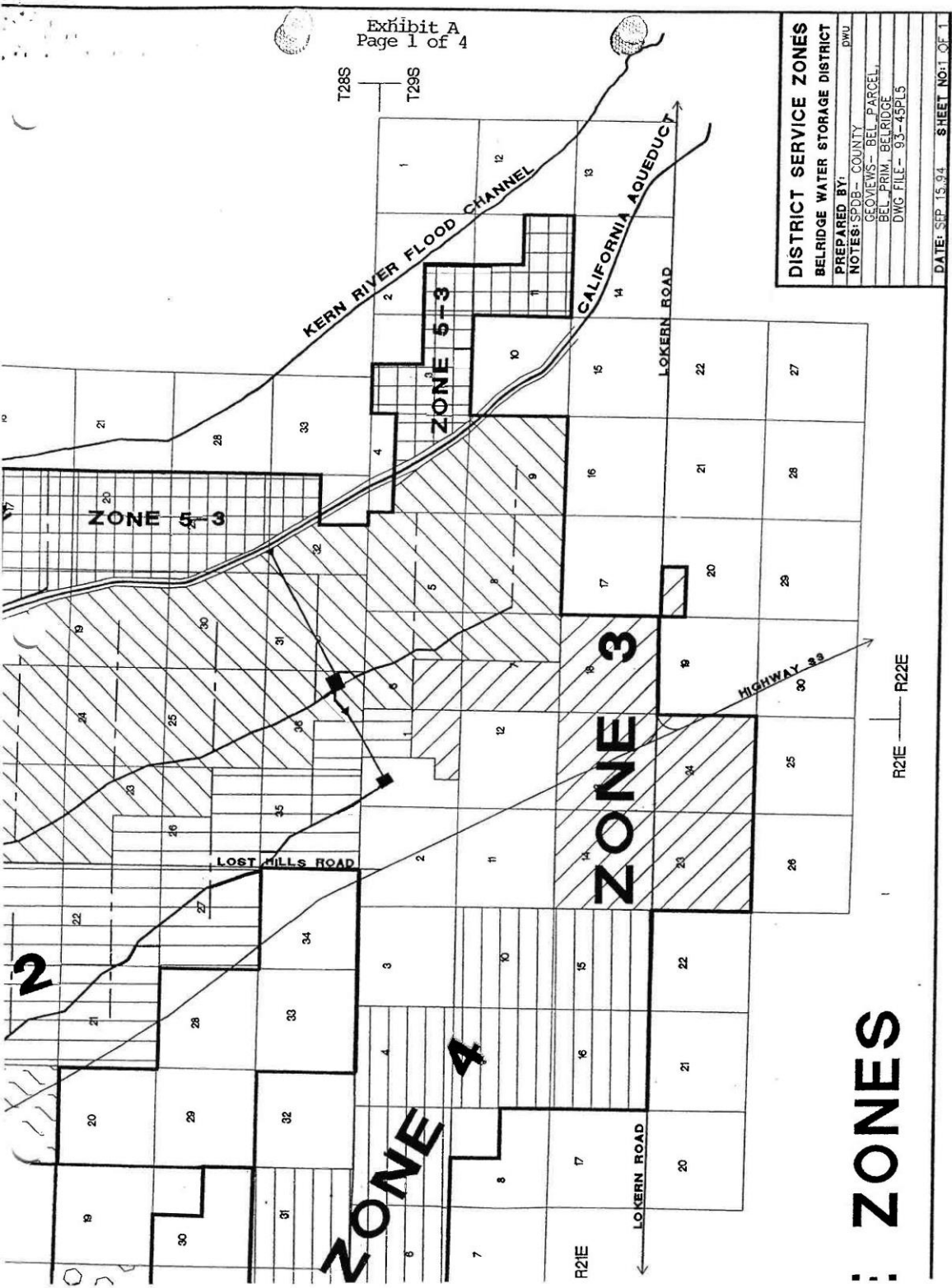
In addition to any documents expressly referred to in the Water Supply Contract to be executed by either or both parties, both parties shall execute any and all documents which might be required to carry out the provisions of the Water Supply Contract.

10.06. Application of Water Supply Contract.

The Water Supply Contract is made for the sole benefit of the District and the Buyer, and their respective successors and assigns, and no other person or persons shall have any right of action thereon or be entitled to any benefits that flow therefrom.

END OF DOCUMENT

C:\WP60\JDH\BWS\standard provisions.wsc- Zone 5.wpd



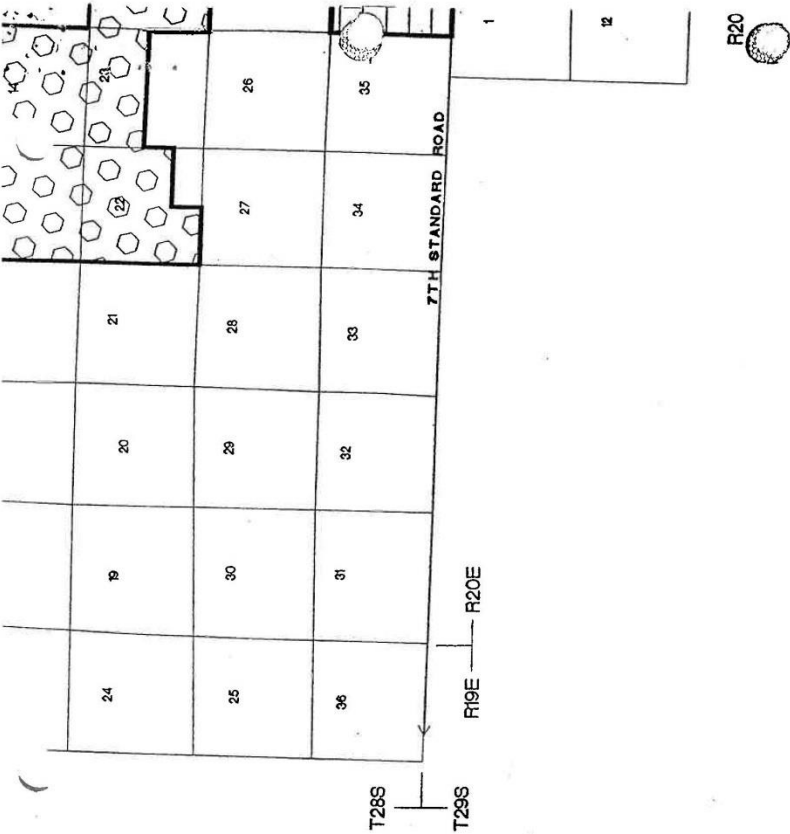
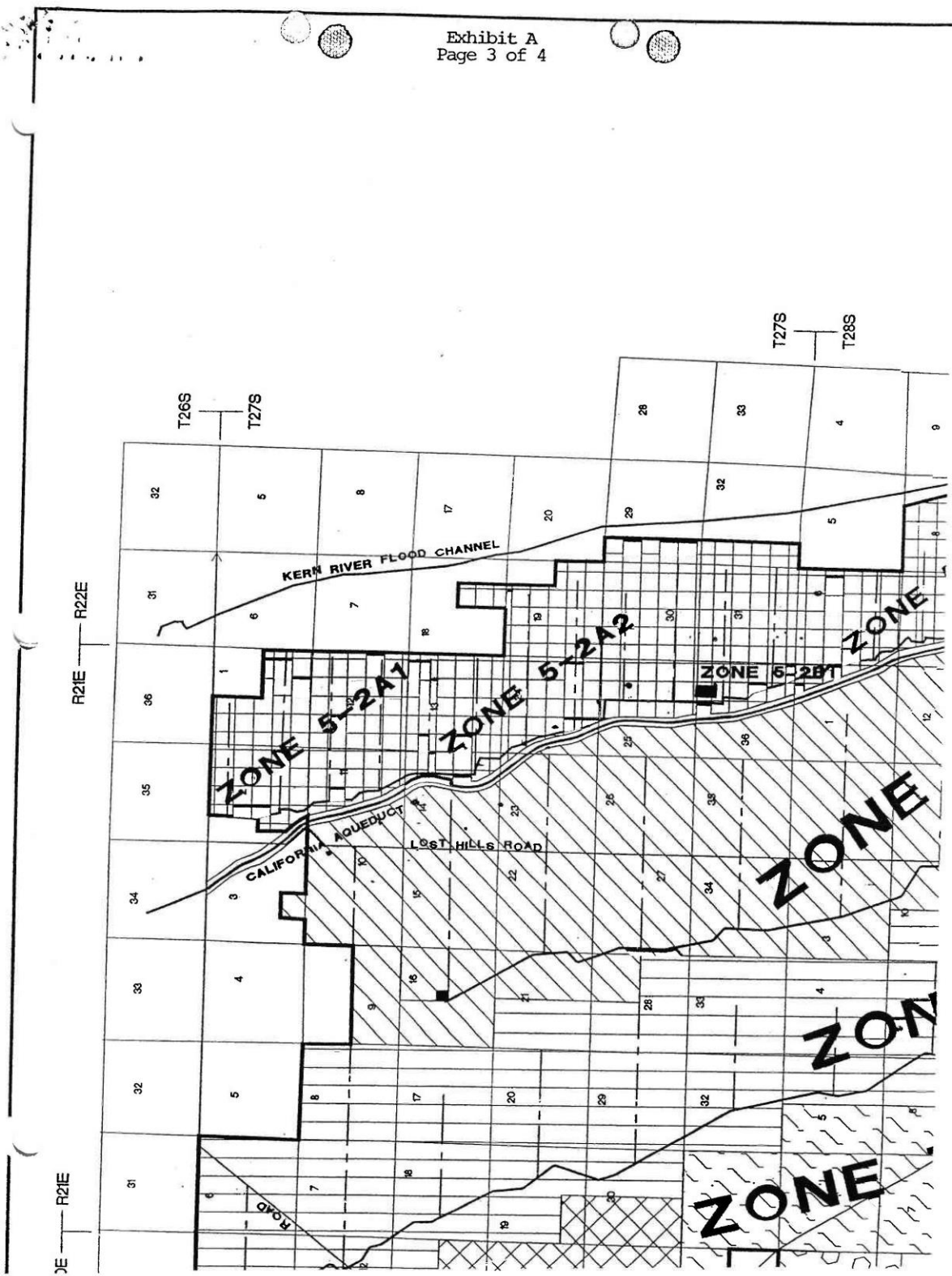


Exhibit A
Page 2 of 4



MAP OF DISTRICT SERVICE

Exhibit A
Page 3 of 4



THIS MAP CORRECTLY REPRESENTS DATA REDUCED BY ME OR UNDER MY SUPERVISION IN CONFORMANCE WITH THE REQUIREMENTS OF THE LAND SURVEYOR'S ACT AT THE REQUEST OF BELVIDGE WATER STORAGE DISTRICT IN OCTOBER 1993.

NOTE:

NOTE: ALL UNDERGROUND UTILITIES OR FACILITIES NOT SHOWN ON THIS MAP WERE OBTAINED FROM INFORMATION COLLECTED FROM THIS MAP REPRESENTS KERN COUNTY ENGINEERING AND SURVEY SERVICES, KERN COUNTY ASSESSORS OFFICE, UNITED STATES OF AMERICA, AND THE KERN COUNTY WATER STORAGE DIVISION. NO ASSURANCE IS DEEMED CORRECT. THE SURVEYOR ASSUMES NO RESPONSIBILITY FOR EASEMENTS, RIGHT-OF-WAYS, PROPERTY OR ANY INFORMATION PERTAINING TO RECORD TITLE INTEREST. SINCE NO TITLE REPORT WAS PROVIDED

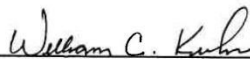
BELRIDGE WATER STORAGE DISTRICT

SECRETARY'S CERTIFICATE

I, WILLIAM C. KUHS, Assistant Secretary of the Board of Directors of BELRIDGE WATER STORAGE DISTRICT, hereby certify that:

- (a) the foregoing is a full, true and correct copy of the Standard Provisions For Water Supply Contracts For Supply of State Water Project Water (the "Standard Provisions") duly adopted at a regular meeting of the Board duly and regularly held at the regular meeting place thereof on November 5, 2002;
- (b) all directors had due notice of the meeting and a majority thereof were present;
- (c) I have compared the foregoing copy of the Standard Provisions with the original minutes of the meeting on file and of record in my office and the foregoing is a full, true and correct copy of the original thereof adopted at the meeting and entered in the minutes; and
- (d) the Standard Provisions have not been amended, modified or rescinded since the date of their adoption, and are now in full force and effect.

WITNESS my hand and the seal of the BELRIDGE WATER STORAGE DISTRICT this 6th day of November, 2002.



William C. Kuhs, Assistant Secretary
Board of Directors

[SEAL]

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7.07. Carry-Over Entitlement Water

(1) Introduction.

The purpose of this section is to implement the provisions of Article 12(e) of the Master Contract which allows the carry-over of Entitlement Water from one Year for delivery during the first three months of the next Year. Carry-over Entitlement Water is limited to Entitlement Water approved for delivery in October, November and December of a Year but which could not be delivered due to (1) outages of facilities within the Agency, (2) delay in the planned application of Entitlement Water for pre-irrigation, or (3) delay in the spreading of Entitlement Water for groundwater storage. The delivery of carry-over Entitlement Water cannot adversely affect current or future State Water Project operations.

(2) Request to Carry-Over Entitlement Water.

On or before December 15 of each Year the District will contact each Water User with unused or undisposed of Entitlement Water to determine whether the Water User desires to carry-over such Entitlement Water for delivery during the first three months of the next Year. Any Water User who desires to carry-over Entitlement Water to the next Year shall submit to the District

by 12 p.m. on the last business day of such Year a schedule for the delivery of such Entitlement Water. The schedule may be revised by the District or the Water User in the manner specified in sections 6.01 and 6.02 hereof. A Water User who fails to timely submit such schedule shall be deemed to have abandoned any unused or undisposed of Entitlement Water. Any Water User who timely submits such schedule shall be deemed to have agreed to pay the District any additional charges the District may incur for the delivery of the Water User's carry-over Entitlement Water.

(3) Delivery of Carry-Over Entitlement Water.

The District, to the extent possible, shall deliver the carry-over Entitlement Water consistent with the approved delivery schedule.

(4) Allocation of Displaced Carry-Over Entitlement Water.

Any carry-over Entitlement Water displaced from State Water Project facilities and lost to the District because of State Water Project operations shall be lost within the District among the District and Water Users with carry-over Entitlement Water in the following order of priority:

First, water carried-over for Water Users,
allocated among Water Users who have not yet used all
of their carry-over Entitlement Water pro rata on the
basis of each affected Water User's amount of unused
carry-over Entitlement Water. Second, water carried-
over by the District.

The District shall give each affected Water User as much
notice as feasible of a potential loss of carry-over Entitlement
Water.

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**Appendix 8. Permanent Entitlement
Transfer Policy**

Adopted

11/07/1995

BELRIDGE WATER STORAGE DISTRICT

REPORT OF
AD-HOC COMMITTEE
ON ESTABLISHMENT OF POLICY
FOR PERMANENT TRANSFER OF ENTITLEMENT TO
STATE WATER PROJECT WATER

I. INTRODUCTION

The Monterey Agreement-Statement of Principles (the "Principles") was signed by representatives of the Department of Water Resources (the "Department"), the Metropolitan Water District of Southern California ("Metropolitan"), the Kern County Water Agency (the "Agency") and others on December 1, 1994. One of the principal purposes of the Principles was to resolve the dispute among State Water Project ("SWP" or "Project") contractors over the proper interpretation and application of the water shortage provisions in the SWP water supply contracts ("Article 18"). Paragraph 4 of the Principles provides for the permanent transfer of 130,000 acre feet ("AF") of SWP annual contract entitlement water from the "Ag Contractors" to the "Urban Contractors" on a willing buyer-willing seller basis. The Ag Contractors have an aggregate annual contract entitlement of 1,222,700 AF, the Agency's share of which is 1,033,800 AF. Belridge Water Storage District (the "District") has an annual contract entitlement under its water supply contract with the Agency of 163,000 AF or about 13.3% of the total agricultural entitlements.

The Agency, the District and other member units of the Agency are currently discussing the manner in which the Principles are to be implemented within the Agency. The Board of Directors of

the District (the "Board") wants to develop a District program to provide for the permanent transfer of part of the District's annual contract entitlement and the President appointed directors David K. Banker and Garry N. Nelson to an ad-hoc committee (the "Committee") to develop a proposed District program for the Board's consideration. This is the Committee's report on the program.

This report is in five parts. This introduction is Part I. Part II contains background information. Part III sets forth the manner in which the opportunity to permanently transfer Project water should be allocated among the Water Users in the District. Part IV recommends the District conditions that should be required for District approval of any permanent transfer of entitlement to Project water. And, Part V recommends a policy for the administration of any funds paid to the District as a condition of the permanent transfer of entitlement to Project water.

II. BACKGROUND

In 1966 the District and the Agency entered into a water supply contract for the delivery of Project water by the Agency to the District. The contract, as amended, provides for the annual delivery to the District of 163,000 AF of Project water, 148,000 AF of which may be used for agricultural purposes and 15,000 AF of which may be used for any purpose.

The District has entered into long-term water supply contracts with landowners in the District ("Water Users").¹ The District is divided into 9 principal Zones of Benefit ("Zones") described as Zones 1 through 9. Zone 5 has been further divided into Zones 5-2A1, 5-2A2, 5-2B1, 5-2B2 and 5-3. The District currently provides permanent water service to Water Users in Zones 1, 2, 5-2A1, 5-2A2, 5-2B1, 5-2B2, 7 and the Industrial Zone.² The District currently provides interim water service to Water Users in parts of Zones 3 and 6. The District does not provide water service to Water Users in parts of Zones 3 and 6 or any part of Zones 4, 5-3 or 8. There are no longer any Water Users in Zone 9.

Attached as Exhibit A is a map of the District which shows, among other things, the Zones, the current service area ("SA"), the interim service area ("ISA"), and the non-service area ("NSA"). Attached as Exhibit B is a tabulation of the area of land in each Zone, the SA, the ISA, and the NSA, and the current annual entitlements of SWP water within these geographical areas.

Of the District's current annual entitlement of 163,000 AF, 7,400 AF has been reserved for operational losses³ and 8,732 AF

¹ Not all landowners in the District executed water supply contracts and not all lands in the District are subject to water supply contracts. "Water Users" refers to those landowners in the District whose lands are subject to a water supply contract.

² The lands subject to industrial water supply contracts are not in any numbered Zone.

³ The operational losses are assumed to be five percent of the water delivered for agricultural use, i.e., five percent of 148,000 AF or 7,400 AF. There are no operational losses for the 15,000 AF delivered for industrial use.

is not under contract with any landowner in the District. The balance of the District's annual entitlement, i.e., 146,868 AF, is held by Water Users in the SA, the ISA, and the NSA in the following amounts:

<u>Geographical Area</u>	<u>Total Annual Entitlements (AF)</u>
SA	112,854
ISA	11,163
NSA	<u>22,851</u>
Total	146,868

The Water Users in the SA and the ISA are obligated to make payments to the District under their contracts with the District but the Water Users in the NSA are not so obligated since the District does not make water service available to those Water Users. Nevertheless, the District is obligated to make payments to the Agency for the uncontracted-for water (8,732 AF) and the water under contract with Water Users in the NSA (22,851 AF). This water (31,583 AF) is referred to in the District as "excess District entitlement" or "EDE" water.

In 1987 the District spread the benefits of its contract with the Agency among all of the tracts of land in the District subject to water supply contracts (the "1987 Assessment"). The assessments have been spread on all such tracts of land in proportion to the average of two ratios, namely: (1) the ratio that the area of the tract bears to the total area of all tracts subject to water supply contracts and (2) the ratio that the annual entitlement of Project water for the tract bears to the aggregate

of all annual entitlements of Project water for all tracts subject to water supply contracts. The District has made two calls on the 1987 Assessment, one in 1987 in the aggregate amount of \$500,000 and one in 1993 in the aggregate amount of \$475,000. It is now anticipated that the District will need to make calls on the 1987 Assessment annually to finance, in part, the District's obligation to the Agency to pay for EDE water.

It does not currently appear to be feasible, financially or economically, to provide District water service to Water Users in the NSA. Moreover, some Water Users within the SA or the ISA may wish to terminate agricultural operations in light of the decreasing reliability of SWP water and the increasing cost thereof. The Board wants to develop a District program for the permanent transfer of part of the District's annual contract entitlement of SWP water. Any policy for the permanent transfer of entitlement to Project water should assure that those Water Users in the District who wish to continue operations, farming or industrial, are not adversely affected by the implementation thereof.

III. ALLOCATION OF OPPORTUNITY TO TRANSFER ENTITLEMENT TO PROJECT WATER

If the District has the opportunity to transfer entitlement to Project water, the initial question is how should the opportunity be allocated among the District and Water Users within the SA, the ISA and the NSA? The next question is how

should the opportunity be allocated among Water Users within a particular geographical area? These questions are addressed in the order presented.

The District has 7,400 AF of operations water and 8,732 AF of uncontracted-for Project water. The total annual entitlements in the SA, the ISA and the NSA are 112,854 AF, 11,163 AF and 22,851 AF, respectively. For now, the 7,400 AF should be reserved for operational losses. The 8,732 AF should be permanently transferred to reduce the financial burden on all Water Users in the District. The 22,851 AF in the NSA should be permanently transferred, if possible, to reduce or eliminate the necessity for assessments under the 1987 Assessment. Project water in the ISA should be transferred if any Water User wants to give notice of termination of an interim water supply contract.⁴ Finally, Project water in the SA should only be transferred if a Water User wishes to do so.

In order to reduce or eliminate the necessity for any assessments under the 1987 Assessment, the Committee recommends that the opportunity to permanently transfer entitlement to Project water should be allocated in the following manner:

1. First, to the District to transfer the annual entitlement to the 8,732 AF of uncontracted-for Project water.

2. Second, to Water Users in the NSA to transfer annual entitlements of up to 22,851 AF of Project water.

3. Third, to Water Users in the ISA to transfer annual entitlements of up to 11,163 AF of Project water.

4. Fourth, and last, to Water Users in the SA to transfer annual entitlements to Project water.

If the demand of Water Users in either the second, third or fourth priority exceeds the opportunity to transfer entitlements to Project water, the Committee recommends that the opportunity be allocated among Water Users of the same priority pro rata on the basis of their annual entitlements to Project water. The opportunity should be transferrable among Water Users within the same priority.

IV. DISTRICT CONDITIONS FOR APPROVAL OF PERMANENT TRANSFERS OF ENTITLEMENT TO PROJECT WATER

A. Introduction.

The Water Users in the SA, the ISA, and the NSA are not similarly situated in many respects. However, the Water Users in each Zone of the SA, each Zone of the ISA, and each Zone of the NSA are generally similarly situated. The Committee therefore recommends different conditions for the approval of a permanent transfer of entitlement to Project water, depending upon the

location of the Water User's land in the District. The Committee first recommends conditions for the transfer of the entitlement to the uncontracted-for Project water, next recommends conditions for the transfer of entitlement to Project water from the NSA, next recommends conditions for the transfer of entitlements to Project water from the SA, and last recommends conditions for the transfer of entitlements to Project water from the ISA.

B. Conditions For Transfer Of
Uncontracted-For Project Water.

The annual entitlement of 8,732 AF of uncontracted-for Project water is of equal benefit, or burden, to all Water Users in the District and therefore no conditions need be placed on the transfer thereof.

C. Conditions For Transfer Of Entitle-
ment To Project Water From The NSA.

1. Introduction.

The Water Users in the NSA have made no payments under their water supply contracts. They have made no payments to finance District debt service, District operations or District overhead. They have, however, paid two assessments under the 1987 Assessment but the amounts paid, together with revenue from the disposition of EDE water, have not covered the Agency charges for the EDE water. While their lands are subject to other District assessments,⁵ no calls have been made on those assessments.

The Committee recommends that Water Users in the NSA pay the District three separate charges as a condition for approval

⁵ See Part IV(D)(2) hereof p. 13 infra.

of any transfer of entitlement to Project water from the NSA, namely (a) a past Agency Charge, (b) a District Capital Charge, and (c) a past Overhead Charge. These charges are discussed below.

2. Past Agency Charge.

The District has received EDE water since 1977. The District has sold the EDE water when it had the opportunity to do so but the District has generally been unable to dispose of the EDE water for its true cost. The total cost of the EDE water through 1994 exceeds \$17 million while the total revenue attributable thereto, including the \$975,000 collected under the 1987 Assessment, is about \$12 million. A tabulation showing the amount, cost, and revenue associated with the EDE water is attached as **Exhibit C**. The tabulation illustrates that the Water Users in the SA and the ISA have contributed over \$4 million, exclusive of interest, to finance the cost of the EDE water.

The Committee recommends that any permanent transfer of entitlement to Project water from the NSA require payment to the District in the amount equal to the transferor's pro rata share of the EDE deficit. Such amount through 1994 is \$138/AF.

3. District Capital Charge.

The District has issued and sold bonds in the aggregate principal amount of \$14,975,000 to finance the construction of irrigation facilities in the District. The District issued and sold bonds in 1967 in the original principal amount of \$10,275,000 to finance the construction of Units of Construction ("Units") 1 and 2, issued and sold bonds in 1972 in the original principal

amount of \$2,700,000 to finance the construction of Unit 6-1, and issued and sold bonds in 1979 in the original principal amount of \$2,000,000 to finance the construction of Unit 5-2. The assessments for Units 1 and 2 were spread on all tracts of land in the District; the assessments for Units 6-1 and 5-2 were spread on each tract of land subject to a water supply contract in the area benefitted thereby. The assessments are security for the repayment of District bonds. The District has not made any calls on these assessments since the debt service on District bonds has been and is collected annually by the District as part of the water charges for Project water.

The NSA includes lands in Zones 3, 4, 5-3, 6 and 8. Lands in Zones 3, 4, 6 and 8 are subject to assessments for Units 1 and 2 and 6-1. Lands in Zone 5-3 are subject to an assessment for Units 1 and 2. The principal amounts of these assessments⁶ range from a low of \$3.30/acre in Zone 5-3 to a high of \$147.58/acre in Zone 6. A tabulation of these assessments is attached as Exhibit D. The Water Users in the NSA have not used any District irrigation facilities financed by District bonds and thus the Committee believes that it would be inappropriate to accrue interest on the assessments. On the other hand, these Water Users should not be given credit for any reduction in District debt resulting from payments by Water Users in the SA and ISA.

⁶ The principal amounts of these assessments bear interest beginning 30 days after the assessment list is filed with the county treasurer. The interest rate was seven percent per year through 1975 and has been eight percent per year since January 1, 1976. (Wat. Code, § 46671.)

The Committee recommends that any permanent transfer of entitlement to Project water from the NSA require a payment to the District of an amount equal to the original principal amount of the assessments. Such amounts are as follows:

<u>Zone</u>	<u>Assessment/Acre</u>	<u>District Capital Charge/AF⁷</u>
3	\$ 96.87	\$48
4	96.87	48
5-3	3.30	2
6	147.58	74
8	121.93	61

4. Past Overhead Charge.

The Water Users in the NSA have paid no costs for the administration of the District's water supply contract with the Agency. The budgeted Overhead Charges from 1968 to 1994 have ranged from a low of zero to a high of \$3.73/AF, averaged \$1.71/AF, and total \$46.30/AF. The Water Users in the NSA have probably not benefited, on a unit basis, to the extent that Water Users in the SA or ISA have benefited from such administration but any difference in benefit is probably offset by disregarding any accrual of interest on past Overhead Charges.

The Committee recommends that any permanent transfer of entitlement to Project water from the NSA require a payment to the District of an amount equal to the total of the principal amount of

⁷ Annual contract entitlements in the SA, ISA and NSA are about 2 AF/acre. The recommended assessment per AF is the assessment per acre divided by two and rounded.

all District Overhead Charges from 1968 through the year of the transfer. Such amount through 1994 is \$46/AF.

5. Summary.

The recommended charges through 1994 are as follows:

<u>Zone</u>	<u>Agency</u>	<u>Charges/AF</u>		<u>Total</u>
		<u>District Capital</u>	<u>Overhead</u>	
3	\$138	\$48	\$46	\$232
4	138	48	46	232
5-3	138	2	46	186
6	138	74	46	258
8	138	61	46	245

D. Conditions For Transfer Of Entitlement To Project Water From The SA.

1. Introduction.

The Water Users in the SA have, for all intents and purposes, made payments under their water supply contracts since SWP water planned for delivery to their lands has been delivered thereto. Thus, they have paid their share of the Agency Charges, the District Capital Charges, the Delivery Charges and the Overhead Charges to date. Indeed, they have perhaps paid more than their share given that they have paid the debt service on bonds sold to finance the construction of District irrigation facilities to provide water service to Water Users in the NSA. If a Water User in the SA permanently transfers entitlement to Project Water, however, the District Capital Charge, the Delivery Charge, the Overhead Charge and similar charges of other Water Users in the SA

will increase unless the transferring Water User makes payments to the District to offset any such increase.

The Committee recommends that the Water Users in the SA pay the District three separate charges as a condition for approval of any transfer of entitlement to Project water from the SA, namely, (a) a District Capital Charge, (b) a Delivery Charge, and (c) an Overhead Charge. These charges are discussed below.

2. District Capital Charge.

The SA includes lands in Zones 1, 2, 5-2A1, 5-2A2, 5-2B1, 5-2B2, 7 and the Industrial Zone. The principal amounts of these assessments range from a low of \$102.58/acre in Zone 5-2B1 to a high of \$337.85/acre in Zone 5-2A1.⁸ The principal amount of District debt has been reduced from \$14,975,000 to \$9,615,000. The Water Users in the SA should only be required to retire their share of the outstanding debt.

The Committee recommends that any permanent transfer of entitlement to Project water from the SA require a payment to the District of an amount equal to the unpaid principal amount of the assessments.⁹ Such amount are currently as follows:

⁸ See Exhibit D.

⁹ This recommendation assumes that all Project water has been transferred from the NSA and the ISA. If any Water User in the NSA or the ISA has an annual contract entitlement of Project water at the time of a proposed transfer of entitlement to Project water from the SA, the District Capital Charge may have to be increased and an Agency Charge may have to be imposed to reflect a larger obligation.

<u>Zone</u>	<u>Assessment/Acre</u>	<u>District Capital Charge/AF¹⁰</u>
1	\$136.36	\$ 68
2	148.40	74
5-2A1	268.59	134
5-2A2	195.55	98
5-2B1	80.84	40
5-2B2	198.67	99
7	78.96	39
Industrial	4.04	2

3. Delivery Charge.

The budgeted Delivery Charge in Zones 1, 2 and 7, exclusive of the cost of energy, has ranged from a low of 36 cents/AF in 1972 to a high of \$6.88/AF in 1968 and has averaged \$2.75/AF from 1968 through 1994. The average during the last 10 years (1985 to 1994) is \$3.95/AF. The average Delivery Charge in Zones 5-2A1, 5-2A2, 5-2B1 and 5-2B2 over the last 10 years is \$1.60/AF. There is no Delivery Charge in the Industrial Zone since the District delivers Project water for industrial use in the California Aqueduct.

The Committee recommends that any permanent transfer of entitlement to Project water from the SA require a payment to the District of an amount equal to the present value, using a five percent per annum discount rate, of a series of annual payments through the year 2035 with the annual payments equal to the average

¹⁰ See note 7.

Delivery Charge, exclusive of the cost of energy, during the last 10 years. The amounts in 1996 would be as follows:

<u>Zone</u>	<u>District Charge/AF</u>
1	\$68
2	68
5-2A1	27
5-2A2	27
5-2B1	27
5-2B2	27
7	68
Industrial	0

4. Overhead Charge.

The budgeted Overhead Charge, as noted in Part IV(C)(4) hereof, averaged \$1.71/AF for the 27 year period from 1968 through 1994. The Overhead Charge during the last 10 years (1985 to 1994) has averaged \$2.21/AF.

The Committee recommends that any permanent transfer of entitlement to Project water from the SA require a payment to the District of an amount equal to the present value, using a five percent per annum discount rate, of a series of annual payments through the year 2035 with the annual payments equal to the average Overhead Charge during the last 10 years. Such amount in 1996 would be \$38/AF.

5. Summary.

The recommended charges through 1994 are as follows:

<u>Zone</u>	<u>District Capital</u>	<u>Charges/AF Delivery</u>	<u>Overhead</u>	<u>Total</u>
1	\$ 68	\$68	\$38	\$174
2	74	68	38	180
5-2A1	134	27	38	199
5-2A2	98	27	38	163
5-2B1	40	27	38	105
5-2B2	99	27	38	164
7	39	68	38	145
Industrial	2	0	38	40 ¹¹

E. Conditions For Transfer Of Entitlement
To Project Water From The ISA.

The Water Users in the ISA are, to some extent, situated like the Water Users in the NSA and, to some extent, situated like the Water Users in the SA. If treated like Water Users in the NSA, the current charges would be as follows:

<u>Zone</u>	<u>Agency</u>	<u>District Capital</u>	<u>Charges/AF Overhead</u>	<u>Total</u>
3	\$138	\$48	\$46	\$232
6	138	74	46	258

¹¹ The industrial water supply contracts require a zone of benefit charge to finance a special obligation of the District to the Agency under the third amendment of the District's water supply contract with the Agency. The Committee cannot anticipate the manner in which this charge will be altered through implementation of the Principles or as a result of the permanent transfer of entitlement to Project water that may be used for any purpose. Thus, the total charge could increase.

If treated like Water Users in the SA, the current charges would be as follows:

<u>Zone</u>	<u>District Capital</u>	<u>Charges/AF</u>		<u>Total</u>
		<u>Delivery</u>	<u>Overhead</u>	
3	\$32	\$68	\$38	\$138
6	47	68	38	153

On balance, the Water Users in the ISA are more similar to the Water Users in the SA than they are to the Water Users in the NSA, unless a Water User in the ISA terminates his interim water service contract, in which event he would probably revert to the status of a Water User in the NSA.

The Committee recommends that any permanent transfer of entitlement to Project water from the ISA require a payment to the District in an amount currently equal to \$170/AF in Zone 3 and \$190/AF in Zone 6.

F. Summary.¹²

<u>Zone</u>	<u>NSA</u>	<u>Charges/AF</u>	
		<u>ISA</u>	<u>SA</u>
1	\$N/A	\$N/A	\$174
2	N/A	N/A	180
3	232	170	N/A
4	232	N/A	N/A
5-2A1	N/A	N/A	199
5-2A2	N/A	N/A	163

¹² The recommended charges are District charges for the permanent transfer of entitlement to Project water. The Agency may seek to impose some Agency charges and any such charges would be in addition to any District charges.

5-2B1	N/A	N/A	105
5-2B2	N/A	N/A	164
5-3	186	N/A	N/A
6	257	190	N/A
7	N/A	N/A	145
8	245	N/A	N/A
Industrial	N/A	N/A	40

V. ADMINISTRATION OF DISTRICT
FUNDS COLLECTED FOR
PERMANENT TRANSFERS OF
ENTITLEMENT TO PROJECT WATER

The recommended charges fall into four categories, namely (a) Agency Charges, (b) District Capital Charges, (c) District Delivery Charges, and (d) District Overhead Charges. These are the charges contained in Article 14 of the agricultural water supply contracts.¹³

The Committee recommends that any funds collected by the District for the permanent transfer of entitlement to Project water be allocated and administered in the same way that the funds would have been allocated and administered if they have been collected as water charges under an agricultural water supply contract or an industrial water supply contract, as the case may be, provided, however, that no portion thereof be considered carryover surplus for the purposes of establishing water charges for future years. To the extent that funds are not required for reserves, the funds

¹³ The industrial water supply contracts have three categories of charges, (a) an Agency Charge, (b) an Overhead Charge, and (c) a Zone of Benefit Charge.

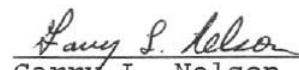
should be transferred to debt service funds and used to accelerate the retirement of District debt.

Dated: February 28, 1995

Respectfully submitted,

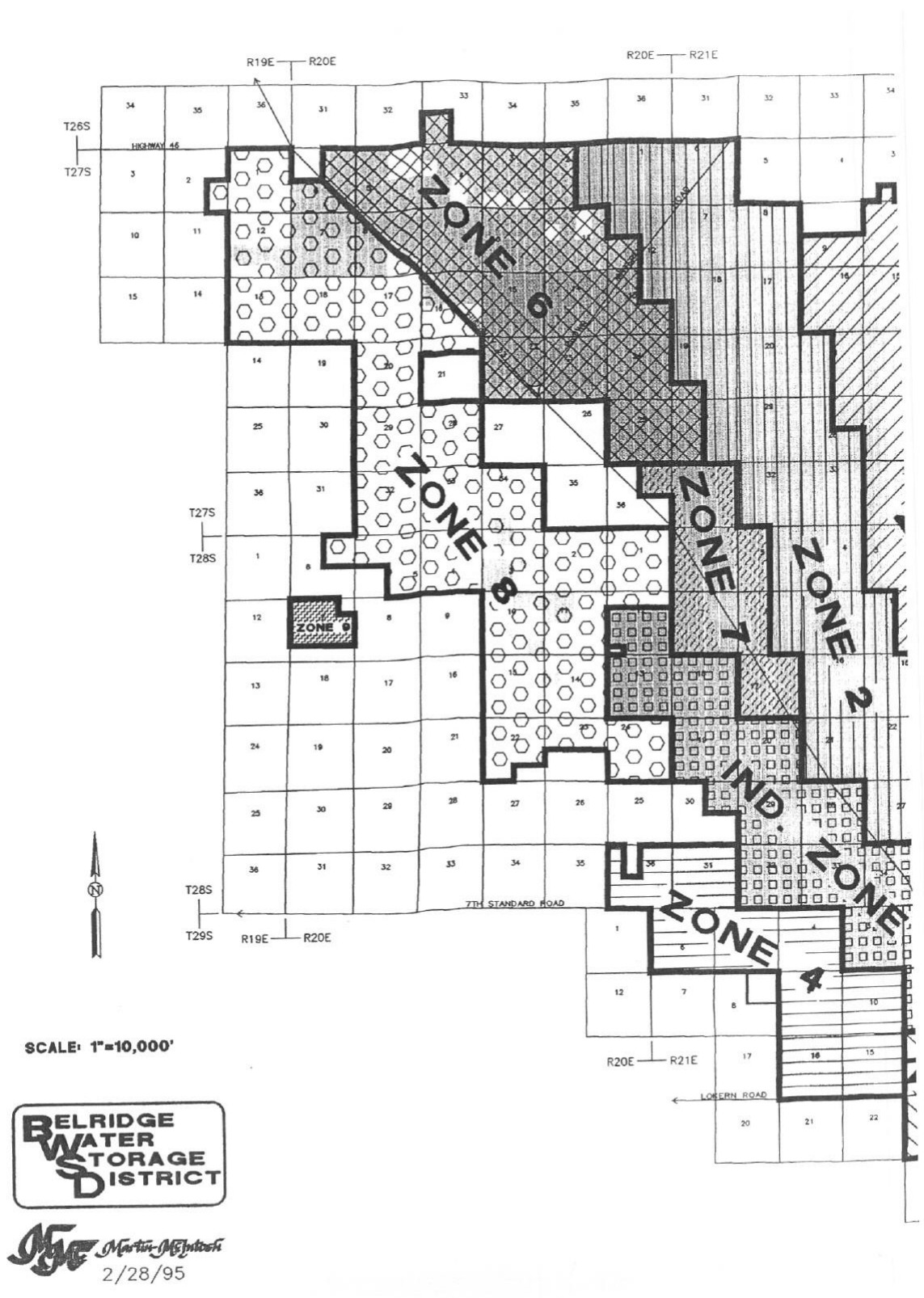


David K. Banker, Director



Garry L. Nelson, Director

BWSD4/Policy.SWP



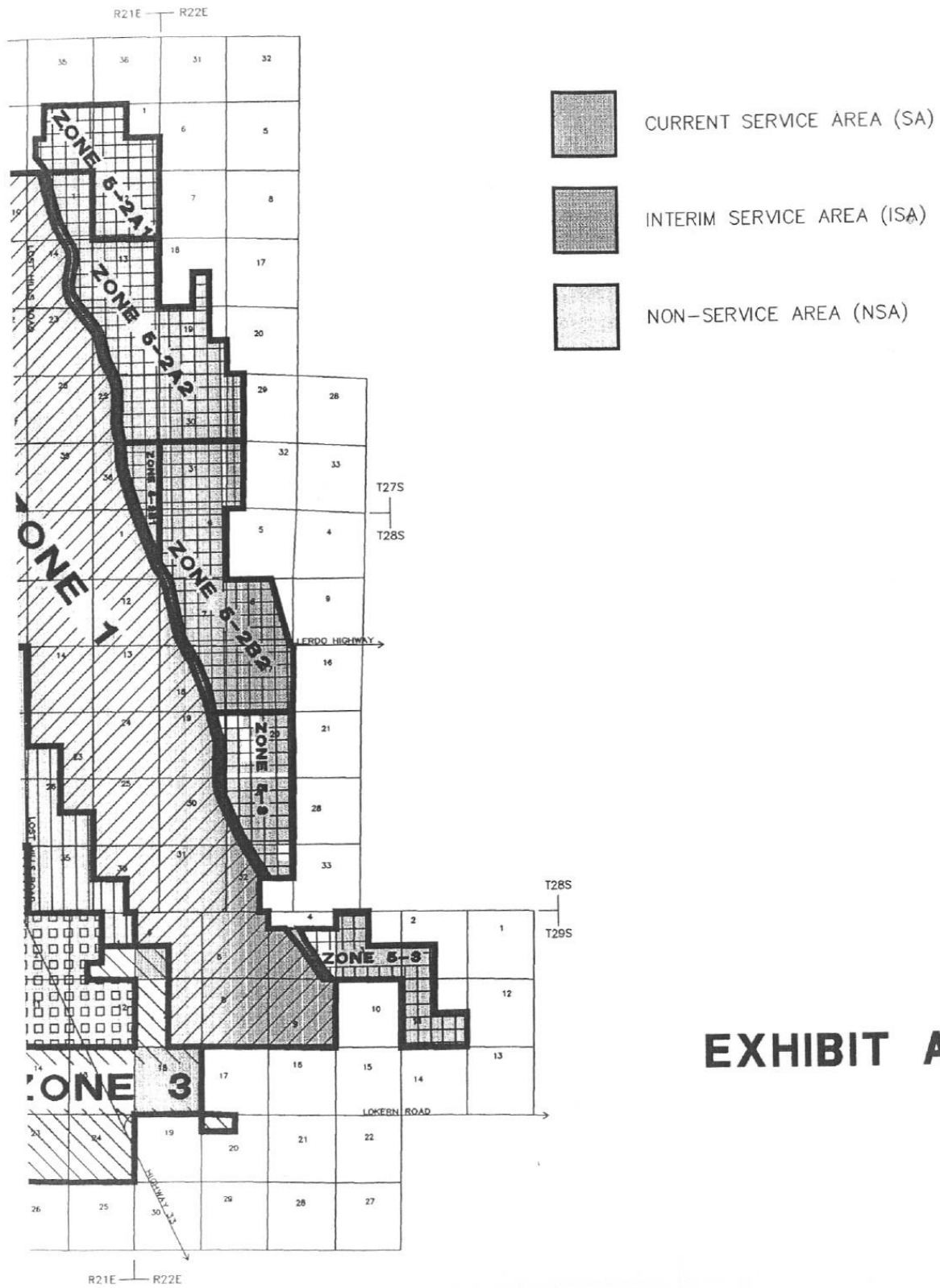


EXHIBIT A

EXHIBIT B

BELRIDGE WATER STORAGE DISTRICT

ENTITLEMENTS BY ZONE AND SERVICE AREA

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5-2A1	Zone 5-2A2	Zone 5-2B1	Zone 5-2B2	Zone 5-3	Zone 6	Zone 7	Zone 8	Zone Ind.	Total
Service Area	38,574	31,930	0	0	4,923	7,981	723	6,280	0	0	7,347	0	15,096	112,854
Interim Service Area	0	0	1,700	0	0	0	0	0	0	9,463	0	0	0	11,163
Non - Service Area	0	0	3,641	1,963	0	0	0	0	4,087	9,640	0	3,520	0	22,851
Operations	2,621	2,169	115	0	334	542	49	427	0	642	500	0	0	7,400
Uncontracted Water														8,732
TOTAL	41,195	34,099	5,456	1,963	5,257	8,524	772	6,707	4,087	19,745	7,847	3,520	15,096	163,000

ACREAGES BY ZONE AND SERVICE AREA

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5-2A1	Zone 5-2A2	Zone 5-2B1	Zone 5-2B2	Zone 5-3	Zone 6	Zone 7	Zone 8	Zone Ind.	TOTAL
Service Area	20,309	15,971	0	0	1,625	3,580	341	3,272	0	0	3,389	0	9,164	57,651
Interim Service Area	0	0	800	0	0	0	0	0	0	4,682	0	0	0	5,482
Non - Service Area	0	0	3,110	5,837	0	0	0	0	2,704	5,422	0	16,238	0	33,311
TOTAL	20,309	15,971	3,910	5,837	1,625	3,580	341	3,272	2,704	10,104	3,389	16,238	9,164	96,444

2/28/95

*Belridge Water Storage District
2020 Agricultural Water Management Plan*

BELRIDGE WATER STORAGE DISTRICT

PAST AGENCY CHARGES PAID FOR EDE WATER BY THE SERVICE AREA

Year	District Entlmt	EDE Water af.	Unit Agency Cost \$/af	Total Cost of EDE \$	EDE Sold af	Revenue From Sale \$	Variable Credit for EDE \$	Revenue From 87 Assesmt \$	Revenue From the Service Area \$
1968	19,400	0		0	0	0	0	0	0
1969	39,700	0	12.04	0	0	0	0	0	0
1970	47,500	0	15.66	0	0	0	0	0	0
1971	48,500	0	12.28	0	0	0	0	0	0
1972	49,500	0	13.05	0	0	0	0	0	0
1973	58,100	0	15.48	0	0	0	0	0	0
1974	81,500	0	15.00	0	0	0	0	0	0
1975	88,400	0	14.19	0	0	0	0	0	0
1976	95,900	0	14.11	0	0	0	0	0	0
1977	102,500	3,195	17.08	54,571	0	0	9,585	0	44,986
1978	109,800	9,356	15.95	149,228	9,356	149,228	0	0	0
1979	116,800	14,220	20.81	295,918	14,220	295,918	0	0	0
1980	123,200	15,467	14.34	221,797	15,467	221,797	0	0	0
1981	129,800	21,684	21.87	474,229	21,684	474,229	0	0	0
1982	136,000	29,299	27.71	811,875	29,299	811,875	0	0	0
1983	140,800	32,316	24.30	785,279	32,316	785,279	0	0	0
1984	146,500	24,600	36.32	893,472	24,600	893,472	0	0	0
1985	150,600	28,700	37.70	1,081,990	28,700	1,081,990	0	0	0
1986	155,200	29,713	31.08	923,480	29,713	923,480	0	0	0
1987	158,500	32,848	39.14	1,285,671	23,182	907,343	57,996	500,000	-179,669
1988	161,000	35,302	41.27	1,456,914	26,643	1,099,557	51,954	0	305,403
1989	162,400	37,198	43.18	1,606,210	27,744	1,197,986	56,724	0	351,500
1990	163,000	27,831	43.55	1,212,040	13,340	584,877	86,406	0	540,758
1991	163,000	27,713	46.75	1,295,583	0	0	166,278	0	1,129,305
1992	163,000	31,583	57.57	1,818,233	14,212	818,205	104,224	0	895,804
1993	163,000	31,583	54.57	1,723,484	31,583	1,294,903	0	475,000	-46,419
1994	163,000	31,583	50.28	1,587,993	16,706	918,830	89,262	0	579,901

TOTALS	\$17,677,967	\$ 12,458,969	\$ 622,429	\$ 975,000	\$3,621,569
					SERVICE AREA 1987 ASMT = \$ 323,046
					SERVICE AREA 1993 ASMT = \$ 398,399
					TOTAL SERVICE AREA COST FOR EDE = \$4,343,014
					UNIT COST FOR 31,583 AF OF EDE = \$138/AF

2/28/95

EXHIBIT D

BELRIDGE WATER STORAGE DISTRICT

ASSESSMENTS LEVIED FOR CAPITAL IMPROVEMENTS

	Bonds Issued	Bonds Retired	Bonds Outstanding
Units 1&2 =	\$10,275,000	\$4,325,000	\$5,950,000
Unit 6-1 =	2,700,000	625,000	2,075,000
Unit 5-2 =	2,000,000	410,000	1,590,000

SUMMARY OF PROJECT ASSESSMENTS BY ZONE IN DOLLARS PER ACRE

Unit of Construction	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5-2A1	Zone 5-2A2	Zone 5-2B1	Zone 5-2B2	Zone 5-3	Zone 6	Zone 7	Zone 8	Zone 9	Zone Ind.
Units 1&2	203.28	196.92	52.15	52.15	0	3.30	3.30	3.30	3.30	102.86	77.01	77.21	75.16	0
Unit 6-1	24.18	44.72	44.72	44.72	0	0	0	0	0	44.72	44.72	44.72	44.72	0
Unit 5-2	0	0	0	0	337.85	243.57	99.28	247.49	0	0	0	0	0	0
Annexation 5	0	0	0	0	0	0	0	0	0	0	0	0	0	4.04
Total Assessment	227.56	241.64	96.87	96.87	337.85	246.87	102.58	250.79	3.30	147.58	121.73	121.93	119.88	4.04
Bonds Retired	91.20	93.24	32.30	32.30	69.26	51.32	21.74	52.12	1.39	53.65	42.77	42.85	41.99	0
Bonds Outstanding	136.36	148.40	64.57	64.57	268.59	195.55	80.84	198.67	1.91	93.93	78.96	79.08	77.89	4.04

2/28/95

Appendix 9. Water Transaction Report

Belridge Water Storage District Water Transactions - Transaction and Usage Summary

From 01/01/2012 - 12/31/2012

Company	Effective Date	Description	Service Area	Transaction Amount
	01/01/2012	2012 Water Allocation #1 @ 60%	1	26.33
	01/01/2012	2012 Water Allocation #1 @ 60%	2	923.02
	01/01/2012	2012 Water Allocation #1 @ 60%	6	463.32
	02/21/2012	2012 Water Allocation Reduction to 50%	1	-4.40
	02/21/2012	2012 Water Allocation Reduction to 50%	2	-153.84
	02/21/2012	2012 Water Allocation Reduction to 50%	6	-77.22
	03/01/2012	Turnback Pool A		6.17
	04/17/2012	2012 Water Allocation #2 @ 10%	1	4.40
	04/17/2012	2012 Water Allocation #2 @ 10%	2	153.84
	04/17/2012	2012 Water Allocation #2 @ 10%	6	77.22
	04/30/2012	Butte County Water (est)		44.58
	04/30/2012	CLWA Water (est)		421.47
	04/30/2012	Dry Year Water (SOD) (est)		477.96
	04/30/2012	FID Water (est)		25.00
	04/30/2012	Groundwater Recovery (est)		91.26
	04/30/2012	KCWA Table A (est)		17.49
	04/30/2012	TCCWD Water (est)		24.00
	04/30/2012	Yuba Water (est)		28.84
	05/23/2012	2012 Water Allocation 3# @ 5%	1	2.19
	05/23/2012	2012 Water Allocation 3# @ 5%	2	76.91
	05/23/2012	2012 Water Allocation 3# @ 5%	6	38.61
	07/27/2012	2011 metering and supply adjustment		-13.27
	08/01/2012	Friant Recirc Water		850.00
	09/30/2012	Dry Year Water (Stranded in Oroville)		-477.96
	10/12/2012	District Operations Water		33.90
	10/23/2012	Browns Valley ID Water		10.65
	12/01/2012	WHWD Water		17.13
	12/10/2012	Adjust 2010 Recharge		1.16
			Total:	3,088.76
Usage Within Water District (01/01/2012 - 12/31/2012)				-2,860.86
Total -----				227.90

Appendix 10. Certified Test Report



CERTIFIED TEST REPORT

CUSTOMER: MCCALLS METER SALES SERVICE
MODEL NO: M0306
METER SERIAL NO: 11-04485

CONFIGURATION

METER INSIDE DIAMETER: 6.065
METER OUTSIDE DIAMETER: 6.625
TEST DATE: 6/16/2011
TEST FACILITY: Volumetric
IDEAL TEST CONSTANT: 6738

CALIBRATION DATA

	Tested TC	GPM	Accuracy
1	6741	1257	100.0

CERTIFIED BY: Paul Hobbs DATE: 6/20/2011

This calibration was performed on a gravimetric or volumetric test facility, traceable to the National Institute of Standards and Technology, USA. The estimated flow measurement uncertainty of the calibration facilities are:
Gravimetric +/- 0.15% Volumetric +/- 0.5%



McCROMETER

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11-04485

6/20/2011 9:06:38 AM
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