Semitropic Water Storage District

Agricultural Water Management Plan

April 2021

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Abbreviations and Acronyms

AFY	acre feet per year
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	Kern County
CVP	Central Valley Project
CWA	Clean Water Act
ESA	Endangered Species Act
GEI	GEI Consultants, Inc.
project	Leonard Avenue Conveyance Improvement Project
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SWID	Shafter-Wasco Irrigation District
SWSD	Semitropic Water Storage District
USACE	U.S. Army of Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 Introduction

Water Code §10800 – 10853 (the Agricultural Water Management Planning Act) requires agricultural water suppliers to submit to the California Department of Water Resources (DWR) an Agricultural Water Management Plan (AWMP) that addresses the elements listed in Water Code §10826. An agricultural water supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

Semitropic Water Storage District (District) is a publicly owned agricultural water supplier currently providing water to approximately 130,000 irrigated acres (Figure 1-1). As such, and in accordance with Water Code §10820, the District has prepared this 2020 AWMP as an update to their 2015 AWMP. This 2020 AWMP complies with current regulations, including AB 1668 (Friedman, Statute of 2018), and generally conforms with DWR's *A Guidebook to Assist Agricultural Water Suppliers to Prepare a 2020 Agricultural Water Management Plan* (August 2020).

1.1 Description of Previous Water Management Activities

Water management activities previously or currently being undertaken by the District are identified as follows:

1. The District completed a Groundwater Sustainability Plan (GSP) in 2019, in compliance with the Sustainable Groundwater Management Act. The GSP identifies Sustainable Management Criteria and Minimum Thresholds for sustainable management of the groundwater basin. Development of the GSP was done in coordination with the Kern Groundwater Authority. The District's GSP is included as Appendix A to this AWMP.
2. Develop water exchanges and/or water banking arrangements that result in a net increase in District water supplies, when practicable.
3. Collaborate with neighboring water agencies to increase the importation of available surface water supplies.
4. Promote water use efficiency through financial support of the North West Kern RCD-DWR Mobile Laboratory, encouraging landowners to take advantage of this resource by requesting field irrigation evaluations, and encouraging landowners to apply for financial assistance for on-farm irrigation application efficiency improvements through existing federal and state programs.
5. Actively participate in local water resource management forums, including the District's Groundwater Monitoring Committee, the Poso Creek Regional Water Management Group, the Kern River Watershed Coalition Authority, and the Kern Groundwater Authority.

6. Implement District level evapotranspiration ET monitoring and reporting to landowner through enhanced ET monitoring program.
7. Participate in California Statewide Groundwater Elevation Monitoring (CASGEM) Program using groundwater level readings.

1.2 Plan Coordination and Adoption Activities

The following coordination activities were performed by SWSD in preparing the 2020 AWMP.

1.2.1 Notification of Preparation

In compliance with Water Code §10821(a), the District prepared and posted a public notice of plan preparation, which is included in Appendix B.

1.2.2 Plan Adoption and Submittal

The 2020 AWMP was adopted during a Public Hearing held on May 12, 2021. A copy of the SWSD Board Resolution of Adoption for this AWMP is included in Appendix B. During the Public Hearing, the public and District landowners were provided an opportunity to provide comment on the AWMP.

The 2020 AWMP, as adopted by SWSD, is available on their web site (http://www.semitropic.com/). This plan is available along with previous AWMPs and the District's GSP for reference.

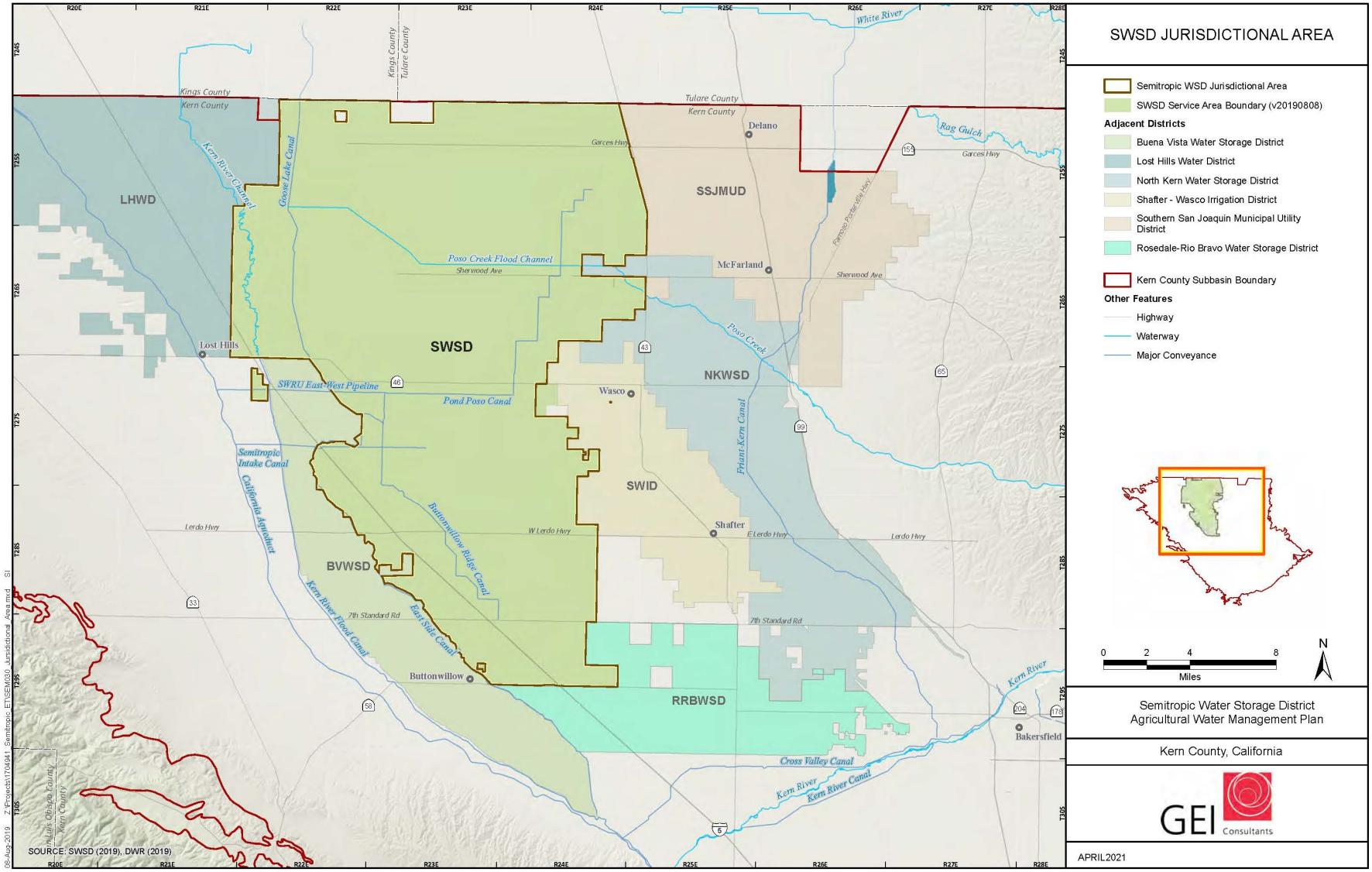

Figure 1-1. General Location and Jurisdiction Boundaries of Semitropic WSD.

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2.0 Description of Service Area

The District was established in 1958 as a water storage for the purpose of securing State Water Project (SWP) water to supplement groundwater supplies and mitigate overdraft within the region. Today, the District is one of eight water storage districts in California and is the largest in Kern County, supplying water, predominantly for agricultural use, to nearly 300 customers. The District is governed by a seven-member Board of Directors. Each member represents a geographical area within the District known as a division and are elected to a 4-year term by the voters owning land within that division.

Semitropic began importing SWP water in 1973 under member unit contracts with the Kern County Water Agency (KCWA or Agency) for a Table A entitlement of 155,000 acre-feet per year. Additionally, the District developed surface water supplies from water transfers, the Poso Creek, and a required "10-percent leave behind" from water banked by third parties in the Semitropic Groundwater Storage Bank. These supplies have been developed to meet the irrigation demand on approximately 130,000 acres within the District's boundaries. District landowners also rely on local groundwater resources to meet irrigation demands not met by available surface water deliveries. Table 2-1 provides a summary of the surface water supplies received by the District from 2010 to 2019.

For the 10-year period of 2010 to 2019, the District received an annual average of 80,000 acre-feet from the SWP (see Table 2-1). Deliveries from the SWP have been reduced due to drought conditions and a continued increase in regulatory constraints on exports from the Sacramento-San Joaquin Delta. As a result of these regulatory constraints, the DWR 2019 Delivery Capacity Report predicts that the average annual delivery of SWP Table A entitlements is expected to be 58 percent of the contract amounts. Accordingly, on average, Semitropic can expect its 155,000 acre-foot SWP member unit contract to yield an average annual supply of about 89,700 acre-feet.

SWP Article 21 supplies, short-term surplus water made available by the SWP, are also a critical wet year supplies that can be used for groundwater recharge and storage for use in dry years to offset the overall reduction of SWP deliveries. During the 10-year period from 2010 to 2019, Semitropic received Article 21 water in 4 years, 2012, 2017,2018, and 2019, for a total supply of approximately 101,100 acre-feet or an average of 10,110 acre-feet per year (Table 2-1).

Table 2-1. Surface Water Deliveries for 2010 to 2019

	Surface Water Sources (acre-feet)					
	SWP Table A	SWP Article 21	Poso Creek	Water Transfers	Banking Leave Behind	Annual Total
2010	77,500	0	0	8,515	14,000	100,015
2011	124,000	42,935	6,000	29,448	26,169	228,552
2012	100,750	0	0	5,736	7,041	113,527
2013	54,250	0	0	1,186	939	56,375
2014	7,750	0	0	4,063	0	11,813
2015	31,000	0	0	1,959	160	33,119
2016	93,000	0	0	5,076	3,391	101,467
2017	131,750	25,469	24,423	83,551	25,450	290,643
2018	54,250	11,213	0	212,468	6,532	284,463
2019	116,250	21,519		113,605	19,127	270,501
2020	31,000	0	0	14,200	0	45,200
Period Average:	74,682	9,194	3,042	43,619	10,281	149,048

2.1 Physical Characteristics

The District is located in the northwestern portion of Kern County in the Central Valley region of California. The District is situated between Interstate 5 on the west, U.S. Highway 43 on the east, U.S. Highway 58 on the south, and the Kern County line to the north (Figure 2-1). Neighboring water agencies include:

- Southern San Joaquin Municipal Utility District (SSJMUD), North Kern Water Storage District (NKWSD), and Shafter-Wasco Irrigation District (SWID) to the east.
- Rosedale Rio Bravo Water Storage District (RRBWSD) to the southeast.
- Buena Vista Water Storage District (BVWSD) to the west/southwest.
- Lost Hills Water District (LHWD) to the west.

2.1.1 Size of the Service Area

The District encompasses approximately 224,000 acres. The total irrigated acreage within the District fluctuates over time, primarily due to changes in land use. As shown on Figure 2-1, from 2015 to 2020 the percentage of irrigated acreage within the District has been declining overall at an average rate of approximately 0.9 percent per year. Currently, 127,035 acres (~57 percent) of District land are irrigated. This is approximately 8,400 acres less than the total irrigated lands within the District in 2015.

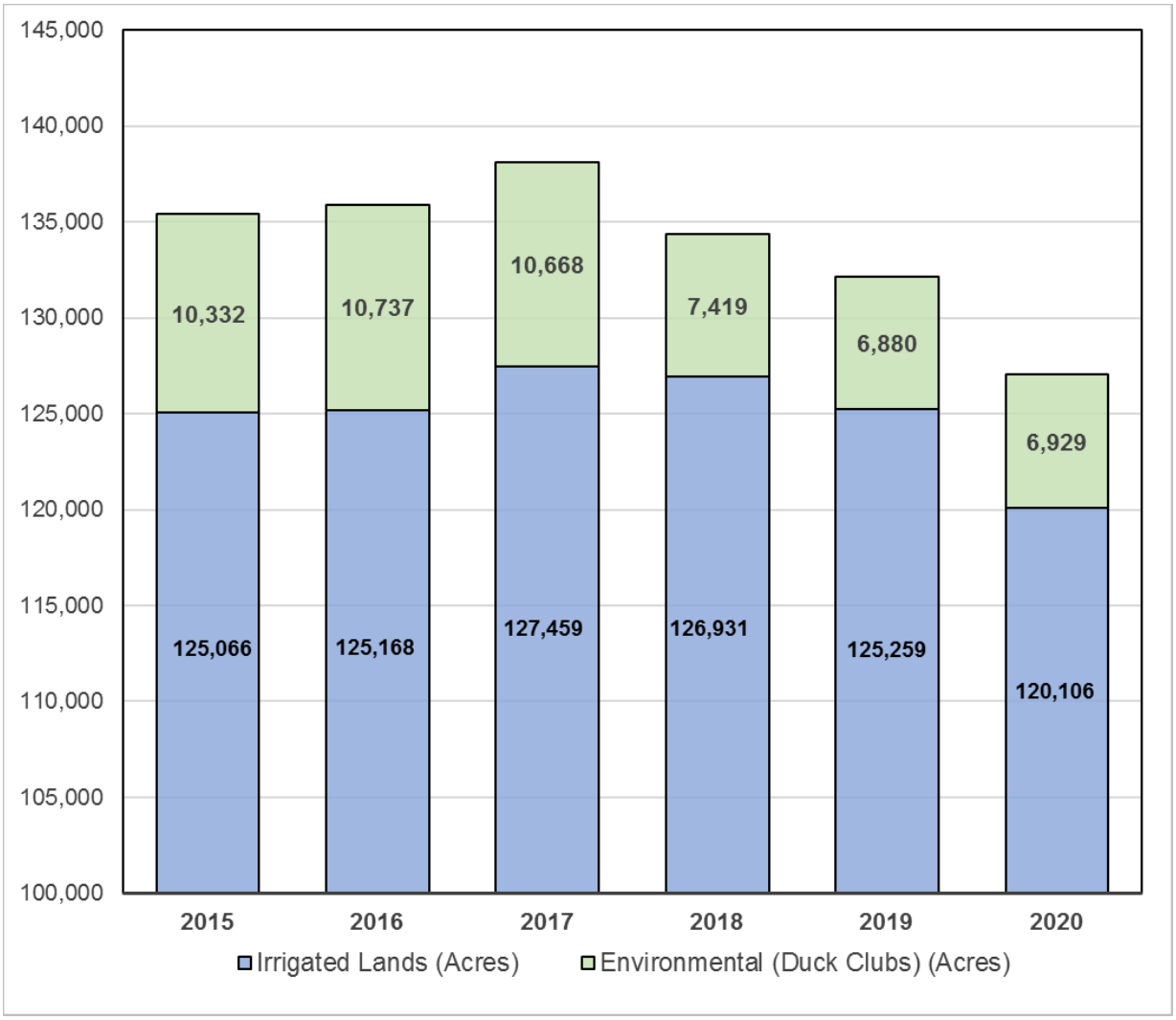

Figure 2-1. Irrigated Lands in the Semitropic WSD, 2015 to 2020.

2.1.2 Water Management Facilities

The District owns and operates a complex system of canals, pipelines, and wells to provide a reliable water supply to its service area. An overview of the District's distribution system including the primary conveyance canals, recharge facilities, and distribution laterals is shown on Figure 2-2.

Surface water turnouts

The District has three turnouts connected to the California Aqueduct. Collectively, the capacity to divert SWP water to the District through these three turnouts is about 1,740 cubic feet per second (cfs) (Turnout No. 1 at 800 cfs, Turnout No. 2 at 300 cfs, and Turnout No. 3 at 640 cfs). Turnouts 1 and 2 supply water to the District's Intake Canal. Turnout No. 3 supplies water to the Pond-Poso Canal via a 120-inch diameter pipeline and is located approximately 2.5 miles north of the Intake Canal.

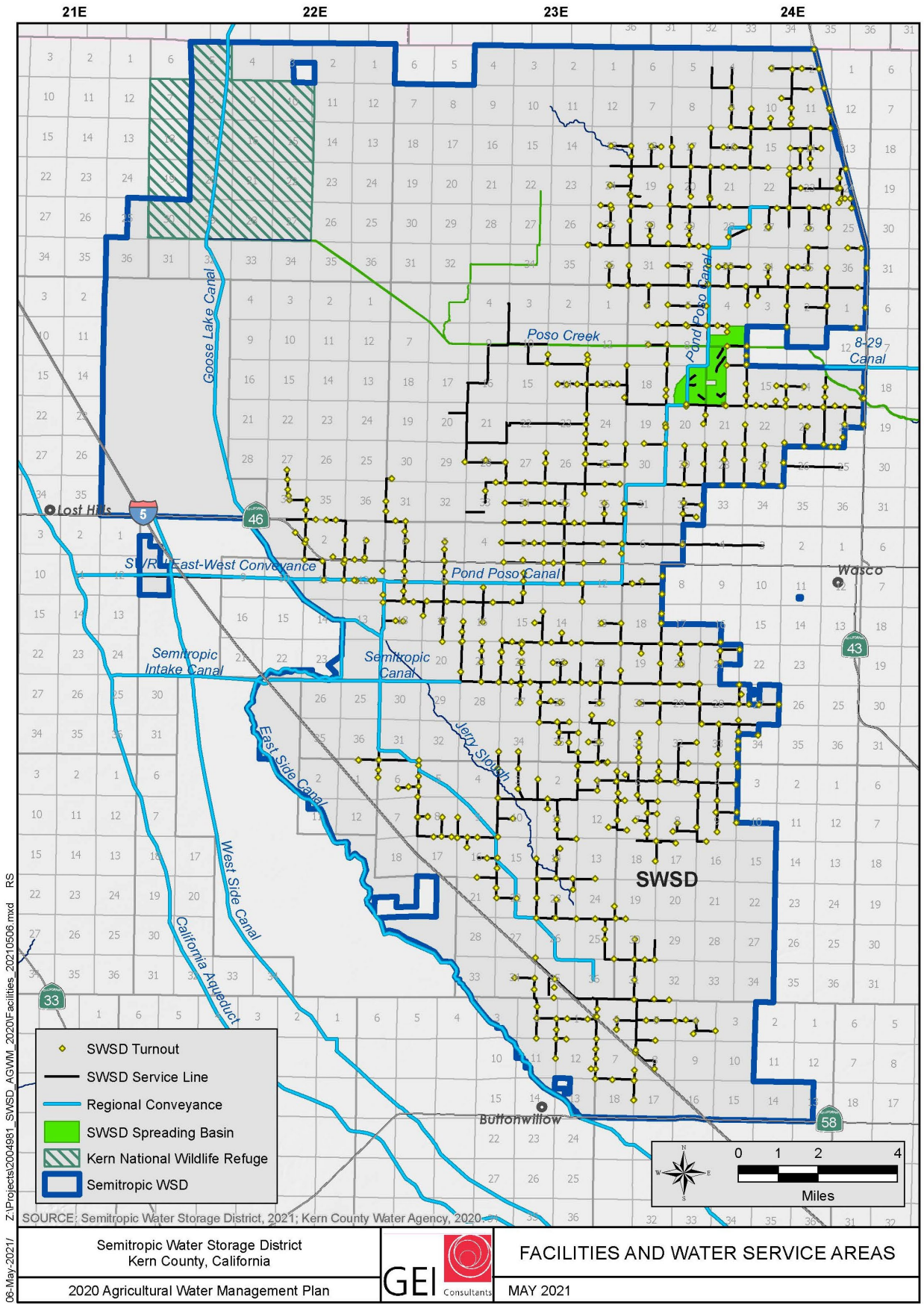

Figure 2-2. Semitropic WSD Distribution Facilities.

Delivery of water into the Aqueduct requires pumping, which is accomplished at two locations: 1) the Junction Pumping Plant, which discharges into a 120-inch diameter pipeline in route to the Aqueduct; and 2) the Pump-Back Pumping Plant, which discharges into a 78-inch diameter pipeline paralleling the Intake Canal.

The District also operates 1,434 turnouts, which includes 1,200 farm turnouts, in addition to the supply turnouts connected to the California Aqueduct. The farm turnouts are utilized to deliver water to individual water users within the District.

Canals and Spill Basins

The District operates approximately 43 miles of canals and three spillway basins as part of its distribution system. Approximately 30 miles of the canals are lined with the remaining 13 miles being unlined. The spillway basins are located at the ends of the Pond-Poso and Buttonwillow Ridge Canals and along the Intake Canal. These basins are designed to capture emergency and/or operational spills and return the water to the distribution system.

Piping

The distribution laterals consist of buried pressure pipelines which are supplied from the canal system by canal-side pumping plants. In total, the District operates approximately 302 miles of pipelines as part of its distribution facilities.

Interties

In cooperation with the SWID, NKWSD, Buena Vista Water Storage District, and the Belridge Water Storage District, the District has constructed interconnection facilities for exchange of water supplies between the districts. The facilities aid participating parties in the delivery of additional supplies and the balancing of existing supplies and demands. In this regard, it is noted that SWID, as a CVP-Friant contractor, and NKWSD, utilizing Kern River supplies, rely on different watersheds for their imported water supplies. From time to time, there are differences in hydrology between the SWP, Kern River, and the CVP's Friant Unit that create opportunities for mutually beneficial exchanges based on use of the interties between districts.

Wells

The District owns and operates approximately 87 production wells. In addition to the District wells, there are approximately 1,200 private on-farm wells in the District service area. Agreements are in place which provide for District use of several the on-farm wells under certain conditions. Using both District-owned wells and on-farm wells, previously banked water is recovered and returned to the District's banking partners via exchange and/or direct delivery through the Aqueduct.

District-owned wells are also used to supply water under emergency conditions, which is defined as a landowner well failure. From the District's perspective, emergency water is provided to landowners when a landowner well fails. Under this scenario, the District provides the

landowner temporary access to the District well capacity to pump the water the landowner would have pumped for himself absent a well failure.

Spreading Basins

There are two spreading basins the District operates as part of its water management facilities for direct recharge. The largest, the Pond-Poso Spreading Grounds, consists of approximately 525 net acres of spreading basins in the northeastern quadrant of the district. The Pond-Poso Spreading Grounds are split into two operable areas: the first located near the mid-point of the northern reach of the Pond-Poso Canal and the second located near the end of this same reach. The second spreading basin operated by the District is known as Schuster Pit and is located east of the northern terminus of the Pond-Poso Canal.

2.1.3 Terrain and Soils

Physiographic setting

The Semitropic Water Storage District is located on the valley floor of the southern portion of the San Joaquin Valley, a physiographic trough. The northwest-southeast trending San Joaquin Valley is bounded by the Sierra Nevada Range to the east, the Tehachapi Mountains to the south, and the Temblor Range and Coast Range to the west. The valley floor is characterized by low alluvial plains and fans and by overflow lands and old lakebeds.

Alluvial deposits in the Kern County subbasin generally consist of sand, silt, and clay laid down in a complex sequence, principally by the Kern River, Poso Creek, Deer Creek, the White River, small drainages along the Sierra Nevada Mountains to the east, and, to a lesser extent, by streams along the Coast Range to the west. The terminus for these flows in the geologic past was Tulare Lake, located to the north of Kern County on the west side of the San Joaquin Valley.

For a more detailed description of the geology and hydrogeologic conditions underlying the Semitropic area see Sections 2 Basin Setting of the District's GSP.

Topography

The topography of the District's service area is relatively flat with a mild westerly slope, generally less than one-quarter percent. Land surface elevations within the District range from over 310 feet above mean sea level (msl) on the east to less than 240 feet to the northwest.

The alluvial fan along the southeastern boundary of District is relatively flat, derived principally from materials deposited by the Kern River and Poso Creek. This is similar in character to the northern area of Semitropic, which has no abrupt changes in topographic relief. Streams, such as Poso Creek, that cross the valley typically flow intermittently during the wet season.

Soils

Soils in the valley floor have two general origins. The eastern alluvial fans were deposited primarily by runoff from the Sierra Nevada, Tehachapi, and Transverse mountain ranges. These

soils originate from mixed igneous and metamorphic material and are typically well drained, and very low in salinity. The western alluvial fans originated from Coastal Range sedimentary marine rocks. This region tends to have more areas with fine-textured, poorly drained soils of relatively marginal quality.

A useful index of a soil's capacity to infiltrate precipitation and applied irrigation water is the National Resource Conservation Service (NRCS) Hydrologic Soils Group classification. Hydrologic Soils Groups typical of the Study area are defined below and are displayed on Figure 2-3 shows the hydrologic soils groups, which was developed using data from the NRCS' Soil Survey Geographic Database (SSURGO).

- Hydrologic Group A – "Soils in this group have low runoff potential when thoroughly wet. Water transmitted freely" (NRCS, 2009). Group A soils have a high infiltration rate due to well drained sands or gravelly sands giving the group the highest potential for contributing to groundwater recharge. These soils are present predominantly along the eastern boundary of the District and as scattered pockets in the southern half of the District.

- Hydrologic Group B – "Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission is unimpeded" (NRCS, 2009). Group B soils are moderately well drained due to moderately fine to coarse textures and have the second highest potential permeability and potential for contributing to groundwater recharge. These soils are limited in extent and present only along the eastern boundary of the District as isolated occurrences.

- Hydrologic Group C – "Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission is somewhat restricted" (NRCS, 2009). This group has limited potential to contribute to groundwater recharge. Group C soils have a low infiltration rate due to their fine texture or because of a layer that impedes downward movement of water. These soils are present in the southern half of the District where they are the predominant soil type.

- Hydrologic Group D – "Soils in this group have high runoff potential when thoroughly wet. Water transmission is very restricted" (NRCS, 2009). This group has a very limited capacity to contribute to groundwater recharge. These soils have a very slow infiltration rate due to the presence of clay and are the predominant soil type in the northern half of the District.

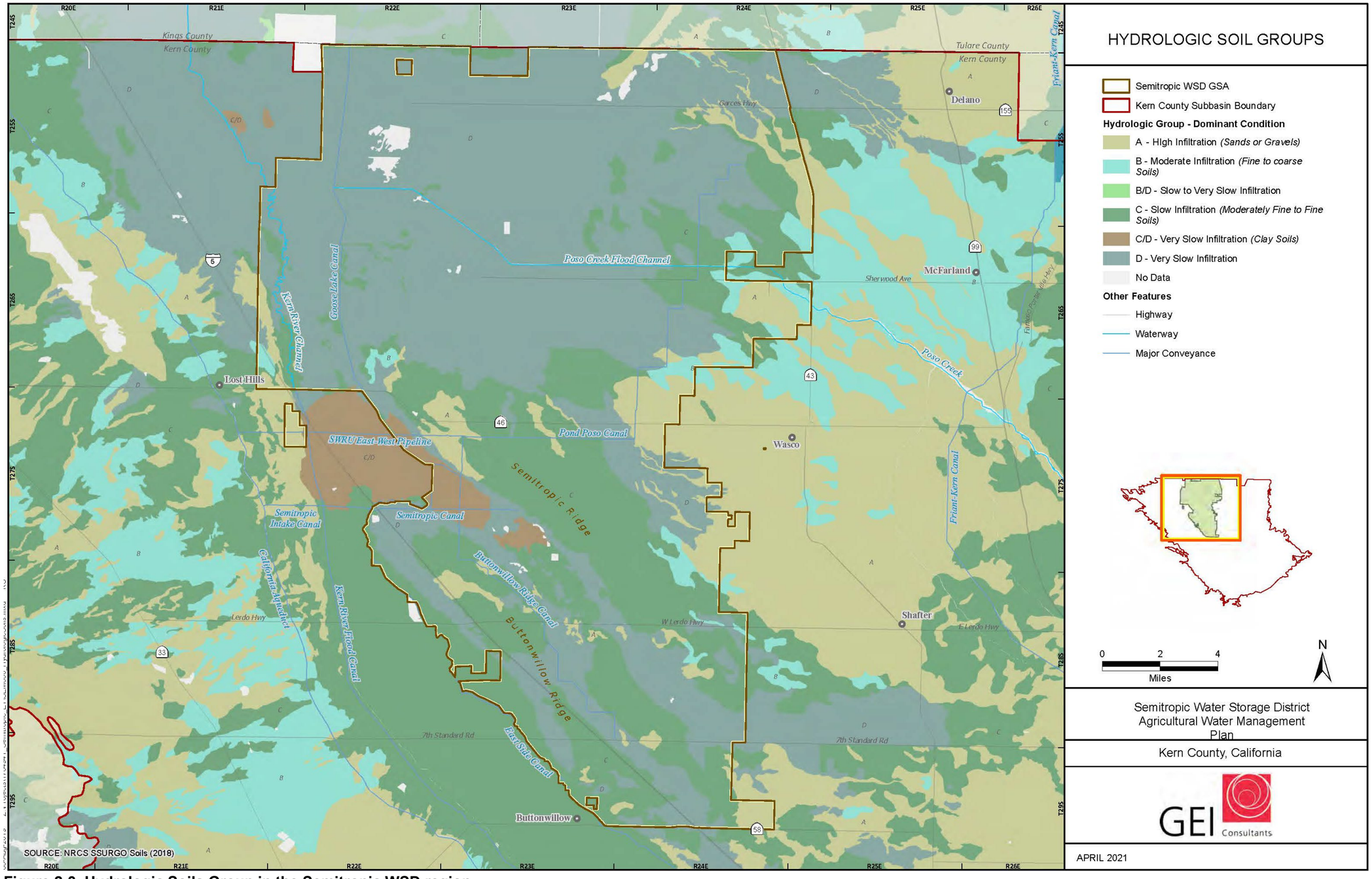

Figure 2-3. Hydrologic Soils Group in the Semitropic WSD region.

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2.1.4 Climate

The southern portion of the San Joaquin Valley is classified as a Mediterranean Sea to Desert climate. To quantify the climate in the immediate vicinity of the District, data from California Irrigation Management Information System (CIMIS) Station ID 5 (Shafter) for the period between March 1985 and December 2020 was utilized. CIMIS Station 5 is located approximately 2 miles north of the City of Shafter and 5.5 miles east of the District.

The 35-year mean monthly precipitation at CIMIS Station 5 is shown on Figure 2-4. Based on the data, in the vicinity of the District, December through March have typically been the wettest months with average rainfall amounts slightly above 1 inch per month. The driest months are typically June through September with average rainfall amounts of less than 0.7 inches per month. Average precipitation during the wet season (October through March) since 1985 is approximately 5.1 inches in the vicinity of the District.

Figure 2-5 shows annual and cumulative departure from mean precipitation determined from the CIMIS Station 5 data. Over the period examined, annual precipitation varied between a low of 2.4 inches in 2004 to a high of 13.69 inches in 1998 with a mean of 6.08 inches. It should be noted that 2013 was excluded from this range as only four months of data were available for the year. Between 1990 and 1998, the District experienced a relatively wet period with seven of the eight years having above average rainfall. From 2001 to 2020, the district experienced an overall dry period with only 2010 and 2019 having above average rainfall.

Figure 2-6 shows annual peak, average, and low temperatures over time at CIMIS Station 5 since March 1985. Each series was fitted with a linear regression line to examine trends in these temperatures over time. As shown by the trendlines, gradual long-term increasing trends are observed in all three series. Over the 35-year period of record, the trendlines show that annual peak, average, and low temperatures have increased at rates of approximately 0.07, 0.05, and 0.02 degrees Fahrenheit per year, respectively. Cumulatively this has resulted in increases of approximately 2.4 degrees in annual peak temperature, 2 degrees in annual average temperature, and 0.7 degrees in annual low temperature in the vicinity of the District since 1985.

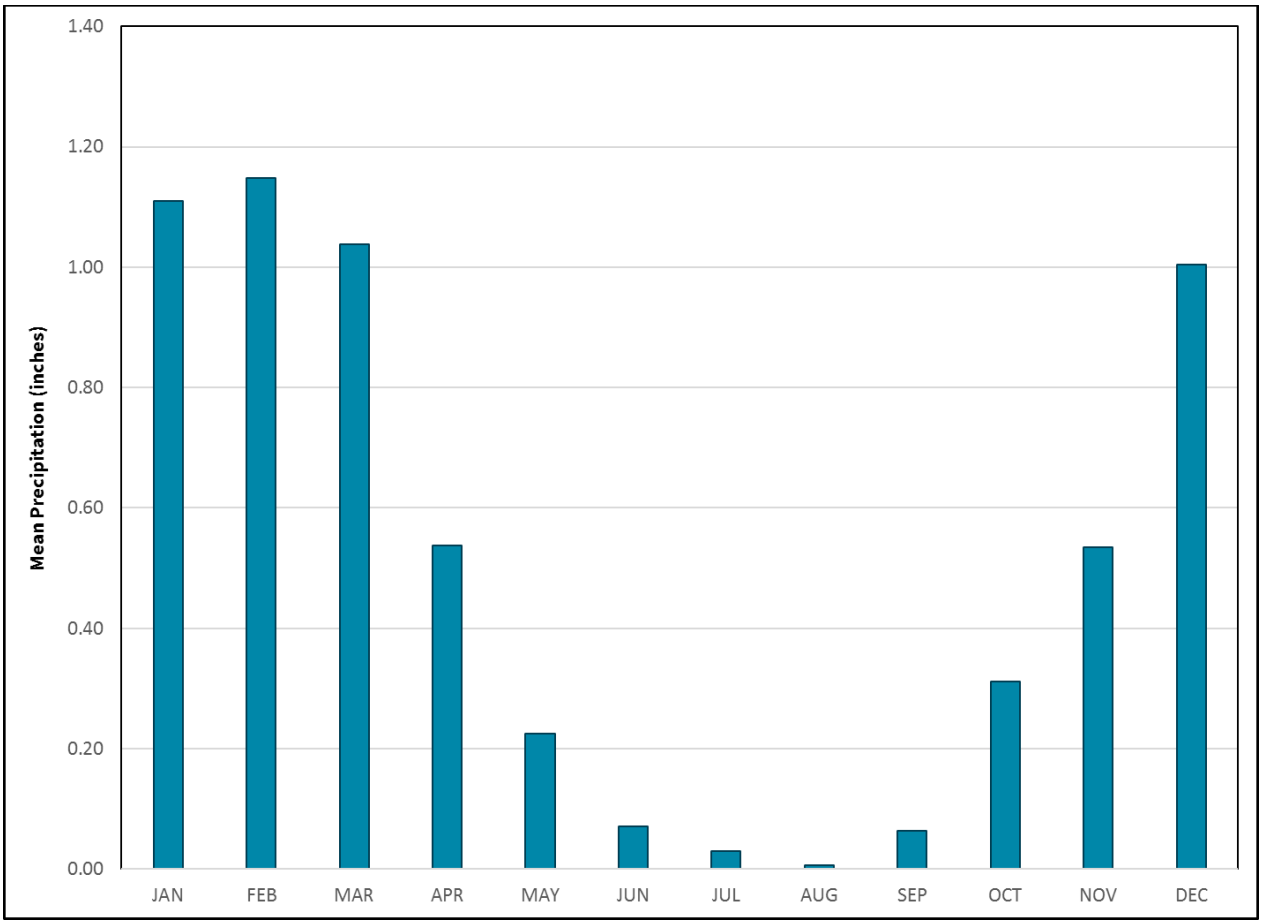

Figure 2-4. Mean Monthly Precipitation at CIMIS Station 5 (Shafter) 1985 to 2020.

2.2 Operational Characteristics

The District operations are based on the principal of efficient, flexible, and equitable use of all available water supplies to further resiliency and the goal of sustainable management according to SGMA. Over the years, the District has implemented various programs to promote in-lieu recharge and enhance groundwater conditions. With the completion of the District's GSP, it will now begin implementation of identified projects and management action designed to assist the District in reaching sustainable groundwater management by 2040. For additional information and descriptions of projects and management actions see Section 5 Projects and Management Actions in the District's GSP.

2.2.1 Operating Rules and Regulations

The District provides water within its service area in accordance with the *Semitropic Water Storage District Consolidated Rules and Regulations for Distribution of Water* (Rules and Regulations) as amended May 17, 2017 and adopted by Resolution No. ST 2017-09. A copy of the rules and regulations for the District are in Appendix C.

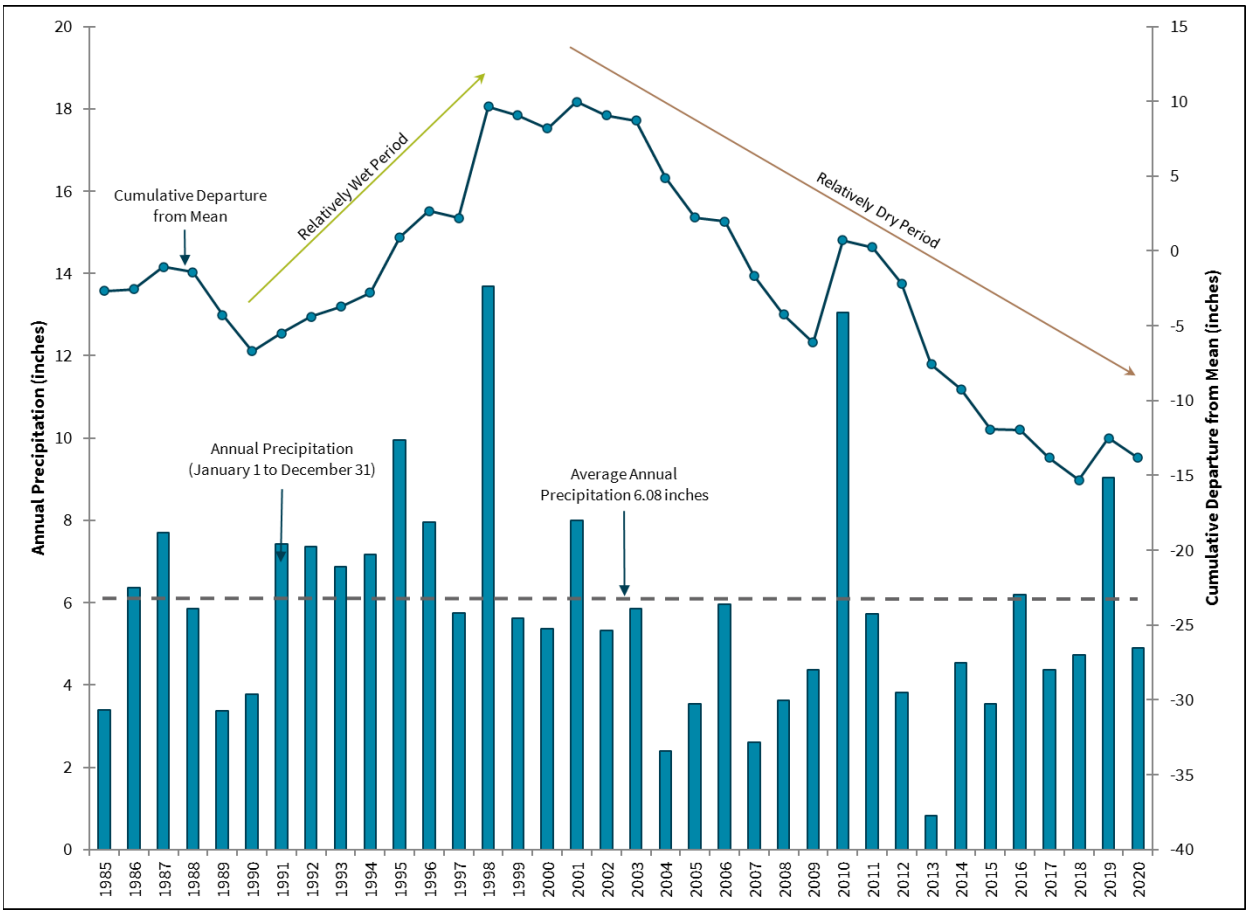

Figure 2-5. Annual Precipitation Pattern at CIMIS Station 5 (Shafter) 1985 to 2020.

2.2.2 Water Delivery Measurements and Calculations

The District delivers irrigation water at farm turnouts which are metered using propeller meters equipped with flow totalizers. Since all propeller meters used by the District are equipped with totalizers that track the delivered volume at each turnout, the District can equate the calibrated accuracy of the flow meter to volumetric accuracy. According to *SBx7-7 Flow Rate Measurement Compliance for Agricultural Irrigation Districts* (prepared by the Irrigation Training & Research Center of the California Polytechnic Institute, San Luis Obispo), devices with totalizers provide measurements that are sufficiently precise (in monitoring flow duration) to assume that the flow rate accuracy is equivalent to the calibrated volumetric accuracy.

District System Operators use tablet computers in the field to record meter readings. To reduce transcription errors, data is electronically uploaded into the District's dispatch software daily. Meter readings are taken every day that a turnout is running and at the end of every month. The farm turnout propeller meters are periodically checked for maintenance requirements. The District's policy is that if a meter is questioned by a water user, that meter will be sent to the meter manufacturer for calibration.

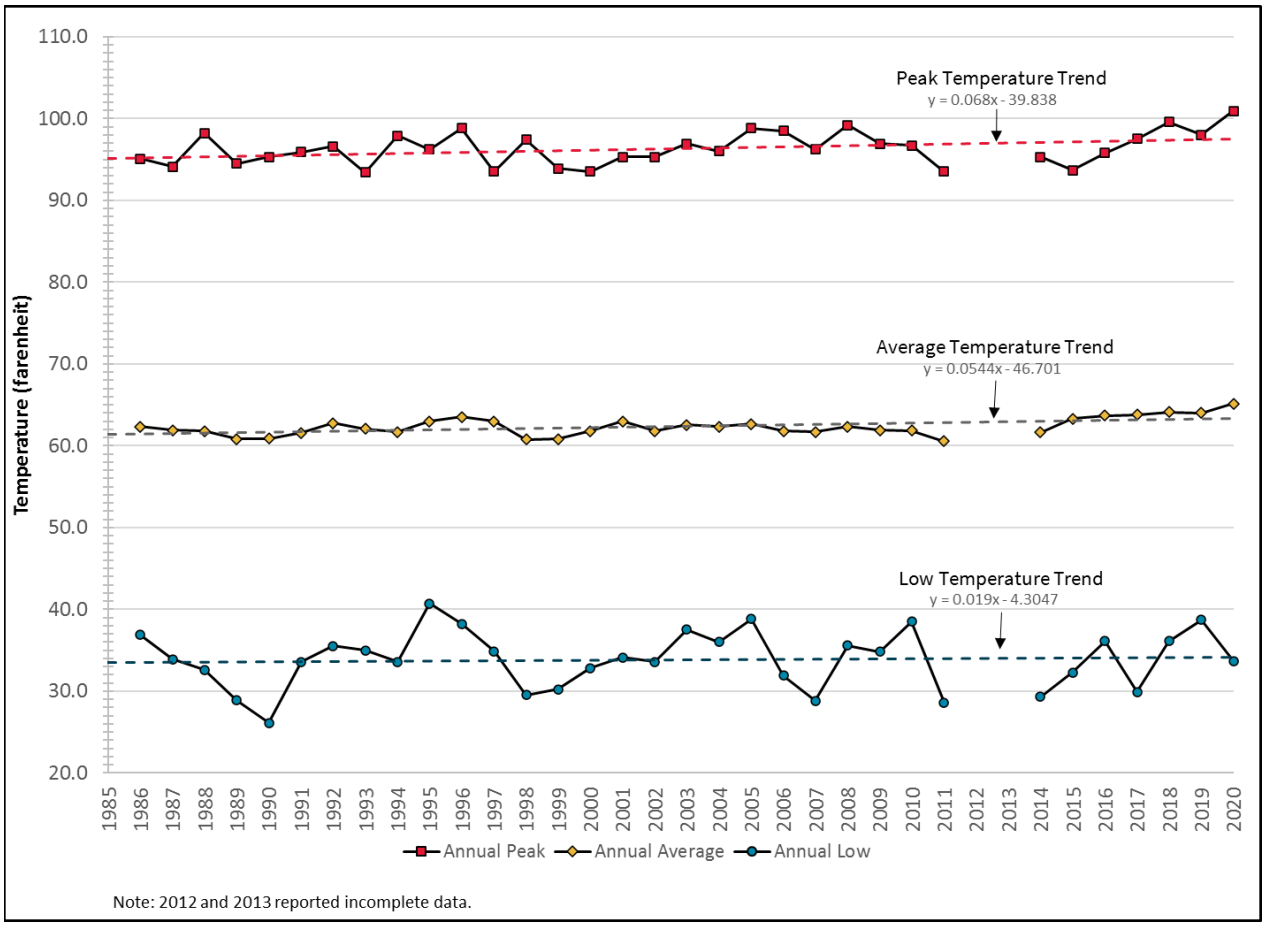

Figure 2-6. Annual Temperature Pattern at CIMIS Station 5 (Shafter) 1985 to 2020.

Diversions to the District from the California Aqueduct are measured through a flume at Turnout No. 1 or acoustic meters at Turnout Nos. 2 and 3. These devices are cleaned and calibrated several times each year by DWR personnel. Table 2-2 provides this information in tabular form, along with the typical levels of accuracy for measurement devices which are in use.

Table 2-2. Water Delivery Measurements

Measurement Device Type	Measurement Frequency	Calibration Frequency	Maintenance Frequency	Est. Level of Accuracy (%)
Propeller Meters	Daily[1]	Minimum frequency of 120 months.	As needed	± 5%
Flume	Daily (DWR)	Monthly	Quarterly	< ± 5%
Acoustic Meters	Daily	Infrequent	As needed	± 5%

2.2.3 Water Rate Schedules and Billing

The District establishes water rates in accordance with Sections 5 and 6 of the *Rules and Regulations*. The rates are applied on a per-acre-foot basis and take into consideration costs associated with the administration and physical delivery of water, infrastructure maintenance and improvements, energy, and the price of State Project Water. The rates are established in October

and adopted in either November or December prior to the affected year, but in no event later than January 15 of the affected year. District water rates for 2020 are shown in Table 2-3.

Table 2-3. 2020 Water Rates

Contract water SWP	$54.10 per acre-foot
Contract water Variable	$44.00 per acre-foot
Non-contract water (winter/summer/allocated)	$106.00/$112.00/117.00 per acre-foot
In Canal Pumping Credit	Energy ($7.00)
In Canal Pumping Credit – O&M SID	($3.00)
Average Ground Water Electrical costs	$127.23
Contract Area – Total of direct and indirect (100% allocation)	$137.93
Indirect District Charges on Tax Bill $139.40/3.5 = $39.83	

Notes:
Winter is October through April
Summer is May through September

Contract water is paid for by the user in eight equal installments due on the 10th day of the months of February through September. Non-contract water is paid for by the user on the 15th of the month in which the invoice for said water is prepared.

2.2.4 Water Shortage Allocation Policy

The District's water shortage allocation policy is detailed in Section 7 of the *Rules and Regulations*.

2.3 Drought Plan

The District is in the process of collaborating on the development of a Drought Contingency Plan (DCP) for the Poso Creek Integrated Regional Water Management Group (IRWM Group). The IRWMP Group includes:

- Semitropic Water Storage District,
- North Kern Water Storage District,
- Cawelo Water District,
- Shafter-Wasco Irrigation District,
- Kern-Tulare Water District,
- Delano-Earlimart Irrigation District,
- North West Kern Resource Conservation District, and
- Southern San Joaquin Municipal Utility District.

The purpose of the DCP will be to identify and implement strategies that monitor short and long-term water availability, assess risks to critical resources in the case of drought, promote mitigation efforts, prioritize drought response actions, ensure administrative framework and associated responsibilities are clear and transparent, and provide for periodic evaluation and updating of the DCP.

The DCP is expected to be completed in the summer of 2021 and, upon completion, will be attached to this AWMP (Appendix D) upon completion and adoption.

3.0 Description of the Quantity of the Water Uses

The following section describes the quantity of water uses in the District, which are almost exclusively agricultural in nature. Water uses are calculated on a calendar years basis, consistent with District accounting and landowner billing practices. The water budget details are consistent with the District's GSP.

3.1 Agricultural

Cropping patterns have varied over the years within the District. In the 1970s, most of the cropped acreage was in annual crops; principally cotton, alfalfa (and pasture), and grain. Since that time, there has been a shift away from annual crops in favor of long-term or permanent crops. Today, approximately 70 percent of the cropped acreage is planted to permanent crops, whereas it was 59 percent in 2015 and less than five percent in the 1970s. As a generalization, the relatively large cotton acreage which persisted until the mid-1990s has since shifted to tree crops (nuts), primarily almonds and pistachios

Tables 3-1 through 3-5 present acreages and estimated water needs for crops grown within Semitropic's service area during each of the selected years, 2016 through 2020. Total crop acreage is based on the District's annual crop survey for each year and remote sensing measurements. The acres in the table represent net irrigated acres for a given year, which is less than the total of the gross acres shown on the District service area map (Figure 1-1). Average unit crop ET requirements for 2016 and 2017 were based on data developed by the Irrigation Training & Research Center of the California Polytechnic Institute, San Luis Obispo (ITRC) and on information published by the University of California Cooperative Extension, Kern County Farm Advisor Crop Specialist. The crop ET requirements for 2018 to 2020 were developed using remote sensing data and analysis performed by the District's consultant Land IQ. The values in Tables 3-1 to 3-5 represent the total ET requirement of the crop and have not been adjusted for effective precipitation. The agricultural demands identified below are met with District developed surface water supplies and groundwater pumping by private landowners. The supplies used to meet these agricultural demands are detailed in Section 4.

Table 3-1. 2016 Land Use and Corp Evapotranspiration Summary

Land Use / Crop Type	Acres	Total ET	Average ET AF/AC
Pasture	542	1,370	2.53
Alfalfa Hay	16,337	60,122	3.68
Field Crops	16,643	44,730	2.69
Truck Crops	2,794	7,006	2.51
Deciduous Fruit	1,291	4,493	3.48
Grapes	5,701	19,497	3.42
Cotton	2,736	8,289	3.03
Idle Lands	212	517	2.44
Nut Crops	78,493	244,103	3.11
Nursery	266	839	3.15
Flowers	152	452	2.98
Total Irrigated Agricultural Acres	**125,168**	**391,416**	**3.13**
Managed Wetlands (Duck Clubs)	10,737	18,575	1.73
TOTAL IRRIGATED LANDS:	**135,905**	**409,991**	**3.02**

Table 3-2. 2017 Land Use and Corp Evapotranspiration Summary

Land Use / Crop Type	Acres	Total ET	Average ET AF/AC
Pasture	1,677	4,832	2.88
Alfalfa Hay	13,432	49,430	3.68
Field Crops	15,088	40,486	2.68
Truck Crops	2,591	6,429	2.48
Deciduous Fruit	323	825	2.56
Grapes	5,434	18,586	3.42
Cotton	2,874	8,707	3.03
Idle Lands	3,704	5,189	1.40
Nut Crops	81,911	255,460	3.12
Nursery	266	839	3.15
Flowers	159	472	2.98
Total Irrigated Agricultural Acres	**127,459**	**391,256**	**3.07**
Managed Wetlands (Duck Clubs)	10,668	18,456	1.73
TOTAL IRRIGATED LANDS:	**138,127**	**409,712**	**2.97**

Table 3-3. 2018 Land Use and Corp Evapotranspiration Summary

Land Use / Crop Type	Acres	Total ET	Average ET AF/AC
Pasture	702	2,066	2.94
Alfalfa Hay	13,447	50,090	3.72
Field Crops	12,887	37,641	2.92
Truck Crops	2,085	5,659	2.71
Deciduous Fruit	309	966	3.13
Grapes	6,104	21,546	3.53
Cotton	2,469	8,153	3.30
Idle Lands	5,893	7,657	1.30
Other Hay	81	169	2.09
Nut Crops	82,612	268,034	3.24
Nursery	129	427	3.32
Flowers	214	695	3.25
Total Irrigated Agricultural Acres	**126,931**	**403,103**	**3.18**
Managed Wetlands (Duck Clubs)	7,419	12,932	1.74
TOTAL IRRIGATED LANDS:	**134,351**	**416,035**	**3.10**

Table 3-4. 2019 Land Use and Corp Evapotranspiration Summary

Land Use / Crop Type	Acres	Total ET	Average ET AF/AC
Pasture	561	1,307	2.33
Alfalfa Hay	10,840	39,351	3.63
Field Crops	14,127	36,560	2.59
Truck Crops	2,622	5,757	2.20
Deciduous Fruit	829	1,490	1.80
Grapes	5,991	19,934	3.33
Cotton	1,649	4,561	2.76
Idle Lands	2,033	3,010	1.48
Nut Crops	86,177	269,442	3.13
Nursery	170	508	2.99
Flowers	260	702	2.70
Total Irrigated Agricultural Acres	**125,259**	**382,622**	**3.05**
Managed Wetlands (Duck Clubs)	6,880	11,801	1.72
TOTAL IRRIGATED LANDS:	**132,139**	**394,423**	**2.98**

Table 3-5. 2020 Land Use and Corp Evapotranspiration Summary

Land Use / Crop Type	Acres	Total ET	Average ET AF/AC
Pasture	994	2,274	2.29
Alfalfa Hay	9,645	34,892	3.62
Field Crops	13,395	32,985	2.46
Truck Crops	1,730	3,379	1.95
Deciduous Fruit	1,458	2,274	1.56
Grapes	5,243	16,479	3.14
Cotton	371	914	2.46
Idle Lands	114	207	1.81
Nut Crops	86,564	258,956	2.99
Nursery	266	721	2.71
Flowers	325	681	2.10
Total Irrigated Agricultural Acres	**120,106**	**353,761**	**2.95**
Managed Wetlands (Duck Clubs)	6,929	10,709	1.55
TOTAL IRRIGATED LANDS:	**127,035**	**364,470**	**2.87**

3.2 Environmental and Recreation

Within the Semitropic service area, there are approximately 7,000 acres of managed wetlands (private Duck Clubs), which receive surface water for fish and wildlife preservation and enhancement and recreation. Duck Clubs also pump groundwater from the basin which is recharged by Semitropic. The Kern National Wildlife Refuge is also located with the boundaries of the District and the District facilitates delivery of surface water to the refuge.

3.3 Municipal and Industrial

All municipal and industrial (M&I) water use in the vicinity of the District service area is supplied by groundwater. Although no small communities are located within the District, a supply wells for an adjacent community is located within the District; a State prison relies on groundwater; and rural residences and businesses pump groundwater for domestic and commercial uses. The District's importation of surface water reduces reliance on the underlying groundwater, thereby supporting all users of groundwater. In other words, the same groundwater system supplies both agricultural and M&I uses and provides storage for groundwater banking.

3.4 Groundwater Recharge

Indirect recharge and groundwater banking occurs as the District delivers surface water in lieu of pumped groundwater to satisfy irrigation water requirements. Referred to as "in-lieu recharge", this has been the District's primary means of banking surplus surface water supplies since the District developed its Groundwater Banking Program (see Section 3.5.1). In 2008, the District

added the Pond-Poso Spreading Grounds, a 525-acre direct recharge facility. In addition, the District banks water outside of its immediate (service) area through its participation in the Kern Water Bank and the Pioneer Project (both of which are water banking projects and are located on the Kern River fan). These projects rely on direct recharge and are used to store surplus water for future use. During particularly "wet" years, direct recharge through the use of these spreading ponds is significant in the basin.

The advantage of in-lieu recharge is that the recharge is essentially immediate, as the delivery of one acre-foot of water on the surface immediately displaces one acre-foot of groundwater pumping and does not depend upon percolation and the movement of water in the aquifer. One disadvantage is the fact that the surface water supply must be available on an irrigation demand schedule, with irrigation demands being relatively low during winter months. In contrast, direct recharge through use of the Pond-Poso spreading ponds, the dry channel of Poso Creek, or Schuster Pit can be accomplished during any time of the year, which increases the likelihood of being able to capture unregulated supplies that become available from time to time.

Table 3-6 provides the volumes of surface water recharged by the District from 2016 through 2020, either within District, primarily through in-lieu recharge, or in neighboring banking projects. Since development of the Groundwater Banking Project the District has actively purchased and managed approximately 1.6 million acre-feet of supplemental surface water supplies for future use. This banked asset will be a valuable resource as the District manages for sustainability under SGMA.

Table 3-6. Annual District Groundwater Recharge and Banking Volumes

	2016	2017	2018	2019	2020	Total for Period
Groundwater Recharge (acre-feet)	8,467	166,538	230,213	157,868	0	563,086

3.4.1 Groundwater Banking Program

In 1988, the District initiated a study of a groundwater banking program which was ultimately included in the District's 1992 Improvements Project. This has developed into the Semitropic Groundwater Banking Project, which is a long-term water storage project designed to optimize the distribution and use of water resources for the District and its banking partners.

Water banking involves the regulation of wet-year surface water supplies through available groundwater storage for subsequent recovery during times of water supply deficiencies. Water is placed in storage through either indirect or direct recharge. Indirect recharge is based on the delivery of surface water for irrigation in lieu of pumping groundwater for irrigation. The preponderance of direct recharge is based on the surface spreading and percolation of surface water supplies in basins or ponds.

The original District projects were planned and designed to deliver supplemental surface water to farms relying exclusively on groundwater. Imported surface water from the SWP and the

associated reduction in groundwater pumping has helped maintain a viable agricultural economy in the area. The Groundwater Banking Project is a continuation of Semitropic's efforts to make the best use of the underlying groundwater resources, including unused storage capacity.

Semitropic has long-term contracts with several water banking partners, including the Metropolitan Water District of Southern California, the Santa Clara Valley Water District, Zone 7 Water Agency, Alameda County Water District, Newhall Land and Farming Company, San Diego County Water Authority (through the Semitropic-Rosamond Water Bank Authority), and the City of Tracy, Poso Creek Water Company, and Castaic Lake Water Agency. Semitropic receives SWP or CVP surface water from its banking partners in years of ample supplies and delivers it to landowners for irrigation use in lieu of groundwater pumping. Groundwater which otherwise would have been pumped remains in storage, credited to the account of the banking partner. In times of surface water shortages, the water may be withdrawn by the banking partner. At that time, Semitropic will return the banked water to the California Aqueduct, either from its own supply of SWP water by exchange, and/or by pumping of District and landowner wells for delivery into the Aqueduct. At the end of 2020, the District will have more than 1 million acre-feet in groundwater storage held on behalf of its banking partners. This banked water has a positive impact on groundwater levels, which reduces the cost of power and energy for groundwater pumping.

To the extent that the District is unable to divert and use all of the water available to it in a very wet year, the District makes use of two out-of-district water banking projects located on the Kern River fan, which are briefly mentioned in the sections which follow.

3.4.2 Kern Water Bank Authority

After implementation of the Monterey Amendment in 1996 between DWR and the State Water Contractors, including Kern County Water Agency, the Kern Water Bank Authority acquired land in the Kern Fan southwest of the City of Bakersfield, upon which it developed and constructed the Kern Water Bank. In exchange for permanent relinquishment of a portion of its SWP entitlement, Semitropic obtained a 6.67 percent share of the Kern Water Bank Authority, a Joint Powers Authority, and rights to use firm capacity in Kern Water Bank facilities for storage and recovery of water. With a gross area of about 20,000 acres, the Kern Water Bank is located south of the District, astride the Kern River. It is a direct recharge-based project, with about 7,000 acres of spreading basins. To reach these facilities, water is diverted from the Aqueduct into the Kern Water Bank Canal. To the extent there has been unused recharge or recovery capacity, Semitropic has at times exercised considerably more than its share of the available capacity.

3.4.3 Pioneer Project

The Pioneer Project is operated by the Kern County Water Agency as a direct recharge-based water banking project, located on the Kern River fan, adjacent to the Kern Water Bank. There are "recharge participants" and "recovery participants"; the former have a first priority right to use of the recharge facilities, and the latter have a first priority right to the use of the recovery facilities. Semitropic is a "recovery participant" with a 14 percent share of the Project's recovery

capacity, thus the District's right to use recharge capacity is second in priority to the "recharge participants". Water is delivered to this facility by diverting water from the Aqueduct into the Cross Valley Canal.

4.0 Description of Quantity and Quality of the Water Resources

4.1 Water Supply Quantity

The following section describes the quantity and quality of water available to the District to meet irrigation demands and for groundwater recharge. Water supplies are presented on a calendar years basis, consistent with District accounting and landowner billing practices. The water budget details are consistent with the District's GSP.

4.1.1 Surface Water Supply

Semitropic began importing SWP water in 1973 under Member Unit Concontract with the KCWA for a Table A entitlement of 155,000 acre-feet per year. Additionally, the District has developed supplemental surface water supplies from water transfers, the Poso Creek, and a required "10-percent leave behind" from water banked by third parties in the Semitropic Groundwater Storage Bank. These supplies have been developed to meet the demand on approximately 144,000 acres of developed lands within the District's boundaries, of which approximately 127,000 acres was irrigated in 2020 (see Section 3.0 for additional details). District landowners also rely on local groundwater resources to meet irrigation demands not met by District developed surface water supplies. Table 4-1 provides a summary of the surface water and groundwater supplies utilized by the District and its landowners to meet demands for calendar years 2016 through 2020.

For the 5-year period of 2016 to 2020, the District received an annual average of 85,250 acre-feet from the SWP (see Table 4-1). Deliveries from the SWP were reduced during this period due to drought conditions and a continued increase in regulatory constraints on exports from the Sacramento-San Joaquin Delta.

SWP Article 21 supplies, short-term surplus water made available by the SWP, is a critical wet year supply the District relies on for groundwater recharge and banking. These wet year supplies offset the overall reduction of SWP deliveries during non-wet years and especially during dry years. During the 5-year period from 2016 to 2020, Semitropic received Article 21 supplies in 3 years, 2017, 2018, and 2019, for a total supply of approximately 58,200 acre-feet or an average of 11,640 acre-feet per year (Table 4-1).

The District participates in voluntary water transfers from various sellers in the San Joaquin Valley, Sacramento Valley and neighboring water districts within Kern County. These water transfers provide an additional source of water to meet the District's demands during drier conditions, but like Article 21 water, they are also a critical supply during wet years that can be banked for use in future years.

Poso Creek in the north portion of the District, provides an intermittent source of water, typically during "wet" seasons; however, no significant water bodies (e.g. continuously flowing rivers or

creeks) extend through the District service area. During wet period when Poso Creek sustains continuous flows through the District it provides a source of groundwater recharge to the District either from the creek bed or diversion of flows into District recharge basins. During the 2016 to 2020 period Poso Creek provided an estimated 24,423 acre-feet of recharge to the District in 2017, the only year in which Poso Creek experienced sustained flows through the District.

The District manages a large Groundwater Banking Project known as the Semitropic Groundwater Bank (1994), covered in Section 3.5.1 of this plan. Surface water delivered into the District on behalf of banking partners is recharged into the aquifer underlying the District. Ten percent of the water that is "banked" for the banking partners is left behind as a water supply benefit to the District. Since operation of the Groundwater Banking Project, the District has banked more than 2 million acre-feet on behalf of banking partners. These deliveries have served to mitigate declining groundwater levels and provided more than 200,000 acre-feet of supply for the District. Banking partner typically put water into the Bank during wetter conditions when SWP allocations are higher. During the 2016 to 2020 period, groundwater banking occurred each year, except in 2020, a dry year with a SWP allocation of only 20 percent.

Table 4-1. Surface Water Deliveries (2016 to 2020)

	Surface Water Sources (acre-feet)					
	2016	2017	2018	2019	2020	Period Average
Water Year Type	Below Normal	Wet	Below Normal	Wet	Dry	
SWP Table A	93,000	131,750	54,250	116,250	31,000	85,250
SWP Article 21	0	25,469	11,213	21,519	0	11,640
Poso Creek	0	24,423	0	0	0	4,885
Water Transfers	5,076	83,551	212,468	113,605	14,200	85,780
Banking Leave Behind	3,391	25,450	6,532	19,127	0	10,900
Annual Total	101,467	290,643	284,463	270,501	45,200	198,455

4.1.2 Groundwater Supply

As described previously, the District completed and submitted a GSP to DWR in January 2020. Section 2.0 Basin Setting of the GSP provides a detailed description of groundwater basin pumped by the District and Section 2.3 Current and Historical groundwater Conditions of the GSP provides a detailed description of the condition of the groundwater basin. Maps of the basin's boundaries and location and density of wells can be found in Section 1.0 Introduction of the GSP.

District landowners rely on groundwater to meet crop demands beyond the volume of surface water available from the District. The amount of surface water available to landowners varies based on their contractual arrangement with the District for surface water supplies and, therefore, each landowner's reliance on groundwater varies.

During the 2016 to 2020 period, District landowners pumped an average of 216,886 acre-feet to meet the applied water demand detailed in Section 3. Groundwater pumping is estimated as that volume of ETAW not met with surface water delivers or effective precipitation. Table 4-2 provides an estimate of the annual landowner groundwater pumping needed to meet the applied water demand.

Table 4-2. Estimated Landowner Groundwater Pumping (2016 to 2020)

	Estimated Landowner Groundwater Pumping (acre-feet)					
	2016	2017	2018	2019	2020	Period Average
Groundwater Pumping	320,133	157,119	167,022	96,579	343,577	216,886

4.1.3 Effective Precipitation

Effective precipitation in the District's service area is calculated as the total rainfall over the developed or irrigated acres of the District. It assumes that all precipitation is effective precipitation and available to meet crop consumptive use due to several local conditions: 1) precipitation is rarely significant enough to cause runoff from developed fields; 2) the volume of precipitation is assumed to remain in the shallow vadose zone and, therefore, is available for uptake by crops, and 3) ET is measured on a monthly basis and captures ET that results from precipitation events or that contributes to weed growth on developed fields.

Table 4-3 provides the annual rainfall totals as measured at the Shafter- San Joaquin Station (Station 5) for 2016 to 2019. Precipitation data for 2020 was collected by the District at 5 rain gage stations located within the District and that are maintained by the District.

Table 4-3. Effective Precipitation (2016 to 2020)

	2016[1]	2017	2018	2019	2020[2]	Period Average
Effective Precipitation (inches)	6.19	4.36	4.72	9.03	4.9	5.84

Notes:
1: 2016-2019 rainfall measured at CIMIS Shafter – San Joaquin Station (Station 5)
2: 2020 rainfall data measured as the average of the District 5 stations

4.1.4 Future Water Supplies

The District will continue to support and request maximum allocation of its SWP contract entitlement to meet in-District demands. However, the future of the District's SWP supply will likely be driven by regulatory restrictions in the Delta, any state-wide changes in hydrology (e.g. volume, nature, and timing of precipitation), and future modifications to SWP conveyance and/or conservation facilities. The availability of groundwater resources in the District will be governed by the implementation of SGMA, which (absent augmentation) will severely limit the amount of groundwater pumping that will occur to reach sustainability by 2040. As described in the Water Budget section of the District's GSP, the District may need to reduce its reliance on the Kern Subbasin by up to 123,900 acre-feet by 2040. Future impacts to surface water supplies are also detailed in the GSP, with the greatest level of impact expected to be on SWP deliveries. At the time of the GSP preparation, DWR's 2017 Delivery Capacity Report predicted a future average annual allocation of 61-perscent. DWR recently updated the Delivery Capacity Report in 2019, and now predicts the future average annual allocation to be 58 percent of the contract amounts. Accordingly, on average, Semitropic can expect its 155,000 acre-foot SWP contract to yield an average annual supply of about 89,700 acre-feet.

Additional details on the District's future water supply reliability can be found in Section 2.4 Water Budget of the District's GSP and, which includes analysis of DWR provided climate change scenarios.

4.2 Water Supply Quality

The quality of water delivered to the District from the SWP is relatively good and suitable for irrigation. This water is pumped from the Sacramento-San Joaquin River Delta and conveyed in the California Aqueduct to Semitropic's turnouts. The total dissolved solids (TDS) concentration has averaged 303 mg/L over a recent five-year period (DWR). Measurements representing the quality of the California Aqueduct water are taken at Kettleman City (Station C21, KA017226), which is located upstream of the turnouts used for deliveries to the District.

The District's groundwater quality is generally good to excellent; however, constituents of concern for agriculture are primarily related to salinity (includes chloride), while other constituents including arsenic and nitrates are constituents of concern in certain areas with regard to drinking water supplies. In general, groundwater in the west has higher TDS content relative to the eastern part of the District. A thorough and detailed description of groundwater quality conditions in provided in Section 2.3.5 Groundwater Quality Issues of the District's GSP.

The District is also a member of the Kern River Watershed Coalition Authority (KRWCA), in that capacity, participates in, and contributes financially to, a Regional Water Quality Control Board Irrigated Lands Regulatory Program to monitor and improve surface water and groundwater quality associated with agricultural activities.

4.2.1 Surface Water Quality

The District has coordinated with and relied on other agencies for the purpose of characterizing the quality of surface water received, especially since its main surface water supply consists of imported SWP water. Water is diverted from the California Aqueduct through three turnouts and is conveyed into the District using two conveyance routes; the District's Intake Canal and the 120-inch pipeline. The quality of water in the California Aqueduct is regularly monitored by DWR at several locations, including Check 21, which is located at Kettleman City (Station C21, KA017226), upstream of Semitropic's turnouts. Table 4-4 presents average concentrations of selected parameters based on DWR sampling at Check 21 over the five-year period extending from 2012 through 2017.

Table 4-4. Surface Water Supply Quality (SWP)

Parameter	Units	Concentration
Ca	mg/L	20
Mg	mg/L	14
Na	mg/L	63
Alkalinity	mg/L (as $CaCO_3$)	75
Cl	mg/L	90
SO_4	mg/L	40
B	mg/L	0.2
TDS	mg/L	303
Hardness	mg/L (as $CaCO_3$)	109
Electrical Conductivity	µS/cm	545

Source: DWR Bulletin 132-17.

4.2.2 Groundwater Quality

Provided below is a summary of the water quality conditions within the District. For a more thorough description of groundwater quality conditions see Section 2.3.5 Groundwater Quality Issues of the District's GSP.

The main production zones beneath the District are of good water quality; however, three areas of potentially poor quality are found within the District and the groundwater basin; shallow groundwater, deep groundwater, and west-side groundwater. The high salinity shallow groundwater is only characteristic where there is perched water; however, the transition zone and saline water below the production zone are typical of the entire District. Prevention of migration from the poor quality areas to the high quality areas is a critical management goal of the District.

Groundwater of poor quality, typically a sodium chloride or sodium chloride-sulfate type with high concentrations of dissolved solids and chlorides, can be found extensively along the west side of the San Joaquin Valley. "Stabilization" of groundwater levels beneath most of the District has served to limit migration of poor quality groundwater into the District from the west.

Groundwater of poor quality also can be found in the unconfined aquifer, particularly with perched water. Some areas of the unconfined aquifer are significantly saline, others brackish, due to "spills" from the perched zone, leakage through domestic well borings, and deep seepage of irrigation water. The E-clay largely prevents this water from entering the main aquifer or production zone. Accurate identification of the E-clay, proper and sufficient length of annular seals through the E-clay, and proper materials and methods of well construction are critical to maintaining good water quality in the main aquifer.

Some groundwater of poor quality can be found in the main aquifer, principally in the deeper zones of the Tulare Formation. The depth to the base of fresh water varies significantly across the District. Pockets of connate saline water may also be trapped in shallower zones under the Buttonwillow and Semitropic ridges. The District has reviewed extensive geologic data and District wells are intentionally constructed sufficiently above the saline boundary to maintain water quality.

Additional details of groundwater quality can be found in the District's GSP, Section 2.3.5 Groundwater Quality Issues.

4.2.3 Source Water Quality Monitoring Practices

As previously stated, the DWR regularly monitors the quality of surface water in the California Aqueduct. In particular, water samples are collected at several locations, including Check Structure C21 (KA017226), which is located approximately 20 to 30 miles northwest of the District's service area. In addition, the District will periodically monitor the incoming water in its two main conveyances from the Aqueduct (the Intake Canal and the 120-inch pipeline).

Under the District's current program, water samples are also collected annually from a representative network of wells located throughout the irrigated areas to monitor groundwater quality. For in-District use of groundwater, water quality testing has historically involved parameters relevant to an irrigation water analysis. However, when previously banked groundwater is recovered and delivered into the Aqueduct, testing is more extensive, both in terms of the number of tests and the constituents that are included in the tests.

A detailed description of the District's groundwater monitoring practices can be found in Section 2.3.5 Groundwater Quality Issues and Section 4.3.6 Degraded Water Quality of the District's GSP.

5.0 Annual Water Budget

5.1 Inflows

The District's water budget components have been described in previous sections of this plan. Inflow elements of the water budget include the surface water elements described in Section 4.1.1 and the and groundwater elements described in Section 4.1.2. The District's water budget inflow components are provided in Table 4-3 for the period 2016 to 2020.

Table 5-1. Water Budget Inflow Components – Semitropic WSD, Kern County Subbasin (5-22-14)

Inflow Component	AWMP Location for Supporting Calculations	Uncertainty	How Quantified?	Calendar Year 2016	Calendar Year 2017	Calendar Year 2018	Calendar Year 2019	Calendar Year 2020
Units	Page number or Section	Percent		Acre-feet per year	Acre-feet per year	Acre-feet per year	Acre-feet per year	Acre-feet per year
Effective Precipitation	Section 4.1.3	10%	Measured	70,104	50,186	52,852	99,434	51,873
Water Supplier surface water diversions	Section 4.1.1	15%	Measured	101,467	290,643	284,463	270,501	45,200
Water Supplier groundwater pumping				0	0	0	0	0
Private groundwater pumping	Section 4.1.2	15%	Calculated	320,133	157,119	167,022	96,579	343,577
Total				491,704	497,948	504,337	466,514	440,650

User Notes & Explanations:
All data provided on a calendar year basis, consistent with District and landowner water budget accounting.

5.2 Outflows

The District's water budget components have been described in previous sections of this plan. Outflow elements of the water budget include the surface water elements described in Section 4.1.1 and the and groundwater elements described in Section 4.1.2. The District's water budget inflow components are provided in Table 4-3 for the period 2016 to 2020.

Table 5-1. Water Budget Outflow Components – Semitropic WSD, Kern County Subbasin (5-22-14)

Inflow Component	AWMP Location for Supporting Calculations	Uncertainty	How Quantified?	Calendar Year 2016	Calendar Year 2017	Calendar Year 2018	Calendar Year 2019	Calendar Year 2020
	Page number or Section	Percent		Acre-feet per year	Acre-feet per year	Acre-feet per year	Acre-feet per year	Acre-feet per year
Crop Consumptive use		15%	Measured	409,991	409,712	416,035	394,423	364,470
Surface Outflows				0	0	0	0	0
Deep Percolation			Calculated	81,713	88,236	88,302	72,091	76,180
Total				491,704	497,948	504,337	466,514	440,650

User Notes & Explanations:
All data provided on a calendar year basis, consistent with District and landowner water budget accounting.

6.0 Quantification of the Efficiency of Agricultural Water Use

6.1 Total Water Use Fraction

The efficiency of agricultural water use within the District was quantified using the Total Water Use Fraction method as detailed in "A Proposed Methodology for Quantifying the Efficiency of Agricultural Water Use" (DWR, 2012). The evapotranspiration of applied water (ETAW) was first calculated using evapotranspiration (ET) and agricultural irrigated acreage data obtained from Land IQ and precipitation data from CIMIS Station 5 for 2016-2019 and in-District measurements for 2020 using the following equation:

$$ETAW = ET_{Total} - P_e$$

Where:

ET_{total} = total crop evapotranspiration of all agricultural irrigated land uses within the District

P_e = effective precipitation on all agricultural irrigated lands within the District

Due to the limited amount of rainfall recorded in the area, the relatively flat topography, and relatively permeable soil types in the District, all precipitation was considered effective precipitation. Therefore, P_e was calculated as the measured total annual rainfall multiplied by the total acreage of agricultural irrigated lands. ET, P_e, and the calculated ETAW for each plan year are shown in Table 6-1. Within the District, the irrigated lands represent those lands actively irrigated within a calendar year, which differs from the District's developed agricultural lands, which are those lands that pay the General Project Service Charge. Differences result from changes in cropping practices, temporary land fallowing, and other landowner management decisions.

Table 6-1. Evapotranspiration of Applied Water for Agricultural Lands

Plan Year	Total ET (af)	Effective Precipitation (af)	ETAW (af)
2016	409,991	70,104	339,887
2017	409,712	50,186	359,526
2018	416,035	52,852	363,183
2019	394,423	99,434	294,989
2020	364,470	51,873	312,597

The total water use fraction (TWUF) was then calculated using the following equation:

$$TWUF = (ETAW + AU + EU)/AW$$

Where:

ETAW = the calculated evapotranspiration of applied water

AU = the portion of applied water directed for salinity management, climate control, seed germination, etc.

EU = the portion of applied water directed to environmental purposes (i.e. Duck clubs in the District)

AW = the total quantity of water that was applied within the District service area

As there is no significant agronomic use within the District, this value was set to zero. The ETAW, AU, EU, AW and calculated TWUF for each plan year are in Table 6-2.

Table 6.2. Total Water Use Fraction

Plan Year	ETAW (af)	Agronomic Use (af)	Environmental Use (af)	Applied Water (af)	Total Water Use Fraction
2016	339,887	0	13,036	421,600	0.837
2017	359,526	0	14,580	445,762	0.839
2018	363,183	0	10,014	451,485	0.827
2019	294,989	0	6,624	367,080	0.822
2020	312,597	0	7,880	388,777	0.824

7.0 Climate Change

The impacts of climate change on water supplies used in Semitropic are assessed using datasets developed by DWR to assist local agencies to developing groundwater sustainability plans under the SGMA program. The datasets were generated from an ensemble of 20 global climate models selected by the DWR Climate Change Technical Advisory Group (CCTAG) as the most appropriate projections for California water resources evaluation and planning (DWR CCTAG, 2015). The datasets are provided at a spatial resolution of 1/16th degree (approximately 3.75-mile grid cells) over California for each calendar month from 1915 through 2011. The Variable Infiltration Capacity (VIC) hydrologic model has been used with the climate projection datasets to simulate future changes in streamflow at the outlet of subbasins defined by each 8-digit Hydrologic Unit Code (HUC) in California. The flows are also entered into the CalSim II model to simulate operations of SWP and the CVP.

As part of GSP development for the KGA, Semitropic performed a climate change assessment using the DWR datasets for 2030 conditions. The results of that assessment are used with Tulare Basin results and CalSim model results for SWP supplies to assess Semitropic water supplies under 2070 conditions. Table 7-1 shows projected changes in major Semitropics water supply sources under 2030 and 2070 conditions. The 2030 projections are obtained from the Semitropic Management Area Plan of the Kern County GSP while the 2070 values are based on change factors extracted from the DWR dataset and applied to the 2030 projections from the GSP.

Table 7-1. Projected Changes in Major Water Supply Sources Under 2030 and 2070 Conditions

Water Supply Source	Projected Availability (AF/Year)		
	Current Conditions	2030 Conditions	2070 Conditions
State Water Project – Table A	95,200	93,000	85,572
State Water Project – Article 21	3,400	3,300	3,395
Imports, transfers & exchanges	21,600	21,400	20,197

The GSP results summarized in Table show a projected 3 percent decrease in SWP Table A and Article 21 water supplies by 2030. Water supply from imports transfers and exchanges is also projected to decrease by 1 percent under 2030 conditions. In the GSP, supplementary water supplies from Poso Creek (400 AF/Yr), leave-behind from water banking (7,800 AF/Yr) and Native Supply (55,400 to 166,100 AF/Yr) are projected to remain unchanged under 2030 conditions.

Under 2070 conditions, the DWR climate projections indicate a SWP Table A supplies are projected to decrease by 8 percent relative to 2030 projections while Article 21 water supplies are projected to increase by 2.9 percent. Regional water supplies are also projected to increase by 1.2 percent under 2070 conditions. Changes in regional imports, transfers and exchanges cannot be projected directly under 2070 conditions but are estimated to reduce by 5.6 percent which is

the average reduction in Central Valley Project supplies (-11.1 percent) and regional supplies (-0.1 percent). The net projected impact of climate change on SWP water supply amounts to about a 2 percent decrease from the Baseline Conditions by 2030 and a 6 percent decrease by 2070.

8.0 Water Management Objectives

In the development of the District's GSP, the District identified projects and management actions that are designed to improve management of the District's water resources by directly improving water use efficiency, through facility improvement projects, and by incentivizing more efficient water use by District landowner, through management actions such as establishing water budgets and pricing structures. The projects and management actions in the GSP will serve as the water management objectives for this AWMP. In combination with EWMPs, identified in the following section, these water management objectives will promote water use efficiency improvements in the District and contribute to sustainable management of surface water and groundwater resources.

Table 8-1 provides the list of projects and management actions developed in the District's GSP and adopted here as water management objectives. The projects and management actions is list in order of priority.

MA Number	MA Name	Summary Description	Relevant Sustainability Indicators Affected: Groundwater Levels and Storage	Relevant Sustainability Indicators Affected: Groundwater Quality	Relevant Sustainability Indicators Affected: Land Subsidence	Circumstance for Implementation	Public Noticing Process	Permitting and Regulatory Process Requirements	Status	Timetable / Circumstances for Initiation	Timetable for Completion	Timetable for Accural of Expected Benefits	Expected Benefits: Primary: Water Supply Augmentation	Expected Benefits: Primary: Water Demand Reduction	Expected Benefits: Secondary: Water Quality Improvement	Expected Benefits: Secondary: Water Management Flexibility / Efficiency	Source(s) of Water, if Applicable	Legal Authority Required	Estimated Costs: One-time Costs	Estimated Costs: Ongoing Costs (per year)	Estimated Costs: Potential Funding Source(s)
1	Landowner Water Budgets	Establish individual water budget for landowners by landowner classes	•	•	•	Establish water budgets by landowner	Semitropic GSA Board Meetings & Website	CEQA	Under development	2020	2020	2020		Est. 60,000 af total (3,000 af/yr to 2040)				District / SGMA authorities		$100,000	Distirct
2	Tiered Pricing for Groundwater Pumping	Develop pricing structure to incentize groundwater users to manage groundwater extractions to MA1 water Budgets	•	•	•	Implementation of MA 1	Semitropic GSA Board Meetings & Website	218 Process	Not yet started	2020	2021	Through 2040		Consistent with MA1				District / SGMA authorities	$50,000	$25,000	District
3	District Fallowing Program	support land fallowing as a District action and by individual landowners or groups of landowners.	•	•	•	Implementation of MA 1	Semitropic GSA and District Board CEQA compliant process	CEQA	Not yet started	2020	2021	Through 2040		Consistent with MA1				District authorities	$300,000		District
4	Enhanced Groundwater Recharge	Development of surface and subsurface recharge projects underlying developed agricultural lands to increase groundwater recharge capacity	•			Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	Site specific (CEQA)	Ongoing	2020	2040	During above average water alloaction years	Up to 20,000 af average annual		•	•	SWP supplies and other local and imported sources	District authorities	TBD	$25,000	District
5	Monitoring Network Improvement Plan	Assess and identify monitoring network requirements for full compliance with SGMA and development of an implementation plan for achieving full compliance.	•	•	•	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	Site specific (CEQA)	Initiated planning	2020	2030	Upon project completion						District authorities	TBD	TBD	District
6	Evaluation and Assessment of GDEs with the Semitropic Area	Conduct additonal analysis to verify the presence and extend fo GDE's in the Semitropic and, if present, develop appropriate monitoring protocols.	•			Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	TBD	Not yet started	2020	2025							District authorities	$50,000		District
7	Brackish Water Desalination	Development of a braackish water treatment facility to treat locally sourced brackish water for District use.	•			Upon completion of environmental and regulatory requirements	Semitropic GSA Board Meetings & Website	CEQA	Initiated planning	2022	2025	Upon project completion	1,800 af / year			•	Local brackish water	District authorities		up to $500 af	District
8	In-District Water Markets and Transfers	District will allow for the development of market for in-district transfers	•			Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	TBD	Not yet started	2022	2024	Upon project completion	TBD			•	SWP supplies and other local and imported sources	District / SGMA authorities	TBD	$25,000	District
9	Poso Creek MAR	Development of floodwater capture and recharge program ffrom Poso Creek flood flows	•		•	Upon completion of feasibility and permitting requirements	Semitropic GSA Board Meetings & Website	CEQA	Undergoing pre-feasibility analysis	2020	2028	Wet year following project completion	1,200 af average annual				Poso Creek	District authorities	TBD	TBD	District
10	Tulare Lake Project	Development of conveyance facilities to divert Kings River flood flows for direct use and recharge in the SWSD	•	•	•	Upon compeltion of water rights determination	Semitropic GSA Board Meetings & Website	CEQA / State Board / Regulatory	Under development	2018	2035	Wet year following project completion	70,000 af average annual		•	•	King River flood flows	District authorities	TBD	TBD	District
11	Water Market Acquititions	Increased participation in state-wide water markets for spot market and long-term water transfers	•		•	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	CEQA / DWR	Ongoing	2020	2020	Immediately	4,000 af average annual			•	Other imported water supplies	District authorities	TBD	TBD	District
12	Stored Water Recovery Unit	Development of water storage to expand in-lieu service areas	•		•	Upon approval by SWSD BOD and identification of funding	Semitropic GSA Board Meetings & Website	CEQA (Completed)	Initiated	2025	TBD	During years of higher than average water delvieries to District	Increases capacity & flexibility of conveyance for recharge			•		District authorities	$32,000,000	TBD	District
13	Pond-Poso Spreading Grounds, Phase II	Development of spreading facililiteis to increase groundwater recharge capacity	•		•	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	CEQA	Initiated	2020	2024	During years with high Poso Creek flows	Increases groundwater recharge capacity			•		District authorities	TBD	TBD	District
14	Pond-Poso Entrance Ponds	Development of spreading facililiteis to increase groundwater recharge capacity	•		•	Upon approval by SWSD BOD and identification of funding	Semitropic GSA Board Meetings & Website	CEQA	Initiated	2024	2026	During years with high Poso Creek flows	Increases capacity & flexibility of conveyance for recharge			•		District authorities	TBD	TBD	District
15	Multi-District Conveyance (CA to Friant-Kern Canal)	Development of a conveyance system to deliver surface water for groundwater recharge and irrigation	•		•	Upon approval by SWSD BOD and identification of funding	Semitropic GSA Board Meetings & Website	None	Ongoing			During years of higher than average water delvieries to District	Increases capacity & flexibility of conveyance for recharge			•		District authorities	$70,000,000	TBD	District
16	Schuster Spreading Grounds	Development of spreading facililiteis to increase groundwater recharge capacity	•		•	Upon approval by SWSD BOD and identification of funding	Semitropic GSA Board Meetings & Website	CEQA	Not yet started	2030	2035	During years of higher than average water delvieries to District	Increases groundwater recharge capacity			•		District authorities	TBD	TBD	District
17	Leonard Avenue System	Development of an intertie system to provide east to west surface water conveyance to for supply in groundwater dependent areas	•		•	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	CEQA	Initiated	2019	2022	Upon project completion	Increases capacity & flexibility of conveyance for recharge			•		District authorities	TBD	TBD	District
18	Diltz Intertie	Connection of an intertie to provide surface water converyance for agricultural irrigation	•		•	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	None	Ongoing	2018	2021	All years	Increases capacity & flexibility of conveyance for recharge			•		District authorities	TBD	TBD	District
19	Cox Canal	Developed canal for the conveyance of surface water for groundwater recharge	•		•	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	None	Ongoing	2018	2021	All years	Increases capacity & flexibility of conveyance for recharge			•		District authorities	TBD	TBD	District
20	Stored Water Recovery Unit- XYZ		•		•	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	None	Ongoing	2019	2022	All years	Increases capacity & flexibility of conveyance for recharge			•		District authorities	TBD	TBD	District

Table 8-1. Water Management Objectives

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9.0 Efficient Water Management Practices Information

Table 9-1 describes the Efficient Water Management Practices (EWMPs) implemented in the District and identifies the EWMPs planned. Each EWMPs is sequenced with the same number referenced from the DWR publication A Guidebook to Assist Agricultural Water Suppliers.

Table 9-2 of this report provides an estimate of efficiency improvements that have occurred since the last AWMP. Table 9-3 identifies an implementation schedule, finance plan, and budget allotment for EWMPs implemented by the District. Although the District does not explicitly budget for each EWMP, it does maintain an annual budget for capital improvements and general operations. The District has identified the type of District Staff that is responsible for implementing each EWMP and has also identified the type of funding that supports implementing the EWMP.

Table 9-1. Report of EWMPs Implemented/Planned

EWMP No.*	Description	EWMP Implemented	EWMP Planned
Critical EWMPS			
1	*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) of the legislation.* **Description:** All deliveries to growers are metered at the farm turnout. Typical farm turnouts serve 160 acres although some serve areas as small as 20 acres. Water usage is reported to growers in their monthly invoices. In this regard, the District has implemented a water accounting system (Water Information Management System) that enhances the District's ability to provide detailed and timely data on water usage. The District is committed to comply with the requirements of SBx7-7 by verifying the accuracy of measurement of irrigation water deliveries using the methodology described in Section VII of this report.	X	

Table 9-1. Report of EWMPs Implemented/Planned

EWMP No.*	Description	EWMP Implemented	EWMP Planned
2	*Adopt a pricing structure for water customers based at least in part on quantity delivered.* **Description:** The District charges water users based on the volume of water delivered.	X	
Conditional EWMPS			
1	*Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.* **Description:** The District will continue to support voluntary land retirement as a means of reducing local demands upon the groundwater basin. Since the early 2000's the District has acquired and retired more than 11,377 acres from irrigated agriculture.	X	
3	*Facilitate financing of capital improvements for on-farm irrigation systems.* **Description:** The District provides financial support to the local Resource Conservation District (RCD), which conducts on-farm testing regarding irrigation management practices. These services are available upon request to the Resource Conservation District, subject to their staffing capabilities. In addition, the District has received additional funding through the NRCS for conversion of on-farm irrigation systems to drip; $1M in 2011 and approximately $1M in 2015. Regarding conjunctive use improvements, the District has facilitated the construction of pipelines connecting landowner wells to the District's distribution/conveyance system. Typically, this has been done to allow District use of the well for conjunctive use and banking purposes when not needed for landowner purposes. District use is governed by an agreement with the given landowner.	X	

Table 9-1. Report of EWMPs Implemented/Planned

EWMP No.*	Description	EWMP Implemented	EWMP Planned
4	*Implement an incentive pricing structure that promotes one or more of the following goals: (A) more efficient water use at the farm level; (B) conjunctive use of groundwater: (C) appropriate increase of groundwater recharge, (D) reduction in problem drainage; (E) improve management of environmental resources; (F) effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.* **Description:** Historically, the District sets the price of water such that it is competitive with the cost to produce groundwater, i.e., the District encourages the use of imported surface water supplies when they are available, so as to reduce groundwater pumping (which amounts to in-lieu recharge). The Semitropic Water Storage District GSA has also adopted and begun implementation of the Landowner Water Budgets Management Action under SGMA. This management action allocates the water supply of the District, including the Native Supply (including native groundwater supplies defined under SGMA [see attached GSP, Section 5.2.3]), to each landowner based on their landowner class. The water budgets derived for landowners within this management action will define the required reduction in consumptive water demand and associated groundwater extractions as necessary to meet consumptive water demand within the District.	X	

Table 9-1. Report of EWMPs Implemented/Planned

EWMP No.*	Description	EWMP Implemented	EWMP Planned
5	*Expand line or pipe distribution system, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance and reduce seepage.* **Description:** When originally constructed, the District's main conveyance facilities, all open canals, were unlined. However, over the years, the District has gradually installed concrete lining. Recently the District completed lining of the Pond Poso Canal, eliminating canal seepage when utilizing District groundwater wells for groundwater recovery operations. The District completed additional in-lieu distribution systems and canal conveyance improvements since the initial AWMP.	X	
6	*Increase flexibility in water ordering by, and delivery to, water customers within operational limits.* **Description:** The District's ability to operate on an on-demand basis is limited, inasmuch as the District's source of surface water, the State Water Project, does not provide flexibility to the District in the water that it orders and receives. In addition, the District has limited capacity in its distribution system to regulate mismatches in supply and demand. Nevertheless, during the off-peak period the District has sufficient control of water levels in its canals to provide some flexibility in water deliveries.	X	
7	*Construct and operate supplier operational outflows and tailwater recovery systems.* **Description:** The District operates three spillway basins, two located at the ends of canals to capture emergency spills and return this water to the distribution system and one on the intake canal that can be pumped back into the canal. As a result, there is no uncontrolled spillage into Poso Creek. Farm tailwater is handled by individual growers through their own on-farm tailwater recovery systems.	X	

Table 9-1. Report of EWMPs Implemented/Planned

EWMP No.*	Description	EWMP Implemented	EWMP Planned
8	*Increase planned conjunctive use of surface water and groundwater within the supplier service area.* **Description:** The District was originally based on conjunctive use of surface water and groundwater. Over the years, these conjunctive use practices have greatly expanded and now include providing water banking service to other agencies. The District continues to expand its conjunctive use practices by supporting installation of landowner subsurface recharge infrastructure, which allows the landowner to recharge groundwater without impacting surface farming operations.	X	
9	*Automate canal control structures.* **Description:** The District has upgraded its SCADA facilities to provide better measurement and control of water. The resulting increased reliability of water delivery will help the District and growers to reduce the use of pumps. Given the complex and variable nature of their operations, full automation would not be effective; however, at this time water level control in District canals is adequate to provide operational flexibility during off-peak periods. In 2020 the District completed installation of a bi-directional meter at the 120-inch line (ST3) where it enters the stored water recovery unit. This allows the District to verify the integrity of the ST3 deliveries from the California Aqueduct.	X	
10	*Facilitate or promote customer pump testing and evaluation.* **Description:** The District has installed water flow meters on all District-owned pumps, but does not allocate a portion of budget or capital for on-farm improvements. The District promotes testing of meters by external entities, is developing its own meter testing facility, and provides some minor services (e.g. video inspection) for wells.	X	

Table 9-1. Report of EWMPs Implemented/Planned

EWMP No.*	Description	EWMP Implemented	EWMP Planned
11	*Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.* **Description:** The function of Water Conservation Coordinator is performed by the District Engineer.	X	
12	*Provide for the availability of water management services to water users.* **Description:** Since 2017, the District has provided detailed Et data by month and by parcel for each landowner within the District along with Et data by specific crop. The District provides water management services to customers that include maintaining a district website, maintaining an engineering and operations staff, and providing funding support for a mobile irrigation evaluation laboratory.	X	
13	*Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.* **Description:** The District receives surface water from the SWP, contracted with KCWA, and is party to turn-in agreements and point-of-delivery agreements with DWR. The District occasionally receives "215 water" from Reclamation; however, the Friant San Joaquin River Settlement has affected the availability of this supply. The District has completed environmental documents that allows for banking, transfer, and exchange of available water supplies with neighboring districts with federal and state water contracts.	X	
14	*Evaluate and improve the efficiencies of the supplier's pumps.* **Description:** The District is investigating opportunities to replace the PG&E pump testing program that was previously terminated. The District owns and operates a well drilling rig and a well service rig.	X	
OTHER Optional EWMPs			

Table 9-1. Report of EWMPs Implemented/Planned

EWMP No.*	Description	EWMP Implemented	EWMP Planned
1999 AWMC MOU A-4	*Improve communication and cooperation among water suppliers, users, and other agencies.* **Description:** The District cooperates directly with the Kern County Water Agency, facilitates the Semitropic Groundwater Monitoring Committee, is the lead agency of the Poso Creek Integrated Regional Water Management Group, is active in the Water Association of Kern County. Over the past several years the District has been actively engaged with the Kern Groundwater Authority (KGA) to facilitate compliance with SGMA and development of a GSP. This effort has involved intense coordination with neighboring water districts, municipalities and county departments that have responsibility for management of the Kern Subbasin's groundwater resources. The District Board Chairman has served as a Director of the KGA since its formation and is currently serving as the Chairman of the KGA Board of Directors. The District is also an active participant in the Kern River Watershed Coalition Authority. The District General Manager serves as the current Chairman of this organization, previously serving as the Vice-Chairman since organization formation.	X	
1999 AWMC MOU B-4	*Facilitate voluntary water transfers.* **Description:** The District has supported the transfer of a landowner's SWP water from another district into the Semitropic; given they are a landowner in both districts, i.e., the water would be moved from the landowner's land in another district to the landowner's holdings in Semitropic. These transfers have been on a case-by-case and year-by-year basis and also require approval of KCWA. Semitropic has also allowed landowners to move their SWP water around within the District; however, this involves the same landowner moving water from one of his parcels in SWSD to another. Semitropic also allows landowners to use the District's conveyance system to wheel water within the District in the same manner.	X	

Table 9-2. Report of EWMPs Efficiency Improvements

Corresponding EWMP No.*	EWMP	Estimated Water Use Efficiency Improvements That Occurred Since Last Report (December, 2013)	Estimated Water Use Efficiency Improvements 5 and 10 years in Future
1	Alternate Land Use	Prior to the 2013 Plan, the District converted 800 acres of irrigated land to spreading basins for use as a direct recharge and recovery facility. Since 2013, the District has retired 1,148 irrigated acres. Since early 2000's, District has retired over 11,377 irrigated acres.	District owns 960 acres of irrigated land that can be converted to spreading basins to add capacity to their direct recharge and recovery facility. The District is considering additional purchases of irrigated land to remove from production (i.e. retire irrigated lands) to reduce demand.
2	Recycled Water Use	In the past, limited opportunities existed for recycled water use within the District.	The District will continue to evaluate the feasibility of projects to reclaim and reuse naturally impaired groundwater. The District also plans to look into different technologies to "treat" water from bad WQ wells in the District, which may lead to a recycled water project.
3	On-Farm Irrigation Capital Improvements	In 2015, the District obtained over $1M for Growers to convert on-farm irrigation systems to drip through the NRCS EQIP program.	District will apply for grants to obtain funding for Growers to convert on-farm irrigation systems to drip through the NRCS EQIP program.
4	Implement an incentive pricing structure	Consistent with SGMA requirements the District implemented the Landowner Water Budget management action.	Charges for groundwater use in excess of the Dsitrict-wide average will increase the efficient use of surface and groundwater supplies in the District.

Table 9-2. Report of EWMPs Efficiency Improvements

Corresponding EWMP No.*	EWMP	Estimated Water Use Efficiency Improvements That Occurred Since Last Report (December, 2013)	Estimated Water Use Efficiency Improvements 5 and 10 years in Future
5	Infrastructure Improvements	District completed equipping existing wells to increase return capacity and added additional pumps, motors, and VFDs at strategic locations to reduce bottlenecks in conveyance.	District will continue to equip existing wells and add additional pumps, motors, and VFDs at strategic locations to reduce bottlenecks in conveyance. The District added 1 MW solar facility in 2020; implemented a well telemetry project to be completed in 2021; added second point of service with PGE (Pond Rd Substation) in 2018/19; initiated construction of the Cox Canal Pump Station in 2020 to improve interconnection with neighboring Buena Vista Water Storage District (BVWSD) and completed interconnection with BVWSD at the 120-inch line in 2017.
6	Order/Delivery Flexibility	Nothing to report.	Nothing to report.
7	Supplier Operational Outflow and Tailwater Systems	Nothing to report.	Nothing to report.
8	Conjunctive Use	Prior to the 2013 update, the District added two in-lieu distribution systems in area that were served by groundwater only.	District completed construction of several additional in-lieu systems of System X, Y, and Z.
9	Automated Canal Controls	District continues to complete improvements to SCADA system and link operations to water ordering.	District will continue to implement automated canal controls that allow staff to monitor operations and multi-task.

Table 9-2. Report of EWMPs Efficiency Improvements

Corresponding EWMP No.*	EWMP	Estimated Water Use Efficiency Improvements That Occurred Since Last Report (December, 2013)	Estimated Water Use Efficiency Improvements 5 and 10 years in Future
10	Customer Pump Test/Evaluation	N/A	N/A
11	Water Conservation Coordinator	District Staff assignment.	District will continue to support by assigning this responsibility to a District Staff person.
12	Water Management Services to Customers	District has maintained and improved communication with Growers during the drought.	District to consider additional water purchases and develop water supply projects to improve long-term water balance in-district.
13	Identify Institutional Changes	District utilized a recently completed environmental document with neighboring SWP, CVP, and Kern River Contractors that allows the districts to bank, transfer, and exchange surface water supplies for 25 years.	District to participate in developing regional groundwater management plans with neighboring districts in accordance with the State of California, Sustainable Groundwater Management Act.

Table 9-3. Schedule to Implement EWMPs

EWMP No.[1]	Description	Implementation Schedule	Finance Plan	Budget Allotment[2]
Critical EWMPS				
1	Water Measurement	On-going service	Operations	District Staff Time
2	Volume-Based Pricing	On-going service	Operations	Management
1	Alternate Land Use	On-going service	Capital Improvement	Board Approved Opportunities
2	Recycled Water Use	To be considered	Capital Improvement	District Staff / Planning Funds

Table 9-3. Schedule to Implement EWMPs

EWMP No.[1]	Description	Implementation Schedule	Finance Plan	Budget Allotment[2]
3	On-Farm Irrigation Capital Improvements	On-going service	Private or NRCS Funding	Grant Funded Opportunities
4	Incentive Pricing Structure	On-going service	Operations	District Staff
5	Infrastructure Improvements	Already Implemented and On-going service	Capital Improvement	District Staff and Grant Funded Opportunities
6	Order/Delivery Flexibility	Already Implemented	Operations	District Staff and SCADA Improvements
7	Supplier Operational Outflow and Tailwater Systems	Already Implemented	Operations	District Staff
8	Conjunctive Use	On-going service	Capital Improvement	District Staff and Grant Funding
9	Automated Canal Controls	Already Implemented	Operations	District Staff and SCADSA Improvements
10	Customer Pump Test/Evaluation	On-going service	Operations	District Staff
11	Water Conservation Coordinator	On-going service	Operations	District Staff
12	Water Management Services to Customers	On-going service	Operations	District Staff
13	Identify Institutional Changes	On-going service	Operations	Management
14	Supplier Pump Improved Efficiency	On-going service	Operations	District Staff
NA	Improve Communication Among Suppliers	On-going service	Operations	N/A
NA	Facilitate Voluntary Water Transfers	On-going service	Operations	N/A

[1] EWMP numbers correspond to Water Code §10608.48(c).
[2] The District has allocated a percentage of the annual budget to cover implementation of the EWMPs under the operations and capital improvements projects.

10.0 Water Measurement Documentation

10.1 Description of Water Measurement Best Professional Practices

Section 10608.48(b) of the California Water Code requires that agricultural water suppliers governed by this section of the code, "Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10" of the legislation. Further, Section 531.10(a) requires that, "An agricultural water supplier shall submit an annual report to the department (DWR) that summarizes aggregated farm-gate delivery data, on a monthly or bi-monthly basis, using best professional practices."

Semitropic's ability to comply with these requirements rests on the fact that all irrigation deliveries made by the District are measured to support the District's volumetric water pricing to its customers. All District deliveries are made through piped turnouts, with the diameters of the pipes ranging between 6 and 14 inches.

Deliveries at farm turnouts are measured with propeller flowmeters manufactured by Water Specialties. The propeller meters are mounted within the turnout piping following accepted engineering practices and measure flow rates and also record the total volume of water delivered.

Data on volumes of delivered water recorded by the District are updated on a daily basis. System operators enter water delivery readings into the District's water management software by selecting the appropriate turnout on their tablet and entering the reading from the water meter. The information is uploaded into the District's water management software daily and reviewed by a supervisor as a quality control procedure. Irrigated acreage is determined based upon an annual crop survey conducted each spring. These crop reports include information obtained directly from water users that identify the crop type, irrigation method and acreage. The irrigated acreage values are verified by checking the acreage identified in the Semitropic Assessor's Parcel Number database and are field confirmed by Semitropic field staff. As all turnouts at Semitropic deliver water to grouped acres, potentially more than one field, there is a direct correspondence to the size of a turnout and the number of acres served by that turnout.

Water delivery data are made available to water users whenever it is requested throughout the season, which enables irrigators to monitor their water usage. The District's billing system uses the pricing structure adopted by Semitropic's Board of Directors and the flowmeter readings at a given farm turnout to determine the water bill associated with District deliveries through that turnout.

10.2 Engineer Certification and Apportionment Requirement for Water Measurement

The methodology used to determine the individual device accuracy values found in Section 597.3(a) will be verified by a Professional Engineer using industry accepted standards. These methods will take into account the differential in water levels and/or fluctuations in the flow rate

or velocity during the delivery event and the type, size and characteristics of the measuring device being verified.

Flow meters at each farm turnout measure District deliveries to each irrigator's place of use. The flow meter indicates the cumulative total of water delivered with the instantaneous flow rate calculated by an on-board "totalizer" device. In practice, meters are only repaired or replaced when a meter is observed to be malfunctioning or when a water user questions a meter's accuracy. In the latter case, if the questioned flow meter is tested and found to be within an acceptable accuracy then the water user must pay for the testing process. Conversely, the District will fund the process to repair or replace the flow meter if the flow meter is not within an acceptable accuracy range.

Semitropic plans to adopt a methodology for testing existing flow meters in a District Testing Facility and to present a report approved by a California-registered Professional Engineer as the basis for ongoing compliance with SBx7-7. The methodology is presented later in this section.

10.3 Documentation of Water Measurement Conversion to Volume

SBx7-7 requires an annual volumetric accuracy of within ±12 percent on existing devices. Since flow measurement devices at Semitropic include totalizers (which directly record cumulative flow volume), the devices' accuracy in measuring flow rates is representative of their ability to measure volumetric deliveries. Therefore, the discussion presented later in this section that relates testing the accuracy of measurement of flow rates applies equally to determination of the accuracy of measurement of volumes of delivered water.

10.4 Legal Certification and Apportionment Required for Water Measurement Lack of Legal Access to the Farm-gate

Semitropic staff has legal access to install, measure, maintain, operate and monitor measurement devices at all farm delivery points, also referred to as "farm gates" within the District. Therefore there are no institutional or legal impediments that restrict access to turnouts or measurement of water and, for the purposes of satisfying SBx7-7, there is no need to measure water upstream of points of delivery to individual customers.

10.5 Device Corrective Action Plan Required for Water Measurement

Semitropic has approved $20,000 per year in its Water Operations Budget program for this activity, including the budget allocation of $242,000 for construction of a Meter Testing Facility to assess and improve the accuracy of District flow meters and measurement devices. Semitropic will monitor this activity on an ongoing basis to determine whether or not this level of effort is sufficient and effective, and will make adjustments, as needed, in order to meet the compliance schedule. The time frame for compliance allowed in the regulation can be met with staff resources and the grant funding received to finish construction of the Meter Testing Facility.

Devices identified to have measurement accuracies that departed by more than ±12 percent from flows measured by the Testing Facility will be sent to the district shop for assessment. If the

meter is older (i.e. installed over 20 years prior to test date) it will be replaced, otherwise the shop will make an attempt at repairing the meter. If the shop is not able to correct the inaccuracy in flow measurement, the device will be replaced. After installation in the field, the accuracy of repaired meters will be verified using a calibrated device, and an affidavit will be submitted by a California-registered Professional Engineer certifying the accuracy of each repaired meter to be within ±10 percent by volume. New replacement meters will be laboratory certified by their manufacturer prior to installation to have an accuracy measurement within ±6 percent by volume. Repair or replacement of these flow meters will be completed within three years of approval of this testing program by the DWR. If approved, the meter testing program is being scheduled to be completed along with other programs and projects that Semitropic is engaged in that are considered to be high priority such as distribution system maintenance, expansion of the Groundwater Banking Program, and other planned capital improvements.

10.6 Farm Gate Measurement and Device Accuracy Compliance

SB7-7 requires that agricultural water suppliers measure the volume of water delivered to customers with sufficient accuracy to comply with certain standards described in the legislation. These standards are described below:

10.6.1 Measurement Options at the Delivery Point or Farm-gate of a Single Customer

An agricultural water supplier shall measure the volume of water delivered at the delivery point or farm-gate of a single customer. If a device measures a value other than volume, for example, flow rate, velocity or water elevation, the accuracy certification must incorporate the measurements or calculations required to convert the measured value to volume. An existing measurement device shall be certified to be accurate to within ±12 percent by volume.

10.6.2 Initial Certification of Device Accuracy

For existing measurement devices, the device accuracy shall be initially certified and documented by either:

a. *Field-testing that is completed on a random and statistically representative sample of the existing measurement devices. Field-testing shall be performed by individuals trained in the use of field-testing equipment and documented in a report approved by an engineer.*

b. *Field-inspections and analysis completed for every existing measurement device. Field-inspections and analysis shall be performed by trained individuals in the use of field inspection and analysis, and documented in a report approved by an engineer.*

10.6.3 Protocols for Field Testing

Field-testing shall be performed for a sample of existing measurement devices according to manufacturer's recommendations or design specifications and following best professional practices. It is recommended that the sample size be no less than 10 percent of existing devices, with a minimum of 5, and not to exceed 100 individual devices for any particular device type.

Alternatively, the supplier may develop its own sampling plan using an accepted statistical methodology.

If during the field-testing of existing measurement devices, more than one quarter of the samples for any particular device type do not meet the relevant accuracy criteria, the agricultural water supplier shall provide in its Agricultural Water Management Plan a plan to test an additional 10 percent of its existing devices, with a minimum of 5, but not to exceed an additional 100 individual devices for the particular device type. This second round of field-testing and corrective actions shall be completed within three years of the initial field-testing.

Field-inspections and analysis protocols shall be performed and the results shall be approved by an engineer for every existing measurement device to demonstrate that the design and installation standards used for the installation of existing measurement devices meet the relevant accuracy standards and that operation and maintenance protocols meet best professional practices.

10.6.4 Semitropic WSD Program for Compliance with Water Measurement Requirements

SBx7-7 offers the water supplier the opportunity to "develop its own sampling plan using an accepted statistical methodology". Following completion of the meter testing facility described above, Semitropic plans to test all flow meters on a regular basis with the testing cycle initially focusing on the oldest meters active in the District and those delivering the largest volumes of water. Before adopting this testing program, the District will confirm with DWR that the program satisfies the requirements of SBx7-7.

The testing approach proposed by Semitropic responds to the condition that of the 1,200 total number of meters in the District, approximately 19 percent of them are over 20 years old. Due to their age, these meters are assumed to contain the flow meters most likely to be outside the acceptable ±12 percent accuracy limit imposed by SBx7-7. Therefore, rather than relying on a random selection of measurement devices, Semitropic proposes to begin their testing program by concentrating on the turnouts most likely to be out of compliance with the accuracy requirements of SBx7-7. Semitropic believes that selection of this stratified sample population will generate the greatest benefits with respect to improving measurement accuracy from operation of their new testing facility. The likely outcome would be a selection of 10 percent of the total number of turnouts from this population based on age, working from the oldest turnout moving towards the newest that represents the assumed lowest accuracy value from District turnout sampling. As noted above, the sampling design is to ensure the District tests and finds any problematic flow meters sooner than later in using the newly constructed in-District Meter Testing Facility.

To develop a methodology where the selected samples also account for the volume of water delivered, in effect the specific turnout size, the total number of samples assessed will be increased until the representative amount of each size is approximately equal. This may result in a selection of turnouts greater than 10 percent of the total number within the District. There are only four different sized flow meters used by the District, with only one meter per turnout.

A preliminary estimate indicates that, when accounting for turnout age and size as described above, at least 19 percent of the District's turnouts would likely be assessed to perform the compliance testing. The sequence of steps proposed to identify a representative population of turnouts for verification of flow measurement is as follows:

Step 1: *Formulate a list of meters* together with the relative age and volume of water supplied by each turnout (i.e. size of turnout, of four different sizes from Table 52).

Step 2: *Select the set of oldest meters* that represents at least 10 percent of the total number of District turnouts. Once a particular device is selected, that device would be designated for testing and the numbers associated with that device will be withdrawn from the pool available for future selection. This procedure will be followed until devices that represent approximately 10 percent of the Semitropic turnouts and an approximately equal number of the four different sized turnouts are identified for testing.

This procedure improves upon the example given in §597.4(b)(1) of the legislation, in that devices representing the oldest turnouts will be selected for opportunity sampling or a preferred sample population rather than a simple random sample of devices that would have simply represented all functioning turnouts in the District. As stated above, this approach supports the purpose to find the turnouts with meters most likely to be outside an acceptable ±12 percent accuracy limit imposed by SBx7-7 by testing the older metered turnouts first.

Step 3: *Evaluate selected meters and record data*, at the District Testing Facility. Flow measurement devices at turnouts selected for testing in Step 3 will be evaluated by Semitropic for accuracy and measured accuracy will be retained for ten years or two AWMP cycles as per §597.4(c).

Step 4: *Determination of compliance.* Semitropic will estimate the annual volumetric accuracy of measurement of the selected sample of flow measurement devices. The District will expand their number of turnout samples if the accuracy is determined to be outside the limit imposed by SBx7-7 to determine the extent of any measurement issues. Non-compliant turnouts will be repaired or replaced by the District.

11.0 Demonstration of Reduced Reliance on the Delta

The Delta Plan provides a regulatory process for activities that qualify as "covered actions." The Delta Reform Act established a self-certification process for demonstrating consistency of "covered actions" with the Delta Plan. State and local agencies proposing "covered actions," prior to initiating the implementation of that action, must prepare a written certification of consistency with detailed findings as to whether the covered action is consistent with applicable Delta Plan policies and must submit that certification to the Delta Stewardship Council (DSC).

As the District is anticipating participating in various projects that would be considered "covered actions", including multi-year water transfers, conveyance facilities, or new diversions that involve transferring water through or exporting water from the Delta, it has elected to prepare a demonstration of its consistency with the Delta Plan and Delta Reform Act. The data and information provided herein is consistent with Section (c)(1) of Policy WR P1, Reduced Reliance on the Delta Through Improved Regional Water Self-Reliance.

To comply with WR P1, the regulation specifies that water suppliers have done the following: (see 23 CCR Section 5003 (c)):

(A) Completed a current Urban or Agricultural Water Management Plan (Plan) which has been reviewed by the Department of Water Resources for compliance with the applicable requirements of Water Code Division 6, Parts 2.55, 2.6, and 2.8;

(B) Identified, evaluated and commenced implementation, consistent with the implementation schedule set forth in the management Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta; and,

(C) Included in the Plan, commencing in 2015, the expected outcome for measurable reduction in Delta reliance and improvement in regional self reliance. The expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance shall be reported in the Plan as the reduction in the amount of water used, or in the percentage of water used from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code Section 1011(a)

The following information provides "self-certification" of the District's compliance with Delta Reform Act and each of the three criteria listed above from WR P1.

11.1 Completion of an Agricultural Water Management Plan (23 CCR Section 5003 (c)(1)(A))

The District has prepared this 2020 Agricultural Water Management Plan update, in compliance with Water Code §10800 – 10853 (the Agricultural Water Management Planning Act), which requires agricultural water suppliers to submit to the DWR an Agricultural Water Management Plan that addresses the elements listed in Water Code §10826. An agricultural water supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

The AWMP has been approved by the District's Board of Directors and submitted to DWR according to the schedule presented in Table 1-1.

11.2 Implementation of Locally Cost-Effective Projects (23 CCR Section 5003 (c)(1)(B))

This update to the District's AWMP demonstrates the District's implementation of cost-effective programs and actions to maximize its efficient use of all available water supplies. This program and projects are listed and described in Section 8, Water Management Objectives and in Section 9, Efficient Water Management Practices Information.

As demonstrated in this AWMP the District is proactive in improving the efficient operation of this own water delivery and conveyance facilities, it also supports numerous programs that assist local landowners in improving their own efficient water management practices. Since the District's formation in 1958 it has continually developed projects and programs to promote best water management. The District was one districts in the State to implement a groundwater banking and conjunctive use program to improve the management of local and state-wide water supplies. Through the years the District has continued to make improvement to its conveyance and distribution facilities to increase the capacity of its conjunctive use program and interconnection with neighboring districts. The District has support increased efficiencies in its distribution facilities and in landowner irrigation systems. Table 11-1 below provides an overview of the major projects and program that have been implemented by the District.

Table 11-1. Schedule of Implementation of Water Management and Efficiency Projects and Programs.

Year	Water Management Action
1958	Formation of Semitropic Water Storage District
1972 - 1977	Construction of original irrigation distribution system
1973	First delivery of SWP water
1979	Adoption of the General Project Service Charge (GPSC)
1990	Water banking Demonstration Project with DWR
1992	1992 Project Election Pilot water banking program with Metropolitan Water District of Southern California
1993	Interconnection with Shafter-Wasco Irrigation District Construction of California Aqueduct Turnout No. 2
1994	Formation of Semitropic Groundwater Monitoring Committee Approval of Semitropic Groundwater Banking Program (1 million acre-feet of storage capacity)
1995	Formation of and District participation in Kern Water Bank Authority
1997 - 1998	Construction of irrigation distribution system
1999	Subscription to Pioneer Water Bank
1999 - 2000	Construction of P-384 irrigation distribution system
2002	Construction of P-923 irrigation distribution system
2003	Adopted Groundwater Management Plan
2006	Construction of B-369 irrigation distribution system Construction of California Aqueduct Turnout No. 3
2007	Construction of P-1030 irrigation distribution system Adopted Poso Creek Integrated Regional Water Management Plan
2008	Construction of P-565 irrigation distribution system Construction of Pond Poso Spreading Grounds
2011	District funded on-farm irrigation improvement projects ($1 million)
2015	Construction of Pond Road Substation Construction of enhanced reverse flow project District funded on-farm irrigation improvement projects ($1 million)
2017	New Land Surcharge Program Established Et monitoring on a monthly basis by landowner parcel
2018	SGMA Basin Sustainability Charges/Credits
2019	Expansion of the In-Lieu Recharge system (System x, y and z)
2020	Groundwater Sustainability Plan Cox Canal Pumping Station, interconnection with Buena Vista Water Storage District.

11.3 Reduction in Delta Reliance and Improved Regional Self Reliance (23 CCR Section 5003 (c)(1)(C))

When addressing the issue of reduced Delta reliance, it is important to note that the District's Delta water supplies makeup less than one-third of the District's total water supply. Table 11-2 identifies, as a percentage, the portion of the District's water demands which are met with Delta water supplies.

Table 11-2. Percent of Delta and Non-Delta Water Supplies.

Period	Delta Supplies	Non-Delta and Local Water Supplies
1978 to 1991	43.7%	56.3%
1992 to 2006	34.6%	66.4%
2007 to 2015	21.1%	78.9%
2016 to 2020	21.4%	78.6%

Furthermore, the information presented in this AWMP demonstrates the District's compliance via a clear reduction in the District's reliance on the Delta and improved regional self-reliance using the metrics of 1) production per unit of applied water and 2) revenue generated per unit of applied water. The increase in both of these metrics over time demonstrates a reduction in the percentage of water used from the Delta for the production food crops and generation of revenue associated with food crops.

As documented in Section 4.1.1, Surface Water Supply, and Section 5.0, Annual Water Budget, the District has been and will continue to increase water supplies from local and other non-SWP sources. Even with an increase in such sources, however, the District will also need to maximize, whenever possible, deliveries of SWP contract water to opportunistically replenish it local groundwater supply via the District's extensive conjunctive use program. Historic reductions in Delta exports, due to regulatory constraints, have unfortunately increased local reliance on groundwater resources, which in turn triggered the passage of the Sustainable Management Act. As the District implements SGMA, its landowners will be required to reduce their reliance on groundwater. Without reliable deliveries of the District SWP contract entitlement, and absent the development of other non-Delta water supplies, landowners in the District will be forced to fallow thousands of acres of prime and productive farmlands.

To demonstrate improvements to on-farm water use efficiency the District used crop production and valuation data from the Kern County Department of Agriculture and Measurement Standards and crop survey developed by the District. Estimates of improvements in crop production and value per unit of water from 2015 to 2019 are provided in Table 11-3.

As the Table 11-3 shows, the District has witnessed a reduction in water demand concurrent with an increase in production tonnage and crop value per acre-foot of water consumed. These five crops represent more than 70 percent of the irrigated acreage within the District. Crop tonnage has increased by 1.2 percent between 2015 and 2019 as a result of increased on-farm irrigation

and water management efficiencies. Crop values over the same period have increased 14.6 percent for the five major crops with a corresponding increase in revenue per acre-foot of water consumed of 16.8 percent.

Table 11-3. Comparison of Semitropic Crop Production and Valuation for 2015 and 2019.

		District Acreage	Total ET AF	ET AF/Ac	Percent of District Irrigated Acres	District Production (tons)	District Value ($)	Production per (tons/af)	Revenue per af ($/af)
2015	Almonds	40,202	158,397	3.94	32.14%	37,790	$278,891,000	0.239	$1,761
	Pistachios	12,252	37,737	3.08	9.80%	4,411	$27,523,000	0.117	$729
	Grapes	5,779	19,765	3.42	4.62%	65,651	$1,015,740,000	3.322	$51,392
	Wheat	12,476	33,559	2.69	9.98%	39,797	$9,472,000	1.186	$282
	Alfalfa	18,378	67,631	3.68	14.69%	131,586	$24,343,000	1.946	$360
Subtotals		**89,087**	**317,088**	**3.56**	**71.23%**	**279,235**	**$1,355,969,000**	**0.881**	**$4,276**
2019	Almonds	43,433	169,463	3.90	35.77%	56,897	$308,384,000	0.336	$1,820
	Pistachios	20,471	62,174	3.04	16.86%	23,541	$133,009,000	0.379	$2,139
	Grapes - Table	4,231	13,833	3.27	3.49%	51,410	$1,055,801,000	3.717	$76,327
	Grapes - Wine	1,760	6,101	3.47	1.45%	14,890	$30,069,000	2.441	$4,929
	Wheat	8,200	20,008	2.44	6.75%	14,269	$2,511,000	0.713	$126
	Alfalfa	10,840	39,351	3.63	8.93%	115,984	$23,777,000	2.947	$604
Subtotals		**88,935**	**310,930**	**3.50**	**73.25%**	**276,991**	**$1,553,551,000**	**0.891**	**$4,996**
Change Ratio (2015 to 2019)						**0.992**	**1.146**	**1.012**	**1.168**

Sources: Kern County Department of Agriculture and Measurement Standards, 2015 and 2019 Kern County Agricultural Crop Report

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Appendix A Semitropic Water Storage District Groundwater Sustainability Plan, 2019

The Semitropic Water Storage District Groundwater Sustainability Agency Groundwater Sustainability Plan can be found her: https://apps.geiconsultants.com/semitropicgcp/

Appendix B Public Hearing Notice and Resolution of AWMP Adoptions

PROOF OF PUBLICATION

The BAKERSFIELD CALIFORNIAN
3700 PEGASUS DRIVE
BAKERSFIELD, CA 93308

SEMITROPIC WATER STGE & BNKNG
P.O. Box 8043
WASCO, CA 93280

Ad Number:	14776370	**PO #:**	
Edition:	CALC	**Run Times**	2
Class Code	Legal Notices		
Start Date	4/22/2021	**Stop Date**	4/29/2021
Billing Lines	34	**Inches**	204.92
Total Cost	$ 610.96	**Account**	1SEM05
Billing Address	SEMITROPIC WATER STGE & BNK P.O. Box 8043 WASCO,CA 93280		

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STATE OF CALIFORNIA
COUNTY OF KERN

I AM A CITIZEN OF THE UNITED STATES AND A RESIDENT OF THE COUNTY AFORESAID: I AM OVER THE AGE OF EIGHTEEN YEARS, AND NOT A PARTY TO OR INTERESTED IN THE ABOVE ENTITLED MATTER. I AM THE ASSISTANT PRINCIPAL CLERK OF THE PRINTER OF THE BAKERSFIELD CALIFORNIAN, A NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED DAILY IN THE CITY OF BAKERSFIELD COUNTY OF KERN,

AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF KERN, STATE OF CALIFORNIA, UNDER DATE OF FEBRUARY 5, 1952, CASE NUMBER 57610; THAT THE NOTICE, OF WHICH THE ANNEXED IS A PRINTED COPY, HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER
AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO WIT: 4/22/21
4/29/21

ALL IN YEAR 2021

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

Brianna Garza

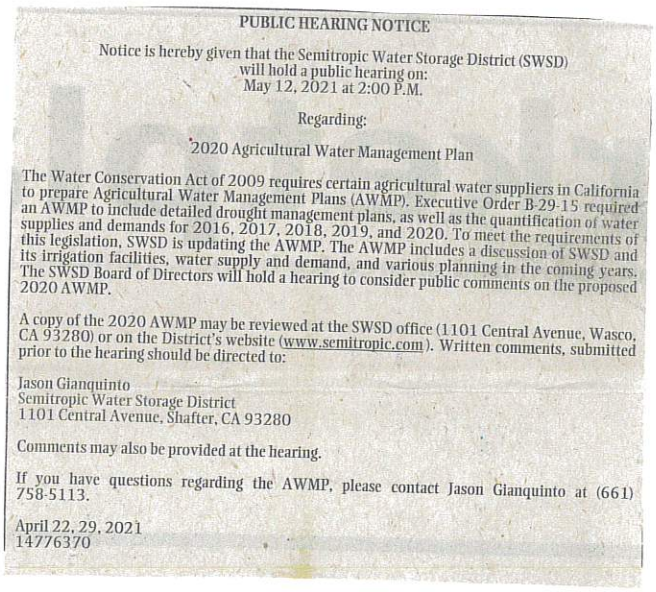
DATED AT BAKERSFIELD CALIFORNIA

4-29-21

Solicitor I.D.: 0

First Text
PUBLIC HEARING NOTICENotice is hereby gi

Ad Number 14776370



PUBLIC HEARING NOTICE

Notice is hereby given that the Semitropic Water Storage District (SWSD) will hold a public hearing on:
May 12, 2021 at 2:00 P.M.

Regarding:

2020 Agricultural Water Management Plan

The Water Conservation Act of 2009 requires certain agricultural water suppliers in California to prepare Agricultural Water Management Plans (AWMP). Executive Order B-29-15 required an AWMP to include detailed drought management plans, as well as the quantification of water supplies and demands for 2016, 2017, 2018, 2019, and 2020. To meet the requirements of this legislation, SWSD is updating the AWMP. The AWMP includes a discussion of SWSD and its irrigation facilities, water supply and demand, and various planning in the coming years. The SWSD Board of Directors will hold a hearing to consider public comments on the proposed 2020 AWMP.

A copy of the 2020 AWMP may be reviewed at the SWSD office (1101 Central Avenue, Wasco, CA 93280) or on the District's website (www.semitropic.com). Written comments, submitted prior to the hearing should be directed to:

Jason Gianquinto
Semitropic Water Storage District
1101 Central Avenue, Shafter, CA 93280

Comments may also be provided at the hearing.

If you have questions regarding the AWMP, please contact Jason Gianquinto at (661) 758-5113.

April 22, 29, 2021
14776370

RECEIVED
MAY 03 2021
S.W.S.D.

Appendix C Semitropic Water Storage District Consolidated Rules and Regulations for Distribution of Water

BEFORE THE BOARD OF DIRECTORS OF
SEMITROPIC WATER STORAGE DISTRICT

IN THE MATTER OF:

RESOLUTION NO. ST 17-09

RESOLUTION OF BOARD OF DIRECTORS OF SEMITROPIC WATER STORAGE DISTRICT ACTING FOR AND ON BEHALF OF ITS SEMITROPIC, BUTTONWILLOW AND POND-POSO IMPROVEMENT DISTRICTS (COLLECTIVELY "DISTRICT") AMENDING RULES AND REGULATIONS FOR DISTRIBUTION OF WATER

WHEREAS, as authorized by Water Code Sections 43003 and 43003.5, the District has promulgated and amended from time to time Rules and Regulations for the Distribution of Water ("Rules and Regulations"); and

WHEREAS, since 1979 the District has levied a General Project Service Charge ("GPSC") on all lands using or having the potential to use surface water supplied by the district and all other lands developed in reliance upon the use of groundwater, as further provided in Section 6 of the District's Rules and Regulations; and

WHEREAS, in light of the adoption of the Sustainable Groundwater Management Act or 2014 ("SGMA"; Water Code Sections 10720 et seq.) this Board has been evaluating various water management and related pricing mechanisms that may be appropriate to consider in light of the adoption of SGMA, and to that end the District supported and sponsored AB 453 enacting Water Code Sections 44200 through 44208 ("AB 453"), effective January 1, 2017, applicable to the District, which provides the authority for the District to impose groundwater extraction fees similar to that provided by SGMA but before a Groundwater Sustainability Plan ("GSP") is adopted, which is expected to occur in 2020; and

WHEREAS, in light of SGMA becoming operative through a GSP, as an interim measure, it is advisable to amend the District's Rules and Regulations to encourage conservation of water resources, including discouraging any new development of lands within the District to irrigation or other water uses, and to more accurately recover the actual costs of the District insures to provide water supplies for the benefit of the respective landowners and water users within the District, as authorized by Water Code Sections 42006 and 47180, and AB 453 with respect to use of groundwater, it is appropriate to charge landowners who use greater quantities of water a greater amount and those who use less a credit, and for any lands developed after July 1, 2017 impose a greater fee based on consumption of water to reflect the estimated actual cost of developing new supplies to provide water to such lands, all as provided in the draft amendment to the Rules and Regulations at Section 6.D, attached hereto as Exhibit A; and

WHEREAS, as authorized by AB 453, in order to help confirm the accuracy of data and for other water management activities, including ultimate implementation of SGMA, it is also

advisable to commence in 2018 requiring landowners to report the quantity of groundwater extractions within the District, as set forth in the draft amendment to the Rules and Regulations at Section 6.D.3, attached hereto as Exhibit A, and

WHEREAS, with adoption of ST Resolution 17-03 on March 8, 2017, this Board considered proposed amendments to its Rules and Regulations in furtherance of the matters referenced above, and although not required, noticed a hearing on such proposed amendments of the Rules and Regulations, and

WHEREAS, following testimony received at such hearing held this date, and input at numerous other meetings with landowners that the District has hosted over the last two months, this Board has determined that it is in the best interest of the District and its landowners to adopt such proposed amendments to the Rules and Regulations, but to defer or further qualify application of such proposed Rules in the following respects: (i) to recognize in some instances landowner's may import supplies not otherwise available to the District which may offset applicability of a Basin Sustainability Credit or Charge and New Lands Surcharge; (ii) to operate the Basins Sustainability Credits and Charges during 2017 on a trial basis and not provide or assess such Credits or Charges, in order that landowners and the District may better assess that application and implementation of such Credits and Charges; and (iii) to defer the effective date of application of the New Lands Surcharge until July 1, 2017, all as more particularly described in Exhibit A hereto.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE SEMITROPIC WATER STORAGE DISTRICT does hereby resolve, declare and order as follows:

1. The foregoing recitals are true and correct.
2. The Rules and Regulation of the District shall be modified as set for at Exhibit A hereto.
3. As provided by Water Code Section 43003.5, a certified copy of this resolution amending the Rules and Regulations shall be recorded with the County Recorder and a copy of the amended Rules and regulation shall be maintain on file and open for r inspection at the District Office.
4. The District's officers and staff are authorized and directed to do all things necessary and proper to carry out the foregoing.

ALL FOR FOREGOING, being on the motion of Director Portwood, seconded by Director Waterhouse, is hereby authorized by the following vote, namely:

AYES: Directors Fabbri, Portwood, Thomson, Toretta, Tracy, Waterhouse and Wegis

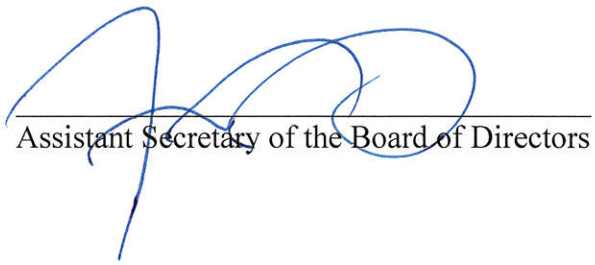
NOES: None

ABSENT: None

ABSTAIN: None

I hereby certify that the foregoing is a true copy of the Resolution of the Board of Directors of SEMITROPIC WATER STORAGE DISTRICT as duly passed and adopted by said Board of Directors on June 14, 2017.

[SEAL]



Assistant Secretary of the Board of Directors

Exhibit A
Proposed Addition to Semitropic Rules and Regulations at Section 6—
Basin Sustainability Charge
May 17, 2017

D. In addition to the charges provided for at Section 6.A and 6.B, and in order to encourage conservation of water resources, to help achieve compliance with the Sustainable Groundwater Management Act, and to more accurately distribute the actual cost the Improvement Districts incur to provide water supplies for the benefit of their landowners and water users in proportion with the costs to serve individual parcels, as authorized by Water Code Sections 42006 and 47180, and Section 44200 through 44208 with respect to groundwater, the following procedures shall be administered. This procedure is adopted on an interim basis and may be modified at a later date, including at such time as the District adopts a Groundwater Sustainability Plan or it becomes effective pursuant to Water Code Section 10720 et seq.:

1. Commencing in 2017, the Improvement Districts shall annually determine the consumptive use of water for lands within the Improvement Districts on a per-acre basis utilizing Landsat and ground-based evaporatransporation (ET) sensors, or similar methods, including consumptive use of both surface water supplied or wheeled by the Improvement Districts and groundwater. Each year at or by the regular board meeting in April (and for 2017 at the regular May meeting), or a date announced at that meeting, the Board shall make a determination as to the estimated average annual per-acre consumptive water use within the Improvement Districts (which shall herein be referred to as the "Baseline Consumptive Use") for that year; provided, however, for lands that pursuant to Section 6.B.2 have been classified as being used for recreational purposes, including commercial duck club uses, or for irrigated native pasture, a special Baseline Consumptive Use shall be established for such lands based on the estimated average annual consumptive use for such uses (herein called the "Recreation Baseline Consumptive Use"). At that same time, the Board shall also establish the following rates and credits:

(a) For a landowner that uses less than the Baseline Consumptive Use per acre for acreage subject to the General Project Service Charge on the collective lands it owns, a credit amount will be earned for each acre-foot conserved (or portion of an acre-foot) less than the Baseline Consumptive Use per acre (herein called the "Basin Sustainability Credit"). Such credit shall be determined by the following formula: the projected General Project Service Charge for the forthcoming year divided by the Baseline Consumptive Use and then multiplied by 1.0. Therefore the Credit due will be calculated as the Basin Sustainability Credit ($/Acre-feet), multiplied by the difference between

the Baseline Consumptive Use (Acre-feet) and the Actual Consumptive Use (Acre-feet).

(b) For a landowner that uses more than the Baseline Consumptive Use per acre for acreage subject to the General Project Service Charge on the collective lands it owns, an additional charge for each acre-foot (or portion of an acre-foot) used in excess of the Baseline Consumptive Use will be imposed (herein called the "Basin Sustainability Charge"). The Basin Sustainability Charge shall be determined by the following formula: The projected General Project Service Charge for the forthcoming year divided by the Baseline Consumptive Use and then multiplied by 1.5. Therefore the Charge due will be calculated as the Basin Sustainability Charge ($/Acre-feet) multiplied by the difference between the Actual Consumptive Use (Acre-feet) and the Baseline Consumptive Use (Acre-feet).

(c) For land subject to the Recreation Baseline Consumptive Use, the credits and charges shall be established in the same manner as provided above in Section 6.D.1 (a) and (b) but shall substitute the Recreation Baseline Consumptive Use in place of the Baseline Consumptive Use.

(d) A Basin Sustainability Credit or a Basin Sustainability Charge under Section 6.D.1 (a), (b), or (c) shall not be provided or assessed to the extent the General Manager determines that a landowner has imported a metered water supply to meet all or a portion of the consumptive uses of his/her lands that is not otherwise available to the Improvement Districts, and importation of such supply does not interfere with use or availability of Improvement District facilities for other purposes or water supplies.

(e) For 2017, the Basin Sustainability Credits and Basin Sustainability Charges shall be determined for each landowner but shall be administered on a trial basis only, and no such credits or charges shall be provided or assessed under Section 6.D.1 (a), (b), or (c).

(f) For any lands that are developed to irrigation or other water uses after July 1, 2017, a charge in addition to the General Project Service Charge shall be imposed for each acre-foot based on the consumptive use on those lands at a rate which is the estimated cost of developing new water supplies for lands in the Improvement Districts minus the General Project Service Charge otherwise payable (herein called the "New Lands Surcharge"). The New Lands Surcharge will not be imposed where the owner of such lands imports a metered water supply to those lands pursuant to a separate agreement with the Improvement Districts that is not otherwise available to the Improvement Districts and

that does not reduce or impede the use or availability of the Improvement Districts' water supplies. Any lands subject to the New Lands Surcharge shall not be entitled to a Basin Sustainability Credit or assessed a Basin Sustainability Charge.

2. On or before April 1 of each year commencing in 2018 the Improvement Districts shall prepare and mail to each landowner that was assessed the General Project Service Charge the prior year or that is subject to the New Lands Surcharge a statement based on the consumptive use of its lands during the prior year as determined utilizing the methods enumerated above in Section 6.D.1 hereof, and advise the landowner as follows; provided that for 2018 (for the prior year of 2017) the Basin Sustainability Credit, Basin Sustainability Charge and such recreational credits and charges shall not be provided or charged:

(a) If the landowner is entitled to a Basin Sustainability Credit, so advise and seek an election by the landowner whether it wishes the credit to be (i) provided as a cash payment, (ii) applied as a credit for future Basin Sustainability Charge(s) against any subsequent year within five years in which the landowner exceeds the Baseline Consumptive Use, or (iii) applied to a landowner bank account as hereinafter described; provided, if the landowner fails to timely respond, the Improvement District shall presume that the landowner wished to have the credit applied to future Basin Sustainability Charge(s). Such a landowner bank account as mentioned in 6.D.(a)(iii) shall be subject to a separate agreement with the Improvement District and shall have the following characteristics: it shall be made up of bank accounts of imported water held for the account of the Improvement Districts (such as return flows, water that was directly recharged for the District and "leave behind" water from banking partners), the account for the benefit of the landowner may be decreased by up to 10% per year and such deductions returned to the account of the Improvement Districts, the quantity provided to the landowner's bank account will be based on the District's valuation of the banked imported water supply as determined by the District Board of Directors, and the bank account shall be for use within the District only;

(b) If the landowner is to be assessed a Basin Sustainability Charge or New Lands Surcharge, such amount shall be invoiced to the landowner and is due and payable and delinquent 60 days of invoicing, and if not timely paid, subject to penalties, interest and collection proceedings as otherwise described at Section 5.C hereof; and if a New Lands Surcharge shall be annually levied upon the lands subject to the New Lands Surcharge.

(c) For land used for recreation purposes as provided in the District's Rules and Regulations, New Lands Surcharges if

applicable shall be established pursuant Section 6.D.1for such uses shall be administered in the same manner as provided above in Section 6.D.2

(d) Where for the prior year a cash payment, a credit for future years or a landowner bank account is available as provided for under Section 6.D.2.a. above, where an additional Basin Sustainability Charge or New Lands Surcharge are due under Section 6.D.2.b. above, or a charge or credit is imposed or available under Section 6.D.2.c. above, as the case may be, upon the sale of lands, such credit, account or charge which is applicable shall run with the land and the subsequent owner(s) thereof, unless as part of such sale the seller and buyer of such lands provide the Improvement Districts joint instructions otherwise.

3. In addition to consumptive use information collected as provided at Section 6.D.1 hereof, the Improvement Districts may also annually require that landowners supply information on the amount of groundwater extracted each year, commencing in 2018, in the manner as provided at Water Code Section 44204 and determined in the manner provided at Water Code Section 44206(b), if applicable. Until 2021, in lieu of requiring meters and providing information from meter readings as herein provided, the Improvement Districts in any year may alternatively permit landowner to determine groundwater extractions utilizing crop coefficients provided by the Improvement Districts.

Fee Exempt
Govt. Code
Section 6103

Jon Lifquist, Assessor – Recorder
Kern County Official Records
Recorded at the request of
Public

BEARDSLE
7/26/2017
11:07 AM

DOC#: 217096014

Stat Types: 1 Pages: 35

Fees	0.00
Taxes	0.00
Others	3.00
PAID	$3.00

Recording Requested by and mail to:
SEMITROPIC IMPROVEMENT DISTRICT
OF SEMITROPIC WATER STORAGE DISTRICT
Post Office Box 8043
Wasco, CA 93280

BUTTONWILLOW, POND-POSO

AND

SEMITROPIC IMPROVEMENT DISTRICTS

OF

SEMITROPIC WATER STORAGE DISTRICT

CONSOLIDATED
RULES AND REGULATIONS

FOR

DISTRIBUTION OF WATER

Adopted by an Agreement Consolidating Activities
May 12, 1993, Effective January 1, 1993
Memorandum of Agreement
Recorded August 26, 1993, Book 6897, Pages 1622 et seq.
Adopted by Resolution No. 96-1, Re-recorded January 22, 1996, Document #0196008422
Amended May 11, 2005, Adopted by Resolution No. ST 05-5
Amended February 10, 2016, Adopted by Resolution No. ST 2016-02
Amended May 17, 2017, Adopted by Resolution No. ST 2017-09

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BUTTONWILLOW, POND-POSO AND SEMITROPIC IMPROVEMENT DISTRICTS
OF
SEMITROPIC WATER STORAGE DISTRICT

CONSOLIDATED RULES AND REGULATIONS FOR DISTRIBUTION OF WATER

These consolidated rules and regulations are established pursuant to the requirements of the California Water Code for Buttonwillow, Pond-Poso Improvement Districts of Semitropic Water Storage District, hereinafter collectively called "District" by the Board of Directors of Semitropic Water Storage District acting for and on behalf of said Improvement Districts of Semitropic Water Storage District, hereinafter called "Board", for the distribution and use of water within the District, to enable the District to perform its functions most efficiently and to deliver water to Water Users at the least possible cost, and are the Rules and Regulations mentioned in those certain water service contracts between Buttonwillow, Pond-Poso and Semitropic Improvement Districts and various landowners within the District.

As provided in an "Agreement Consolidating Activities...", dated May 12, 1993 (hereinafter "Consolidation Agreement"), among other things, SEMITROPIC IMPROVEMENT DISTRICT (SID) was authorized to act for itself and as Agent for Buttonwillow and Pond-Poso Improvement Districts in administering contracts between said Improvement Districts and various landowners. A Memorandum of Agreement referencing said Consolidation Agreement was recorded August 26, 1993 of Book 6897, Pages 1622 et seq. of the Official Records of Kern County. These Rules and Regulations supersede previous Rules and Regulations adopted for Buttonwillow and Pond-Poso Improvement Districts.

1. DEFINITIONS

Terms and expressions employed in the Rules and Regulations are as defined in the water service contracts executed by the Buttonwillow and Pond-Poso Improvement Districts, including Intermittent Water Service Contracts executed by Semitropic Improvement District, with their respective landowners, with the exception of certain terms or expressions used herein which do not appear in said contracts but which terms or expressions are defined or explained at the point where they are introduced in the Rules and Regulations.

2. AUTHORITY

A. Semitropic Improvement District: SID shall act as Agent for Buttonwillow and Pond-Poso Improvement Districts in carrying out and implementing these Rules and Regulations, except that Buttonwillow and Pond-Poso Improvement Districts shall levy charges provided at Articles 5 and 6 hereof, all as provided by the Consolidating Agreement.

B. Manager: The District's Project Facilities are under the exclusive management and control of the Manager, who is the person appointed by the Board to manage the affairs of the District pursuant to its direction. No person except the Manager or his designee shall operate any of the District's Project Facilities.

C. District Employees: The Manager shall supervise the activities of all District employees in connection with operation and maintenance of the District's Project Facilities and all other activities of the District. The authority of the employees of the District shall be designated by the Manager, and any controversy between a Water User and District employee that cannot be settled directly shall be appealed to the Manager. In the event the Manager is unable to reach a satisfactory decision, an appeal may be made to the Board. The decision of the Board shall be final and conclusive.

D. Right of Access: District employees authorized by the Manager have reasonable access to lands within the District for the purpose of conducting District business, which may include, among other matters, the following:

1) Inspection of the lands upon which water delivered from Project Facilities is being applied for the purpose of determining Water User's compliance with the terms of the applicable Water Service Contract and these Rules and Regulations and for purposes of determining whether or not wells in the Intermittent Surface Water Service Area are operating.

2) Inspection, maintenance, repair or modification of Project Facilities.

3) Determination of improper use or wasting of water.

4) Measurement of ground water levels and obtaining water quality samples from wells.

3. WATER SERVICE

A. Contract Surface Water Service Area: Contract Water Service will be provided only to lands in the District's Contract Surface Water Service Area. The lands included in said Contract Surface Water Service Area are those certain parcels of real property described in the Exhibit "A" of those certain Water Service Contracts which have been executed by the Buttonwillow and Pond-Poso Improvement Districts and the landowners and are on file in the District's office. Lands within the Contract Surface Water Service Area are shown on a map on file at the District office designated as "Contract Surface Water Service Area" as amended from time to time. In a case of conflict between the lands described in the Exhibit "A" of said Water Service Contracts and said map, the description contained in said Exhibits shall govern.

B. Intermittent Surface Water Service Area: Intermittent Water Service will be provided only to lands in the District's Intermittent Surface Water Service Area. The lands included in said Intermittent Surface Water Service Area are those certain parcels of real property described in the Exhibit "A" of those certain Intermittent Water Service Contracts which have been executed by the Semitropic Improvement District and the landowners and are on file in the District's office. Lands within the Intermittent Surface Water Service Area are shown on a map on file at the District office designated as "Intermittent Surface Water Service Area" as amended from time to time. In a case of conflict between the lands described in the Exhibit "A" of said Intermittent Water Service Contracts and said map, the description contained in said Exhibits shall govern.

C. Additions of Lands to Contract Surface Water Service Area and Intermittent Surface Water Service Area: Lands may be added to the Intermittent and Contract Surface Water Service Areas pursuant to an application filed with the Board therefore by the owner or owners of said lands only if: (1) such addition is determined by the Board to be feasible and in the best interests of the District and in accordance with criteria established by the Board, and (2) the owner or owners of said lands execute a contract with the District for water service for said lands in the form established by the Board.

D. Exclusion of Lands from either the Intermittent or Contract Surface Water Service Area: Lands may be excluded from either surface water service area pursuant to an application filed with the Board therefore only if: (1) the Board determines that such exclusion will not be detrimental to the best interests of the District, and (2) the obligations of the contract for water service, if any, binding said lands are assumed by other lands within the District which are added to either surface water service area as provided in Section 3(C) above. Assumption of said obligations must be under terms and conditions which will result in no financial loss to the District.

E. Noncontract Water Service: Noncontract Water may be offered to Water Users for agricultural use on lands within the Intermittent or Contract surface water service area (sometimes called "Unscheduled Water") and for agricultural use on irrigated lands outside said service areas (sometimes called "Temporary or Noncontract Water"), from water supplies available to District in excess of delivery requirements of District to supply the Contract Amounts of Water (or proration thereof in case of shortage) of the Intermittent and/or Contract Water Users. Such water may be made available only if it does not interfere with obligations of the District to supply the quantities of water (or proration thereof in case of shortage) available to each Water User under its applicable Water Service Contract for Contract or Intermittent water service and shall be delivered on an interruptible and non-dependable basis. The acceptance of such Noncontract Water will be at the option of Water User/Landowner. Noncontract Water will be made available to lands within and outside of the Contract and Intermittent

surface water service area on the same priority.

F. Special Purpose Water Service: From time to time the District may have available water in excess of project demands which may be used to provide temporary water service for special purposes unrelated to agriculture. Such Special Purpose Water Service shall be made available under terms and conditions established by the Board.

4. DELIVERY, USE, AND MEASUREMENT OF WATER

A. Annual Water Delivery Schedule: The District on behalf of each Contract Water User that executed a Water Service Contract for Project Water from the State Water Project, will file with the Kern County Water Agency ("Agency"), an Annual Water Delivery Schedule indicating the amount of water estimated to be delivered each month for the succeeding five years. The District will schedule deliveries taking into consideration previous years cropping patterns and other factors it may deem appropriate. It should be recognized that the District's supply of water is limited in the month or months of maximum demand by contractual provisions, capacity of the California Aqueduct available to the District and by capacity of the District's distribution system. Revisions to the annual schedule submitted by the District may be filed by the Water User at any time. The District will make every reasonable effort to comply with any revised schedule, but will do so only if the Manager or his designee determines that it is practicable and feasible to do so, and the District assumes no obligation for the delivery of water under such revised schedule.

B. Daily Water Use Schedule: Orders to turn on or to turn off water, or orders to increase or decrease the rate of water delivery (herein called "water orders"), shall be made at District office in person or by telephone by Water User or his designee as provided in these Rules and Regulations.

Water orders are to be called in to the Dispatcher. Water orders will not be accepted by field personnel. Water orders for Tuesday through Friday must be called in by 8:00 a.m. the day before the water service. Water orders for Saturday through Monday must be called in by 8:00 a.m. on Friday. On holiday weekends (e.g. Labor Day, Thanksgiving, etc.), water orders must be placed by 8:00 a.m. on the last weekday before the holiday weekend. Requests received after the order deadline may not be accommodated. It is essential that the policies be followed for ordering your water through turn-outs or farmer operated in-canal pumps.

Orders shall normally be made on the basis of continuous use of water during a 24 hour period commencing between 7:00 a.m. and 8:00 a.m. from October 1 to March 30, and commencing between 6:00 a.m. and 8:00 a.m. from April 1 to September 30. In the event of an emergency, or when a change is in the delivery

point within the service area of the same lateral, or when it may otherwise be practical to do so, changes in deliveries may be approved on lesser notice, but the District assumes no obligation to do so. Although the District will make every reasonable effort to comply with the requested water orders, the conveyance capabilities and delivery capabilities of the District's facilities as well as the achievement of overall economy of operational costs make it necessary that at times, and particularly during periods of peak irrigation water use, essentially 24 hour operation of the conveyance and delivery capabilities on a seven-day week basis be maintained in order to assure that all Water Users receive adequate supplies of irrigation water.

C. Authorization Form: In the case of leased land, or for any other reason where the Water User wishes to authorize someone else to place water orders, Water User may execute and file with the District an Authorization Form. This form will authorize the lessee or the designee to file the Annual Water Delivery Schedule and to make subsequent water orders and shall constitute the consent of the Water User to the collection and to all charges in any manner authorized under the Water Service Contract and by Sections 47181 to 47185, inclusive, of the California Water Code. Said form may authorize the lessee or designee to receive copies of District billings arising from the affected Water Service Contract. This authorization shall remain in effect until suspended, or until revoked in writing by Water User or the lessee or designee.

D. Appointment of Agent: Where the Water User consists of more than one individual, except husband and wife living at the same address, or when Water User is an entity, i.e., a corporation, partnership, limited liability company, or state, county or other public agency, Water User shall appoint an agent for the purpose of performing any and all acts to be done by Water User as defined in the Water Service Contract, and for receiving all notices from the District and billings for charges incurred by reason thereof. The form of the appointment shall be prepared by the District and signed by the Water User. The appointment of such an agent will in no way release Water User or his lands from any obligation under the Water Service Contract.

E. Authority of Representative: Any person acting in any representative capacity as Water User shall furnish evidence of his authority to so act and bind Water User to the satisfaction of the District. Such representative shall include a guardian, conservator, administrator, executor, trustee, partner including limited partnership, attorney-in-fact, operator of lands affected by a master operating agreement, and the like.

F. Interruptions and Service: Attention is directed to section 3(h) of the Water Service Contracts, which provides as follows:

"District may temporarily discontinue or reduce the amount of water to be furnished to Water User as herein provided for the purpose of investigation, inspection, maintenance, repair or replacement, as may be reasonably necessary, of any of the Project Facilities for the furnishing of water to Water User, or of the facilities of the State Water Project, but, so far as feasible, District shall give Water User due notice in advance of such temporary discontinuance or reduction, except in the case of an emergency, in which case no notice need be given. In no event shall any liability accrue against the District or any of its officers, agents, or employees, for any damage, direct or indirect, arising from such temporary discontinuance or reduction of water deliveries."

Under paragraph 3(h) of the Intermittent Contract, the District similarly reserves the right to temporarily discontinue water deliveries.

In the case of emergency shut off by the District, an effort will be made to notify Water User as soon as possible. Notice may be given by leaving a note under the meter cap of the affected turnout(s).

G. Turn-Offs/Turn-Ons by Water User

1) Emergency Turnoffs by Water User: Water User may, in an emergency, including but not limited to acts of God, turn off the supply of water to Water User's turnout. If Water User affects such emergency turnoff, he must notify the District office immediately by telephone or in person. Water User and anyone affecting such an emergency turnoff does thereby agree to assume the defense of and hold harmless the District and its officers, agents and employees from any and all loss, damage, liability, claims or causes of action of every nature whatsoever, for damage to or destruction of property, including District's property, or for injury to or death of persons in any manner arising out of or incidental to such emergency turnoff.
2) Unnotified turn-ons and turn-offs: Any turn-ons or turn-offs made by Water User without notifying District prior to the change and being authorized to make same will be charged a special service charge of $75 for each occurrence which amount may be adjusted from time to time by the Board.
3) Failure to comply with the District's delivery rules and regulations may result in the District padlocking a valve or removal of a meter until compliance is assured.

H. After Hours Adjustments and Changes: After hours adjustments may be scheduled with the Dispatcher, however, there will be a $25.00 charge per change. Changes made after 9:00 p.m. will be treated as after hours changes. Self initiated changes performed without notifying the District will also be charged a special service charge per g (2) above.

I. Use of Other Water Supplies: Except as limited by the Intermittent Water Service Contract, Water User may use water furnished by District concurrently with water

from other sources, provided that Water User can demonstrate to the satisfaction of the Manager or his designee that Project Water is not being used on land other than that for which it is intended, as set forth in the Water Service Contracts.

J. Waste of Water: Water delivery may be discontinued by the District for any Water User 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 said water delivery will not be resumed until such conditions are corrected; PROVIDED, HOWEVER, that Water User shall in no way be relieved of any responsibility for payment of any charges or obligations by reason of such discontinuance of water service.

K. Drainage Water: In order to insure acceptable water quality in District Facilities, waste water, tail water or surface runoff will not be allowed to enter District Facilities at any time unless a written determination is made by the Manger that it is of acceptable quality.

L. Farm Turnouts: Except as hereinafter provided for Noncontract, Unscheduled, Temporary, and Special Purpose deliveries of water, and as provided in the Water Service Contracts, all deliveries will be made only through District owned and operated turnouts or other turnouts or facilities approved in writing by the District.

M. Connections: All plans for the connection of Water User's on farm system to District's facilities shall be submitted to the Manager or his designee for approval, and no such connection will be permitted until written approval has been given. All connections to District's facilities shall be made in a manner so as to prevent damage from occurring to District's system resulting from operation of Water User's system and so as to prevent unauthorized water from Water User's system from entering District's system without written permission by the District. Any required modification of District's facilities shall be made by District or a contractor approved by the District. All costs associated with such connections shall be born by the Water User, except the initial hookup costs of affected lands for the Intermittent Surface Water Service Area will be borne by the District.

N. Combined Turnouts: In accordance with the District's design criteria, water service will be provided to parcels less than 20 acres in size within the Surface Water Service Area only in conjunction with service to an adjacent larger parcel or several adjacent smaller parcels where the total combined area is 20 acres or more. Service to such parcels as well as service to any other land described in Exhibit A of the respective Water Service Contracts that split ownership subsequent to execution of the applicable water service contracts, will be made through a single turnout designated a combined turnout. Water will be furnished through such a combined turnout to a group of Water Users only upon condition that said group of Water Users first files with the District an agreement, in a form

approved by the District, executed by each and every Water User in said group and providing, among other things, the following:

1) Acceptance of delivery of water through the combined turnout.

2) Granting of an easement to the other Water Users, as necessary, to convey water from the combined turnout to their respective lands.

3) Authorization for one individual to represent said group in all matters relating to delivery of water by District through said combined turnout.

O. Noncontract and Special Purpose Deliveries: Delivery of water for Noncontract and Special Purpose Service will be made in the manner decided by the Manager or his designee. As a condition to Noncontract Water Service for lands not within the Contract or Intermittent service areas, the owner of lands to be served shall have executed an agreement establishing a covenant running with the land in a form provided by the District, wherein the landowner expressly acknowledges that the affected lands have no right to firm water service from the District.

P. Transfers and Wheeling of Water Supplies: The overall objective of this policy is to provide operational flexibility so that Water Users can utilize water supplies available to them in the most cost effective and efficient manner, but in a manner that does not adversely affect the water supply, water quality or costs of fellow Water Users within the District. For the most part, the policies which follow have been informally administered over the years as part of the Districts ongoing water management project. The following refine, clarify and supersede such prior policies.

1) Permanent Transfers of Water Service Contracts
Consistent with Paragraphs 3 (C) and (D) of the Rules and Regulations, a Water User may petition the Board to change the lands provided with Contract Water Service or Intermittent Water Service Area. In addition to those matters provided in Paragraphs 3(C) and (D) [generally providing the transfer must be feasible, in the best interests of the District, not detrimental to the District and binding contractual obligations are made] such a transfer must be within the Semitropic Improvement District (SID) and generally involve equal acreage relinquishing and assuming the affected contract. (Where there are minor differences in acreage, compensation adjustments may be made in the amended water service contract which insures that other Water Users are not adversely affected by the transfer.) The District Board will closely scrutinize such requests to insure that on a cumulative basis they are consistent with the objectives of the SID adopted projects and not interfere with the District carrying out its water management activities.

2) Annual Transfers Within A Farming Unit

The District allows a Water User to utilize water available to him under contracts for Contract Water Service on any lands which he owns or leases within SID. Water made available as Noncontract Water may be used on any lands the Water User owns or leases within SID.

Within the Contract Surface Water Service Area the District's policy is that in event of limitations of system capacity that the available capacity will be prorated based on the original Contract Amount of Water of each Water User for that system. Delivery of the "transferred" water must be on the basis of no adverse impact on the original contract users within that system.

3) Wheeling Of Groundwater Within The Service Areas

From time to time a Water User may find it beneficial in order to maximize efficient use of water and/or save costs to pump groundwater into the District's distribution system from a well on lands he owns or leases which are farmed (i.e., are subject to the General Project Service Charge) for delivery to other lands he owns or leases in the District which are farmed. This will be permitted whenever the District does not have Noncontract Water available, at which time it would be under limited circumstances, namely:

a) The Water User must sign a Groundwater Pumping Agreement which will provide, among other things, the water pumped into the District's canals or distribution system be under the District's specifications, be metered and the water must be of acceptable quality as determined at the time by the District. The water user must also pay wheeling fees to offset increased O&M costs, as established from time to time by the Board.

b) The Groundwater Pumping Agreement also requires the well owner to operate the well for District purposes when he is not using it, or alternatively, the well owner will pay a capital fee of $44.00 per acre foot for all water pumped in to the system (2004 dollars, which shall be escalated from time to time).

c) The ability to transport groundwater within the District using District facilities is limited to available capacity. Delivery of such water shall be on a lower priority than delivery of surface supply water within the District and of the District transporting groundwater for carrying out its internal water management program or banking programs with others. Additionally, in order for water to be wheeled in the district, there must be a "downstream" demand for the water at the time it is being pumped in.

d) In the event any Water User or landowner within the District believes that the District permitting a Water User to wheel groundwater as herein

permitted is or will adversely affect him by causing a disproportionate withdrawal of groundwater from a particular location which adversely affects him in a manner which would not occur if the District did not permit such wheeling of groundwater, such landowner or Water User may file a complaint with the District Manager. The District Manager will promptly investigate the complaint and based on available information and data will make a written determination whether such an adverse affect has occurred or is likely to occur. The Manager may also on his own initiative deny a request for such wheeling if based on available information and date it is likely such wheeling would have such an adverse impact on other Water Users and/or landowners. Such determinations made by the Manager in response to a complaint or on his own initiative may be appealed to the Board of Directors as provided in Paragraph 20 of the Rules and Regulations.

e) Such use of groundwater must be beneficial use of groundwater and the location from which it is pumped must be in the same groundwater basin (the entire District being within the same basin).

4) Wheeling Of Groundwater From Outside The Service Areas

If a Water User wishes to pump groundwater from lands which are not farmed and/or are located outside of the Improvement District's boundaries (i.e., are not subject to the General Project Service Charge) the same conditions as prescribed in Parag. 4(P) (3) shall apply, except that in addition to charges therein provided, there shall be levied an "in-lieu" General Project Service Charge which shall be assessed per acre foot pumped for such purpose. The per acre-foot Charge shall be the then current General Project Service Charge for the Improvement District closest to the well divided by 3.5. In such case, the Groundwater Pumping Agreement reference above at Parag. 4(P) (3) shall also establish a lien for the affected lands as security for payment of such in-lieu Charge.

The General Manager shall maintain adequate records of water being transferred and wheeled within the District pursuant to Parag. 4(P) (2), (3), and (4), in the event it becomes necessary to determine whether any cumulative affects are occurring or may occur which are adverse to particular Water Users and/or landowners. Based on such information, the Board may consider further amendments, modification or repeal of these policies.

5. PAYMENTS FOR WATER

A. Contract Water Service:

1) For Contract Water Service Contract Water Users, each shall pay in lieu of the Water Use Charge and Service Charge provided for in the Water Service Contracts the following:

   a. A SWP Water Charge based on the Contract Amount of Water, as set for in Exhibit "A" of each Water User's Contract, which for each acre-foot of Contract Amount of Water shall be calculated as follows: The District's total fixed costs under the respective Agency Contracts estimated based on the costs for the preceding year; Times the Table A Contract Water Percentage which is equal to 100%, less an allocation of such Agency Contracts fixed costs attributed to District activities to import supplies into the District in addition to Table A Amounts for the benefit of all District landowners utilizing water, as determined by the Board from time to time; Divided by the Total Contract Amount of Water of all Water Users' contracts (approximately 155,000 acre-feet). Said cost per acre-foot of Contract Amount of Water shall be paid each year by each Contract Water User, regardless of the allocation which is actually made available under the Agency Contacts to the Contract Water Users.

   b. An Additional Water User Charge to reflect the estimated variable costs in any given year will be comprised of the following: (i) The variable delivery charge as incurred for the delivery of Table A amounts under the Agency Contracts for the preceding year and (ii) the current District variable costs to deliver such water to turnouts in the District, including operation and maintenance costs of the District's distribution system and energy costs, and which Charge may change from time to time during a given year based on conditions at the time. Said charge shall be based on the acre-feet delivered to each Contract Water User.

   Until further notice is given through amendment of these Rules and Regulations, in lieu of the SWP Water Charge and Additional Water Use Charge herein provided, the District shall waive fixing and collecting the Water Use Charge and Service Charge provided for in the respective Water Service Contracts.

2) Procedure for Fixing and Collecting Charges: The procedure established for fixing and collecting the SWP Water Charge and Additional Water Use Charge shall be as follows:

   a) Until such time as this policy or these procedures are changed as provided in subparagraph (6) hereof, at the regular meeting in October preceding

the affected Year or at such other time as may be announced at said meeting, the Board shall consider, determine, and by resolution fix the preliminary amounts to be raised from said charges for the ensuing year for both the Buttonwillow and Pond-Poso Improvement Districts; provided, however, said resolution shall be adopted at the regular December, 2015 meeting for 2016, and shall be in lieu of proceedings for fixing of charges that have earlier occurred for 2016. Said resolution shall fix:

i. the total Contract Amount of Water provided by the Water Service Contracts in acre feet;

ii. the total preliminary amount of money necessary to be raised from the Surface Water Service Area during said Year to recover such of the improvement district's costs incurred by reason of construction and operation of its Adopted Project, in fulfillment of its obligation to provide water service under conditions of Contract Water Service;

iii. the amount of money estimated to be collected from the Water Use Charge;

iv. the total preliminary amount of money to be raised from the SWP Water Charge, as described at Section 5.A.1 hereof;

v. the total preliminary amount of money necessary to be raised from the Additional Water Use Charge as described at Section 5.A.1 hereof, declare that said Additional Water Use Charge is in addition to and in lieu of the Water Use Charge and Service Charge specified in the Water Service Contracts and is payable and to be collected upon the terms and conditions as the Water Use Charge as set forth in the Water Service Contracts and the Rules and Regulations, and declare the per acre-foot rate of the Additional Water Use Charge;

vi. declare that delinquent charges and penalties shall constitute a lien upon the affected real property as provided in said Water Service Contracts and the Rules and Regulations;

vii. declare the time and place of the public hearing to be held as required herein; and

viii. fix the form of notice of said hearing.

b) The District's Secretary shall give notice to all Contract Water Users and persons authorized to receive billings for water service. Said notice shall be mailed to all Contract Water Users and persons authorized to receive

billings for water, which mailing is to be completed at least 10 days prior to the date of said hearing. Said notice shall also be published once a week for two successive weeks, as provided in Section 39057 of the Water Code, publication to commence at least 25 days prior to the date of said hearing.

c) There shall be held, by the Board, on the date of the regular meeting in November, or at such other time fixed by the Board, at the District office, a public hearing at which time any person interested in District's operations may in person or by representative appear and be heard regarding the fixing of said charges. The Board may adjourn said hearing from time to time and may adjourn said hearing to a different place if deemed necessary. Said hearing is to be completed by December 31st prior to the affected Year, but in no event shall it be continued beyond the following January 15th, provided, however, for 2016, said hearing shall be completed by March 31, 2016.

d) At the hearing the Board may change or modify the proposed rates and charges; provided, however, that no proposed rate or charge shall be raised or increased from that set forth in said resolution and notice, unless notice of intention to make said increase shall be published once at least ten (10) days prior to the hearing on the proposed charge.

e) At the conclusion of the hearing the Board shall, by resolution, determine whether the proposed charges, as originally proposed or modified as provided herein, are not discriminatory or excessive and will be sufficient to comply with the requirements of this Rule; adopt said proposed charges as proposed or as modified as provided herein and order that said charges be collected as provided in the Water Service Contract and the Improvement Districts' Rules and Regulations and that said charges shall constitute a lien upon the land.

f) Following adoption of said resolution finalizing charges, the District shall forthwith notify all affected Water Users and persons authorized to receive billings for water service of the Board action and the rates of said charges. The SWP Water Charge and Additional Water Use Charge may be billed at a composite rate.

3) Payments for Contract Water Service: The SWP Water Charge, shall be paid by the Contract Water User in eight equal installments, said installments

to become due and payable on the 10th day of the months of February through September; PROVIDED, HOWEVER, for 2016, the first two installments shall be due and payable on the 10th day of March. The Additional Water Use Charge shall be invoiced to Water User monthly based upon deliveries.

4) Adjustments: The Board may at any time during the Year decrease the SWP Water Charge or the Additional Water Use Charge by making retroactive adjustments in said charges, or either of them. PROVIDED, HOWEVER, said charges may only be decreased if monies necessary to meet the District's financial obligations in lieu of the monies not raised by the reduced charge(s) are obtained from the Contingency Reserve Fund under conditions established by the Board, from other sources or from borrowings.

Under the assumption that most years will be water deficient years and in order to provide Contract Water Users with an estimate of the annual cost to be incurred for the delivery of Contract Water, an initial annual Contract Water Statement, which will include the SWP Charge and the estimated Additional Water Use Charge, will be prepared and sent out to Contract Water users at the beginning of the water year on the assumption of an 80% Contract Water supply year.

5) Amendments: This policy and procedure affecting Contractual Water Service shall continue until such time as the Board determines, pursuant to noticed public hearing, that said charges, or any of them, are to be fixed on some basis other than that herein provided or until such time as there has been a reassessment of Project costs as provided in Section 46355 of the Water Code; PROVIDED, HOWEVER, pursuant to petition of the holders of title to ten percent (10%) of the land to receive such charge or charges filed with the Board not later than five days preceding the regular meeting date in September preceding the affected Year, the Board shall set a noticed public hearing to consider whether such policy should be continued or the amount of such charge or charges or all of such matters, as may be specified in said petition.

   Notice of time and place of such public hearing, specifying the matters to be considered, shall be by publication once a week for two successive weeks, as provided in Section 39057 of the Water Code, and by depositing in the mail, at least three weeks before said hearing date, a copy of the notice directed to each holder of title to lands within the improvement district at their last known address as determined in accordance with Chapter 3, Part 1, Division 14 (commencing with Section 39050) of the Water Code. Said date of hearing shall not be less than thirty days after the first date of publication.

B. Intermittent, Noncontract and Special Purpose Service: For Intermittent, Noncontract and Special Purpose Service, payment shall be made at the rate or rates and under terms and conditions established by the Board for such services. On Contract Water accounts only, it will be assumed that water delivered in a given month was Contract Water unless the Water User advises the District before the end of the month as to the amount of water, if any, that is to be considered as Noncontract Water, in which case, an invoice will be sent.

A Contract Water User may at any time request a reclassification from Noncontract to Contract Water, but once it is reclassified, it cannot be reversed to a Noncontract designation. If payments have been received before the water is reclassified, credits will be applied for the Noncontract account which then may, at the Water User's option, be returned or transferred to the Contract account.

Invoices will be due and payable on the 15th of the month in which the invoice was prepared.

If payment has not been received by the 15th of the following month or 30 days after it was due and payable, whichever is later in time, then (1) all water deliveries, including contract deliveries, will be shut off; and (2) penalty (10%) and interest (1% per month) will be applied to the Noncontract Water account.

If payment remains delinquent, the unpaid amount will become a lien on the land which ultimately results in sale of the property as provided in Sections 47181 to 47185, inclusive, of the California Water Code.

If an account remains delinquent until after a Notice of Sale has been processed, then that Water User shall, for the subsequent calendar year pay for Noncontract Water in advance in a manner prescribed under the District's 1998 policy.

C. Delinquency in Payments: If any payment which Water User is required to make to the District is not received by the District at 5:00 p.m., on the 30th day after the date it becomes due and payable, said payment is delinquent within the meaning of Section 5(h) of the Water Service Contract, and delivery of water to said Water User shall be discontinued. No further water deliveries will be made to said Water User until all delinquencies, plus penalties and interest, are paid. Also, any payment remaining unpaid for a period of thirty (30) days after the date it becomes due and payable is delinquent as provided in Section 5(i) of said Contract, and a penalty of ten percent (10%) of that payment will be charged plus interest at twelve percent (12%) per year from the date it was due and payable until all payments are brought up to date. If a Water User has been delivered his full Contract Amount of Water (in the case of a Contract Water User) and, thereafter, becomes delinquent in any installment, all remaining installments for that year shall forthwith be due, payable and delinquent as herein provided.

Should a Water User be delinquent on October 10, or at other times as the Board may determine from time to time, the District will commence proceedings to collect the charge as provided in Sections 47181 to 47185, inclusive, of the Water Code. This may lead to the sale of the property affected by the Water Service Contract and to continued refusal of water service, all as provided in the Water Service Contract and the Rules and Regulations. Nothing herein contained shall be construed in any manner as abridging, limiting, or depriving District of any means of enforcing any remedy, either at law or in equity, for any breach by Water User in failing to timely pay any assessments, tolls, or charges.

D. Payments –
   1. General: All payments to the District will be by check, cash or may be by electronic deposit as authorized by The Check Clearing For The 21st Century Act ("Check 21") (PL 108-100).
   2. If a check payment made to the District is not honored by the issuer's bank, the District shall impose a Returned Check Fee of $25. If a returned check results in an account being delinquent, the terms in Paragraph 5C above will apply.

      If two check payments are dishonored by the issuer's bank within 12 months, the district will only accept a cashier's check as payment.

6. PROCEDURE FOR FIXING TOLLS AND CHARGES NOT ESTABLISHED BY CONTRACT

A. In accordance with Section 43003 of the Water Code, the following procedures are established for fixing tolls and charges authorized by Sections 43006 and 47180 other than those tolls and charges established by the Water Service Contracts for Contract or Intermittent water service and by the Board from time to time for Unscheduled, Temporary, Wheeling and Special Purpose Water Service. Before fixing any such toll or charge, the Board shall pass a resolution declaring its intention to do so and in the resolution establish a time not less than two weeks nor more than four weeks from the date of the resolution when the matter of fixing such toll or charge will be considered in open meeting. A copy of the resolution of intention shall be published once a week for at least two weeks before the time appointed by the Board for the open meeting in a newspaper of general circulation in Kern County. At the time established for the open meeting by the Board, it shall consider the matter of fixing the tolls or charges and hear any objections thereto.

B. In order to provide for payment of Project costs in proportion to services rendered to all lands within each Improvement District and in proportion to the services rendered to developed lands within the Surface Water Service and Ground Water

Service Areas under present Project conditions it is necessary that the following charges, in addition to the charges fixed pursuant to Water Service Contracts for lands within its Contract or Intermittent surface water service area or such short-term Water Service Contracts as may be entered into, be established, namely:

1. General Administrative Service Charge: Being the amount of money necessary to be raised by Buttonwillow and Pond-Poso Improvement Districts to provide for and to recover such of its costs of salaries, services, supplies, and other expenses as are applicable to the general administration of the affairs of each Improvement District, plus a reasonable percentage not to exceed fifteen percent (15%) for delinquency and the percentage necessary to cover cost of collection.

   Said charge shall be fixed annually in such amount as reflects that portion of the costs of such Improvement Districts' services as reflect the services and benefits to lands within the Improvement Districts by reason of being in an organized improvement district, importing supplemental water.

   In order that such charge be collected from all persons receiving the benefit thereof and that such charge be collected in proportion, as nearly as practicable, to such services rendered, said charge shall be fixed at an equal rate per acre upon each acre of assessable land within each improvement district; EXCEPTING, that a minimum rate per parcel shall be established for tracts of land less than one acre in area.

2. General Project Service Charge: Being the amount of money necessary to be raised by Buttonwillow and Pond-Poso Improvement Districts to provide for and to recover such of its costs incurred by reason of construction and operation of the Adopted Projects of Buttonwillow, Pond-Poso and Semitropic Improvement Districts, including repayment of construction loan contracts, service and retirement of Improvement Districts' securities, water service from the Kern County Water Agency or from other sources, and operation, maintenance, and replacement of completed Project Facilities in excess of said General Administrative Service Charge and such tolls and charges as are to be collected for Surface Water Service provided in Buttonwillow and Pond-Poso Improvement Districts' long-term Water Service Contracts with lands within their Surface Water Service Area or such short-term Water Service Contracts as may be entered into, plus a reasonable percentage necessary to cover costs of collection.

   Said charge shall be fixed annually in such amount as reflects that portion of the costs of such Improvement Districts' services as reflect that portion of the Project services and benefits to certain lands within each improvement district arising as a consequence of the construction and operation of the Buttonwillow, Pond-Poso and Semitropic Improvement Districts' adopted

projects, which projects are designed to provide a more reliable water supply on a long-term basis by the importation of supplemental water. Such general project services and benefits accrue equally to all assessable lands using or having the potential to use Surface Water Service by reason of a long-term or short-term Water Service Contract with Buttonwillow and Pond-Poso Improvement Districts, and/or the Semitropic Improvement District and to all other assessable lands developed in reliance upon the use of ground water, including all commercial, industrial, and residential lots or parcels, all of which, as a consequence of the District's operations, will be in a long-term stabilized water area.

In order that such charge be collected from all persons receiving the benefit thereof and that such charge be collected in proportion, as nearly as practicable, to such services rendered, the charge shall be fixed at an equal rate per acre upon each acre of such assessable land within Buttonwillow and Pond-Poso Improvement Districts; EXCEPTING as follows: (1) EXCEPTING that a minimum rate per parcel may be established for tracts of land less than one acre in area; (2) FURTHER EXCEPTING a separate minimum rate per acre, not to be less than one-quarter of the general per acre rate, may be established for tracts of land permanently developed and used for recreational purposes, including commercial duck club uses, and for irrigated native pasture; PROVIDED, HOWEVER, such lands shall not be considered as being used for such purposes unless it has been exclusively used for such purposes for a continuous five-year period preceding the year in which any such charge has been fixed or was undeveloped during said preceding years or the landowner demonstrates to the satisfaction of the Board that the property has been converted to such uses and will not in the future be used for irrigated agriculture, other commercial, industrial or residential uses; (3) FURTHER EXCEPTING, the charge for all public entities with an alternative supply of water and which operate ground water extraction facilities that withdraw water from otherwise undeveloped lands within the District (not already receiving the General Project Service Charge) (hereinafter "public well site lands") shall be fixed at a rate per acre-foot, which rate shall be based on the assumed average applied water demands of other developed agricultural lands within the District, applied to the amount of water extracted during the prior irrigation season of April 1 through March 31, calculated by a reasonable method approved by the Board.

C. It is necessary that the following procedure be established for annually fixing and collecting the foregoing charges:

1. Until such time as this policy and procedure is changed, as provided in subparagraph (5) hereof, at the regular meeting in April or at such other time as may be announced at said meeting, the Board shall consider, determine, and by resolution fix the amount of such charges for the current Fiscal Year.

In compliance with Section 47980 of the Water Code, said resolution shall fix the total amount of each such charge; the percentage for delinquency and cost of collection attributable to such charges; the minimum charge for parcels less than one acre in area; set the time and place for hearing of objections to the roll as provided in subparagraph (3) hereof; and determine the newspaper or newspapers in which notice shall be published.

2. In accordance with the provisions of Section 47980(b) of the Water Code, the Treasurer shall prepare a roll setting forth the assessee parcels and the assessee names for such parcel of assessable land in the District, determined in accordance with the provisions of Chapter 3, Part 1, Division 14 (commencing with Section 39050) of the Water Code and matters on file in District's records; the acreage assessed to each such assessee according to District's records and the acre-feet of water extracted for public well site lands during the prior irrigation season and the classification of each such tract of land, said classifications being non-developed, developed, recreation or irrigated native pasture and public well site, and shall prepare plat maps in accordance with said roll.

   The Treasurer shall determine the preliminary rates per acre for said charges, which rates shall be based upon the matters set forth in said roll and the determinations of the Board and shall be separately stated as a rate per acre for parcels receiving only a General Administrative Service Charge and a composite rate for those lands also receiving the General Project Service Charge.

3. Said roll, plat maps, and preliminary rates shall be filed with the Secretary and be available for public inspection at the District office. The Secretary shall forthwith give notice of filing of said roll, which notice shall set forth the preliminary rates per acre, the minimum charge for parcels less than one acre in area, if any and, the special per acre rates for lands developed and used for recreational purposes and for irrigated native pasture and the rate per acre-foot for public well site lands, and declare the time and place set by the Board when the Board will meet and hear any objections to the charges established for said respective tracts of land in accordance with the matters set forth in said roll. A copy of said notice shall be published once a week for two successive weeks, as provided in Section 39057 of the Water Code, and shall be deposited in the mail, addressed to each holder of title to lands within the Improvement Districts receiving a charge at their last known address as set forth in said roll. The first publication shall be at least three weeks (21 days) prior to the date of said hearing and mailing shall be completed at least ten (10) days prior to said hearing date.

4. At the time and place for hearing of objections, the Board shall consider such objections to the roll and make such corrections thereto as are necessary and

proper. Upon conclusion of the hearing, the Board shall adopt said roll as finally fixed and determined; make such changes in the preliminary rates per acre necessitated thereby; order the Treasurer to certify said roll, declare whether all or any part of said charges be collected by the County of Kern pursuant to the provisions of Article 4, Part 9, Chapter 13, Division 14 (commencing with Section 47980) of the Water Code or by the District pursuant to Water Code Section 43006 or 47180 et seq. and, in the former case, determine the District account at the County to which said funds shall be deposited when collected.

If it is ordered that the charges be collected by the County of Kern then, on or before July 15 and no later than the third Monday in August, the Secretary shall file with the County Auditor-Controller of Kern County certified copies of said final roll, the resolution fixing charges and the resolution adopting said roll, fixing the rates per acre and ordering collection by the County.

5. This policy and procedure shall continue until such time as the Board determines, pursuant to noticed public hearing, that said charges, or either of them, are to be fixed on some basis other than that herein provided or until such time as there has been a reassessment of project costs as provided in Section 46355 of the Water Code; PROVIDED, HOWEVER, pursuant to petition of the holders of title to ten percent (10%) of the land to receive such charge or charges, filed with the Board not later than five days preceding the regular meeting date in August, the Board shall set a noticed public hearing to consider whether such policy should be continued or the amount of such charge or charges or all of such matters, as may be specified in said petition.

   Notice of time and place of such public hearing specifying the matters to be considered, shall be by publication once a week for two successive weeks, as provided in Section 39057 of the Water Code, and by depositing in the mail, at least three weeks before said hearing date, a copy of the notice directed to each holder of title to lands within the District at their last known address as determined in accordance with Chapter 3, Part 1, Division 14 (commencing with Section 39050) of the Water Code. Said date of hearing shall not be less than thirty (30) days after the first date of publication.

D. In addition to the charges provided for at Section 6.A and 6.B, and in order to encourage conservation of water resources, to help achieve compliance with the Sustainable Groundwater Management Act, and to more accurately distribute the actual cost the Improvement Districts incur to provide water supplies for the benefit of their landowners and water users in proportion with the costs to serve individual parcels, as authorized by Water Code Sections 42006 and 47180, and Section 44200 through 44208 with respect to groundwater, the following procedures shall be administered. This procedure is adopted on an interim basis and may be modified at a later date, including at such time as the

District adopts a Groundwater Sustainability Plan or it becomes effective pursuant to Water Code Section 10720 et seq.:

1. Commencing in 2017, the Improvement Districts shall annually determine the consumptive use of water for lands within the Improvement Districts on a per-acre basis utilizing Landsat and ground-based evaporatransporation (ET) sensors, or similar methods, including consumptive use of both surface water supplied or wheeled by the Improvement Districts and groundwater. Each year at or by the regular board meeting in April (and for 2017 at the regular May meeting), or a date announced at that meeting, the Board shall make a determination as to the estimated average annual per-acre consumptive water use within the Improvement Districts (which shall herein be referred to as the "Baseline Consumptive Use") for that year; provided, however, for lands that pursuant to Section 6.B.2 have been classified as being used for recreational purposes, including commercial duck club uses, or for irrigated native pasture, a special Baseline Consumptive Use shall be established for such lands based on the estimated average annual consumptive use for such uses (herein called the "Recreation Baseline Consumptive Use"). At that same time, the Board shall also establish the following rates and credits:

    (a) For a landowner that uses less than the Baseline Consumptive Use per acre for acreage subject to the General Project Service Charge on the collective lands it owns, a credit amount will be earned for each acre-foot conserved (or portion of an acre-foot) less than the Baseline Consumptive Use per acre (herein called the "Basin Sustainability Credit"). Such credit shall be determined by the following formula: the projected General Project Service Charge for the forthcoming year divided by the Baseline Consumptive Use and then multiplied by 1.0. Therefore the Credit due will be calculated as the Basin Sustainability Credit ($/Acre-feet), multiplied by the difference between the Baseline Consumptive Use (Acre-feet) and the Actual Consumptive Use (Acre-feet).

    (b) For a landowner that uses more than the Baseline Consumptive Use per acre for acreage subject to the General Project Service Charge on the collective lands it owns, an additional charge for each acre-foot (or portion of an acre-foot) used in excess of the Baseline Consumptive Use will be imposed (herein called the "Basin Sustainability Charge"). The Basin Sustainability Charge shall be determined by the following formula: The projected General Project Service Charge for the forthcoming year divided by the Baseline Consumptive Use and then multiplied by 1.5. Therefore the Charge due will be calculated as the Basin Sustainability Charge ($/Acre-feet)

multiplied by the difference between the Actual Consumptive Use (Acre-feet) and the Baseline Consumptive Use (Acre-feet).

(c) For land subject to the Recreation Baseline Consumptive Use, the credits and charges shall be established in the same manner as provided above in Section 6.D.1 (a) and (b) but shall substitute the Recreation Baseline Consumptive Use in place of the Baseline Consumptive Use.

(d) A Basin Sustainability Credit or a Basin Sustainability Charge under Section 6.D.1 (a), (b), or (c) shall not be provided or assessed to the extent the General Manager determines that a landowner has imported a metered water supply to meet all or a portion of the consumptive uses of his/her lands that is not otherwise available to the Improvement Districts, and importation of such supply does not interfere with use or availability of Improvement District facilities for other purposes or water supplies.

(e) For 2017, the Basin Sustainability Credits and Basin Sustainability Charges shall be determined for each landowner but shall be administered on a trial basis only, and no such credits or charges shall be provided or assessed under Section 6.D.1 (a), (b), or (c).

(f) For any lands that are developed to irrigation or other water uses after July 1, 2017, a charge in addition to the General Project Service Charge shall be imposed for each acre-foot based on the consumptive use on those lands at a rate which is the estimated cost of developing new water supplies for lands in the Improvement Districts minus the General Project Service Charge otherwise payable (herein called the "New Lands Surcharge"). The New Lands Surcharge will not be imposed where the owner of such lands imports a metered water supply to those lands pursuant to a separate agreement with the Improvement Districts that is not otherwise available to the Improvement Districts and that does not reduce or impede the use or availability of the Improvement Districts' water supplies. Any lands subject to the New Lands Surcharge shall not be entitled to a Basin Sustainability Credit or assessed a Basin Sustainability Charge.

2. On or before April 1 of each year commencing in 2018 the Improvement Districts shall prepare and mail to each landowner that was assessed the General Project Service Charge the prior year or that is subject to the New Lands Surcharge a statement based on the consumptive use of its lands during the prior year as determined utilizing the methods enumerated above in Section 6.D.1 hereof, and advise the landowner as

follows; provided that for 2018 (for the prior year of 2017) the Basin Sustainability Credit, Basin Sustainability Charge and such recreational credits and charges shall not be provided or charged:

(a) If the landowner is entitled to a Basin Sustainability Credit, so advise and seek an election by the landowner whether it wishes the credit to be (i) provided as a cash payment, (ii) applied as a credit for future Basin Sustainability Charge(s) against any subsequent year within five years in which the landowner exceeds the Baseline Consumptive Use, or (iii) applied to a landowner bank account as hereinafter described; provided, if the landowner fails to timely respond, the Improvement District shall presume that the landowner wished to have the credit applied to future Basin Sustainability Charge(s). Such a landowner bank account as mentioned in 6.D.(a)(iii) shall be subject to a separate agreement with the Improvement District and shall have the following characteristics: it shall be made up of bank accounts of imported water held for the account of the Improvement Districts (such as return flows, water that was directly recharged for the District and "leave behind" water from banking partners), the account for the benefit of the landowner may be decreased by up to 10% per year and such deductions returned to the account of the Improvement Districts, the quantity provided to the landowner's bank account will be based on the District's valuation of the banked imported water supply as determined by the District Board of Directors, and the bank account shall be for use within the District only;

(b) If the landowner is to be assessed a Basin Sustainability Charge or New Lands Surcharge, such amount shall be invoiced to the landowner and is due and payable and delinquent 60 days of invoicing, and if not timely paid, subject to penalties, interest and collection proceedings as otherwise described at Section 5.C hereof; and if a New Lands Surcharge shall be annually levied upon the lands subject to the New Lands Surcharge.

(c) For land used for recreation purposes as provided in the District's Rules and Regulations, New Lands Surcharges if applicable shall be established pursuant Section 6.D.1for such uses shall be administered in the same manner as provided above in Section 6.D.2

(d) Where for the prior year a cash payment, a credit for future years or a landowner bank account is available as provided for under Section 6.D.2.a. above, where an additional Basin Sustainability Charge or New Lands Surcharge are due under Section 6.D.2.b. above, or a charge or credit is imposed or available under Section 6.D.2.c. above, as the case may be, upon the sale of lands, such credit, account or charge which is applicable shall run with the land and the subsequent owner(s) thereof, unless as part of such sale the seller and

buyer of such lands provide the Improvement Districts joint instructions otherwise.

3. In addition to consumptive use information collected as provided at Section 6.D.1 hereof, the Improvement Districts may also annually require that landowners supply information on the amount of groundwater extracted each year, commencing in 2018, in the manner as provided at Water Code Section 44204 and determined in the manner provided at Water Code Section 44206(b), if applicable. Until 2021, in lieu of requiring meters and providing information from meter readings as herein provided, the Improvement Districts in any year may alternatively permit landowner to determine groundwater extractions utilizing crop coefficients provided by the Improvement Districts.

7. WATER SHORTAGES

Pursuant to powers granted by Section 43003, et seq., of the California Water Code, the Board has established and does hereby establish the policy to provide for the sharing of the burden of any shortages in the quantity of water available for distribution to Water Users.

A. For Contract Water Service, in any year when District's water supply from the Kern County Water Agency is less than the total of the Contract Amounts of Water for all Water Users, each Water User will be allocated a share of District's total supply in the ratio of said Water User's Contract Amount of Water to the total of Contract Amounts of Water of all Water Users. The District may supply all or a portion of the Contract Amount of Water allocated to a particular Water User from sources other than the Kern County Water Agency, including water it obtains for ground water banking and from the underground.

B. For Intermittent Water Service, as provided at paragraph 3(k) of the Intermittent Water Service contract, the Board shall determine from time to time the quantity available to such Water Users and the manner to allocate among such Water Users.

8. DISPOSAL OF WATER

For Contract Water Users, as provided in Section 5(j) of the Water Service Contract, the District will make reasonable efforts to dispose of water not required by Water User in any year and credit to Water User any net revenue from such disposal.

9. CONTROL, USE AND RECAPTURE OF WATER

District will not be responsible for the control, carriage, handling, use, disposal or distribution of water delivered to Water User hereunder outside the facilities then being operated and maintained by District. Water User shall indemnify and shall assume the defense of and hold harmless the District and its officers, agents and employees for any and all loss, damage, liability, claims or causes of action of every nature whatsoever, for damage to or destruction of property, including the District's property, or for injury to or death of persons, in any manner arising out of or incidental to the control, carriage, handling, use, disposal or distribution of water outside such facilities.

Without obligating District to assume any responsibility therefore, District shall have the right to the use of all waste, seepage and return flow resulting from surface water which escapes or is discharged beyond Water User's recovery facilities, if any, and nothing herein contained shall be construed as an abandonment or relinquishment by District of the right to the recapture and the use of any such water; PROVIDED, HOWEVER, that nothing herein contained shall limit or detract from the obligations assumed by Water User.

10. PRESERVATION OF PUMPING RIGHTS

In order that no Water User be prejudiced by utilizing Project Water or other imported water in lieu of exercising whatever rights he may have to pump ground water, and in recognition of the anticipated benefit to the District's underground water supply arising from the implementation of the District's project, all Water Service Contracts for the Contract Surface Water Service Area include at Section 3(m), and for the Intermittent Surface Water Service Area include at Section 3(l), language which memorializes such matters and are incorporated by this reference, and which provides as follows:

> "In the interest of preserving to Water User his rights to pump ground water for use on his lands which will be served with water under this Contract, it is agreed that during all the years that District delivers water to Water User, to the extent the Water User shall reduce his pumping of ground water and shall make use of water so delivered to him by District, Water User's said use of water so delivered to him by the District shall be deemed the same as if he had pumped from the underground a quantity of water equal to the quantity of water so delivered to him by District. Water User also agrees to recognize and be bound by the pumping rights similarly preserved to other Water Users in the District pursuant to Water Service Contracts heretofore and hereafter executed. It is further agreed that, in the event District were to carry out a program for spreading of water and percolation thereof to underground storage, District shall have the right to use of the underground storage for spreading and recovery of water in connection with supplying water service to Water User and to all other Water Users, and it is further agreed that, to the extent that District may pump water from underground supplies for furnishing to Water Users, District shall be deemed to be exercising said Water User's rights to pump water from underground water supplies; PROVIDED, HOWEVER, that

nothing herein contained shall prevent or hinder Water Users from exercising his rights to pump groundwater."

In implementing this policy, it is declared that without obligating District to assume any responsibility therefore and without limiting or detracting from the obligations assumed by Water Users in this regard, District shall have the right to the use of all waste, seepage and return flow resulting from imported water which escapes, percolates or is discharged beyond Water User's recovery facilities, if any, and nothing herein contained shall be construed as an abandonment or relinquishment by District of the right to the recapture, use and benefit of all such water and any use made of any resulting benefit to ground water conditions arising from imported water is made with the consent of the District, which consent is revocable at any time and such use is not to be considered a use adverse to District's rights nor shall any such use under any circumstances create an estoppel in asserting such rights at any time.

Further in implementing this policy, it is declared that during all the years that District delivers water to a Water User, to the extent that such Water User shall have reduced his pumping of ground water and shall make use of water so delivered to him by District, any use made of the resultant benefit to ground water conditions is made with the consent of said Water User, which consent is revocable at any time, and such use is not to be considered a use adverse to his right to the continued exercise of his rights to pump and utilize ground water nor shall any such use under any circumstances create an estoppel in asserting any such right at any time.

Notwithstanding the foregoing, but without limiting the right of landowners to exercise overlying ground water rights as provided above, at any time the District receives additional supplies for the purpose of banking or storing such supplies, and the District delivers such supplies to Water Users or others who otherwise would pump ground water, the District retains the right to subsequently withdraw such banked water, all in accordance with such banking and/or storage program.

11. PROTECTION OF DISTRICT FACILITIES

Without limiting rights otherwise reserved, and except for drains and waterways which may be built by the District expressly for the conveyance of Water User's drainage water, no persons will be allowed to drain irrigation water upon District owned property, and any person doing so will be in violation of the Rules and /Regulations, and will be subject to fine and damages, and water service may be terminated.

It is the duty of Water User to furnish reasonable protection for the individual farm turnout to prevent damage to said turnout. In the event that damage occurs to farm turnout as a result of failure by Water User to provide such protection, the repair of such damage will be made by the District, the expense of such repair will be charged to Water User, and no water will be furnished through the affected turnout until such repairs are made and the charges for damage and repairs paid to the District.

12. ENCROACHMENT ON DISTRICT PROPERTY

Without limiting rights otherwise reserved, before any drains, fences, pipelines or other encroachments from private sources will be permitted to be upon the District's property, written consent for such encroachment must be obtained from the District. Consent forms will be furnished by the District to the applicant and consent must be obtained from the Manager or his designee before any construction begins. Where District rights in any property are an easement, no encroachments will be permitted which will in any manner interfere with or exceed the rights of the District under said easement, and the District's written consent must first be obtained before any pipelines or other encroachments are constructed in any easement area. The work shall be constructed to specifications approved by the District, at the sole expense of the permittee, and maintained to the satisfaction of the District. If such consent is granted, the permittee shall be solely responsible for and shall indemnify and shall assume the defense of and hold harmless the District and its officers, agents and employees from any and all loss, damage, liability, claims or cause of action of every nature whatsoever, for damage to or destruction of property, including the District's property, or for injury to or death of persons in any manner arising out of permittee's exercise of the rights and privileges given in the granting of such consent. Issuance of consent does in no way grant a permanent right but shall be a revocable license only, and on demand of District said works shall be removed and the District's property restored to its original state at the sole expense of the permittee. Granting of such consent shall not be deemed to surrender or subordinate the District's control or supervision over the encroachment. Any person or his authorized agent who uses the property of District for the movement of equipment shall be responsible to District for any damage to District property. No livestock will be allowed to enter upon or graze on District's property without written consent from the Manager or his designee. If such consent is granted, the permittee shall be solely responsible for and shall indemnify and shall assume the defense of and hold harmless the District and its officers, agents and employees from any and all loss, damage, liability, claims or cause of action of every nature whatsoever, for damage to or destruction of property, including the District's property, or for injury to or death of persons or livestock in any manner arising out of permittee's exercise of the right and privileges given in the granting of such consent. Any persons using a District right-of-way for any purpose assumes all risks associated therewith and assumes the responsibility for any damage to District property resulting therefrom and also for any damage to private property caused by such damage to District property.

13. MODIFICATIONS OF PROJECT FACILITIES

No changes shall be made in the constructed Project Facilities except by District personnel or its contractors and in accordance with the District's specifications. If a modification is made at the request of a Water User, and for his benefit, the cost thereof shall be paid in advance by the Water User requesting said modification. The advance payment shall be determined by the Manager based upon an estimate of the costs, including but not limited to reasonable charges for engineering performed by the District and overhead, and after completion

of the work a final accounting shall be submitted to the Water User. Within thirty (30) days after submission of said final accounting, the Water User will pay the difference between the actual cost and the estimate thereof or the District will make a refund if the actual cost is less than the advance payment. Any additions to Project Facilities so constructed become the property of the District.

14. SALE OR TRANSFER OF TITLE TO LANDS

Without limiting the provisions of the Water Service Contracts (Section 10 for Contract Water Service and Section 9 for Intermittent Water Service), when land affected by a Water Service Contract is sold or title otherwise transferred to another party, District will be under no obligation to deliver water to such lands until the Water Service Contract is assigned to and assumed by the new landowner. Such assignments and assumption agreements shall be on forms provided by the District, executed and completed in a manner satisfactory to the District. In the event of a transfer of ownership as to a portion of the lands described in an Exhibit "A" to a Water Service Contract and in the absence of written instructions from the affected parties, the Water Service Contract will be administered and the agreement will be prepared so as to allocate the rights and obligations under said Water Service Contract on an acreage basis.

Notwithstanding any transfer or change of ownership, the District shall be entitled to administer the Water Service Contract in accordance with matters in the files at the District office, including but not limited to Water Delivery Schedules and Water Use Schedules and revisions thereto, appointments of agents, authorization forms and billing of tolls and charges until or unless District has received actual notice in writing that any or all of such matters are revoked.

15. MISCELLANEOUS PROVISIONS REGARDING ASSIGNMENTS AND TRANSFERS

The execution by the District of any assignment and/or the giving of its consent to transfer of the rights of a Water User under a Water Service Contract shall be without any warranty of title on the part of the District and shall not be interpreted as any representation, express or implied, by or on behalf of District, that such assignment, transfer or disposal is free and clear of outstanding encumbrances.

Without attempting to establish or in any manner affect the rights of any person arising from a deed of trust, any person or entity having any interest in a deed of trust on property subject to a Water Service Contract, may file with the District a written request for notice of failure to make the payments required by such Water Service Contract or a request for notice of any specific act that the District may be requested to undertake or to consent to under the Water Service Contract or the Rules and Regulations that such person alleges will detrimentally affect its interest, but not limited to (1) a request for exclusion from the Surface Water Service Area, (2) a request for written permission to utilize water on lands other than those described in Exhibit "A" to a Water Service Contract for a period in excess of a year, or (3) a request for assignment of rights under Water Service Contract for a period in excess of a year. Upon receipt of such

notice District shall give such person written notice of default or of any request that it take such action as is set forth in the request for notice, at least fifteen (15) days prior to foreclosure proceedings or prior to such other specified act by the District, unless such person has given written consent to the requested action. In addition to setting forth the matters as to which notice by the District is requested, the request for notice shall set forth a legal description of the land affected; the name of the current owner of the fee; the name and address where the requested notice is to be sent and a copy of the deed of trust showing the recording information. Any notice from the District shall be effective when deposited in the mail, postage prepaid, directed to the address shown in the notice; PROVIDED, HOWEVER, District may disregard any request for notice which has not been refiled within fifteen (15) days of a written demand therefore by the District mailed in the same manner and with the same effect as hereinabove provided for the notice by the District: PROVIDED, FURTHER, HOWEVER, nothing herein provided shall render District liable to any person under any circumstances. As used in this paragraph, the term deed of trust shall be deemed to include mortgages, contracts of sale, and other liens and encumbrances.

16. REAPPORTIONMENT OF ASSESSMENTS

The provisions hereof are supplementary to the provisions of Article 8 (commencing with Section 46325) of Chapter 2 of Part 9 of the Water Code.

When any tract of land upon which an assessment has been levied has been subdivided into smaller parcels of land, the Board may, in the absence of any application being filed therefore, prior to a call on said assessment or prior to closing of the County Assessment Rolls if the alternative procedure for collecting District assessments is utilized, order that such assessments be reapportioned in the same manner as utilized in establishing the assessments on the entire tract being reapportioned without notice and hearing unless a person interested shall have filed with the Board a request for notice of hearing of reapportionment of assessments to be made pursuant to said Section 46325.

Applications for reapportionment of assessments on tracts of land in the District shall be in such form as is approved by the Board; landowners' signatures shall be acknowledged in the same form as a conveyance of real property and the application shall be accompanied by certified copies of recorded deeds showing the current ownership of the entire tract to be reapportioned. If the application be signed by less than all the landowners within the subdivided tract, a hearing will be held and notice of hearing shall be by mail directed to landowners affected at the address shown in District records and only to such other persons as are interested who have filed with the Board a request for notice of reapportionment, mailed at least ten (10) days prior to the day of hearing. District may require a report as to status of title of said reapportioned tract and may require payment of such fees and costs by the applicant as the Board may establish.

17. SECTION 592 OF THE PENAL CODE OF THE STATE OF CALIFORNIA

Attention is directed to the provisions of Section 592(a) of California Penal Code, as follows:

"Every person who shall, without authority of the owner or 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."

18. AUTHORITY OF CONTRACTS

The Rules and Regulations are in implementation of the Agency Contract, the Master Contract and any amendments to the foregoing, and the Water Service Contracts; and in the case of inconsistency between these Contracts and the Rules and Regulations, the Contracts shall govern.

19. ENFORCEMENT OF RULES AND REGULATIONS

The Manager shall be responsible for the enforcement of the Rules and Regulations. Failure of a Water User to comply with any of the Rules and Regulations shall be sufficient cause for the termination of water service, and water service will not again be furnished to such Water User until full compliance has been made with all the requirements as herein set forth; PROVIDED, HOWEVER, that Water User shall in no way be relieved of any responsibility for payment of any charges or obligations by reason of such termination of water service. When in the sole judgment of the Manager it is practicable to do so, advance notice of any such termination of water service will be furnished to Water User. In no event shall any liability accrue against District or any of its officers, agents, or employees, for damage, direct or indirect, arising from such terminations of water service.

20. APPEAL OF DECISION OF MANAGER

In event the Water User disagrees with a decision made by the Manager in administering the Rules and Regulations, he shall have the right to appeal to the Board within ten (10) days after notice of such decision. Appeal shall be submitted in writing to the Board and shall specifically set forth the decision being appealed and shall give reasons for said appeal. Appeals shall be considered at the regular meeting of the Board next after ten (10) days following the appeal.

21. MISCELLANEOUS

A. The Rules and Regulations shall become effective immediately and may be added to, amended, or repealed at any time by resolution of the Board.

B. If any provision of the Rules and Regulations, or the application thereof to any person or circumstance, is held invalid, the remainder of the Rules and Regulations and the application thereof to other persons or circumstances shall not be affected thereby.

C. Words used herein in the masculine shall include the feminine or an entity.

CERTIFICATE OF ACCEPTANCE, GOVERNMENT CODE, SECTION 27281:

THIS IS TO CERTIFY, that the SEMITROPIC IMPROVEMENT DISTRICT of SEMITROPIC WATER STORAGE DISTRICT, a California Water Storage District (pursuant to Government Code Section 27281), hereby accepts for public purposes the real property described in the within document and consents to the recordation thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this 19th day of July, 2017.

[SEAL]

Assistant Secretary of the Board of Directors

Appendix D Poso IRWM Drought Contingency Plan (to be added upon completion)

SEMITROPIC

GROUNDWATER BANKING

WATER STORAGE DISTRICT