

2020 URBAN WATER MANAGEMENT PLAN

PHELAN PIÑON HILLS COMMUNITY SERVICES DISTRICT



JUNE 2021



PREPARED BY





2020 Urban Water Management Plan (UWMP)

FINAL

Prepared for:

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List of Abbreviations and Acronyms

ACS - American Community Survey
Act - Urban Water Management Planning Act
AFY – Acre Feet Per Year
AMI - Advanced Metering Infrastructure
AMR - Automatic Meter Reading
Annual Assessment - annual water supply demand assessment
AVAA – Antelope Valley Adjudication Area
AVGBA – Antelope Valley Groundwater Basin Adjudication
CCR - California Code of Regulations
CDP - census designated place
CEQA - California Environmental Quality Act
CIMIS - California Irrigation Management Information System
CPUC - California Public Utilities Commission
CWC - California Water Code
Delta - Sacramento-San Joaquin Delta
DMM - Demand Management Measures
DOF - California Department of Finance
DRA - Drought Risk Assessment
DWR - California Department of Water Resources
eAR - Electronic Annual Reporting System
ERP - Emergency Response Plan
GPCD - Gallons Per Capita Per Day
GSA - Groundwater Sustainability Agency
GSP - Groundwater Sustainability Plan
Guidebook – 2020 Urban Water Management Plan Guidebook
HOA - Homeowners’ Associations
IRWM - Integrated Regional Water Management
LAFCO - Local Agency Formation Commission
Legislature - State of California Legislature
M&I - municipal and industrial
Methodologies - Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use
MWA – Mojave Water Agency
NAICS - North American Industry Classification System
NOAA - National Oceanographic and Atmospheric Administration
P-NP - Potable/Non-Potable
PWSID - Public Water System Identification Number
RES-BCT – Renewable Energy Self-Generation Bill Credit Transfer Program
R-GPCD - Residential GPCD
Retail Supplier - urban retail water supplier
RUWMP - Regional Urban Water Management Plan
SB X7-7 - Senate Bill Extraordinary Session 7-7
SCE – Southern California Edison
SGMA - Sustainable Groundwater Management Act
State Water Board - State Water Resources Control Board
Supplier - urban water supplier
SWP - State Water Project

U.S. - United States

UWMP - Urban Water Management Plan

WSCP - Water Shortage Contingency Plan

WUE - Data Portal Water Use Efficiency Data Portal

Chapter 1. Introduction and Overview

Pursuant to the California Urban Water Management Planning Act (Act), Phelan Piñon Hills Community Services District (District) prepared this 2020 Urban Water Management Plan, which is referred as the UWMP or Plan, interchangeably, as an update to its 2015 UWMP. The 2020 UWMP documents the District's past, current, and projected future water demand and water supply within its service area, water management strategies, and water service reliability and drought risk assessment through 2045. This Chapter presents an overview and purpose of the 2020 UWMP and summarizes the 2020 UWMP requirements, plan organization, and its preparation and coordination with other agencies.

1.1. Background and Purpose

In 1983 the State of California Legislature (Legislature) enacted the Act requiring each urban water supplier to prepare and adopt an UWMP [CWC 10610 – 10657]. An urban water supplier, interchangeably referred to as Supplier herein, is defined as a water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually. The Act has undergone various revisions and expansion, and is included in Appendix A. Each urban water supplier is required to update its plan at least every five years on or before July 1, in years ending with six and one. The intent of the UWMP is to develop a document that provides a framework for long-term water planning to ensure a reliable and sustainable water supply for existing and future demands under various weather conditions.

The Act requires urban water suppliers to report and analyze:

- Existing and planned sources of water supply
- Past, current, and projected water use
- Water use baselines and targets
- Water service reliability and drought risk assessment
- Water shortage contingency planning
- Demand management measures

The District is an urban water supplier per the definitions of CWC 10617, as it provides water to more than 3,000 customers annually, and is required to update its 2015 UWMP.

1.1.1. UWMP Organization

The 2020 UWMP presented herein follows the 2020 UWMP Guidebook (Guidebook) which was prepared by the California Department of Water Resources (DWR), and uses the Guidebook's suggested Chapters as follows:

Chapter 1 - Introduction and Overview

Chapter 2 - Plan Preparation

Chapter 3 - System Description

Chapter 4 – Water Use Characterization

Chapter 5 – SB X7-7 Baselines, Targets, and 2020 Compliance

Chapter 6 - System Supply Characterization

Chapter 7 - Water Supply Reliability and Drought Risk Assessment

Chapter 8 - Water Shortage Contingency Plan

Chapter 9 - Demand Management Measures

Chapter 10 - Plan Adoption, Submittal, and Implementation

As part of the 2020 UWMP, Suppliers are required to complete and submit the DWR's standardized tables electronically through DWR's Online Submittal Tool. The standardized tables are included in Appendix B.

1.1.2. Changes to the Water Code since 2015 UWMPs

There are a few major reporting requirement changes to the 2020 UWMP per CWC since the 2015 UWMPs that are summarized and described briefly below:

- Lay Description – Suppliers are now required to include a lay description on key components of the UWMP such as water service reliability, future challenges, reliability risk management strategies, and any other information to provide a general understanding of the 2020 UWMP [CWC 10630.5]
- Groundwater Supplies Coordination – Suppliers are now required to be consistent with Groundwater Sustainability Plans (GSP) where applicable [CWC 10631]
- Five Consecutive Dry-Year Water Reliability Assessment – Suppliers are now required to analyze the water service reliability from multiple dry water years to a period of drought lasting five consecutive water years [CWC 10631]
- Five-year water loss reporting – Suppliers are now required to include the water loss audit reports over the past five-years [CWC 10631]
- Energy Use Information – Suppliers are now required to include information on estimated energy use for suppliers' water systems [CWC 10631.2]
- Drought Risk Assessment – Suppliers are now required to include assessment of water supply reliability within the five-year cycle of the UWMP update, which is from 2021 to 2025 for the 2020 UWMP [CWC 10635]
- Water Shortage Contingency Plan (WSCP) – Suppliers are now required to include and adopt a WSCP as part of their UWMP with specified elements [CWC 10632]
- Seismic Risk Analysis – Suppliers are now required to include local or regional seismic risk assessments and mitigation plans [CWC 10632.5]

1.2. Urban Water Management Plans in Relation to Other Efforts

DWR recommends a regional, cross-sector planning process to prepare the UWMP. Suppliers are encouraged to consult and coordinate with other planning agencies and integrate other planning efforts and documents into the 2020 UWMPs to further enhanced the UWMPs. As a member agency of the MWA, the District coordinates with MWA in preparing the 2020 UWMP. The following documents were used in the preparation of the District's 2020 UWMP:

- The District's 2015 UWMP, June 2016
- Mojave Water Agency(MWA)'s Watermaster 2019-20 Annual Report, May 2021
- Antelope Valley Watermaster 2019 Annual Report, July 2020
- Antelope Valley Integrated Regional Water Management (IRWM) Plan, 2019
- MWA Population Forecast – 2020 Edition, August 2020
- MWA 2015 UWMP, June 2016
- San Bernardino County's Countywide Plan – Phelan/Pinon Hills Community Action Guide, 2019
- The District's Water Shortage Contingency Plan, June 2016
- The District's Parks and Recreation Master Plan, February 2019

1.3. UWMPs and Grant or Loan Eligibility

CWC 10608.56

(a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan,

developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

CWC 10656

An urban water supplier is not eligible for a water grant or loan awarded or administered by the state unless the urban water supplier complies with this part.

CCR Section 596.1

(b) (2) “disadvantaged community” means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

In order to be eligible for any water management grant or loan administered by the DWR, a Supplier must have a current UWMP on file that has met the requirements of the UWMP Act. The District’s 2020 Plan has been prepared to meet eligibility requirements for grants and loans administered by the State and/or DWR.

1.4. Demonstration of Consistency with the Delta Plan for Participants in Covered Actions

The District’s primary source of supply is groundwater pumped from the Mojave Basin Area (MBA) and does not receive water directly from the Delta conveyance, which is also referred to as the State Water Project (SWP) infrastructure. The MBA is adjudicated and managed by Mojave Water Agency (MWA). MWA imports SWP water from Northern California for groundwater basin recharge. As part of MWA’s 2020 UWMP, the agency has prepared the Delta Reliance Tables for the region to demonstrate its consistency with the Delta Plan, and is included in Appendix C.

Chapter 2. Plan Preparation

This Chapter presents information related to the preparation of the District’s 2020 UWMP including basis of preparing a Plan, overview of the District’s water system, efforts taken in regional planning, and general information on coordination and outreach activities.

2.1. Basis for Preparing a Plan

CWC 10617

“Urban water supplier” means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems...

CWC 10620

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

CWC 10621

(a) Each urban water supplier shall update its plan at least once every five years on or before July 1, in years ending in six and one, incorporating updated and new information from the five years preceding each update.

In accordance with the CWC, a Supplier with 3,000 or more customers or supplying more than 3,000 acre-feet (AF) of water annually is required to prepare an UWMP and update its UWMP once every five years, and adopt it on or before July 1 in years ending in six and one. The District has 7,053 service connections in 2020, thus is required to prepare a 2020 UWMP. The District retained the services of Infrastructure Engineering Corporation (IEC) to prepare this 2020 UWMP.

The UWMP includes the specified elements listed in CWC Sections 10630 – 10634. DWR has prepared the 2020 UWMP Guidebook (Guidebook) outlining the UWMP Act requirements and providing recommendations to help Suppliers to prepare their UWMP in compliance with the UWMP Act. The Guidebook has been utilized in preparation of the District’s 2020 UWMP.

2.1.1. Public Water Systems

CWC 10644

(a) (2) The plan, or amendments to the plan, submitted to the department ... shall include any standardized forms, tables, or displays specified by the department.

California Health and Safety Code 116275

(h) “Public Water System” means a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more

service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

Public Water Systems (PWS) are systems that provide drinking water for human consumption per the definition of the California Health and Safety Code 116275.

Under this definition, the District owns and maintain one PWS for its service area. As a PWS, it is regulated by the State Water Resources Control Board, Division of Drinking Water. The District’s PWS Identification Number is CA3610120. Table 2-1 provides information regarding the District’s number of connections and volume of water supplied in 2020.

Table 2-1: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020
CA3610120	Phelan Piñon Hills Community Services District	7,053	2,948
TOTAL		7,053	2,948

2.2. Individual or Regional Planning and Compliance

The District has opted to prepare an Individual UWMP which signifies that the District reports solely on its service area and has developed an UWMP meeting the requirements of the CWC, as shown in Table 2-2. The District has notified and coordinated with the proper local and regional agencies and constituents during the preparation of its UWMP. As a member agency of MWA, the District provided necessary information in support of MWA’s 2020 UWMP preparation as well.

Table 2-2: Plan Identification		
Select Only One	Type of Plan	Name of RUWMP or Regional Alliance <i>if applicable</i> <i>drop down list</i>
<input checked="" type="checkbox"/>	Individual UWMP	
	<input type="checkbox"/>	Water Supplier is also a member of a RUWMP
	<input type="checkbox"/>	Water Supplier is also a member of a Regional Alliance
<input type="checkbox"/>	Regional Urban Water Management Plan (RUWMP)	

2.3. Fiscal or Calendar Year and Units of Measure

CWC 1608.20

(a) (1) *Urban retail water suppliers...may determine the targets on a fiscal year or calendar year basis.*

The District has selected the calendar year for reporting water use and planning data in their 2020 UWMP, as shown in Table 2-3. In addition, water volume is reported in Acre-feet (AF) unless noted otherwise.

Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
<input type="checkbox"/>	Supplier is a wholesaler
<input checked="" type="checkbox"/>	Supplier is a retailer
Fiscal or Calendar Year (select one)	
<input checked="" type="checkbox"/>	UWMP Tables are in calendar years
<input type="checkbox"/>	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP (select from drop down)	
Unit	AF

2.4. Coordination and Outreach

CWC 10631

(j) An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier’s plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

2.4.1. Wholesale and Retail Coordination

As referenced in Table 2-4, the District is a member agency of the MWA and has coordinated with MWA during preparation of the 2020 UWMP. MWA shared regional planning information with the District to identify and quantify existing and future water supplies. In support of MWA’s 2020 UWMP, the District provided water use projection information to MWA.

Table 2-4: Water Supplier Information Exchange
The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name <i>(Add additional rows as needed)</i>
Mojave Water Agency (MWA)

2.4.2. Coordination with Other Agencies and the Community

CWC 10620

(d) (2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

CWC 10642

Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.

The District is required to coordinate with the appropriate agencies in the area including other water suppliers that share a common source for preparation of the 2020 UWMP, water management agencies, and relevant public agencies according to CWC 10620. Therefore, the

District coordinated with MWA and the County of San Bernardino Department of Environmental Health Services in the preparation of the 2020 UWMP. As discussed in Chapter 10, the appropriate agencies have received notice of preparation of the 2020 UWMP at least sixty (60) days prior to the public hearing and have been invited to participate in the development of the Plan.

2.4.3. Notice to Cities and Counties

CWC 10621 (b)

Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

Communities and county within which the District provides water service to were notified at least 60 days prior to the public hearing on the 2020 UWMP. The District will provide a copy of the adopted Plan to each agency within the District's boundary no later than 60 days after its submission to the DWR.

Chapter 3. System Description

This Chapter provides general information about the District's water system including the District's service area, climate, current and projected land uses within the service area, projected population, socio-economic factors, and other factors that might affect water management planning.

3.1. General Description

CWC Section 10631

Describe the service area of the supplier, including current and projected population, climate, and other social, economic, and demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available. The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.

Pursuant to Resolution No. 2994 of the Local Agency Formation Commission of the County of San Bernardino (LAFCO) in 2008, the District was formed as a consolidation of three Special Districts: the County Service Districts of Area 70 Zone L, Area 9 Phelan Parks and Street Lighting, and Area 56-F1 Piñon Hills Parks.¹ A five-member Board of Directors was elected to administrate the District.

In 2015, the District initiated an application to expand its sphere of influence to include an area that is generally bordered by El Mirage Road to the north, Sheep Creek Road to the east, Rancho Road to the South, and Tanner Road to the west within the unincorporated San Bernardino County.² This allowed the District to annex District-owned parcels in the area to avoid paying property tax and provide higher level of services to the annexation area. The annexation was completed in 2017 as LAFCO approved and adopted Resolution No. 3239.³ The District's water service area does not include the annexation area and is not anticipated to be extended to the annexation area, as properties within the annexation area generally rely on underground water wells.⁴

The District is located in the Mojave Desert, north of the San Gabriel Mountains. The District's water service boundary encompasses an area of approximately 118 square miles from the communities of Phelan and Piñon Hills.

¹ Source: https://www.pphcsd.org/uploads/8/4/9/8/84989998/resolution_2013-01.pdf

² Sources: http://www.sbcounty.gov/uploads/LAFCO/AgendaNotices/20160217/Item_5.pdf;
http://www.sbcounty.gov/uploads/lafco/Proposals/3193/3193_app_just.pdf

³ Source: <https://www.pphcsd.org/uploads/8/4/9/8/84989998/lafcoresolution3239.pdf>

⁴Source: http://www.sbcounty.gov/uploads/LAFCO/AgendaNotices/20160217/Item_5.pdf

The water distribution system of the District consists of 12 groundwater wells within the Mojave Basin Area (MBA) and one groundwater well within the Antelope Valley Adjudication Area (AVAA), 39 reservoirs, 31 active pressure reducing stations, 25 booster stations, approximately 338 miles of water lines, and three emergency interties.

3.2. Service Area Boundary Maps

The DWR recommends Suppliers to include service area boundary maps in the UWMP. Figure 3-1 presents the District's water service boundary and the community boundary. Figure 3-2 presents the District's water distribution system.

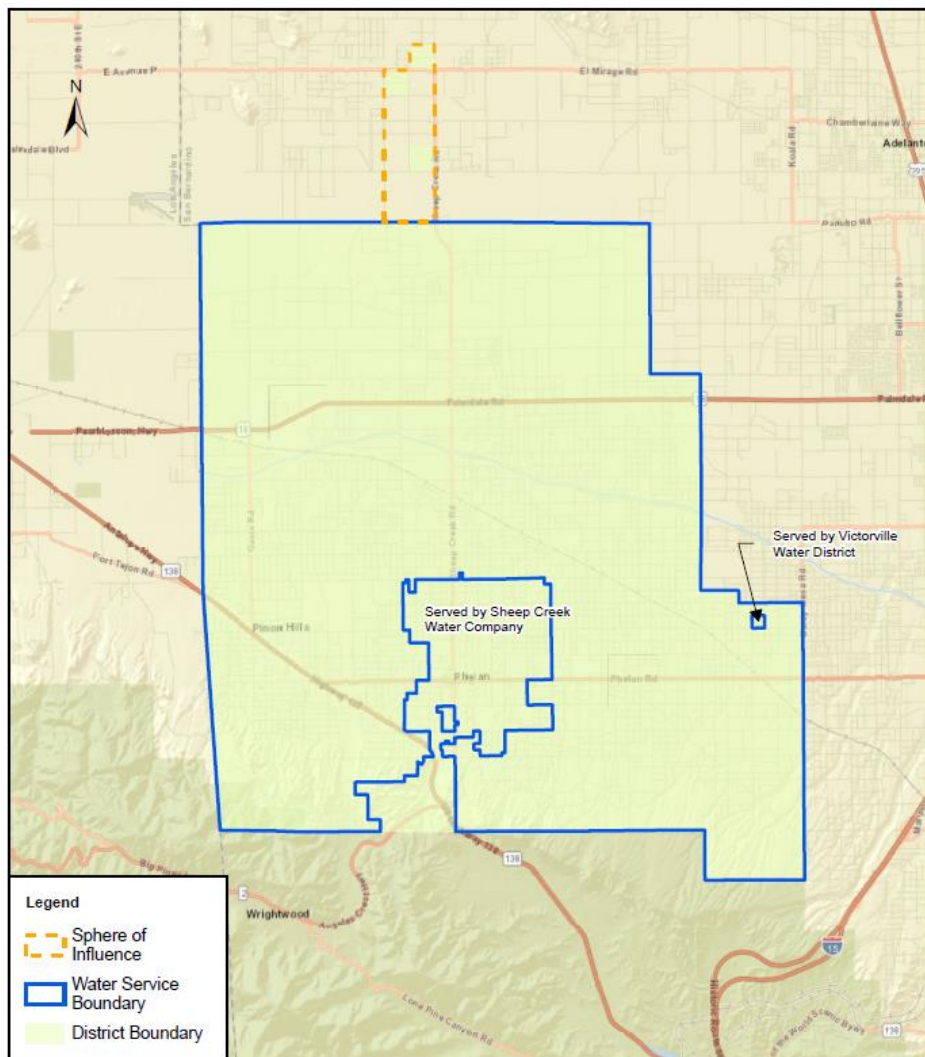


Figure 3-1. Water Service Boundary

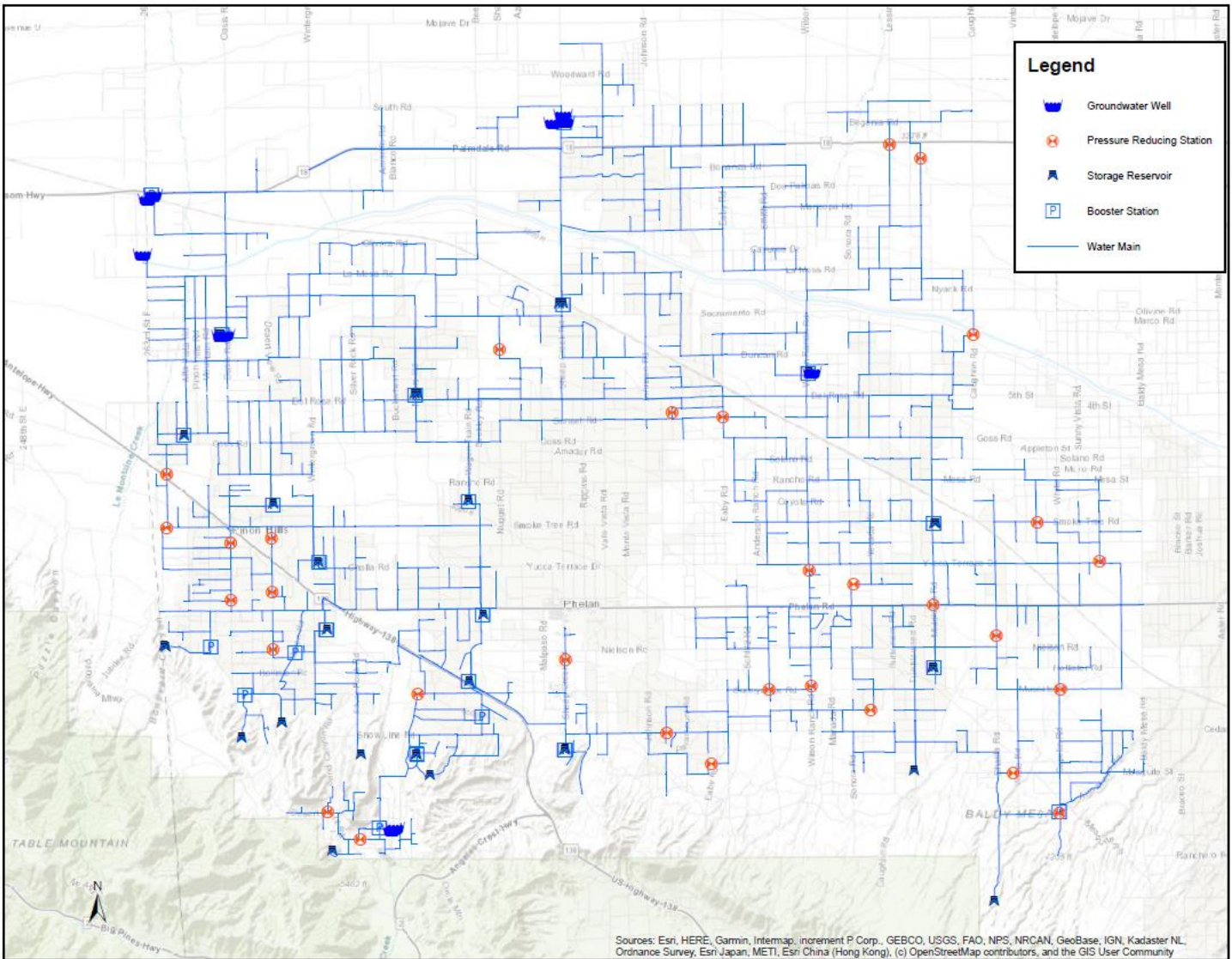


Figure 3-2. Potable Water System

3.3. Service Area Climate

CWC Section 10631(a)

A plan shall... Describe the service area of the supplier, including ... climate...

CWC Section 10630.

It is the intention of the Legislature, in enacting this part, to permit levels of water management planning... while accounting for impacts of climate change.

The District is within San Bernardino County and has a hot-summer Mediterranean Climate (Csa).⁵ According to the California Irrigation Management Information System (CIMIS)'s

⁵ Source: National Weather Service: https://www.weather.gov/jetstream/climate_max

Reference EvapoTranspiration (ETo) Map, the District is located within Zone 17 (High Desert Valleys) with an average Eto of 67.94 inches. The District usually experiences hot and dry summers with an average maximum temperature of the warmest months at approximately 98 °F. The average annual precipitation in the District’s vicinity is estimated to be 5.35 inches. The monthly historical average temperatures, precipitation, and ETo in the vicinity of the District’s service area are summarized in Table 3-1.

Table 3-1: Historical Monthly Average Climate Data Summary for the District*					
Month	Average Max Temperature (F)	Average Min. Temperature (F)	Average Temperature (F)	Average Total Precipitation (Inches)	Average Eto (inches)
January	58.95	30.21	44.58	0.96	2.22
February	62.19	33.43	47.82	1.00	3.01
March	66.91	37.05	52.00	0.77	4.98
April	74.24	42.01	58.12	0.36	6.48
May	82.19	48.16	65.18	0.11	7.98
June	91.81	54.89	73.35	0.04	9.11
July	98.22	61.47	79.85	0.14	9.53
August	97.21	60.69	78.95	0.19	8.80
September	91.35	54.62	72.99	0.22	6.55
October	80.22	44.91	62.57	0.32	4.52
November	67.46	35.08	51.24	0.48	2.74
December	59.23	29.85	44.50	0.87	2.02
Annual	77.40	44.46	60.94	5.35	67.94

* Notes: Historical temperatures and precipitation data was based on data collected for Station 049324 (VICTORVILLE PUMP PT) from January 1917 to March 2021 from the Western Regional Climate Center. Historical monthly average Eto information was based on the data collected for Station 117 (Victorville) from the California Irrigation Management Information Systems.

Based on Cal-Adapt’ s Local Climate Change Snapshot tool, the District’s annual average maximum temperature is projected to increase by approximately 4.4 °F in the next 30 years, and the average annual precipitation is projected to decrease by 0.7 inches in the next 30 years.

Further analysis of the impact of climate change are discussed in further detail in Chapter 4, 6, and 7. A discussion regarding the regional impacts of climate change on demand and supply is provided in MWA’s 2020 UWMP.

3.4. Service Area Population and Demographics

3.4.1. Service Area Population

CWC Section 10631(a)

Describe the service area of the supplier, including current and projected population ...The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available .

The District’s 2020 population and population forecast through 2045 was determined based on MWA’s Population Forecast Report- 2020 Edition (See Appendix D) for the District’s service area. This report was prepared by the UC Riverside School of Business Center for Economic Forecasting and Development that details the population projections throughout 2065 for the MWA region, subareas, and incorporated cities and towns. Population for the region was projected using a comprehensive econometric forecasting model which includes economic indicators such as residential housing stock, home prices, and employment trends. Historical population data are primarily collected from the United States decennial census and the Department of Finance (DOF). The historical population data together with DOF’s historical economic indicators were used to build a time series model. Population estimated from 2020 through 2045 for the District’s service area, in 5-year increments, is provided in Table 3-2.

Table 3-2: Population - Current and Projected						
Population Served	2020	2025	2030	2035	2040	2045(opt)
	20,836	21,136	21,465	21,744	22,003	22,245
NOTES: Based upon the Mojave Water Agency Population Forecast, included as Appendix D						

3.4.2. Other Social, Economic, and Demographic Factors

CWC 10631

Describe the service area of the supplier, including. . . other demographic factors affecting the supplier’s water management planning.

The District is primary residential and does not expect significant commercial and industrial growth. No demographic factors other than population changes are anticipated to impact the District’s water management planning.⁶

3.5. Land Uses within Service Area

CWC 10631 (a)

The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier’s water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities...

The District is a small-town community with rural natural environment. Based on the County’s parcel geodatabase, approximately 29% of the District’s area is developed, and the remaining

⁶ Source: Phelan Pinon Hills Community Service District 2019 Parks and Recreation Master Plan data from 2018

areas are vacant lands. Approximately 97% of the developed areas are residential use. Approximately 91% of the District area including developed and vacant lands are designated as Rural Living. Table 3-3 summarizes the existing land use information of the District's service area. The District does not anticipate any near-term future developments or rezoning that would alter its water planning management.

Table 3-3: Existing Land Use Summary			
Zoning	Developed (acres)	Vacant (acres)	Total (acres)
Agriculture	158	315	473
Phelan/Pinon Hills/General Commercial	192	348	540
Phelan/Pinon Hills/Neighborhood Commercial	21	51	73
Phelan/Pinon Hills/Office Commercial	0	10	10
Phelan/Pinon Hills/Service Commercial	67	71	138
Phelan/Pinon Hills/Community Industrial	89	719	807
Phelan/Pinon Hills/Institutional	49	254	303
Phelan/Pinon Hills/Multiple Residential	206	167	374
Phelan/Pinon Hills/Rural Living	18,828	32,468	51,296
Phelan/Pinon Hills/Rural Living (PRD 2008-01)	1	156	157
Phelan/Pinon Hills/Rural Living-5 Acre Minimum	2,531	19,163	21,695
Phelan/Pinon Hills/Single Residential - 14,000 square feet Minimum	33	0	34
Phelan/Pinon Hills/Single Residential -1 Acre Minimum	1,308	1,567	2,876
Rural Living	79	174	253
Rural Living-5 Acre Minimum	0		0
Resource Conservation	0	748	748
Phelan/Pinon Hills/Special Development-Commercial	46	273	319
Phelan/Pinon Hills/Special Development-Residential	160	541	701
Special Development-Commercial	11	24	35
Total	23,780	57,051	80,831

Chapter 4. Water Use Characterization

This Chapter addresses the District's historical, current, and projected water use in the service area with considerations of water use for lower income households and climate change. The District has a potable water distribution system and provides potable water to its customers. The District does not provide recycled water and is not anticipated to provide recycled water to its customers in the future. The District forecasts its water demands utilizing the population data from the MWA's Population Forecast Report and the historical water use information between 2015 and 2020.

4.1. Past, Current, and Projected Water Uses by Sector

CWC 10635

(a) Every urban water Supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

Water Code Section 10631(d)

(1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following...

(2). The water use projections shall be in the same five-year increments described in subdivision (a).

(4) (A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following: (i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections. (ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

Potable water use accounts for 100% of the District's water demands. The District's potable water use are classified into five use sectors: Single-family Residential, Multi-family Residential,

Commercial, Wholesale (Sales to Other Agencies), and Other. Due to the District’s unique rural natural environment with residents engaging in practices of animal keeping, gardening, and agriculture, agricultural water use is currently accounted for in the residential water use. The District does not have industrial water use.

Among these use sectors, single-family residential, multi-family residential, commercial, and wholesale (Sales to Other Agencies) are use sectors listed in the CWC. The District’s Institutional (and Government) water use is accounted for in the Other water use sector.

The use sector denoted as “Other” also includes water used for system maintenance and flushing inside the District’s service area. The District does not have exchanges, surface water augmentation, wetlands or wildlife habitat, or any other water demands not listed in the CWC.

Distribution system losses were reported annually by the District through the Water Loss Audit Reporting Program.

4.1.1. Past Water use

The District’s historical water use data was estimated based on the District’s water billing records and production records. The District’s water use in the past four years has shown approximately 1 to 7 percent reduction compared to the actual water use of 2,776 AF in 2015 as shown in Table 4-1.

Year	Water Use (AF)
2016	2,592
2017	2,670
2018	2,744
2019	2,632

4.1.2. Current Water Use

In the District’s 2015 UWMP, water demand for 2020 was projected to be 3,870 AF. Actual water use for 2020 was significantly less than the demand projected in the 2015 UWMP, as shown in Table 4-2. The actual water use for 2020 has increased 288 AF more compared to the average annual water use of the past four years and is most likely due to more indoor water use due to State/County lock-downs and stay-at-home precautionary measures taken by residents during the COVID-19 pandemic. Such increase in demand is expected to be temporary.

Table 4-2: Demands for Potable and Non-Potable Water - Actual

Use Type <i>(Add additional rows as needed)</i>	2020 Actual		
<p>Drop down list <i>May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool</i></p>	Additional Description <i>(as needed)</i>	Level of Treatment When Delivered <i>Drop down list</i>	Volume
Single Family		Drinking Water	2,171
Multi-Family		Drinking Water	2
Commercial		Drinking Water	94
Other	includes Construction Use and Institutional Use	Drinking Water	249
Losses		Drinking Water	432
TOTAL			2,948

4.1.3. Projected Water Use

The District’s normal water use for the next 25 years is projected based on the 2020 Actual GPCD and projected population with assumptions of ongoing water savings on existing and future customers. The actual 2020 GPCD is estimated to be 126. The projected water use incorporates water savings resulting from implementation of new plumbing codes along with consumer awareness of water conservation. The District has adopted Ordinance No. 2016-01 in March 2016 as a tool to help the District use water wisely and reduce wasteful uses of water. Current customers are assumed to have a 3% passive saving between 2020 and 2040. Future customers’ water use are assumed to be 116 GPCD between 2021 and 2030, and reduced to 111 GPCD by 2035 to account for water savings required by legislation and other factors. Projected water use for the District in 5-year increments are presented in Table 4-3.

Table 4-3: Use for Potable and Non-Potable Water - Projected						
Use Type <i>(Add additional rows as needed)</i>	Additional Description <i>(as needed)</i>	Projected Water Use <i>Report To the Extent that Records are Available</i>				
Drop down list <i>May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>		2025	2030	2035	2040	2045 (opt)
Single Family		2,184	2,199	2,206	2,213	2,236
Multi-Family		2	2	2	2	2
Commercial		94	95	95	96	96
Other		251	252	253	254	256
Losses		434	438	439	440	445
TOTAL		2,965	2,986	2,995	3,005	3,035
NOTES:						

A new requirement for the 2020 UWMP requires Suppliers to estimate a five-year drought risk assessment, and DWR recommends Suppliers to estimate the expected water demand for the next five years without drought conditions (unconstrained water demand) as a first step. The District's unconstrained water demand for the next five years are estimated as shown in Table 4-4.

Table 4-4: Projected Water Use for 2021 - 2025	
Year	Water Use (AF)
2021	2,952
2022	2,955
2023	2,958
2024	2,962
2025	2,965

4.2. Distribution System Water Losses

Water Code Section 10631(d) (1)

For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following...

(J) Distribution system water loss...

Water Code Section 10631(d) (3)

(A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

(C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.

Distribution system water losses refer to the physical potable water losses from the Suppliers storage facilities through distribution system up to the point of delivery (e.g., water meter), and is the difference between water supplied and authorized water consumption. The Senate Bill No. 555 (SB 555) adopted in 2015 requires Suppliers to submit a completed and validated water loss audit report for the previous calendar year or fiscal year annually since 2017.⁷ The District has reported its distribution system water losses in fiscal year using the American Water Works Association (AWWA) water audit software and has submitted them through the DWR's Online Submittal Tool annually. Distribution system water losses of the past five years are summarized in Table 4-5. In addition, the water loss audit reporting worksheets are provided in Appendix E. The District's projected distribution system water losses are provided in Table 4-3.

⁷ Source: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB555

Table 4-5: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss ^{1,2}
07/2015	321
07/2016	297
07/2017	339
07/2018	366
07/2019	412

¹ Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.
² Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

4.3. Water Use for Lower Income Households

CWC 10631.1

(a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

California Health and Safety Code 50079.5

(a) "Lower income households" means persons and families whose income does not exceed the qualifying limits for lower income families... In the event the federal standards are discontinued, the department shall, by regulation, establish income limits for lower income households for all geographic areas of the state at 80 percent of area median income, adjusted for family size and revised annually.

The District’s water use projections through 2040 include projected water demands for lower income single-family and multi-family households, as indicated in Table 4-6. “Lower income households” are referred to persons and families whose incomes do not exceed 80 percent of area median income based on the Guidebook. The estimated number of lower income households within the District’s service area is approximately 45 percent of its total number of households based on the billing records provided by the District, a review of median household income statistics provided by the U.S. Census Bureau’s American FactFinder, and a review of GIS maps of Disadvantaged Communities (DACs), including block groups, tracts, and places, provided by DWR.

As indicted in Table 4-2, the total projected residential (single family and multi-family) water demands within the District in 2045 is estimated at about 2,938 acre feet per year (AFY). Based

on a 45 percent use factor, the projected water use for low income households is approximately 1,322 AFY.

Table 4-6: Inclusion in Water Use Projections	
<p>Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i></p>	Yes
<p>If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.</p>	Section 4.1.3
<p>Are Lower Income Residential Demands Included In Projections? <i>Drop down list (y/n)</i></p>	Yes

4.4. Climate Change Considerations

Water Code Section 10630.

It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied, while accounting for impacts from climate change.

Water Code Section 10635(b)

Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following...

(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

Climate change is defined as the long-term change in weather patterns over a specific time. CWC now requires Suppliers to include consideration of climate change in their water use and supply projections for long-term water service reliability.

Using the data and models provided from Cal-Adapt, the following climatological factors for the area served by the District were reviewed: Maximum and Minimum temperature, Precipitation, and Evapotranspiration in extended drought conditions, data is modeled up to the year 2042.

- the Maximum and Minimum temperature is expected to rise about 5 degrees by end of 2042.

- Precipitation is expected to decrease from 6.7 to 4.7 inches by end of 2042
- Evapotranspiration is expected to decrease from 5.6 inches to 4.0 inches end of 2042

The increase in temperature and decrease in precipitation can lead to increase in water demands in the future. At the same time, the District is continuously implementing demand management measures such as educating its customers with water smart landscaping tips and other water saving tips to promote water conservation awareness and demand reduction practices. The District's water service reliability assessment on single-dry year and multiple-dry years is discussed in Chapter 7. The District's primary source of water supply is groundwater pumped from the Mojave Basin Area (MBA), which is adjudicated by MWA. A discussion regarding the regional impacts of climate change on demand and supply is provided in MWA's 2020 UWMP.

Chapter 5. SB X7-7 Baselines and Targets

This Chapter demonstrates the District's 2020 Compliance to the Water Conservation Act of 2009, Senate Bill X7-7 (SB X7-7). SB X7-7 was enacted in November 2009, requiring all urban retail water suppliers to increase water efficiency by reducing urban water use by 20 percent by the year 2020. The District's SB X7-7 baselines and water use targets were identified in the 2015 UWMP. This Chapter compares the actual water use for the year 2020 with the 2020 Target to demonstrate that the District has achieved its 2020 Target.

5.1. Baseline and 2020 Water Use Target

The District has documented its historical per capita water use in its 2010 UWMP and updated the baseline per capita water use and targets with the DWR's provided update methodologies in the 2015 UWMP.

In the 2015 UWMP, the District utilized the DWR's online Population Tool to estimate the population within the District's service area for each year during the baseline periods and for the 2015 compliance year. The District's Baseline GPCD was estimated to be 202 GPCD based on a continuous 10-year period between 1996 through 2005. The District's 2020 Target was set to be 162 GPCD based on Target Method 1, eighty percent of the Supplier's Baseline GPCD, as shown in Table 5-1. The District's SBX7-7 2020 Compliance Form was included as Appendix F.

Table 5-1: Baselines and Targets Summary <i>Retail Supplier or Regional Alliance Only</i>				
Baseline Period	Start Year	End Year	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	1996	2005	202	162
5 Year	2004	2008	180	

*All values are in Gallons per Capita per Day (GPCD)

5.2. 2020 Compliance GPCD

5.2.1. Service Area Population

The 2020 population within the District's service area is estimated to be 20,836 based on the MWA's Population Forecast Report (2020 Edition), and was used to calculate the District's 2020 Compliance GPCD. The population estimation method was discussed in Section 3.4.

5.2.2. Meeting the 2020 Target

The District does not have agricultural water use, industrial water use, or other water use that can be excluded/deducted from the gross water use per the CWC. No adjustment was made to the 2020 gross water use, and the gross water use of the 2020 compliance year is approximately 2,948 AF. The actual per capita water use for 2020 was determined to be 126 GPCD which is less than the 2020 Target of 162 GPCD, as shown in Table 5-2. Therefore, the District has achieved its 2020 Target.

Table 5-2: 2020 Compliance							
<i>Retail Supplier or Regional Alliance Only</i>							
Actual 2020 GPCD*	Optional Adjustments to 2020 GPCD Enter "0" if no adjustment is made <i>From Methodology 8</i>					2020 GPCD* <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2020? Y/N
	Extraordinary Events*	Economic Adjustment*	Weather Normalization*	TOTAL Adjustments*	Adjusted 2020 GPCD*		
126	0	0	0	0	126	126	Yes

**All values are in Gallons per Capita per Day (GPCD)*

5.3. Regional Alliance

As discussed in Chapter 2, the District’s 2020 Plan was not developed as part of a Regional Alliance. Information from the District’s 2020 Plan is not required to be reported in a Regional Alliance report.

Chapter 6. Water Supply Characterization

This Chapter discusses the District's existing and planned sources of water supply. Groundwater supply makes up 100 percent of the District's existing and planned future source of water supply. The District only purchases water from neighboring agencies via its emergency interties during emergency events.

6.1. Purchased or Imported Water

The District typically does not use purchased or imported water as its source of supply. However, the District owns three emergency interties that allows the District to exchange water during shortage or emergency. Details of these emergency interties are discussed in Section 6.7. The District did not purchase any water from the neighboring agencies in the last five years.

6.2. Groundwater

Water Code Section 10631(b)(4)

If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:

(A) The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management for basins underlying the urban water supplier's service area.

(B) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For a basin that has not been adjudicated, information as to whether the department has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to coordinate with groundwater sustainability agencies or groundwater management agencies listed in subdivision (c) of Section 10723 to maintain or achieve sustainable groundwater conditions in accordance with a groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720).

(C) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(D) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and

analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

Local groundwater supply has made up 100 percent of the District’s current water supply portfolio. The District owns 17 production wells in two groundwater adjudicated areas: the Mojave Basin Area (MBA) and the Antelope Valley Adjudication Area (AVAA). Three of the wells (20, 22, and 23) are not connected to the District’s distribution system and are not used to supply the service area. The District’s distribution system includes 13 groundwater production wells: 12 of the groundwater wells (1B, 2A, 2, 3, 5, 6A, 6B, 8, 9B, 10, 11, and 12) are located within the MBA while one (Well 14) is located within the AVAA. Wells 1B, 2A, 2, 3, 5, 6A, 6B, 8, 10, 11, and 12 are located in the Oeste Subarea of the MBA and Well 9B is located in the Alto Subarea of the MBA. The current total pumping capacity of the wells in the MBA is approximately 3,136 gallons per minute (gpm), or 5,058 AFY. The current total pumping capacity of the well in the AVAA is approximately 762 gpm, or 1,230 AFY. The District recently added Well 9A to its distribution system, and it is located in the Alto Subarea of the MBA. Well 9A has a design capacity of 150 gpm, or 242 AFY, and is anticipated to come into service by the mid-2021. The District’s groundwater pumped in the past five years are summarized in Table 6-1.

Table 6-1: Groundwater Volume Pumped						
<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
<input type="checkbox"/>	All or part of the groundwater described below is desalinated.					
Groundwater Type <i>Drop Down List</i> May use each category multiple times	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
<i>Add additional rows as needed</i>						
Alluvial Basin	Mojave Basin Area	1,821	2,285	2,567	2,629	2,781
Alluvial Basin	Antelope Valley Adjudication Area	771	385	177	3	167
TOTAL		2,592	2,670	2,744	2,632	2,948
* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.						

6.2.1. Mojave Basin Area (MBA)

Over 95% of the District's groundwater supply in 2020 were pumped from the MBA. The MBA includes the basins along the Mojave River and the adjacent areas. It is generally bounded by the San Bernardino and San Gabriel Mountains to the South, Afton Canyon to the northeast, Lucerne Valley to the east, and the Antelope Valley to the west at the San Bernardino Los Angeles County line; its adjudicated boundary encompasses approximately 3,400 square miles.⁸

The MBA was adjudicated by the Mojave Basin Area Judgment (MBA Judgment) that was settled in 1996 due to rapid growth within the area and overdraft issues. MWA was appointed as the Watermaster of the MBA, and is required to file an Annual Report with specific information detailing its activities for each water year from October to September.⁹ For management purposes, MWA subdivided the Mojave River watershed and underlying groundwater basin into five subareas, including Oeste, Alto, Este, Centro, and Baja.

The MBA is a closed basin that limits groundwater entering or exiting the basin. Natural recharge to the basin area is primarily infiltration from the Mojave River. Other sources of recharge include infiltration of runoff from the mountains and desert washes, and recharge from human activities. Investigations done by MWA and USGS has found that the MBA consists of two interconnected unconfined aquifers: a floodplain aquifer and a regional aquifer. The floodplain aquifer is composed of sand and gravel weathered from rocks of the San Gabriel and the San Bernardino Mountains.¹⁰ The regional aquifer underlies and surrounds the floodplain aquifer, and is composed of unconsolidated older alluvium and fan deposits of Pleistocene to Tertiary age.¹¹

In order to sustain the groundwater within each subarea, the MBA Judgment assigned Base Annual Production (BAP) rights to its Producers (e.g., District) using 10 acre-feet (AF) or more within the MBA based on historical production during the period of 1986-1990, and established a decreasing Free Production Allowance (FPA) for each subarea for the first five years. The FPA is a percentage of the BAP, and is set for each subarea annually by MWA beginning in the sixth year and each year thereafter. Each Producer within the area is allocated a variable FPA based on the percentage share of the FPA in each subarea. A Producer that pumps more than the assigned FPA must pay MWA a Replacement Water Assessment. The Replacement Water Assessment of each Producer is calculated by subtracting the sum of each Producer's FPA and any transferred or carryover FPA from the Producer's verified production of the year. In addition, if the minimum annual flow of the Subarea is less than the minimum amount required by the MBA Judgment, the Producers in the upstream subarea are required to pay MWA for Makeup Water to be delivered to the downstream subarea.¹²

The District pumps groundwater from the Oeste Subarea and Alto Subarea. Table 6-2 summarizes the District's groundwater production rights during Water Year 2019-2020.

⁸ Source: https://www.mojavewater.org/mojave_basin_area.html

⁹ Sources: MWA 2015 UWMP, https://www.mojavewater.org/annual_report.html

¹⁰ Source: MWA 2015 UWMP, https://www.mojavewater.org/annual_report.html

¹¹ Source: <https://ca.water.usgs.gov/mojave/>

¹² Source: Twenty-Seven Annual Report of the Mojave Basin Area Watermaster- Water Year 2019-20, March 2021

Table 6-2: Groundwater Production Rights in the Mojave Basin Area for Water Year 2019 -2020						
Subarea	BAP	FPA	Carryover From Previous Year	Transfers	Replacement Water Obligation	Makeup Water Obligation
Oeste	4,680	3,510	3,744	0	0	0
Alto	355	196	207	0	0	8
* All values are in Acre Feet (AF).						
Source: Twenty-Seven Annual Report of the Mojave Basin Area Watermaster- Water Year 2019-20, March 2021						

MWA has invested in a groundwater replenishment system to manage and help sustain the groundwater resources of the MBA since the MBA Judgment. Purchased water from the State Water Project (SWP) has been discharged to the MBA via the Mojave River Pipeline since 2006. Purchased Treated wastewater from Lake Arrowhead Community Services District, Crestline Sanitation District, Big Bear Area Regional Wastewater Agency, and Victor Valley Wastewater Reclamation Authority are also used to recharge the Mojave Basin Area.

In addition, MWA maintains a comprehensive groundwater monitoring program to track groundwater production, storage, elevations, and quality. The program consists of over 900 monitoring wells that track water production within each of its subareas. Water levels within each of the five subareas are measured by MWA and reported to the California Statewide Groundwater Elevation Monitoring (CASGEM) program. Water levels of each Subarea was reviewed by the MWA and utilized to make recommendations on FPA. Water levels in Alto Subarea indicate that extractions exceeding recharge over time with different extents in different parts of the subarea. The Alto Subarea has been prioritized for recharge per the MBA Judgment. Water levels in Oeste Subarea were observed to decline over time but has been variable but stable in the short-term.

Pursuant to the CWC 10720-10720.9, also known as the Sustainable Groundwater Management Act (SGMA), MWA uses the State of the Basin analysis, which was included in its Watermaster annual reports, for documenting sustainability of the groundwater basin. MWA conducts the consumptive use analysis annually to estimate consumptive uses of each Producer, and uses the consumptive uses estimation with other support data such as surface flow data, estimates of subsurface flows between subareas and imported water to determine the water balance for each subarea on an annual basis pursuant to the MBA Judgment.¹³ The net storage change of the MBA was determined to be deficient for 2019-2020. MWA recommended a reduction in FPA for the future to lower the threshold of Replacement Water Obligation to purchase imported water supply to offset deficits. The Twenty-Seven Annual Report of the Mojave Basin Area Watermaster- Water Year 2019-20 is included in Appendix G.

¹³ Source: Twenty-Seven Annual Report of the Mojave Basin Area Watermaster- Water Year 2019-20, March 2021

6.2.1.1.1. Antelope Valley Adjudication Area (AVAA)

The Antelope Valley Groundwater Basin is located in the western part of the Mojave Desert and encompasses approximately 1,580 square miles. Approximately two thirds of the basin lies in the Los Angeles County, a small portion lies in the San Bernardino County, and the remainder lies in Kern County. The Antelope Valley Groundwater basin is an undrained, closed basin that is composed of two primary aquifers: the upper (principal) aquifer and the lower (deep) aquifer. The principal aquifer is an unconfined aquifer that provided artesian flows because of perched water tables in some areas historically but are currently absent due to excessive groundwater pumping. The deep aquifer is separated from the principal aquifer by clay layers and is generally considered to be confined. The basin has been divided into 12 sub-basins by USGS based on faults, groundflow patterns, recharge characteristics, and geographic locations. The primary source of natural recharge to the basin is deep percolation of precipitation and runoff from surrounding mountains and hills, and the major groundwater discharge is through well pumping.¹⁴

Groundwater levels in some areas of the basin have declined significantly due to overdraft issue since early 1990s. The Antelope Valley Groundwater Basin was adjudicated by the Antelope Valley Groundwater Basin Adjudication Judgment (AVGBA Judgment) in 2015 after 15 years of complex proceedings among more than 4,000 parties including public water suppliers, landowners, small pumpers and non-pumping property owners, and the federal and state governments. Approximately 90 percent, 1,390 square miles, of the basin was adjudicated and is referred to as the Antelope Valley Area of Adjudication (AVAA). The AVGBA Judgment determined the Antelope Valley Groundwater Basin in a state of overdraft, established respective water rights among groundwater producers based on the basin's Native Safe Yield (NSY), and ordered a rampdown of production to meet the NSY by 2023. The Antelope Valley (AV) Watermaster was formed following the adjudication to implement the AVGBA Judgment including administering the adjudicated water rights and managing the groundwater resources of the area. The AVAA is comprised of five management areas: Central Antelope Valley Subarea, West Antelope Valley Subarea, South East Subarea, Willow Springs Subarea, and Rogers Lake Subarea.¹⁵

Before the adjudication, agencies in the Antelope Valley Region formed a Regional Groundwater Management Group (RGMG) for regional coordination and planning, and prepared the Integrated Regional Water Management (IRWM) Plan. The IRWM plan provides vision and direction for the sustainable management of water resources in the region and served as a functional equivalent to a Groundwater Management Plan pursuant to the Groundwater management Act (AB 3030 & SB 2002). This plan has recently been updated in 2019. With the SGMA enacted in 2014, adoption of Groundwater Management Plans is no longer required and there are a few adjudicated areas listed in CWC Section 17820.8 that are exempt from the SGMA. The Antelope Valley Groundwater Basin is currently designated as a very low-priority basin and is not subject to SGMA requirements.¹⁶ However, following the adjudication of AVAA,

¹⁴ Sources: 2019 Antelope Valley IRWMP; <https://avwatermaster.net/about-us/history/>;
<https://pubs.er.usgs.gov/publication/sir20145166>

¹⁵ Sources: 2019 Antelope Valley IRWMP

¹⁶ Sources: 2019 Antelope Valley IRWMP

the AV Watermaster prepared reports to document the progress and details regarding implementation of the AVGBA Judgment to the court annually. The annual reports were also prepared to meet the requirements specified under the SGMA.¹⁷

The AVGBA Judgment has established a NSY of 82,300 AFY and a Total Safe Yield (TSY) of 110,000 AFY for the AVAA. NSY includes estimates of natural recharge plus return flows from groundwater use, and TSY is the sum of NSY plus the imported water return flows. Producers were allocated with ramped down water rights based on different classes to balance extraction and recharge.¹⁸

There is an on-going water level monitoring program conducted by USGS over approximately 185 wells within and adjacent to the AVAA. This program complies with the CASGEM program. The AV Watermaster works with USGS and other agencies for subsidence monitoring and evaluates groundwater level data to determine the groundwater conditions annually. Most wells indicate an overall declining trend to different extents over the 23-year period, but it is still too early to draw conclusion on the effects of the AVGBA Judgment as it is the second year of rampdown.¹⁹

Approximately 5% of the District's groundwater supply in 2020 was from the AVAA. The District is classified under "Other Rights to Produce Groundwater", that is, the District does not have a production right but is allowed to pump up to 1,200 AFY from its Well 14 provided such use does not cause Material Injury. The District is required to pay a Replacement Water Assessment and any other costs needed to protect Production Rights defined in the AVGBA Judgment on all water produced and exported. The District's replacement obligation for 2019 is 3.16 AF based on the Antelope Valley Watermaster's Final 2019 Annual Report, which is included in Appendix H.

6.2.2. Surface Water

The District does not use surface water to meet its water demands.

6.2.3. Stormwater

The District does not use stormwater to meet its water demands.

6.2.4. Wastewater and Recycled Water

The District does not use recycled water as its source of water supply and lacks the infrastructure to deliver recycled water to its customers. The District does not have a wastewater collection and treatment system. All customers discharge their wastewater into septic tanks.²⁰

6.2.5. Desalinated Water

The District does not use desalinated water to meet its water demands. The State Water Resources Control Board (SWRCB) the Division of Drinking Water (DDW) recommends the consumer acceptance contaminants levels for Total Dissolved Solids (TDS) ranging from 500

¹⁷ Source: Antelope Valley Watermaster Final 2019 Annual Report

¹⁸ Antelope Valley Watermaster Final 2019 Annual Report

¹⁹ Source: Antelope Valley Watermaster Final 2019 Annual Report

²⁰ The District's 2015 UWMP

milligrams per liter (mg/l) to 1,500 mg/L per the Secondary Drinking Water Standards.²¹ Groundwater pumped from the District wells has acceptable total dissolved solids (TDS) concentrations and does not require desalination. The TDS levels detected from the past five years ranged from 260 mg/l to 660 mg/l with an average level of 395 mg/L.²² Due to both the District location and quality of the groundwater, the District does not anticipate investigating opportunities for desalinated water .

6.2.6. Water Exchanges and Transfers

Water Code Section 10631(c)

Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

The District has three emergency interties that allows the District to purchase water from and/or transfer water to its neighboring agencies during an emergency event, as summarized in Table 6-3.

Intertie	Location	Agency	Estimated Capacity (gpm)	Notes
County Special Districts Zone J Intertie	Mesquite St. and Baldy Mesa Rd.	SB County CSA 70 Zone J	~ 450	<ul style="list-style-type: none"> • Give and Take • One meter for each direction. • Need boosting to obtain water and need to open a valve to deliver water • Feeds Tank 4C
Victorville Water District Intertie	Acacia Rd. and Caughlin Rd.	Victorville Water District	~ 600	<ul style="list-style-type: none"> • Emergency use only, meter belongs to VWD • Receive water from VWD only
Sheep Creek Water Company Intertie	Reservoir 6A	Sheep Creek Water Company	N/A	Emergency use only, water flows both directions.

6.2.7. Future Water Projects

Water Code Section 10631 (f)

Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected

²¹ Source: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/ddw_secondary_standards.pdf

²² Source: 2015 – 2019 Annual Consumer Confidence Reports

water use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in normal and single dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

The District has rehabbed a new well (Well 9A) to its distribution system. Well 9A is anticipated to come into service by mid-2021. The additional well will increase the District's pumping capacity by 242 AFY and increase the service reliability.

In addition, the District is planning to conduct a pilot study using drone with thermal imaging technologies to detect water leaks in the system and reduce the system's water loss.

The District is currently working with MWA on a pilot recharge project in the Oeste Subarea within the District's service area. This study will characterize surface infiltration rates, subsurface hydrogeologic zones and properties, groundwater levels, hydraulic properties, and alluvial sediments to identify a suitable place for recharge facilities.

6.3. Summary of Existing and Planned Sources of Water

Water Code 10631

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following...

(b) (2) When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.

(h) An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

As discussed in Sections 6.1 and 6.2, the District utilizes its groundwater supply to meet existing demand, as presented in Table 6-4. The District is anticipated to utilize its groundwater supply to meet future demand on a regular basis as presented in Table 6-5. Groundwater pumped from MBA will be the primary source of supply, and groundwater pumped from the AVAA will be

utilized as an emergency source. The District continues its efforts on water use efficiency and coordinates with MWA on regional water planning. A discussion regarding the regional impacts of climate change on demand and supply are provided in MWA's 2020 UWMP.

Table 6-4: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2020		
<i>Drop down list</i> <i>May use each category multiple times.</i> <i>These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		Actual Volume	Water Quality <i>Drop Down List</i>	Total Right or Safe Yield <i>(optional)</i>
<i>Add additional rows as needed</i>				
Groundwater (not desalinated)	Mojave River Basin	2781	Drinking Water	
Groundwater (not desalinated)	Antelope Valley	167	Drinking Water	
Total		2,948		0

Table 6-5: Water Supplies — Projected

Table 6-5: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply <i>Report To the Extent Practicable</i>									
		2025		2030		2035		2040		2045 (opt)	
<i>Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
<i>Add additional rows as needed</i>											
Groundwater (not desalinated)	Mojave River Basin	2,083		2,098		2,104		2,112		2,133	
Groundwater (not desalinated)	Antelope Valley	882		888		891		893		902	
Total		2,965	0	2,986	0	2,995	0	3,005	0	3,035	0

6.4. Energy Intensity

Water Code 10631.2. (a)

In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:

- (1) An estimate of the amount of energy used to extract or divert water supplies.*
- (2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.*
- (3) An estimate of the amount of energy used to treat water supplies.*
- (4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.*
- (5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.*
- (6) An estimate of the amount of energy used to place water into or withdraw from storage.*
- (7) Any other energy-related information the urban water supplier deems appropriate.*

A new requirement for the 2020 UWMP requires Suppliers to include energy related information including but not limited to the methods and data used to measure and calculate the amount of energy used for the water management processes, which includes extraction, distribution, placement into storage, conveyance, treatment, and distribution. There are various reporting methods identified in Appendix O of the Guidebook. Based on the available information, the District selects the Total Utility Approach to report its energy use for the water management process, as presented in Table 6-6. The energy use reported herein includes energy used by well pumps and booster stations based on the District's metered data.

The District has worked with SunPower to build a 1.2-megawatt solar power system on a retired dairy farm. The solar power system came in service on September 30, 2015. The solar power system generates electricity that is put back into the Southern California Edison (SCE)'s power grid. The District receives energy credits from the generated electricity. The credits are used to offset the District operational water-related electricity costs through the SCE's Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) program.²³ In 2020, the electricity generated by the solar power system offset nearly 50% of the water system's total energy consumption.

²³ Source: <https://us.sunpower.com/commercial-solar/luminary-series-phelan-pinon-hills-community-services-district>

Table 6-6: Recommended Energy Reporting - Total Utility Approach (Submittal Table O-1B)				
Enter Start Date for Reporting Period	1/1/2020	Urban Water Supplier Operational Control		
End Date	12/30/2020			
Is upstream embedded in the values reported?		Sum of All Water Management Processes	Non-Consequential Hydropower	
Water Volume Units Used	AF	Total Utility	Hydropower	Net Utility
	<i>Volume of Water Entering Process (volume unit)</i>	2,948	0	2,948
	<i>Energy Consumed (kWh)</i>	5,512,880	0	5,512,880
	<i>Energy Intensity (kWh/volume)</i>	1,870	0.0	1,870
Quantity of Self-Generated Renewable Energy				
	2,656,803 kWh			
Note: Based on metered data.				

Chapter 7. Water Service Reliability and Drought Risk Assessment

This Chapter addresses the District's water service reliability under normal, single dry, and five consecutive dry years through 2045 by integrating the District's water supply portfolio and water use characterization. This chapter also includes a Drought Risk Assessment on the District's supply reliability over the next five years under continuous drought condition. The District plans to maximize its local groundwater supply for its planned future source of supply and provides as needed water to its customers. The District has sufficient supply to meet the demand under various hydrologic conditions over the next 25 years.

7.1. Water Service Reliability Assessment

Water Code Section 10635(a)

Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

California has experienced a prolonged drought beginning in December 2011 and ending in March 2019 per the National Integrated Drought Information System (NIDIS). The most intense drought period was between 2014 and 2017. As of April 2021, the County of San Bernardino has been designated by the U.S. Department of Agriculture (USDA) to be in a drought-state from a Crop Year perspective.²⁴ Similarly, per NOAA Drought Monitor²⁵, the County has entered a D2 (Severe Drought) and D3 (Extreme Drought) drought intensity. The District is within the D2 area. In order to plan for long-term water service reliability, the District assesses its planned sources of supply, water use characterization, and demand reduction options to determine the expected water service reliability under a normal year, a single dry year, and five consecutive dry years projections through 2045 in 5 year increment.

²⁴ Source: <https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/disaster-designation-information/index>; <https://www.drought.gov/states/california/county/san%20bernardino>

²⁵ <https://www.climate.gov/maps-data/data-snapshots/data-source-drought-monitor>

7.1.1. Constraints on Water Sources

Water Code section 10631 (b) (1)

A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.

As mentioned in Chapter 6, groundwater supply makes up 100 percent of the District’s source of supply portfolio. A majority of its groundwater supply is pumped from the MBA, and a small portion of groundwater supply is pumped from the AVAA. The District’s groundwater supply reliability is based on the water supply reliability of MBA and AVAA. Both MBA and AVAA are adjudicated and are managed by MWA and the AV Watermaster, respectively.

The District’s groundwater supply from MBA is mostly pumped from the Oeste Subarea, and the remainder is pumped from the Alto Subarea. Net change in storage in MBA was determined to be in deficit for water year 2019-20. Groundwater supply conditions in the Oeste Subarea is considered stable over the past 19 years. Groundwater supply conditions of the Alto Subarea for the past 9 years have been dry and water level will decline if the dry condition continues. In order to balance demand and replenish past overdraft, MWA assesses the water supply conditions for MBA annually to determine the annual change in storage by subarea, determines the Replacement Water Obligations, and makes recommendations to the Court for adjusting the FPA for each subarea in the upcoming year (See Section 6.2.1 for more details). MWA recharges the basin with imported water from the SWP and reclaimed water from outside MWA’s service area to help sustain the groundwater supply. The District’s water rights in MBA for the upcoming two years are summarized in Table 7-1.

Table 7-1: Groundwater Production Rights in the Mojave Basin Area				
Water Year	Subarea	BAP	FPA	Carryover From Previous Year
2020-21	Oeste	4,680	3,042	3,510
	Alto	355	196	111
2021-22*	Oeste	4,680	2,808	-
	Alto	355	196	-
* All values are in Acre Feet (AF).				
Source: Twenty-Seven Annual Report of the Mojave Basin Area Watermaster- Water Year 2019-20, March 2021				
* The 2021-22 FPA are subject to court approval.				

A small portion of the District’s groundwater supply is pumped from South East Subarea of the AVAA. Significant declines in groundwater volume has been estimated between 2016 and 2019 in the South East Subarea. Similar to MBA, the AV Watermaster manages the groundwater resources, assesses the AVAA’s water supply conditions through its monitoring program,

determines the Replacement Water Obligations, and makes recommendations to the Court for adjusting the NSY and imported water return flow percentage beginning in 2034. AV Watermaster recharges imported water from the SWP and recycled water to AVAA for long-term groundwater sustainability. Per the AVAA Judgment, the District is allowed to pump up to 1,200 AFY from Well 14 and pay a Replacement Water Assessment on all water produced and exported.

The District plans to utilize its groundwater rights in the MBA and uses groundwater pumped from the MBA as the primary source of supply. The District will use the groundwater pumped from AVAA as an alternative source.

As required by the State Water Resources Control Board (SWRCB), the District prepares Annual Consumer Confidence Report (CCR) with water quality information on its supply on an annual basis. Water is examined for regulated water contaminants with a primary drinking water standard or secondary drinking water standard, and unregulated water contaminants that may have adverse health effects. Groundwater from the District's wells are of good quality, and meets the State's current drinking water standard.

The current Maximum Concentration Level (MCL) for Total Chromium is 50 milligram per liter ($\mu\text{g/L}$) under the primary drinking water standard. The State Water Board is in the process of evaluating whether the MCL for Hexavalent Chromium (Chromium-6) will need to change. In the event the State reduces the MCL of Chromium-6 to 10 $\mu\text{g/L}$, groundwater pumped from Wells 3, 12, and 14 may be affected. The District has found that well profiling has helped existing wells meet regulatory standards and will consider using the same technology for any future wells impacted with Chromium-6. The District's 2015 to 2019 CCRs are provided as Appendix I.

7.1.2. Year Type Characterization

Water service reliability for the next 25 years are analyzed under three hydrologic scenarios: normal year, single-dry year, and five consecutive dry years. The base years selected for normal, single dry, and five-consecutive dry years for the District, as presented in Table 7-2, are based on the historical precipitation data in the vicinity of the past 20 years.

Calendar year 2011 which had a total precipitation of about 4.8 inches represents a normal year for the District. Calendar year 2013 which had a total precipitation of about 2.0 inches represents a single dry year for the District. Calendar years 2013 to 2017 which had annual precipitation of about 2.0 inches, 1.8 inches, 4.6 inches, 5 inches, and 3.8 inches, respectively, represent five consecutive dry years.

Table 7-2: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year <i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020</i>	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	2011	2899	100%
Single-Dry Year	2013	3156	109%
Consecutive Dry Years 1st Year	2013	3156	109%
Consecutive Dry Years 2nd Year	2014	3140	108%
Consecutive Dry Years 3rd Year	2015	2776	96%
Consecutive Dry Years 4th Year	2016	2595	90%
Consecutive Dry Years 5th Year	2017	2671	93%
<p>Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.</p>			

7.1.3. Water Service Reliability

Water Code Section 10635(a)

Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

District customers have historically conserved water especially during prolonged drought periods resulting in decline in water demand since 2015. This was mainly prompted by multiple statewide emergency water conservation regulations that went into effect during that period and the

continuous efforts that the District has taken to curtail demand. Such efforts included but not limiting to adopting a water conservation ordinance, outreach and providing residents with water conservation tips, and implementing water saving incentive programs. Most customers within the District’s service area have changed their lawns to water-smart landscaping. In addition, the State continues to implement long-term water conservation and water use efficiency measures to prepare for unpredictable droughts and climate change, making water conservation a way of life in California.

Based on the historical groundwater production data over the past five years, the District’s groundwater supply remains stable. The historical purchases of water such as in 2014 and 2015 were mainly during emergencies caused by vandalism and pump failure. Per MWA’s 2020 UWMP, the groundwater supply in the region is reliable under normal year, single dry year, and five consecutive dry years conditions for the next 25 years. The District’s current groundwater pumping capacity in MBA is 5,058 AFY, and will soon increase to 5,300 AFY with the addition of a new well (Well 9A). The District’s groundwater pumping capacity in AVAA is approximately 1,230 AFY. In addition, the District is allowed to produce as much water as it needs from MBA annually to meet its demand as long as it complies with the Physical Solution set forth in the MBA Judgement. The District anticipates no reduction in local water supplies during a single dry year or five consecutive dry years for the next 25 years as the projected water demands are below the District’s pumping capacity.

The historical production for the normal water year in 2011 (2,899 AF) and during the Single dry year in 2013 (3,156 AF) and for five consecutive dry years from 2013 to 2017 (3,156 AF, 3,140 AF, 2,776 AF, 2595 AF, and 2671 AF, respectively) were used to estimate the projected water demands during single dry years and five consecutive dry years period.

Supply and demand assessment under normal, single, and five consecutive dry years are summarized in Table 7-3, Table 7-4, and Table 7-5, respectively. As such, the District can reliably meet water demands during any year type over the next 25 years.

Table 7-3 : Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals	2,965	2,986	2,995	3,005	3,035
Demand totals	2,965	2,986	2,995	3,005	3,035
Difference	0	0	0	0	0

7-4: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals	3,228	3,251	3,261	3,272	3,305
Demand totals	3,228	3,251	3,261	3,272	3,305
Difference	0	0	0	0	0

Table 7-5: Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045 (Opt)
First year	Supply totals	3,228	3,251	3,261	3,272	3,305
	Demand totals	3,228	3,251	3,261	3,272	3,305
	Difference	0	0	0	0	0
Second year	Supply totals	3,212	3,234	3,244	3,255	3,288
	Demand totals	3,212	3,234	3,244	3,255	3,288
	Difference	0	0	0	0	0
Third year	Supply totals	2,839	2,859	2,868	2,878	2,907
	Demand totals	2,839	2,859	2,868	2,878	2,907
	Difference	0	0	0	0	0
Fourth year	Supply totals	2,654	2,673	2,681	2,690	2,717
	Demand totals	2,654	2,673	2,681	2,690	2,717
	Difference	0	0	0	0	0
Fifth year	Supply totals	2,732	2,751	2,759	2,769	2,797
	Demand totals	2,732	2,751	2,759	2,769	2,797
	Difference	0	0	0	0	0

7.1.4. Description of Management Tools and Options

Water Code Section 10620(f)

An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

As mentioned in Chapter 6 and Section 7.1, the District's primary source of water supply is local groundwater pumped from MBA and AVAA. The District will utilize groundwater from MBA and only pump groundwater as needed to meet water use. Both MBA and AVAA are adjudicated groundwater basins and managed by MWA and AV Watermaster, respectively, on an annual basis. The District coordinates with MWA for groundwater banking program and other programs that will help sustain the groundwater supply in the region. In addition, the District continues its efforts on water use efficiency and water conservation for demand reduction. Demand management measures are discussed in Chapter 9.

7.2. Drought Risk Assessment

Water Code Section 10635(b)

Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following:

- (1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.*
- (2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.*
- (3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.*
- (4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.*

7.2.1. Data, Methods, and Basis for Water Shortage Condition

A new requirement to the 2020 UWMP is to prepare a drought risk assessment (DRA) for the next five years based on the five driest consecutive years on record with consideration of plausible changes in climate, regulations, and other locally applicable criteria. The DRA evaluates the District's sources of supplies during stressed hydrologic conditions in relation to

variations in customer water use, help identify undesired risk, and allow proactive steps to be taken before the next actual prolonged drought. The District selected years 2013 to 2017 to represent its water supply during the five driest consecutive years. As mentioned in Section 7.1.3, the District’s groundwater supply remained stable based on historical groundwater production data of the past five years. The groundwater supply in the region is reliable with a combination of natural supply, imported water, water banking program, water conservation, and water reuse and transfers of FPA among parties under normal year, single dry year, and five consecutive dry years for the next 25 years per MWA’s 2020 UWMP and the AV Watermaster’s 2019 Annual Report. The District’s current groundwater pumping capacity in MBA is 5,058 AFY, and will soon increase to 5,300 AFY. The District’s groundwater pumping capacity in AVAA is approximately 1,230 AFY. In addition, the District is allowed to produce as much water as it needs from MBA annually to meet its demand as long as it complies with the Physical Solution set forth in the MBA Judgement.

7.2.2.DRA Water Source Reliability

The District utilizes the DWR’s optional Planning Tool to characterize the expected quantity and reliability of its water supply sources for each year over the next five consecutive driest years, as shown in Table 7-6. The District estimates that its supply capacities are expected to exceed its projected demand use, but the District will pump groundwater as needed to meet its demands.

Table 7-4: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)

2021	Total
Gross Water Use	3,217
Total Supplies	3,217
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0

2022	Total
Gross Water Use [Use Worksheet]	3,188
Total Supplies [Supply Worksheet]	3,188
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0

Table 7-4: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)

2023	Total
Gross Water Use [Use Worksheet]	2,833
Total Supplies [Supply Worksheet]	2,833
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0%

2024	Total
Gross Water Use [Use Worksheet]	2,656
Total Supplies [Supply Worksheet]	2,656
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0%

2025	Total
Gross Water Use [Use Worksheet]	2,745
Total Supplies [Supply Worksheet]	2,745
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0%

Chapter 8. Water Shortage Contingency Plan

As part of the 2020 UWMP, Suppliers are required to prepare and adopt a Water Shortage Contingency Plan (WSCP) with the elements specified in CWC. The District's WSCP is a standalone document that helps the District to proactively respond and mitigate water supply shortages due to droughts or other conditions. The WSCP is included in Appendix J.

Chapter 9. Demand Management Measures

This Chapter describes the demand management measures (DMM) implemented by the District to improve water service reliability and water use efficiency. The District continues its efforts on implementing water conservation programs and works collaboratively with MWA to provide water rebates and water saving incentive programs for its customers.

9.1. Existing Demand Management Measures for Retail Supplier

Water Code Section 10631

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

(v) Programs to assess and manage distribution system real loss.

(vi) Water conservation program coordination and staffing support.

(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

The District is a member of the Alliance for Water Awareness and Conservation (AWAC) which was formed of over 20 agencies within the MWA service area committing to achieve water conservation goals. MWA is a signatory of the Memorandum of Understanding regarding Urban Water Conservation in California (MOU) and is a member of the California Urban Water Conservation Council (CUWCC). Although the District is not a member of the CUWCC, as a member of MWA, the District's customers can participate in MWA's conservation efforts.

9.1.1. Water Waste Prevention Ordinances

The District adopted Ordinance 2016-01 (Water Conservation Ordinance) that established water conservation measures including water waste prevention measures, included in Appendix K.

9.1.2. Metering

Water Code Section 526

(a) Notwithstanding any other provisions of law, an urban water supplier that, on or after January 1, 2004, receives water from the federal Central Valley Project under a water service contract or subcontract... shall do both of the following:

(1) On or before January 1, 2013, install water meters on all service connections to residential and nonagricultural commercial buildings... located within its service area.

Water Code section 527

(a) An urban water supplier that is not subject to Section 526 shall do both the following:

(1) Install water meters on all municipal and industrial service connections located within its service area on or before January 1, 2025.

All the District's water service connections are provided with water meters. The District meters are classified within one of five sectors: single family residential, multi-family residential, commercial, wholesale, and others. District customers are billed a fixed amount every month based on meter size and charged for the water used.

9.1.3. Conservation Pricing

The District implements a two-tier water rate structure for its water service to encourage water conservation. Customers whose water use fall into the lower tier are billed at a lower rate.

9.1.4. Public Education and Outreach

Customers in the district service area are educated on water conservation via the District's public information programs.

- Website - Information on water conservation is displayed on the District website which includes but not limited to conservation ordinance, water saving tips for indoor use, outdoor use, and landscaping, State conservation and rebate resources, and methods to detect leaks.
- Signs – The District posts signs in its service area to inform its customers on water conservation measures
- Door Hangers - Notifications with information on water conservation which informs customers on concepts such as turf removal, water leaks, and evaporative cooler repair and maintenance
- Water Conservation Kits – The District provides customers with kits to improve the customers' water conservation. The kit may include shower heads and timers, leak detection tablets, faucet aerators, and hose nozzles
- School Programs – The District has outreach programs for schools and individual sessions for classrooms.
- Water Conservation Booth – During the community fairs of Phelan Phun Days, the District sets a booth to inform customers on water conservation and water saving devices.

The District provides following information session in collaboration with MWA:

- ABC's of Water

MWA has an on-going Strategic Partners Program which sets aside funds to assist community projects that promote water resource education and water conservation projects such as demonstration gardens designed to teach the public about native plants and water-wise gardening, scholarships for water-related classes, water saving projects, etc.

9.1.5. Programs to Assess and Manage Distribution System Real Loss

The District uses AWWA's M36 Manual Water Audits and Loss Control Program recommendation to develop water loss control methods. Using meters sales and water production the District can track water losses. The District sends notifications to customers who have continuous water use and provide water use audits to address leak issues. The water audits includes information on smart water practices, visual leak checks, and smart metering tools. The District maintains communications with audited customers to verify the leak repair. The District has conducted a pilot study on approximately 2% of the District's Automatic Meter Reading (AMR) meters and found leakage issues on these meters. As a result, the District is in the progress of replacing its AMR meters into Advanced Metering Infrastructure (AMI) meters with customer portals that allow customers to track their daily water use online. The District is anticipated to replace all the AMR meters to AMI meters in four years. In addition, the District has service line and meter replacement programs, control valve rebuilding program, and a practice of adding mechanical seals to pumps that aims to reduce the system's water loss.

9.1.6. Water Conservation Program Coordination and Staffing Support

The District has a water conservation specialist with supporting staff to perform enforcement and water conservation outreach activities. The District coordinates with MWA in preparing reports, annual conservation budgets, conservation elements, etc. regarding regional conservation programs.

9.1.7. Other Demand Management Measures

The District has identified its high users and has conducted specialized outreach to this group to encourage water conservation and water efficiency.

Rebate Programs are offered by the District via AWAC, which are the following: Cash for Grass, Weather based Irrigation Controller, and High efficiency toilet replacement rebate programs. In addition, the District offers a Mulch program to its customers to reduce irrigation.

9.2. Reporting Implementation

9.2.1. Implementation Over the Past Five Years

Water Code Section 10631

(e) Provide a description of the supplier's water demand management measures.

This description shall include all of the following:

(1)(A) For an urban retail water supplier, ...a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years..

The following are DMMs the District has had over the past 5 years:

- *Water Waste Prevention Ordinances* – State’s Executive Order B-29-15 caused the creation of Ordinances 2015-01, 2015-02, 2016-01, and Resolution 2015-17 and 2016-02 (See Appendix K) to impose mandatory emergency water conservation regulations. Ordinance 2016-01 has superseded Ordinance 2015-02 and 2015-01.
- *Metering* – See Section 9.1.2
- *Conservation Pricing* - As discussed in Section 9.1.3
- *Public Education and Outreach* – As discussed in Section 9.1.4
- *Programs to Assess and Manage Distribution System Real Loss* – As discussed in Section 9.1.5, see Chapter 4 for water loss summary.
- *Water Audits* – as discussed in Section 9.1.5
- *Water Conservation Program Coordination and Staffing Support* – As described in Section 9.1.6
- *Other Demand Management Measures* – As discussed in Section 9.1.7

9.2.2. Planned Implementation to Achieve Water Use Targets

Water Code Section 10631

(e)(1)(A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

With implementation of the conservation programs and water use efficiency measures, the District’s water consumption reduced over the past five years and the actual per capita water use of 2020 is 25% less than the 2020 Target. The District is planning to develop District Meter Areas (DMAs) to better quantify non-revenue water by monitoring the amount of water entering an area and comparing to water sales. The District is also planning to purchase a drone with thermal imagery technology to detect water leaks in the system. The District will continue to implement water conservation programs and work collaboratively with MWA to maintain current or lower per capita water use in order to meet its conservation goals.

Chapter 10. Plan Adoption, Submittal, and Implementation

This Chapter describes the UWMP adoption process, UWMP Submittal, and UWMP implementation.

10.1. Inclusion of all 2020 Data

This 2020 UWMP includes the data of the compliance year 2020 on a calendar year basis as mentioned in Chapter 2.

10.2. Notice of Public Hearing

Water Code Section 10621

(b) Every urban water supplier required to prepare a plan shall...at least 60 days prior to the public hearing on the plan...notify any city or county within which the supplier provides waters supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

Water Code Section 10642

...The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area...

District coordinated its preparation of the Urban Water Management Plan with the MWA and County of San Bernardino. These agencies were notified at least sixty (60) days prior to the public hearing of the preparation of the 2020 UWMP and WSCP. Copies of the notification letters are provided in Appendix L.

A notice of the public hearing for the District 2020 UWMP and WSCP was sent to MWA, County of San Bernardino, and District customers. Copies of the notice of the public hearing are provided in Appendix M.

Table 10-1 summarizes the agencies that have been notified by the District regarding the preparation of the 2020 UWMP and WSCP and the public hearing for the 2020 UWMP and WSCP.

Table 10-1: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
San Bernardino County	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
San Bernardino County	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
Notes: Phelan Piñon Hills Community Services District serves the census-designated places of Phelan and Piñon Hills. Notifications were submitted to the County of San Bernardino in-lieu of a city.		

10.2.1. Notice to the Public

Water Code Section 10642

...Prior to adopting either [the plan or water shortage contingency plan], the urban water supplier shall make both of the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code [see below]. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies.

Government Code section 6066

Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.

All individuals and agencies involved in the District service area were invited to participate in the preparation of the District 2020 UWMP. The Notice of Public Hearing was posted on the District websites and in the District office on May 27, 2021, and was published in the Mountaineer Progress on May 27, 2021, June 3, 2021, and June 10, 2021. A copy of the 2020 Urban Water Management Plan and Water Shortage Contingency plan has been available to view on the District website and in the District office. Copies of the notice are in Appendix P.

10.3. Public Hearing and Adoption

Water Code Section 10642

…Prior to adopting either, the [plan or water shortage contingency plan], the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon.

Water Code Section 10608.26

(a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20 for determining its urban water use target.

10.3.1. Public Hearing

The District held a public hearing as one of the agenda items at the District's regularly scheduled Board Meeting on June 16, 2021. District staff presented the highlights of the 2020 UWMP such as the District's water use targets, achieving the 2020 Target, future supply and demand projections, and demand management measures on water savings. In addition, the District addressed and responded to the received comments regarding the Draft UWMP during the public hearing.

10.3.2. Adoption

Water Code Section 10642

…After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing.

The District adopted the 2020 UWMP and the WSCP after the completion of the public hearing. A copy of the Resolution 2021-13 adopting the 2020 UWMP and the WSCP is provided in Appendix N.

10.4. Plan Submittal

Water Code Section 10621

(e) Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021…

Water Code Section 10644

(a)(1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption.

Water Code Section 10635

(a) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

10.4.1. Submitting UWMP and WSCP to DWR

Once adopted by District Council within 30 days of its adoption and by July 1, 2021. Phelan Pinon Hills Community Service District will submit its 2020 UWMP and WSCP via DWR's Water Use Efficiency (WUE) Data Online Submittal Tool.

10.4.2. Electronic Data Submittal

Water Code Section 10644 (a) (2)

The plan, or amendments to the plan, submitted to the department ... shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

As mentioned in section 10.4.1 the District will submit its UWMP alongside all required submittal tables using DWR's WUE Data Online Submittal Tool website.

10.4.3. Submitting UWMP to the California State Library

Once the District 2020 UWMP has been adopted by District Board, a copy of the plan will be submitted within 30 days to the California State Library to the following address:

Regular Mail-

*California State Library
Government Publications Section
Attention: Coordinator, Urban Water Management Plans
P.O. Box 942837
Sacramento, CA 94237-0001*

if delivered by courier or overnight carrier to the State Library, the following street address will be used instead of the P.O. Box-

*California State Library
Government Publications Section
Attention: Coordinator, Urban Water Management Plans
900 N Street
Sacramento, CA 95814*

The District will maintain a copy on hand of the letter to the State Library.

10.4.4. Submitting UWMP to Cities and Counties

Within 30 days of the plan adoption, copies of the plan will be distributed to the County of San Bernardino Registrar and Records Office, and the District Clerks Office. The District will maintain a copy of the letters sent to the Cities and Counties.

10.5. Public Availability

Water Code Section 10621 (c)

An urban water supplier regulated by the Public Utilities Commission shall include its most recent plan and water shortage contingency plan as part of the supplier's general rate case filings.

Once the submission to DWR is completed, the 2020 UWMP will be available for public viewing and uploaded to the District website within 30 days.

10.6. Notification to Public Utilities Commission

Water Code Section 10621 (c)

An urban water supplier regulated by the Public Utilities Commission shall include its most recent plan and water shortage contingency plan as part of the supplier's general rate case filings.

10.7. Amending an Adopted UWMP

Water Code Section 10621

(d) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

Water Code Section 10644

(a) (1) Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

Should the District need to amend the 2020 UWMP, the amended plan will be approved and adopted by the District Board. Once adopted, the amended plan will be submitted following the same process as laid out in Sections 10.2 to 10.6.

10.7.1. Amending WSCP

Water Code Section 10644 (b)

If an urban water supplier revises its water shortage contingency plan, the supplier shall submit to the department a copy of its water shortage contingency plan prepared no later than 30 days after adoption, in accordance with protocols for submission and using electronic reporting tools developed by the department.

The District's WSCP will follow the procedures as stated in Sections 10.1 to 10.6.

Appendix A. California Water Code – Urban Water Management Planning

This material is for informational purposes only and not to be used in place of official California Water Code (Water Code).

This document presents updated sections of Water Code as of January 1, 2020, as compiled by DWR staff. The selection focuses on the portions of code directly relevant to preparation of the urban water management plan and contextually relevant to urban water suppliers and the Department of Water Resources (DWR). This includes the Urban Water Management Planning Act and the Sustainable Water Use and Demand Reduction (SB X7-7), and more. Further legislative information is available on the California Legislative Information website at

<https://leginfo.legislature.ca.gov/>.

The following Water Code sections are included in this appendix.

- **Sustainable Water Use and Demand Reduction (SB X7-7)
Water Code Division 6, Part 2.55**
 - **Chapter 1. General Declarations and Policy**, Sections 10608 – 10608.8
 - **Chapter 2. Definitions**, Section 10608.12
 - **Chapter 3. Urban Retail Water Suppliers**, Sections 10608.16 – 10608.44
 - **Chapter 4. Agricultural Water Suppliers**, Section 10608.48
 - **Chapter 5. Sustainable Water Management**, Section 10608.50
 - **Chapter 6. Standardized Data Collection**, Section 10608.52
 - **Chapter 7. Funding Provisions**, Sections 10608.56 – 10608.60
 - **Chapter 8. Quantifying Agricultural Water Use Efficiency**, Section 10608.64

- **Urban Water Management Planning Act
Water Code Division 6, Part 2.6**
 - **Chapter 1. General Declaration and Policy**, Sections 10610 – 10610.4
 - **Chapter 2. Definitions**, Sections 10611 – 10618
 - **Chapter 3. Urban Water Management Plans**
 - Article 1. General Provisions, Sections 10620 – 10621
 - Article 2. Contents of Plans, Sections 10630 – 10634
 - Article 2.5. Water Service Reliability, Section 10635
 - Article 3. Adoption and Implementation of Plans, Sections 10640 – 10645
 - **Chapter 4. Miscellaneous Provisions**, Sections 10650 – 10657

**PART 2.55. SUSTAINABLE WATER USE AND DEMAND REDUCTION
CHAPTER 1. General Declaration and Policy [10608 – 10608.8]**

10608. The Legislature finds and declares all of the following:

- (a) Water is a public resource that the California Constitution protects against waste and unreasonable use.
- (b) Growing population, climate change, and the need to protect and grow California’s economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.
- (c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.
- (d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve streamflows, and reduce greenhouse gas emissions.
- (e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.
- (f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time,

providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.

- (g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.
- (h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.
- (i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

10608.4. It is the intent of the Legislature, by the enactment of this part, to do all of the following:

- (a) Require all water suppliers to increase the efficiency of use of this essential resource.
- (b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.
- (c) Measure increased efficiency of urban water use on a per capita basis.
- (d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.
- (e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.
- (f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.

- (g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.
- (h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.
- (i) Require implementation of specified efficient water management practices for agricultural water suppliers.
- (j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.
- (k) Advance regional water resources management.

10608.8. (a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.

(2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an administrative proceeding. This paragraph shall become inoperative on January 1, 2021.

(3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.

- (b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.
- (c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population

growth may have greater effects on water use. This part does not limit the economic productivity of California's agricultural, commercial, or industrial sectors.

- (d) The requirements of this part do not apply to an agricultural water supplier that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect. After the expiration of the Quantification Settlement Agreement, to the extent conservation water projects implemented as part of the Quantification Settlement Agreement remain in effect, the conserved water created as part of those projects shall be credited against the obligations of the agricultural water supplier pursuant to this part.

CHAPTER 2. Definitions [10608.12]

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

- (a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.
- (b) "Base daily per capita water use" means any of the following:
 - (1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.
 - (2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the

calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

- (3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.
- (c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.
- (d) "CII water use" means water used by commercial water users, industrial water users, institutional water users, and large landscape water users.
- (e) "Commercial water user" means a water user that provides or distributes a product or service.
- (f) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.
- (g) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.
- (h) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:
- (1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.
 - (2) The net volume of water that the urban retail water supplier places into long-term storage.
 - (3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.
 - (4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.
- (i) "Industrial water user" means a water user that is primarily a

manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

- (j) "Institutional water user" means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.
- (k) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.
- (l) "Large landscape" means a nonresidential landscape as described in the performance measures for CII water use adopted pursuant to Section 10609.10.
- (m) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.
- (n) "Performance measures" means actions to be taken by urban retail water suppliers that will result in increased water use efficiency by CII water users. Performance measures may include, but are not limited to, educating CII water users on best management practices, conducting water use audits, and preparing water management plans. Performance measures do not include process water.
- (o) "Potable reuse" means direct potable reuse, indirect potable reuse for groundwater recharge, and reservoir water augmentation as those terms are defined in Section 13561.
- (p) "Process water" means water used by industrial water users for producing a product or product content or water used for research and development. Process water includes, but is not limited to, continuous manufacturing processes, and water used for testing, cleaning, and maintaining equipment. Water used to cool machinery or buildings used in the manufacturing process or necessary to maintain product quality or chemical characteristics for product manufacturing or control rooms, data centers, laboratories, clean rooms, and other industrial facility units that

are integral to the manufacturing or research and development process is process water. Water used in the manufacturing process that is necessary for complying with local, state, and federal health and safety laws, and is not incidental water, is process water. Process water does not mean incidental water uses.

- (q) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050.
- (r) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:
 - (1) The capture and reuse of stormwater or rainwater.
 - (2) The use of recycled water.
 - (3) The desalination of brackish groundwater.
 - (4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.
- (s) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.
- (t) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.
- (u) "Urban water use objective" means an estimate of aggregate efficient water use for the previous year based on adopted water use efficiency standards and local service area characteristics for that year, as described in Section 10609.20.
- (v) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.
- (w) "Urban wholesale water supplier" means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

CHAPTER 3. Urban Retail Water Suppliers [10608.16 – 10608.44]

10608.16. (a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.

- (1) The state shall make incremental progress towards the state target specified in subdivision (a) by reducing urban per capita water use by at least 10 percent on or before December 31, 2015.

10608.20. (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

- (2) It is the intent of the Legislature that the urban water use targets described in paragraph (1) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

- (1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.
- (2) The per capita daily water use that is estimated using the sum of the following performance standards:
 - (A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2017 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.
 - (B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail

water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of

subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

- (d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.
- (e) An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.
- (f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.
- (g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).
- (h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:
 - (A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

- (B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.
- (2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its internet website, and make written copies available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.
- (i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.
- (2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.
- (j) (1) An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow the use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.
- (2) An urban wholesale water supplier whose urban water management plan prepared pursuant to Part 2.6 (commencing with Section 10610) was due and not submitted in 2010 is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water

supplier and urban retail water suppliers.

10608.22. Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

10608.24. (a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

- (b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.
- (c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.
- (d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:
 - (A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.
 - (B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.
 - (C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.
- (2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.
- (e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial

percentage of industrial water use in its service area may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.

- (f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.
 - (2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26. (a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

- (1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.
 - (2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.
 - (3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.
- (b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.
- (c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's implementation plan for complying with this part shall consider the conservation of that military installation under

federal Executive Order 13514.

(d) (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

(2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28. (a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

- (1) Through an urban wholesale water supplier.
- (2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).
- (3) Through a regional water management group as defined in Section 10537.
- (4) By an integrated regional water management funding area.
- (5) By hydrologic region.
- (6) Through other appropriate geographic scales for which computation methods have been developed by the

department.

- (b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

10608.32. All costs incurred pursuant to this part by a water utility regulated by the Public Utilities Commission may be recoverable in rates subject to review and approval by the Public Utilities Commission, and may be recorded in a memorandum account and reviewed for reasonableness by the Public Utilities Commission.

10608.34. (a) (1) On or before January 1, 2017, the department shall adopt rules for all of the following:

- (A) The conduct of standardized water loss audits by urban retail water suppliers in accordance with the method adopted by the American Water Works Association in the third edition of Water Audits and Loss Control Programs, Manual M36 and in the Free Water Audit Software, version 5.0.
- (B) The process for validating a water loss audit report prior to submitting the report to the department. For the purposes of this section, "validating" is a process whereby an urban retail water supplier uses a technical expert to confirm the basis of all data entries in the urban retail water supplier's water loss audit report and to appropriately characterize the quality of the reported data. The validation process shall follow the principles and terminology laid out by the American Water Works Association in the third edition of Water Audits and Loss Control Programs, Manual M36 and in the Free Water Audit Software, version 5.0. A validated water loss audit report shall include the name and technical qualifications of the person engaged for validation.
- (C) The technical qualifications required of a person to

- engage in validation, as described in subparagraph (B).
- (D) The certification requirements for a person selected by an urban retail water supplier to provide validation of its own water loss audit report.
- (E) The method of submitting a water loss audit report to the department.
- (2) The department shall update rules adopted pursuant to paragraph (1) no later than six months after the release of subsequent editions of the American Water Works Association's Water Audits and Loss Control Programs, Manual M36. Except as provided by the department, until the department adopts updated rules pursuant to this paragraph, an urban retail water supplier may rely upon a subsequent edition of the American Water Works Association's Water Audits and Loss Control Programs, Manual M36 or the Free Water Audit Software.
- (b) (1) On or before October 1 of each year until October 1, 2023, each urban retail water supplier reporting on a calendar year basis shall submit a completed and validated water loss audit report for the previous calendar year or the previous fiscal year as prescribed by the department pursuant to subdivision (a).
- (2) On or before January 1 of each year until January 1, 2024, each urban retail water supplier reporting on a fiscal year basis shall submit a completed and validated water loss audit report for the previous fiscal year as prescribed by the department pursuant to subdivision (a).
- (3) On or before January 1, 2024, and on or before January 1 of each year thereafter, each urban retail water supplier shall submit a completed and validated water loss audit report for the previous calendar year or previous fiscal year as part of the report submitted to the department pursuant to subdivision (a) of Section 10609.24 and as prescribed by the department pursuant to subdivision (a).
- (4) Water loss audit reports submitted on or before October 1, 2017, may be completed and validated with assistance as described in subdivision (c).

- (c) Using funds available for the 2016–17 fiscal year, the board shall contribute up to four hundred thousand dollars (\$400,000) towards procuring water loss audit report validation assistance for urban retail water suppliers.
- (d) Each water loss audit report submitted to the department shall be accompanied by information, in a form specified by the department, identifying steps taken in the preceding year to increase the validity of data entered into the final audit, reduce the volume of apparent losses, and reduce the volume of real losses.
- (e) At least one of the following employees of an urban retail water supplier shall attest to each water loss audit report submitted to the department:
 - (1) The chief financial officer.
 - (2) The chief engineer.
 - (3) The general manager.
- (f) The department shall deem incomplete and return to the urban retail water supplier any final water loss audit report found by the department to be incomplete, not validated, unattested, or incongruent with known characteristics of water system operations. A water supplier shall resubmit a completed water loss audit report within 90 days of an audit being returned by the department.
- (g) The department shall post all validated water loss audit reports on its internet website in a manner that allows for comparisons across water suppliers. The department shall make the validated water loss audit reports available for public viewing in a timely manner after their receipt.
- (h) Using available funds, the department shall provide technical assistance to guide urban retail water suppliers' water loss detection programs, including, but not limited to, metering techniques, pressure management techniques, condition-based assessment techniques for transmission and distribution pipelines, and utilization of portable and permanent water loss detection devices.
- (i) No earlier than January 1, 2019, and no later than July 1, 2020, the board shall adopt rules requiring urban retail water suppliers to meet performance standards for the volume of water losses. In

adopting these rules, the board shall employ full life-cycle cost accounting to evaluate the costs of meeting the performance standards. The board may consider establishing a minimum allowable water loss threshold that, if reached and maintained by an urban water supplier, would exempt the urban water supplier from further water loss reduction requirements.

10608.35. (a) The department, in coordination with the board, shall conduct necessary studies and investigations and make a recommendation to the Legislature, by January 1, 2020, on the feasibility of developing and enacting water loss reporting requirements for urban wholesale water suppliers.

(b) The studies and investigations shall include an evaluation of the suitability of applying the processes and requirements of Section 10608.34 to urban wholesale water suppliers.

(c) In conducting necessary studies and investigations and developing its recommendation, the department shall solicit broad public participation from stakeholders and other interested persons.

10608.36. Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

10608.40. Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

10608.42. (a) The department shall review the 2015 urban water management plans and report to the Legislature by July 1, 2017, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.

- (b) A report to be submitted pursuant to subdivision (a) shall be submitted in compliance with Section 9795 of the Government Code.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

- (a) Appropriate metrics for evaluating commercial, industrial, and institutional water use.
- (b) Evaluation of water demands for manufacturing processes, goods, and cooling.
- (c) Evaluation of public infrastructure necessary for delivery of recycled water to the commercial, industrial, and institutional sectors.
- (d) Evaluation of institutional and economic barriers to increased recycled water use within the commercial, industrial, and institutional sectors.
- (e) Identification of technical feasibility and cost of the best management practices to achieve more efficient water use statewide in the commercial, industrial, and institutional sectors that is consistent with the public interest and reflects past investments in water use efficiency.

10608.44. Each state agency shall reduce water use at facilities it operates to support urban retail water suppliers in meeting the target identified in

Section 10608.16.

CHAPTER 4. Agricultural Water Suppliers [10608.48]

10608.48. (a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

- (b) Agricultural water suppliers shall implement both of the following critical efficient management practices:
 - (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).
 - (2) Adopt a pricing structure for water customers based at least in part on quantity delivered.
- (c) Agricultural water suppliers shall implement additional efficient management practices, including, but not limited to, practices to accomplish all of the following, if the measures are locally cost effective and technically feasible:
 - (1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.
 - (2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.
 - (3) Facilitate the financing of capital improvements for on-farm irrigation systems.
 - (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) Improved management of environmental resources.
 - (F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.
- (5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.
 - (6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.
 - (7) Construct and operate supplier spill and tailwater recovery systems.
 - (8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.
 - (9) Automate canal control structures.
 - (10) Facilitate or promote customer pump testing and evaluation.
 - (11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.
 - (12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:
 - (A) On-farm irrigation and drainage system evaluations.
 - (B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.
 - (C) Surface water, groundwater, and drainage water quantity and quality data.
 - (D) Agricultural water management educational programs and materials for farmers, staff, and the public.
 - (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.
 - (14) Evaluate and improve the efficiencies of the supplier's

pumps.

- (d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.
- (e) The department shall require information about the implementation of efficient water management practices to be reported using a standardized form developed pursuant to Section 10608.52. (f) An agricultural water supplier may meet the requirements of subdivisions (d) and (e) by submitting to the department a water conservation plan submitted to the United States Bureau of Reclamation that meets the requirements described in Section 10828.
- (f) On or before December 31, 2013, December 31, 2016, and December 31, 2021, the department, in consultation with the board, shall submit to the Legislature a report on the agricultural efficient water management practices that have been implemented and are planned to be implemented and an assessment of the manner in which the implementation of those efficient water management practices has affected and will affect agricultural operations, including estimated water use efficiency improvements, if any.
- (g) The department may update the efficient water management practices required pursuant to subdivision (c), in consultation with the Agricultural Water Management Council, the United States Bureau of Reclamation, and the board. All efficient water management practices for agricultural water use pursuant to this chapter shall be adopted or revised by the department only after the department conducts public hearings to allow participation of the diverse geographical areas and interests of the state.

- (h) (1) The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).
- (2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

CHAPTER 5. Sustainable Water Management [10608.50]

10608.50. (a) The department, in consultation with the board, shall promote implementation of regional water resources management practices through increased incentives and removal of barriers consistent with state and federal law. Potential changes may include, but are not limited to, all of the following:

- (1) Revisions to the requirements for urban and agricultural water management plans.
- (2) Revisions to the requirements for integrated regional water management plans.
- (3) Revisions to the eligibility for state water management grants and loans.
- (4) Revisions to state or local permitting requirements that increase water supply opportunities, but do not weaken water quality protection under state and federal law.
- (5) Increased funding for research, feasibility studies, and project construction.
- (6) Expanding technical and educational support for local land use and water management agencies.

- (b) No later than January 1, 2011, and updated as part of the California Water Plan, the department, in consultation with the board, and with public input, shall propose new statewide targets, or review and update existing statewide targets, for regional water resources management practices, including, but not limited to, recycled water, brackish groundwater desalination, and infiltration and direct use of urban stormwater runoff.

CHAPTER 6. Standardized Data Collection [10608.52]

10608.52. (a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision (a) of Section 10608.28.

- (b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24 and an agricultural water supplier's compliance with implementation of efficient water management practices pursuant to subdivision (a) of Section 10608.48. The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

CHAPTER 7. Funding Provisions [10608.56 – 10608.60]

10608.56. (a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

- (b) On and after July 1, 2013, an agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.
- (c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita

reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

- (d) Notwithstanding subdivision (b), the department shall determine that an agricultural water supplier is eligible for a water grant or loan even though the supplier is not implementing all of the efficient water management practices described in Section 10608.48, if the agricultural water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the efficient water management practices. The supplier may request grant or loan funds to implement the efficient water management practices to the extent the request is consistent with the eligibility requirements applicable to the water funds.
- (e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.
- (f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

10608.60. (a) It is the intent of the Legislature that funds made available by Section 75026 of the Public Resources Code should be expended, consistent with Division 43 (commencing with Section 75001) of the Public

Resources Code and upon appropriation by the Legislature, for grants to implement this part. In the allocation of funding, it is the intent of the Legislature that the department give consideration to disadvantaged communities to assist in implementing the requirements of this part.

- (b) It is the intent of the Legislature that funds made available by Section 75041 of the Public Resources Code, should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for direct expenditures to implement this part.

CHAPTER 8. Quantifying Agricultural Water Use Efficiency [10608.64]

10608.64. The department, in consultation with the Agricultural Water Management Council, academic experts, and other stakeholders, shall develop a methodology for quantifying the efficiency of agricultural water use. Alternatives to be assessed shall include, but not be limited to, determination of efficiency levels based on crop type or irrigation system distribution uniformity. On or before December 31, 2011, the department shall report to the Legislature on a proposed methodology and a plan for implementation. The plan shall include the estimated implementation costs and the types of data needed to support the methodology. Nothing in this section authorizes the department to implement a methodology established pursuant to this section.

PART 2.55. SUSTAINABLE WATER USE AND DEMAND REDUCTION [10608 – 10609.42]

CHAPTER 9. Urban Water Use Objectives and Water Use Reporting [10609 – 10609.38]

10609. (a) The Legislature finds and declares that this chapter establishes a method to estimate the aggregate amount of water that would have been delivered the previous year by an urban retail water supplier if all that water had been used efficiently. This estimated aggregate water use is the urban retail water supplier's urban water use objective. The method is based on water use efficiency standards and local service area characteristics for that year. By comparing the amount of water actually used in the previous year with the urban water use objective, local urban water suppliers will be in a better position to help eliminate unnecessary use of water; that is, water used in excess of that needed to accomplish the intended beneficial use.

- (b) The Legislature further finds and declares all of the following:
- (1) This chapter establishes standards and practices for the following water uses:
 - (A) Indoor residential use.
 - (B) Outdoor residential use.
 - (C) CII water use.
 - (D) Water losses.
 - (E) Other unique local uses and situations that can have a material effect on an urban water supplier's total water use.
 - (2) This chapter further does all of the following:
 - (A) Establishes a method to calculate each urban water use objective.
 - (B) Considers recycled water quality in establishing efficient irrigation standards.
 - (C) Requires the department to provide or otherwise identify data regarding the unique local conditions to support the calculation of an urban water use objective.
 - (D) Provides for the use of alternative sources of data if alternative sources are shown to be as accurate as, or more accurate than, the data provided by the department.
 - (E) Requires annual reporting of the previous year's water use with the urban water use objective.
 - (F) Provides a bonus incentive for the amount of potable recycled water used the previous year when comparing the previous year's water use with the urban water use objective, of up to 10 percent of the urban water use objective.
 - (3) This chapter requires the department and the board to solicit broad public participation from stakeholders and other interested persons in the development of the standards and the adoption of regulations pursuant to this chapter.

- (4) This chapter preserves the Legislature’s authority over long-term water use efficiency target setting and ensures appropriate legislative oversight of the implementation of this chapter by doing all of the following:
 - (A) Requiring the Legislative Analyst to conduct a review of the implementation of this chapter, including compliance with the adopted standards and regulations, accuracy of the data, use of alternate data, and other issues the Legislative Analyst deems appropriate.
 - (B) Stating legislative intent that the director of the department and the chairperson of the board appear before the appropriate Senate and Assembly policy committees to report on progress in implementing this chapter.
 - (C) Providing one-time-only authority to the department and board to adopt water use efficiency standards, except as explicitly provided in this chapter. Authorization to update the standards shall require separate legislation.
- (c) It is the intent of the Legislature that the following principles apply to the development and implementation of long-term standards and urban water use objectives:
 - (1) Local urban retail water suppliers should have primary responsibility for meeting standards-based water use targets, and they shall retain the flexibility to develop their water supply portfolios, design and implement water conservation strategies, educate their customers, and enforce their rules.
 - (2) Long-term standards and urban water use objectives should advance the state’s goals to mitigate and adapt to climate change.
 - (3) Long-term standards and urban water use objectives should acknowledge the shade, air quality, and heat-island reduction benefits provided to communities by trees through the support of water-efficient irrigation practices that keep trees healthy.

- (4) The state should identify opportunities for streamlined reporting, eliminate redundant data submissions, and incentivize open access to data collected by urban and agricultural water suppliers.

10609.2. (a) The board, in coordination with the department, shall adopt long-term standards for the efficient use of water pursuant to this chapter on or before June 30, 2022.

(b) Standards shall be adopted for all of the following:

- (1) Outdoor residential water use.
- (2) Outdoor irrigation of landscape areas with dedicated irrigation meters in connection with CII water use.
- (3) A volume for water loss.

(c) When adopting the standards under this section, the board shall consider the policies of this chapter and the proposed efficiency standards' effects on local wastewater management, developed and natural parklands, and urban tree health. The standards and potential effects shall be identified by May 30, 2022. The board shall allow for public comment on potential effects identified by the board under this subdivision.

(d) The long-term standards shall be set at a level designed so that the water use objectives, together with other demands excluded from the long-term standards such as CII indoor water use and CII outdoor water use not connected to a dedicated landscape meter, would exceed the statewide conservation targets required pursuant to Chapter 3 (commencing with Section 10608.16).

(e) The board, in coordination with the department, shall adopt by regulation variances recommended by the department pursuant to Section 10609.14 and guidelines and methodologies pertaining to the calculation of an urban retail water supplier's urban water use objective recommended by the department pursuant to Section 10609.16.

10609.4. (a) (1) Until January 1, 2025, the standard for indoor residential water use shall be 55 gallons per capita daily.

(2) Beginning January 1, 2025, and until January 1, 2030, the

standard for indoor residential water use shall be the greater of 52.5 gallons per capita daily or a standard recommended pursuant to subdivision (b).

(3) Beginning January 1, 2030, the standard for indoor residential water use shall be the greater of 50 gallons per capita daily or a standard recommended pursuant to subdivision (b).

(b) (1) The department, in coordination with the board, shall conduct necessary studies and investigations and may jointly recommend to the Legislature a standard for indoor residential water use that more appropriately reflects best practices for indoor residential water use than the standard described in subdivision (a). A report on the results of the studies and investigations shall be made to the chairpersons of the relevant policy committees of each house of the Legislature by January 1, 2021, and shall include information necessary to support the recommended standard, if there is one. The studies and investigations shall also include an analysis of the benefits and impacts of how the changing standard for indoor residential water use will impact water and wastewater management, including potable water usage, wastewater, recycling and reuse systems, infrastructure, operations, and supplies.

(2) The studies, investigations, and report described in paragraph (1) shall include collaboration with, and input from, a broad group of stakeholders, including, but not limited to, environmental groups, experts in indoor plumbing, and water, wastewater, and recycled water agencies.

10609.6. (a) (1) The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, standards for outdoor residential use for adoption by the board in accordance with this chapter.

(2) (A) The standards shall incorporate the principles of the model water efficient landscape ordinance adopted by the department pursuant to the Water Conservation in Landscaping Act (Article 10.8 (commencing with Section 65591) of Chapter 3 of Division 1 of Title 7 of the Government Code).

(B) The standards shall apply to irrigable lands.

- (C) The standards shall include provisions for swimming pools, spas, and other water features. Ornamental water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, shall be analyzed separately from swimming pools and spas.
- (b) The department shall, by January 1, 2021, provide each urban retail water supplier with data regarding the area of residential irrigable lands in a manner that can reasonably be applied to the standards adopted pursuant to this section.
- (c) The department shall not recommend standards pursuant to this section until it has conducted pilot projects or studies, or some combination of the two, to ensure that the data provided to local agencies are reasonably accurate for the data's intended uses, taking into consideration California's diverse landscapes and community characteristics.

10609.8. (a) The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, standards for outdoor irrigation of landscape areas with dedicated irrigation meters or other means of calculating outdoor irrigation use in connection with CII water use for adoption by the board in accordance with this chapter.

- (b) The standards shall incorporate the principles of the model water efficient landscape ordinance adopted by the department pursuant to the Water Conservation in Landscaping Act (Article 10.8 (commencing with Section 65591) of Chapter 3 of Division 1 of Title 7 of the Government Code).
- (c) The standards shall include an exclusion for water for commercial agricultural use meeting the definition of subdivision (b) of Section 51201 of the Government Code.

10609.9. For purposes of Sections 10609.6 and 10609.8, "principles of the model water efficient landscape ordinance" means those provisions of the model water efficient landscape ordinance applicable to the establishment or determination of the amount of water necessary to efficiently irrigate both new and existing landscapes. These provisions include, but are not limited to, all of the following:

- (a) Evapotranspiration adjustment factors, as applicable.
- (b) Landscape area.
- (c) Maximum applied water allowance.
- (d) Reference evapotranspiration.
- (e) Special landscape areas, including provisions governing evapotranspiration adjustment factors for different types of water used for irrigating the landscape.

10609.10. (a) The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, performance measures for CII water use for adoption by the board in accordance with this chapter.

- (b) Prior to recommending performance measures for CII water use, the department shall solicit broad public participation from stakeholders and other interested persons relating to all of the following:
 - (1) Recommendations for a CII water use classification system for California that address significant uses of water.
 - (2) Recommendations for setting minimum size thresholds for converting mixed CII meters to dedicated irrigation meters, and evaluation of, and recommendations for, technologies that could be used in lieu of requiring dedicated irrigation meters.
 - (3) Recommendations for CII water use best management practices, which may include, but are not limited to, water audits and water management plans for those CII customers that exceed a recommended size, volume of water use, or other threshold.
- (c) Recommendations of appropriate performance measures for CII water use shall be consistent with the October 21, 2013, report to the Legislature by the Commercial, Industrial, and Institutional Task Force entitled "Water Use Best Management Practices," including the technical and financial feasibility recommendations provided in that report, and shall support the economic productivity of California's commercial, industrial, and institutional sectors.

- (d) (1) The board, in coordination with the department, shall adopt performance measures for CII water use on or before June 30, 2022.

- (a) Each urban retail water supplier shall implement the performance measures adopted by the board pursuant to paragraph (1).

10609.12. The standards for water loss for urban retail water suppliers shall be the standards adopted by the board pursuant to subdivision (i) of Section 10608.34.

10609.14. (a) The department, in coordination with the board, shall conduct necessary studies and investigations and, no later than October 1, 2021, recommend for adoption by the board in accordance with this chapter appropriate variances for unique uses that can have a material effect on an urban retail water supplier's urban water use objective.

- (b) Appropriate variances may include, but are not limited to, allowances for the following:
 - (1) Significant use of evaporative coolers.
 - (2) Significant populations of horses and other livestock.
 - (3) Significant fluctuations in seasonal populations.
 - (4) Significant landscaped areas irrigated with recycled water having high levels of total dissolved solids.
 - (5) Significant use of water for soil compaction and dust control.
 - (6) Significant use of water to supplement ponds and lakes to sustain wildlife.
 - (7) Significant use of water to irrigate vegetation for fire protection.
 - (8) Significant use of water for commercial or noncommercial agricultural use.
- (c) The department, in recommending variances for adoption by the board, shall also recommend a threshold of significance for each recommended variance.
- (d) Before including any specific variance in calculating an urban retail water supplier's water use objective, the urban retail water supplier shall request and receive approval by the board for the inclusion of that variance.
- (e) The board shall post on its Internet Web site all of the following:

- (1) A list of all urban retail water suppliers with approved variances.
- (2) The specific variance or variances approved for each urban retail water supplier.
- (3) The data supporting approval of each variance.

10609.15. To help streamline water data reporting, the department and the board shall do all of the following:

- (a) Identify urban water reporting requirements shared by both agencies, and post on each agency's Internet Web site how the data is used for planning, regulatory, or other purposes.
- (b) Analyze opportunities for more efficient publication of urban water reporting requirements within each agency, and analyze how each agency can integrate various data sets in a publicly accessible location, identify priority actions, and implement priority actions identified in the analysis.
- (c) Make appropriate data pertaining to the urban water reporting requirements that are collected by either agency available to the public according to the principles and requirements of the Open and Transparent Water Data Act (Part 4.9 (commencing with Section 12400)).

10609.16. The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, guidelines and methodologies for the board to adopt that identify how an urban retail water supplier calculates its urban water use objective. The guidelines and methodologies shall address, as necessary, all of the following:

- (a) Determining the irrigable lands within the urban retail water supplier's service area.
- (b) Updating and revising methodologies described pursuant to subparagraph (A) of paragraph (1) of subdivision (h) of Section 10608.20, as appropriate, including methodologies for calculating the population in an urban retail water supplier's service area.
- (c) Using landscape area data provided by the department or alternative data.

- (d) Incorporating precipitation data and climate data into estimates of a urban retail water supplier's outdoor irrigation budget for its urban water use objective.
- (e) Estimating changes in outdoor landscape area and population, and calculating the urban water use objective, for years when updated landscape imagery is not available from the department.
- (f) Determining acceptable levels of accuracy for the supporting data, the urban water use objective, and compliance with the urban water use objective.

10609.18. The department and the board shall solicit broad public participation from stakeholders and other interested persons in the development of the standards and the adoption of regulations pursuant to this chapter. The board shall hold at least one public meeting before taking any action on any standard or variance recommended by the department.

10609.20. (a) Each urban retail water supplier shall calculate its urban water use objective no later than January 1, 2024, and by January 1 every year thereafter.

- (b) The calculation shall be based on the urban retail water supplier's water use conditions for the previous calendar or fiscal year.
- (c) Each urban water supplier's urban water use objective shall be composed of the sum of the following:
 - (1) Aggregate estimated efficient indoor residential water use.
 - (2) Aggregate estimated efficient outdoor residential water use.
 - (3) Aggregate estimated efficient outdoor irrigation of landscape areas with dedicated irrigation meters or equivalent technology in connection with CII water use.
 - (4) Aggregate estimated efficient water losses.
 - (5) Aggregate estimated water use in accordance with variances, as appropriate.
- (d) (1) An urban retail water supplier that delivers water from a groundwater basin, reservoir, or other source that is augmented by potable reuse water may adjust its urban water use objective by a bonus incentive calculated pursuant to this subdivision.

- (2) The water use objective bonus incentive shall be the volume of its potable reuse delivered to residential water users and to landscape areas with dedicated irrigation meters in connection with CII water use, on an acre-foot basis.
- (3) The bonus incentive pursuant to paragraph (1) shall be limited in accordance with one of the following:
 - (A) The bonus incentive shall not exceed 15 percent of the urban water supplier's water use objective for any potable reuse water produced at an existing facility.
 - (B) The bonus incentive shall not exceed 10 percent of the urban water supplier's water use objective for any potable reuse water produced at any facility that is not an existing facility.
- (4) For purposes of this subdivision, "existing facility" means a facility that meets all of the following:
 - (A) The facility has a certified environmental impact report, mitigated negative declaration, or negative declaration on or before January 1, 2019.
 - (B) The facility begins producing and delivering potable reuse water on or before January 1, 2022.
 - (C) The facility uses microfiltration and reverse osmosis technologies to produce the potable reuse water.
- (e)
 - (1) The calculation of the urban water use objective shall be made using landscape area and other data provided by the department and pursuant to the standards, guidelines, and methodologies adopted by the board. The department shall provide data to the urban water supplier at a level of detail sufficient to allow the urban water supplier to verify its accuracy at the parcel level.
 - (2) Notwithstanding paragraph (1), an urban retail water supplier may use alternative data in calculating the urban water use objective if the supplier demonstrates to the department that the alternative data are equivalent, or superior, in quality and accuracy to the data provided by the department. The department may provide technical assistance to an urban retail water supplier in evaluating whether the alternative data are appropriate for use in calculating the supplier's urban water use objective.

10609.21. (a) For purposes of Section 10609.20, and notwithstanding paragraph (4) of subdivision (d) of Section 10609.20, "existing facility" also includes the North City Project, phase one of the Pure Water San Diego Program, for which an environmental impact report was certified on April 10, 2018.

(b) This section shall become operative on January 1, 2019.

10609.22. (a) An urban retail water supplier shall calculate its actual urban water use no later than January 1, 2024, and by January 1 every year thereafter.

(b) The calculation shall be based on the urban retail water supplier's water use for the previous calendar or fiscal year.

(c) Each urban water supplier's urban water use shall be composed of the sum of the following:

- (1) Aggregate residential water use.
- (2) Aggregate outdoor irrigation of landscape areas with dedicated irrigation meters in connection with CII water use.
- (3) Aggregate water losses.

10609.24. (a) An urban retail water supplier shall submit a report to the department no later than January 1, 2024, and by January 1 every year thereafter. The report shall include all of the following:

- (1) The urban water use objective calculated pursuant to Section 10609.20 along with relevant supporting data.
- (2) The actual urban water use calculated pursuant to Section 10609.22 along with relevant supporting data.
- (3) Documentation of the implementation of the performance measures for CII water use.
- (4) A description of the progress made towards meeting the urban water use objective.
- (5) The validated water loss audit report conducted pursuant to Section 10608.34.

(b) The department shall post the reports and information on its internet website.

- (c) The board may issue an information order or conservation order to, or impose civil liability on, an entity or individual for failure to submit a report required by this section.

10609.25. As part of the first report submitted to the department by an urban retail water supplier no later than January 1, 2024, pursuant to subdivision (a) of Section 10609.24, each urban retail water supplier shall provide a narrative that describes the water demand management measures that the supplier plans to implement to achieve its urban water use objective by January 1, 2027.

10609.26. (a) (1) On and after January 1, 2024, the board may issue informational orders pertaining to water production, water use, and water conservation to an urban retail water supplier that does not meet its urban water use objective required by this chapter. Informational orders are intended to obtain information on supplier activities, water production, and conservation efforts in order to identify technical assistance needs and assist urban water suppliers in meeting their urban water use objectives.

(2) In determining whether to issue an informational order, the board shall consider the degree to which the urban retail water supplier is not meeting its urban water use objective, information provided in the report required by Section 10609.24, and actions the urban retail water supplier has implemented or will implement in order to help meet the urban water use objective.

(3) The board shall share information received pursuant to this subdivision with the department.

(4) An urban water supplier may request technical assistance from the department. The technical assistance may, to the extent available, include guidance documents, tools, and data.

(b) On and after January 1, 2025, the board may issue a written notice to an urban retail water supplier that does not meet its urban water use objective required by this chapter. The written notice may warn the urban retail water supplier that it is not meeting its urban water use objective described in Section 10609.20 and is not making adequate progress in meeting the urban water use objective, and may request that the urban retail water supplier

address areas of concern in its next annual report required by Section 10609.24. In deciding whether to issue a written notice, the board may consider whether the urban retail water supplier has received an informational order, the degree to which the urban retail water supplier is not meeting its urban water use objective, information provided in the report required by Section 10609.24, and actions the urban retail water supplier has implemented or will implement in order to help meet its urban water use objective.

- (c) (1) On and after January 1, 2026, the board may issue a conservation order to an urban retail water supplier that does not meet its urban water use objective. A conservation order may consist of, but is not limited to, referral to the department for technical assistance, requirements for education and outreach, requirements for local enforcement, and other efforts to assist urban retail water suppliers in meeting their urban water use objective.
- (2) In issuing a conservation order, the board shall identify specific deficiencies in an urban retail water supplier's progress towards meeting its urban water use objective, and identify specific actions to address the deficiencies.
- (3) The board may request that the department provide an urban retail water supplier with technical assistance to support the urban retail water supplier's actions to remedy the deficiencies.
- (d) A conservation order issued in accordance with this chapter may include requiring actions intended to increase water-use efficiency, but shall not curtail or otherwise limit the exercise of a water right, nor shall it require the imposition of civil liability pursuant to Section 377.

10609.27. Notwithstanding Section 10609.26, the board shall not issue an information order, written notice, or conservation order pursuant to Section 10609.26 if both of the following conditions are met:

- (a) The board determines that the urban retail water supplier is not meeting its urban water use objective solely because the volume of water loss exceeds the urban retail water supplier's standard for water loss.

- (b) Pursuant to Section 10608.34, the board is taking enforcement action against the urban retail water supplier for not meeting the performance standards for the volume of water losses.

10609.28. The board may issue a regulation or informational order requiring a wholesale water supplier, an urban retail water supplier, or a distributor of a public water supply, as that term is used in Section 350, to provide a monthly report relating to water production, water use, or water conservation.

10609.30. On or before January 10, 2024, the Legislative Analyst shall provide to the appropriate policy committees of both houses of the Legislature and the public a report evaluating the implementation of the water use efficiency standards and water use reporting pursuant to this chapter. The board and the department shall provide the Legislative Analyst with the available data to complete this report.

- (a) The report shall describe all of the following:

- (1) The rate at which urban retail water users are complying with the standards, and factors that might facilitate or impede their compliance.
- (2) The accuracy of the data and estimates being used to calculate urban water use objectives.
- (3) Indications of the economic impacts, if any, of the implementation of this chapter on urban water suppliers and urban water users, including CII water users.
- (4) The frequency of use of the bonus incentive, the volume of water associated with the bonus incentive, value to urban water suppliers of the bonus incentive, and any implications of the use of the bonus incentive on water use efficiency.
- (5) The early indications of how implementing this chapter might impact the efficiency of statewide urban water use.
- (6) Recommendations, if any, for improving statewide urban water use efficiency and the standards and practices described in this chapter.
- (7) Any other issues the Legislative Analyst deems appropriate.

10609.32. It is the intent of the Legislature that the chairperson of the board and the director of the department appear before the appropriate policy committees of both houses of the Legislature on or around January 1, 2026, and report on the implementation of the water use efficiency standards and water use reporting pursuant to this chapter. It is the intent of the Legislature that the topics to be covered include all of the following:

- (a) The rate at which urban retail water suppliers are complying with the standards, and factors that might facilitate or impede their compliance.
- (b) What enforcement actions have been taken, if any.
- (c) The accuracy of the data and estimates being used to calculate urban water use objectives.
- (d) Indications of the economic impacts, if any, of the implementation of this chapter on urban water suppliers and urban water users, including CII water users.
- (e) The frequency of use of the bonus incentive, the volume of water associated with the bonus incentive, value to urban water suppliers of the bonus incentive, and any implications of the use of the bonus incentive on water use efficiency.
- (f) An assessment of how implementing this chapter is affecting the efficiency of statewide urban water use.

10609.34. Notwithstanding Section 15300.2 of Title 14 of the California Code of Regulations, an action of the board taken under this chapter shall be deemed to be a Class 8 action, within the meaning of Section 15308 of Title 14 of the California Code of Regulations, provided that the action does not involve relaxation of existing water conservation or water use standards.

10609.36. (a) Nothing in this chapter shall be construed to determine or alter water rights. Sections 1010 and 1011 apply to water conserved through implementation of this chapter.

- (b) Nothing in this chapter shall be construed to authorize the board to update or revise water use efficiency standards authorized by this chapter except as explicitly provided in this chapter. Authorization to update the standards beyond that explicitly provided in this chapter shall require separate legislation.

- (c) Nothing in this chapter shall be construed to limit or otherwise affect the use of recycled water as seawater barriers for groundwater salinity management.

10609.38. The board may waive the requirements of this chapter for a period of up to five years for any urban retail water supplier whose water deliveries are significantly affected by changes in water use as a result of damage from a disaster such as an earthquake or fire. In establishing the period of a waiver, the board shall take into consideration the breadth of the damage and the time necessary for the damaged areas to recover from the disaster.

PART 2.6. URBAN WATER MANAGEMENT PLANNING

CHAPTER 1. General Declaration and Policy [10610 – 10610.4]

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2. (a) The Legislature finds and declares all of the following:

- (1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.
- (2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.
- (3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate, and increasing long-term water conservation among Californians, improving water use efficiency within the state's communities and agricultural production, and strengthening local and regional drought planning are critical to California's resilience to drought and climate change.
- (4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years now and into the

foreseeable future, and every urban water supplier should collaborate closely with local land-use authorities to ensure water demand forecasts are consistent with current land-use planning.

- (5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.
 - (6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.
 - (7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.
 - (8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.
 - (9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.
- (b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

- (a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
- (b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.
- (c) Urban water suppliers shall be required to develop water management plans to achieve the efficient use of available supplies and strengthen local drought planning.

CHAPTER 2. Definitions [10611 – 10618]

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.3. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10611.5. "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Drought risk assessment" means a method that examines water shortage risks based on the driest five-year historic sequence for the agency's water supply, as described in subdivision (b) of Section 10635.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

10617.5. "Water shortage contingency plan" means a document that incorporates the provisions detailed in subdivision (a) of Section 10632 and is subsequently adopted by an urban water supplier pursuant to this article.

10618. "Water supply and demand assessment" means a method that looks at current year and one or more dry year supplies and demands for determining water shortage risks, as described in Section 10632.1.

CHAPTER 3. Urban Water Management Plans

ARTICLE 1. General Provisions [10620 – 10621]

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

- (b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.
- (c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.
- (d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce

preparation costs and contribute to the achievement of conservation, efficient water use, and improved local drought resilience.

- (2) Notwithstanding paragraph (1), each urban water supplier shall develop its own water shortage contingency plan, but an urban water supplier may incorporate, collaborate, and otherwise share information with other urban water suppliers or other governing entities participating in an areawide, regional, watershed, or basinwide urban water management plan, an agricultural management plan, or groundwater sustainability plan development.
 - (3) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.
- (e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.
 - (f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

10621. (a) Each urban water supplier shall update its plan at least once every five years on or before July 1, in years ending in six and one, incorporating updated and new information from the five years preceding each update.

- (b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.
- (c) An urban water supplier regulated by the Public Utilities Commission shall include its most recent plan and water shortage

- contingency plan as part of the supplier's general rate case filings.
- (d) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).
 - (e) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.
 - (f) Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.

CHAPTER 3. Urban Water Management Plans

ARTICLE 2. Contents of Plans [10630 – 10634]

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied, while accounting for impacts from climate change.

10630.5. Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:

- (a) Describe the service area of the supplier, including current and projected population, climate, and other social, economic, and demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available. The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including,

where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.

- (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:
- (1) A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.
 - (2) When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.
 - (3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.
 - (4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:
 - (A) The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management for basins underlying the urban water supplier's service area.
 - (B) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater.

For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For a basin that has not been adjudicated, information as to whether the department has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to coordinate with groundwater sustainability agencies or groundwater management agencies listed in subdivision (c) of Section 10723 to maintain or achieve sustainable groundwater conditions in accordance with a groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720).

- (C) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.
 - (D) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.
- (c) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.
- (d) (1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors,

including, but not necessarily limited to, all of the following:

- (A) Single-family residential.
 - (B) Multifamily.
 - (C) Commercial.
 - (D) Industrial.
 - (E) Institutional and governmental.
 - (F) Landscape.
 - (G) Sales to other agencies.
 - (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
 - (I) Agricultural.
 - (J) Distribution system water loss.
- (2) The water use projections shall be in the same five-year increments described in subdivision (a).
- (3) (A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34.
- (B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.
- (C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.
- (4) (A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

- (B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:
 - (i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.
 - (ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.
- (e) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
 - (1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.
 - (B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:
 - (i) Water waste prevention ordinances.
 - (ii) Metering.
 - (iii) Conservation pricing.
 - (iv) Public education and outreach.
 - (v) Programs to assess and manage distribution system real loss.
 - (vi) Water conservation program coordination and staffing support.
 - (vii) Other demand management measures that have a significant impact on water use as measured in

gallons per capita per day, including innovative measures, if implemented.

- (2) For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.
- (f) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in normal and single-dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.
- (g) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
- (h) An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

10631.1. (a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

10631.2. (a) In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:

- (1) An estimate of the amount of energy used to extract or divert water supplies.
- (2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.
- (3) An estimate of the amount of energy used to treat water supplies.
- (4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.
- (5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
- (6) An estimate of the amount of energy used to place water into or withdraw from storage.
- (7) Any other energy-related information the urban water supplier deems appropriate.

(b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.

- (c) The Legislature finds and declares that energy use is only one factor in water supply planning and shall not be considered independently of other factors.

10632. (a) Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan that consists of each of the following elements:

- (1) The analysis of water supply reliability conducted pursuant to Section 10635.
- (2) The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:
 - (A) The written decision making process that an urban water supplier will use each year to determine its water supply reliability.
 - (B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:
 - (i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.
 - (ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.
 - (iii) Existing infrastructure capabilities and plausible constraints.
 - (iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.
 - (v) A description and quantification of each source of water supply.

- (3) (A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.
 - (B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.
- (4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:
 - (A) Locally appropriate supply augmentation actions.
 - (B) Locally appropriate demand reduction actions to adequately respond to shortages.
 - (C) Locally appropriate operational changes.
 - (D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.
 - (E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.
- (5) Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all of the following:

- (A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1.
 - (B) Any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1.
 - (C) Any other relevant communications.
- (6) For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.
- (7) (A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.
- (A) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1.
 - (B) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.
- (8) A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:
- (A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).
 - (B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

- (C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.
- (9) For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.
- (10) Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.
- (b) For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.
- (c) The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.

10632.1. An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.

10632.2. An urban water supplier shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in its water shortage contingency plan, as identified in

subdivision (a) of Section 10632, or reasonable alternative actions, provided that descriptions of the alternative actions are submitted with the annual water shortage assessment report pursuant to Section 10632.1. Nothing in this section prohibits an urban water supplier from taking actions not specified in its water shortage contingency plan, if needed, without having to formally amend its urban water management plan or water shortage contingency plan.

10632.3. It is the intent of the Legislature that, upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, the board defer to implementation of locally adopted water shortage contingency plans to the extent practicable.

10632.5. (a) In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.

- (b) An urban water supplier shall update the seismic risk assessment and mitigation plan when updating its urban water management plan as required by Section 10621.
- (c) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk.

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

- (a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the

amount of wastewater collected and treated and the methods of wastewater disposal.

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

10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

CHAPTER 3. Urban Water Management Plans**ARTICLE 2.5. Water Service Reliability [10635]**

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

(b) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following:

- (1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.
- (2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.
- (3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.
- (4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate

change conditions, anticipated regulatory changes, and other locally applicable criteria.

- (d) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.
- (e) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.
- (f) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

CHAPTER 3. Urban Water Management Plans

ARTICLE 3. Adoption and Implementation of Plans [10640 – 10645]

10640. (a) Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

- (b) Every urban water supplier required to prepare a water shortage contingency plan shall prepare a water shortage contingency plan pursuant to Section 10632. The supplier shall likewise periodically review the water shortage contingency plan as required by paragraph (10) of subdivision (a) of Section 10632 and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan or a water shortage contingency plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan and the water shortage contingency plan. Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644. (a) (1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

(b) If an urban water supplier revises its water shortage contingency plan, the supplier shall submit to the department a copy of its

water shortage contingency plan prepared pursuant to subdivision (a) of Section 10632 no later than 30 days after adoption, in accordance with protocols for submission and using electronic reporting tools developed by the department.

- (c) (1) (A) Notwithstanding Section 10231.5 of the Government Code, the department shall prepare and submit to the Legislature, on or before July 1, in the years ending in seven and two, a report summarizing the status of the plans and water shortage contingency plans adopted pursuant to this part. The report prepared by the department shall identify the exemplary elements of the individual plans and water shortage contingency plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan and water shortage contingency plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans and water shortage contingency plans submitted pursuant to this part.

(B) The department shall prepare and submit to the board, on or before September 30 of each year, a report summarizing the submitted water supply and demand assessment results along with appropriate reported water shortage conditions and the regional and statewide analysis of water supply conditions developed by the department. As part of the report, the department shall provide a summary and, as appropriate, urban water supplier specific information regarding various shortage response actions implemented as a result of annual supplier-specific water supply and demand assessments performed pursuant to Section 10632.1.

(C) The department shall submit the report to the Legislature for the 2015 plans by July 1, 2017, and the report to the Legislature for the 2020 plans and water shortage contingency plans by July 1, 2022.

- (2) A report to be submitted pursuant to subparagraph (A) of paragraph (1) shall be submitted in compliance with Section 9795 of the Government Code.

- (d) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

10645. (a) Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

- (b) Not later than 30 days after filing a copy of its water shortage contingency plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

CHAPTER 4. Miscellaneous Provisions [10650 – 10657]

10650. Any actions or proceedings, other than actions by the board, to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

- (a) An action or proceeding alleging failure to adopt a plan or a water shortage contingency plan shall be commenced within 18 months after that adoption is required by this part.
- (b) Any action or proceeding alleging that a plan or water shortage contingency plan, or action taken pursuant to either, does not comply with this part shall be commenced within 90 days after filing of the plan or water shortage contingency plan or an amendment to either pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan or a water shortage contingency plan, or an action taken pursuant to either by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the

preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the board and the Public Utilities Commission, for the preparation of water management plans, water shortage contingency plans, or conservation plans; provided, that if the board or the Public Utilities Commission requires additional information concerning water conservation, drought response measures, or financial conditions to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan that complies with analogous federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its urban water management plan, its drought risk assessment, its water supply and demand assessment, and its water shortage contingency plan and implementing the reasonable water conservation measures included in either of the plans.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier is not eligible for a water grant or loan awarded or administered by the state unless the urban water supplier complies with this part.

10657. The department may adopt regulations regarding the definitions of water, water use, and reporting periods, and may adopt any other regulations deemed necessary or desirable to implement this part. In developing regulations pursuant to this section, the department shall solicit broad public participation from stakeholders and other interested persons.

Appendix B- Standardized Tables

Submittal Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 *
<i>Add additional rows as needed</i>			
CA3610120	Phelan Piñon Hills Community Services	7,053	2,948
TOTAL		7,053	2,948
* <i>Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</i>			
NOTES:			

Submittal Table 2-2: Plan Identification		
Select Only One	Type of Plan	Name of RUWMP or Regional Alliance <i>if applicable</i> (select from drop down list)
<input checked="" type="checkbox"/>	Individual UWMP	
	<input type="checkbox"/>	Water Supplier is also a member of a RUWMP
	<input type="checkbox"/>	Water Supplier is also a member of a Regional Alliance
<input type="checkbox"/>	Regional Urban Water Management Plan (RUWMP)	
NOTES:		

Submittal Table 2-3: Supplier Identification

Type of Supplier (select one or both)

- Supplier is a wholesaler
- Supplier is a retailer

Fiscal or Calendar Year (select one)

- UWMP Tables are in calendar years
- UWMP Tables are in fiscal years

If using fiscal years provide month and date that the fiscal year begins (mm/dd)

Units of measure used in UWMP * (select from drop down)

Unit	AF
------	----

** Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

Submittal Table 2-4 Retail: Water Supplier Information Exchange

The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.

Wholesale Water Supplier Name

Add additional rows as needed

Mojave Water Agency (MWA)

NOTES:

Submittal Table 3-1 Retail: Population - Current and Projected

Population Served	2020	2025	2030	2035	2040	2045(opt)
	20,836	21,136	21,465	21,744	22,003	22,245

NOTES: Based on MWA's Population Forecast-2020 Edition

Submittal Table 4-1 Retail: Demands for Potable and Non-Potable¹ Water - Actual

Use Type	2020 Actual		
<p>Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUedata online submittal tool</p>	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume ²
Add additional rows as needed			
Single Family		Drinking Water	2,171
Multi-Family		Drinking Water	2
Commercial		Drinking Water	94
Other	includes Construction Use and Institutional Use	Drinking Water	249
Losses		Drinking Water	432
TOTAL			2,948

¹ Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. ²
 Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES:

Submittal Table 4-2 Retail: Use for Potable and Non-Potable¹ Water - Projected

Use Type	Additional Description (as needed)	Projected Water Use ² <i>Report To the Extent that Records are Available</i>				
<u>Drop down list</u> May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		2025	2030	2035	2040	2045 (opt)
Add additional rows as needed						
Single Family		2,184	2,199	2,206	2,213	2,236
Multi-Family		2	2	2	2	2
Commercial		94	95	95	96	96
Other		251	252	253	254	256
Losses		434	438	439	440	445
TOTAL		2,965	2,986	2,995	3,005	3,035

¹ Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

² Units of

NOTES:

Submittal Table 4-3 Retail: Total Water Use (Potable and Non-Potable)

	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable <i>From Tables 4-1R and 4-2 R</i>	2,948	2,965	2,986	2,995	3,005	3,035
Recycled Water Demand ¹ <i>From Table 6-4</i>	0	0	0	0	0	0
Optional Deduction of Recycled Water Put Into Long-Term Storage ²						
TOTAL WATER USE	2,948	2,965	2,986	2,995	3,005	3,035

¹ Recycled water demand fields will be blank until Table 6-4 is complete ²
 Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier **may** deduct recycled water placed in long-term storage from their reported demand. This value is manually entered into Table 4-3.

NOTES:

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss ^{1,2}
07/2015	321
07/2016	297
07/2017	339
07/2018	366
07/2019	412

¹ Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet. ²
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES:

Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections

<p>Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i></p>	<p>Yes</p>
<p>If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.</p>	<p>Section 4.1.3</p>
<p>Are Lower Income Residential Demands Included In Projections? <i>Drop down list (y/n)</i></p>	<p>Yes</p>
<p>NOTES:</p>	

Submittal Table 5-1 Baselines and Targets Summary
From SB X7-7 Verification Form
Retail Supplier or Regional Alliance Only

Baseline Period	Start Year *	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	1996	2005	202	162
5 Year	2004	2008	180	

**All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)*

NOTES:

Submittal Table 5-2: 2020 Compliance SB X7-7 2020 Compliance Form <i>Retail Supplier or Regional Alliance Only</i>				From
2020 GPCD			2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD* <i>(Adjusted if applicable)</i>		
126			162	Y
*All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)				
NOTES:				

Submittal Table 6-1 Retail: Groundwater Volume Pumped						
<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
<input type="checkbox"/>	All or part of the groundwater described below is desalinated.					
Groundwater Type <i>Drop Down List</i> May use each category multiple times	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
<i>Add additional rows as needed</i>						
Alluvial Basin	Mojave Basin Area	1821	2285	2567	2629	2781
Alluvial Basin	Antelope Valley Adjudication Area	771	385	177	3	167
TOTAL		2,592	2,670	2,744	2,632	2,948
* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.						
NOTES:						

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020

<input checked="" type="checkbox"/>	There is no wastewater collection system. The supplier will not complete the table below.
	Percentage of 2020 service area covered by wastewater collection system <i>(optional)</i>
	Percentage of 2020 service area population covered by wastewater collection system <i>(optional)</i>

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2020 *	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i> <i>Drop Down List</i>
Total Wastewater Collected from Service Area in 2020:		0				

** Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3 .*

NOTES:

Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020

No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional) ²	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area? <i>Drop down list</i>	Treatment Level <i>Drop down list</i>	2020 volumes ¹				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
Total							0	0	0	0	0

¹ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.
² If the **Wastewater Discharge ID Number** is not available to the UWMP preparer, access the SWRCB CIWQS regulated facility website at <https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=RegulatedFacility>

NOTES:

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area

Recycled water is not used and is not planned for use within the service area of the supplier.
The supplier will not complete the table below.

Name of Supplier Producing (Treating) the Recycled Water:

Name of Supplier Operating the Recycled Water Distribution System:

Supplemental Water Added in 2020 (volume) *Include units*

Source of 2020 Supplemental Water

Beneficial Use Type <i>additional rows if needed.</i>	<i>Insert</i> Potential Beneficial Uses of Recycled Water (Describe)	Amount of Potential Uses of Recycled Water (Quantity) <i>Include volume units¹</i>	General Description of 2020 Uses	Level of Treatment <i>Drop down list</i>	2020 ¹	2025 ¹	2030 ¹	2035 ¹	2040 ¹	2045 ¹ (opt)
Agricultural irrigation										
Landscape irrigation (exc golf courses)										
Golf course irrigation										
Commercial use										
Industrial use										
Geothermal and other energy production										
Seawater intrusion barrier										
Recreational impoundment										
Wetlands or wildlife habitat										
Groundwater recharge (IPR)										
Reservoir water augmentation (IPR)										
Direct potable reuse										
Other (Description Required)										
Total:					0	0	0	0	0	0

2020 Internal Reuse

¹ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES:

Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual



Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.

Beneficial Use Type	2015 Projection for 2020 ¹	2020 Actual Use ¹
<i>Insert additional rows as needed.</i>		
Agricultural irrigation		
Landscape irrigation (exc golf courses)		
Golf course irrigation		
Commercial use		
Industrial use		
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Reservoir water augmentation (IPR)		
Direct potable reuse		
Other (Description Required)		
Total	0	0

¹ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTE:

Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
<input checked="" type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
6.2.4	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use *
<i>Add additional rows as needed</i>			
Total			0
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.			
NOTES:			

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs

- No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
- Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.

6.2.7 Provide page location of narrative in the UWMP

Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type <i>Drop Down List</i>	Expected Increase in Water Supply to Supplier* <i>This may be a range</i>
	<i>Drop Down List (y/n)</i>	<i>If Yes, Supplier Name</i>				
<i>Add additional rows as needed</i>						

***Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:

Submittal Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2020		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Actual Volume*	Water Quality Drop Down List	Total Right or Safe Yield* (optional)
Add additional rows as needed				
Groundwater (not desalinated)	Mojave River Basin	2781	Drinking Water	
Groundwater (not desalinated)	Antelope Valley Adjudication Area	167	Drinking Water	
Total		2,948		0
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.				
NOTES:				

Submittal Table 6-9 Retail: Water Supplies — Projected

Water Supply	Additional Detail on Water Supply	Projected Water Supply * Report To the Extent Practicable									
		2025		2030		2035		2040		2045 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Add additional rows as needed											
Groundwater (not desalinated)	Mojave River Basin	2,083		2,098		2,104		2,112		2,133	
Groundwater (not desalinated)	Antelope Valley	882		888		891		893		902	
	Total	2,965	0	2,986	0	2,995	0	3,005	0	3,035	0

**Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES

Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. _____ Location
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available *	% of Average Supply
Average Year	2011	2899	100%
Single-Dry Year	2013	3156	109%
Consecutive Dry Years 1st Year	2013	3156	109%
Consecutive Dry Years 2nd Year	2014	3140	108%
Consecutive Dry Years 3rd Year	2015	2776	96%
Consecutive Dry Years 4th Year	2016	2595	90%
Consecutive Dry Years 5th Year	2017	2671	92%

Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

***Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:

Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045 (Opt)
Supply totals (autofill from Table 6-9)	2,965	2,986	2,995	3,005	3,035
Demand totals (autofill from Table 4-3)	2,965	2,986	2,995	3,005	3,035
Difference	0	0	0	0	0

NOTES:

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045 (Opt)
Supply totals*	3,228	3,251	3,261	3,272	3,305
Demand totals*	3,228	3,251	3,261	3,272	3,305
Difference	0	0	0	0	0

**Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison

		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	3,228	3,251	3,261	3,272	3,305
	Demand totals	3,228	3,251	3,261	3,272	3,305
	Difference	0	0	0	0	0
Second year	Supply totals	3,212	3,234	3,244	3,255	3,288
	Demand totals	3,212	3,234	3,244	3,255	3,288
	Difference	0	0	0	0	0
Third year	Supply totals	2,839	2,859	2,868	2,878	2,907
	Demand totals	2,839	2,859	2,868	2,878	2,907
	Difference	0	0	0	0	0
Fourth year	Supply totals	2,654	2,673	2,681	2,690	2,717
	Demand totals	2,654	2,673	2,681	2,690	2,717
	Difference	0	0	0	0	0
Fifth year	Supply totals	2,732	2,751	2,759	2,769	2,797
	Demand totals	2,732	2,751	2,759	2,769	2,797
	Difference	0	0	0	0	0
Sixth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0

****Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.***

NOTES:

Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)

2021	Total
Total Water Use	3,217
Total Supplies	3,217
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

2022	Total
Total Water Use	3,188
Total Supplies	3,188
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

2023	Total
Total Water Use	2,833
Total Supplies	2,833
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

2024	Total
Total Water Use	2,656
Total Supplies	2,656
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

2025	Total
Total Water Use	2,745
Total Supplies	2,745
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

Submittal Table 8-1**Water Shortage Contingency Plan Levels**

Shortage Level	Percent Shortage Range	Shortage Response Actions (Narrative description)
1	Up to 10%	Water Shortage Alert - The District is able to meet all customers' demands in the immediate future with voluntary reductions per District Ordinance 2016-01.
2	Up to 20%	Slightly Restricted - Mandatory demand reduction of up to 20% with penalties will be implemented. Conservation measures may include requirements for efficient irrigation systems, automatic controllers, use of drought resistant plants, shrubs, and drought resistant turfs and other restrictions as outlined in Table 8-2.
3	Up to 30%	Moderately Restricted - Mandatory demand reduction of up to 30% with penalties will be implemented. Restriction of landscape irrigation to several days per week. Details in Table 8-2.
4	Up to 40%	Severely Restricted - Mandatory demand reduction of up to 40% with penalties. Further restriction on outdoor water use for landscaping, water features (pools and spas), construction activities, livestock needs. Details in Table 8-2.
5	Up to 50%	Critical Water Supply Shortage - Mandatory demand reduction of up to 50% with penalties will be implemented. Further restrictions on outdoor use for parks, school grounds, golf courses, and landscaping. Details in Table 8-2.
6	>50%	Emergency Water Supply Shortage - Mandatory demand reduction greater than 50% with penalties. All water use shall be limited to human and animal consumption only. Outdoor use prohibited.

NOTES:

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions Drop down list <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
<i>Add additional rows as needed</i>				
1	Landscape - Limit landscape irrigation to specific times	1% - 5%	Watering of lawns, grass, shrubbery, ground cover or other landscaping prohibited between 9.00 A.M. and 6:00 p.m. from June through October; and between 3:00 P. M. and 9:00 A.M. from November through May.	No
1	Landscape - Other landscape restriction or prohibition	1% - 5%	Potable water irrigation not allowed during and within 48 hrs after measurable rainfall.	No
1	Landscape - Other landscape restriction or prohibition	<1%	New developments will require timed irrigation systems, and encouraged to use drought resistant plants, shrubs, and turf. Areas required for turf shall be restricted to no more than 20% of the total landscaped area.	No
1	Landscape - Prohibit certain types of landscape irrigation	<1%	No potable water irrigation of ornamental turf on public street medians	No

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only</i> <i>Drop Down List</i>
1	Landscape - Restrict or prohibit runoff from landscape irrigation	<1%	The use of water for any purpose which allows flooding or runoff, including but not limited to the flow of water onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures is prohibited.	No
1	CII - Lodging establishment must offer opt out of linen service	0%	Although, the District does not have this landuse designation at present, operators of hotels and motels shall post notices urging guests to conserve water and provide guests with the option of choosing not to have towels and linens laundered daily per state law.	No
1	CII - Restaurants may only serve water upon request	<1%	No serving drinking water other than upon request at restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased.	No

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions Drop down list <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	1% - 5%	Allowing the waste of water through leaks or breaks in the users' water system or devices is prohibited. All leaks or breaks shall be repaired in a timely manner.	No
1	Other - Prohibit use of potable water for washing hard surfaces	1% - 5%	Watering driveways, sidewalks, parking lots, or other hard and/or impervious surfaces with potable water is prohibited.	No
1	Other - Require automatic shut of hoses	1% - 5%	Only the use of a hose fitted with a shut-off nozzle or device attached to it is allowed for washing vehicles.	No
1	Other water feature or swimming pool restriction	<1%	Evaporation resistant covers and water recirculation systems are required for all swimming pools and hot tubs of at least 600 gallons capacity	No
1	Water Features - Restrict water use for decorative water features, such as fountains	0%	Water shall not be used in a fountain or other decorative water feature, unless part of a recirculating system. Currently, District does not have such features.	No

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only</i> <i>Drop Down List</i>
1	Other	<1%	Irrigation of newly constructed homes/buildings must comply with CA Bldg Standards Commission and Dept. Housing and Community Development	No
1	Other	<1%	All new construction, including residential, commercial and industrial, shall install water conserving devices as required by law.	No
1	Other	<1%	Water used for cooling systems must be recycled to the extent possible	No
1	Other	<1%	All current water customers are encouraged to install low flush toilets, shower heads, flow reducers, and faucet aerators	No
2	Expand Public Information Campaign	5% - 10%	Stage 1 Prohibitions will be enforced as needed to meet reduction target	Yes

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
2	Other	5% - 10%	Persons using water for agricultural practices, whether for the purpose of crop production, growing of commercial ornamental plants or maintaining existing nursery stock shall provide, maintain and use irrigation equipment and practices which are the most efficient possible. District will require owners of these practices to prepare a water conservation plan as needed.	Yes
2	CII - Other CII restriction or prohibition	1% - 5%	Commercial and industrial facilities must provide water conservation plan to reduce water used by that percentage required by the Board of Directors.	Yes
2	Increase Water Waste Patrols	1% - 5%	Use of drone and other water theft identification enforcements	Yes

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only</i> <i>Drop Down List</i>
2	Landscape - Prohibit certain types of landscape irrigation	1% - 5%	Irrigation of landscaping or other outdoor vegetation, plantings, lawns, or other growth is not permitted to exceed reduction amount required	Yes
2	Landscape - Restrict or prohibit runoff from landscape irrigation	1% - 5%	The free flow of water away from an irrigated site shall be presumptively considered excessive irrigation and a waste of water.	Yes
2	Pools and Spas - Require covers for pools and spas	1% - 5%	All residential, public, and recreational swimming pools, of all size, shall use evaporation resistant covers and shall recirculate water.	Yes
2	Other water feature or swimming pool restriction	1% - 5%	Public and private parks, golf courses, swimming pools, and school grounds shall only use water for pool filling between the hours of 10:00 p.m. and 6:00 a.m	Yes

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
3	Expand Public Information Campaign	20% - 30%	The District will expand its public outreach campaign and enhance water waste monitoring programs to help ensure compliance. Stage 1 and Stage 2 prohibitions will be enforced as needed to meet reduction target	Yes
3	Landscape - Limit landscape irrigation to specific days	5% - 10%	Irrigation of exterior vegetation is limited to no more than two (2) days per week. Tuesdays and Saturdays for even-numbered addresses; Wednesdays and Sundays for odd-numbered addresses.	Yes
4	Expand Public Information Campaign	30% - 40%	All prohibitions under Stage 1 through 3 will be enforced to meet reduction target	Yes
4	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	<1%	Washing of vehicles is prohibited, except when done by commercial vehicle wash equipment using recycled or reclaimed water	Yes
4	CII - Other CII restriction or prohibition	1% - 5%	No new construction meter permits shall be issued by the District . All existing construction meters to be removed and/or locked	Yes

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
4	Other	<1%	Watering of livestock shall only be permitted as necessary	Yes
4	Other water feature or swimming pool restriction	5% - 10%	Filling or adding water to pools, water features is prohibited.	Yes
4	Other	1% - 5%	The District will cease operations of the bulk water filling station.	Yes
5	Expand Public Information Campaign	40% - 50%	All prohibitions under Stage 1 through 4 will be enforced to meet reduction target	Yes
5	Landscape - Other landscape restriction or prohibition	5% - 10%	Watering of parks, school grounds and golf courses is prohibited	Yes
5	Landscape - Other landscape restriction or prohibition	1% - 5%	Lawn Watering and Landscaping irrigation is prohibited	Yes
5	Other	< 1%	No new customer meters permits will be issued by the District.	Yes
6	Expand Public Information Campaign	40% - 50%	All prohibitions under Stage 1 through 5 will be enforced to meet reduction target	Yes
6	Landscape - Prohibit all landscape irrigation	5% - 10%	All water use limited to human and animal consumption.	Yes

NOTES: All actions in proceeding Stages will employ actions from previous Stages, thereby having a cumulative demand reduction as the Stage level progresses.

Submittal Table 8-3: Supply Augmentation and Other Actions

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>
<i>Add additional rows as needed</i>			
1	Other Actions (describe)	1% - 5%	Continue to maintain and upgrade facilities and apply operational changes as needed: Eg. Rehabilitate operating wells if needed, apply seals on pumps, proactive leak detection, minimize tank spills, etc.
2	Improve Customer Billing	1% - 5%	Tracking and monitoring high users
3	Implement or Modify Drought Rate Structure or Surcharge	15% - 20%	Modify billing rates
4	Other Purchases	1% - 5%	Activate Victorville Interconnect
5	Other Purchases	1% - 5%	Activate Victorville, SB County 70 J
6	Other Actions (describe)	<1%	Import water by truck
6	Other Purchases	1% - 5%	Activate Victorville, SB County 70 J, wheel water from MWA through Victorville as needed

NOTES: All actions in proceeding Stages will employ actions from previous Stages, thereby having a cumulative supply augmentation as the Stage level progresses in order to meet reduction targets per Stage

Submittal Table 10-1 Retail: Notification to Cities and Counties

City Name	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
San Bernardino County (See Notes)	Yes	Yes
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
San Bernardino County	Yes	Yes
<p>NOTES: The District serves the census-designated places of Phelan and Piñon Hills. Notifications were submitted to the County of San Bernardino in-lieu of a city.</p>		

Urban Water Supplier:

Phelan Piñon Hills Community Service District

Water Delivery Product (If delivering more than one type of product use Table O-1C)

Retail Potable Deliveries

Table O-1B: Recommended Energy Reporting - Total Utility Approach				
Enter Start Date for Reporting Period	1/1/2020	Urban Water Supplier Operational Control		
End Date	12/30/2020			
<input type="checkbox"/> Is upstream embedded in the values reported?		Sum of All Water Management Processes	Non-Consequential Hydropower	
<i>Water Volume Units Used</i>	AF	Total Utility	Hydropower	Net Utility
<i>Volume of Water Entering Process (volume unit)</i>		2,948		2948
<i>Energy Consumed (kWh)</i>		5,512,880		5512880
<i>Energy Intensity (kWh/vol. converted to MG)</i>		5739.0	0.0	5739.0
Quantity of Self-Generated Renewable Energy				
	2,656,803	kWh		
Data Quality (<i>Estimate, Metered Data, Combination of Estimates and Metered Data</i>)				
<u>Metered Data</u>				
Data Quality Narrative:				
Utilized SCADA well pumps and booster pumps data. Anomalies were omitted.				
Narrative:				

Appendix C

Delta Reliance

This Appendix provides the Delta Reliance assessment for Phelan Piñon Hills Community Services District. The Mojave Water Agency (MWA) service area boundary includes the following retail water service agencies: Liberty Utilities – Apple Valley Water Company, Bighorn-Desert View Water Agency, City of Adelanto Water District, San Bernardino County Service Area 64, San Bernardino County Service Area 70J, Golden State Water Company – Barstow System, Helendale Community Services District, Hesperia Water District, Hi-Desert Water District, Joshua Basin Water District, Phelan Pinon Hills Community Services District, and Victorville Water District. These retail agencies are subject to the minimum threshold requirements of the Urban Water Management Planning Act (UWMP Act) and work with MWA on managing regional water supplies. Additional entities that are not currently subject to the UWMP Act but may be subject to the UWMP Act in the future and that rely upon water supplies derived from MWA’s and the retail agencies’ management are also considered in this assessment. This assessment is consistent with all applicable water management activities within the MWA service area boundary including the Mojave Basin Area Adjudication, the Warren Valley Basin Judgment, and the Ames/Reche Groundwater Storage and Recovery Program Management Agreement.

A.1 Delta Reform Act and Certification of Consistency

The Delta Reform Act of 2009 required state and local agencies to prepare a written certification of consistency with Delta Plan policies before initiating a covered action in the Delta.¹ The written certification of consistency must be submitted to the Delta Stewardship Council and include detailed findings as to whether the covered action is consistent with applicable Delta Plan policies.² The submitted certification of consistency may be appealed by any person and the Delta Stewardship Council may grant the appeal to address contested issues.³ In short, water suppliers that anticipate participating in a proposed covered action must comply with the requirements of the Delta Reform Act. For more detail on the specific provisions of the Delta Reform Act covered by this Delta Reliance Analysis, see Mojave Water Agency’s 2020 Urban Water Management Plan, Appendix A.

¹ California Water Code section 85057.5.

² California Water Code section 85225.

³ California Water Code section 85225.10-85225.25.

A.2 Expected Outcomes for Reduced Delta Reliance and Regional Self Reliance

The expected outcomes for this Delta reliance and improved regional self-reliance assessment were developed using guidance described in Appendix C of DWR’s Urban Water Management Plan Guidebook 2020 issued in March 2021 (Guidebook 2020). The data used in this assessment represent the total regional efforts of MWA and the retail agencies and were developed as part of a region-wide coordination process. Table A-1 shows MWA’s expected outcomes for reduced Delta reliance.

Table A-1: Expected Outcomes for Reduced Reliance on the Delta

Year	2010	2015	2020	2025	2030	2035	2040	2045
Total Water Supplies from the Delta Watershed	34.2%	34.2%	31.9%	28.7%	26.2%	24.4%	22.9%	22.2%
Change in Water Supplies from the Delta Watershed		-0.1%	-2.4%	-5.6%	-8.0%	-9.8%	-11.4%	-12.1%

Table A-2 shows the expected outcomes for supplies contributing to regional self-reliance.

Table A-2: Supplies Contributing to Regional Self-Reliance

Water Supplies Contributing to Regional Self-Reliance	2010	2015	2020	2025	2030	2035	2040	2045
Water Use Efficiency	-	17,735	33,701	46,803	54,025	59,962	64,920	68,828
Water Recycling	62,000	47,825	52,536	47,495	49,699	50,930	52,172	53,559
Conjunctive Use Projects	54,045	57,349	57,349	57,349	57,349	57,349	57,349	57,349
Water Supplies Contributing to Regional Self-Reliance	116,045	122,909	143,586	151,647	161,073	168,241	174,441	179,736
Service Area Water Demands without Water Use Efficiency	2010	2015	2020	2025	2030	2035	2040	2045
Service Area Water Demands without Water Use Efficiency	145,066	155,744	163,296	176,846	188,351	196,641	203,965	210,600
Change in Regional Self Reliance (Acre-Feet)	2010	2015	2020	2025	2030	2035	2040	2045
Water Supplies Contributing to Regional Self-Reliance	116,045	122,909	143,586	151,647	161,073	168,241	174,441	179,736
Change in Water Supplies Contributing to Regional Self-Reliance		6,864	27,541	35,602	45,028	52,196	58,396	63,691
Percent Change in Regional Self Reliance	2010	2015	2020	2025	2030	2035	2040	2045
Water Supplies Contributing to Regional Self-Reliance	80.0%	78.9%	87.9%	85.8%	85.5%	85.6%	85.5%	85.3%
Change in Water Supplies Contributing to Regional Self-Reliance		-1.1%	7.9%	5.8%	5.5%	5.6%	5.5%	5.4%

The data presented in this section demonstrate the expected outcomes for reduced Delta reliance and regional self-sufficiency. The information contained in this Appendix is also intended to be an addendum to Phelan Piñon Hills Community Services District 2015 UWMP consistent with WR P1 subsection (c)(1)(C). The information has been noticed and presented in accordance with applicable law. Further information related to these determination may be found in Mojave Water Agency’s 2020 Urban Water Management Plan, Appendix A.

Appendix D- MWA Population Forecast



MOJAVE WATER AGENCY

POPULATION FORECAST | 2020 EDITION

August 2020



ABOUT THE CENTER

The UC Riverside School of Business Center for Economic Forecasting and Development opened its doors in October 2015 and represents a major economic research initiative in one of California's most vital growth regions. The Center produces a wide variety of research both independently and in collaboration with academic, business, and government partners. Research products include monthly employment analyses, quarterly regional economic forecasts, a quarterly business activity index, a white paper series, and a major regional economic forecast conference, hosted annually.

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EXECUTIVE SUMMARY

Urban planning involves the investment of millions of dollars in infrastructure projects long before they will be realized. From transportation to water supply management, these developments require many years of planning and resources in order to become fully functional. As a result, it is imperative to have a firm understanding of the size of population needed to support these projects, especially regarding water supply. This report, commissioned by the Mojave Water Agency (MWA), details population estimates forecasted to 2065 for the MWA region, subareas, and incorporated cities and towns. It also discusses methodology and recent changes in population trends, and provides an overview of the economic conditions in the Inland Empire and, specifically, San Bernardino County.

For years, California has experienced a housing supply crisis with several major metropolitan areas suffering a serious shortage of available homes. Home prices have skyrocketed over the past decade, with most California metropolitan areas surpassing pre-Recession peaks. However, San Bernardino County and the Inland Empire have remained considerably more affordable than some nearby counties, Los Angeles and Orange County in particular. The Inland Empire has the third largest workforce of any of California's metropolitan regions. It is a powerhouse for Logistical industries such as Transportation and Warehousing, and is ideally situated near the ports of Los Angeles and Long Beach, the largest in the nation in terms of import and export movement. As such, it is likely that interest in the Inland Empire will continue to grow as nearby counties in Southern California become less affordable and supply remains low.

Current economic and demographic trends indicate that California's population is slowing down, and will continue to do so well into the future. Statewide net migration remains positive but has declined significantly, relying on foreign migration to keep total net migration above zero. Furthermore, birth rates have dropped across most racial and ethnic groups, and are expected to flatten out or continue declining. The UCR Center for Economic Forecasting ("The UCR Center") expects the same patterns to resonate within San Bernardino County and the Mojave Water Agency. While the County and MWA service area experience greater home affordability compared to the nearby regions, regional data patterns over the past few years have shown negative net migration and declining birth rates. Net migration has averaged below zero between 2010 and 2019 – periods of considerable economic expansion. Between 2007 and 2018, San Bernardino County has gone from roughly 18 births per 1000 people to 13 births per 1000, a 24.2% drop. With crude birth rates declining and net migration in the negatives, San Bernardino County's and the MWA service area's populations have been revised down considerably.

The UCR Center estimates that between 2020 and 2060, the MWA service area will grow by 39.2% - which remains considerably larger than estimated growths in both San Bernardino County (21.1%) and California (12.9%).

The UCR Center forecasts incorporated cities and towns in order to estimate future populations in the MWA service areas and its subareas as well. The following are some key findings for recent estimates of the MWA incorporated cities and towns:

- Adelanto had the largest percentage growth of any incorporated city in the last decade, with population increasing by 10.5% between 2011 and 2019.
- Victorville, the largest population of any MWA incorporated city, saw the second largest percent growth at 7.7% between 2011 and 2019.
- The slowest growing cities by percentage were Apple Valley and Barstow, at 5.3% each between 2011 and 2019.

FORECAST METHODOLOGY

The UCR Center uses a comprehensive econometric forecasting model for the MWA service area, to include population estimates for the incorporated cities, subareas, and water purveyors. Structured around a long-term forecast of the San Bernardino County economy, the model includes economic indicators such as residential housing stock, home prices, and employment trends. Relying on the underlying fundamentals of each variable, research is applied to identify the relationship between the variables of interest and various moving parts of the economy. Using this methodology, the UCR Center estimates population forecasts based on the incorporated cities in the MWA service area.

Historical population data was collected from two primary sources: The United States decennial census, and the DOF for annual estimates dating back to 1970. Census estimates were used to derive shares of population by census block in order to calculate population for subareas and purveyors by cities/towns. The DOF historical estimates were used to build a time series model, incorporating not only historical population estimates, but economic indicators including housing stock and home prices. The incorporated cities were then estimated using these econometric models out to 2065, and their respective shares were used to build the MWA service area. The subareas and water purveyors were developed using growth estimates from the incorporated cities and using the shares based off of the census blocks.

The long-run estimates from the DOF's San Bernardino County population forecast are used as a driver for the incorporated cities, accompanied by economic variables that help define the structure and interrelationships within the economy. As previously mentioned, demographic projections in California have been revised significantly to better reflect the changes in birth rates, deaths and net migration patterns. For example, California overall has seen its population forecast for 2060 lowered by roughly 5.2 million people, from over 50 million to just over 45 million. For San Bernardino County, 2060 estimates were lowered from roughly 3.2 million to about 2.7 million. A primary reason for the lower estimates is the revision in annual net migration. Previous iterations of the population forecasts predicted annual net migration between 2020 and 2060 to average roughly 14,470. In the revised forecasts, net migration averages just over 2,500 people per year. This means that, according to the revised forecast, an estimated 478,000 fewer people will move to San Bernardino County between 2020 and 2060. Given changes to the population at the county level, there will be notable differences in population estimates for the incorporated cities, subareas, purveyors and therefore the MWA service area as a whole.

Long-run forecasts are an estimate of what the population is expected to be in a given time period based on current economic and demographic trends. Policy decisions and large, random events add to the inherent uncertainty of any economic outlook. However, these models are developed using the most up-to-date data, and include comprehensive variables to accurately estimate what the population of the MWA service area will be in the future, given current and anticipated economic conditions.

ECONOMIC AND DEMOGRAPHIC TRENDS INLAND EMPIRE AND SAN BERNARDINO COUNTY

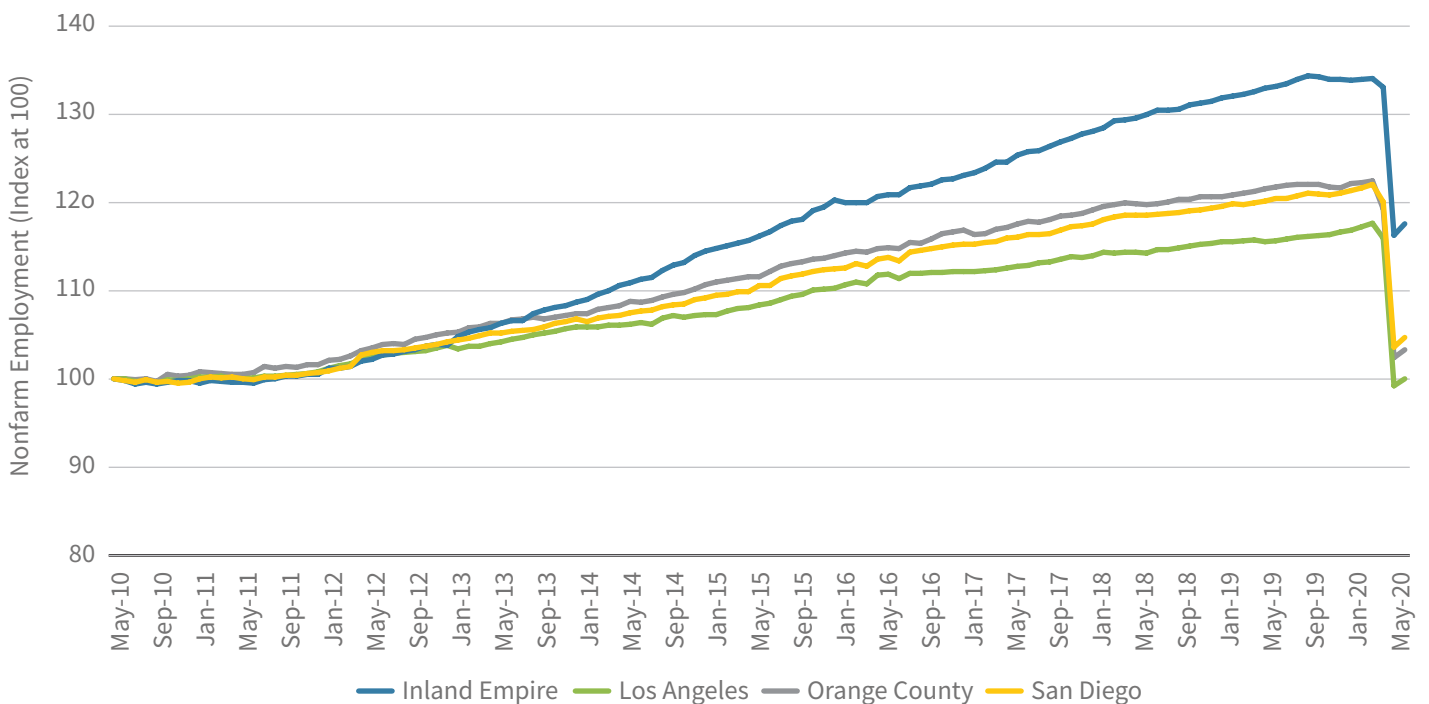
Demographic trends are affected by various factors, from employment opportunities and economic development, to housing supply. Understanding the current situation in the Inland Empire and, more specifically, in San Bernardino County, gives better insight into how the population may change. Moreover, it is highly unlikely that any one factor would, by itself, determine and drive population trends and growth in any given area. For example, a city that has focused solely on housing supply, without taking economic and workforce developments into consideration, is unlikely to attract workers and large cohorts of the population. It takes a mixture of good economic development opportunities, housing affordability and more to attract large in-migration.



JOB GROWTH: 10-YEAR CHANGE AND THE COVID IMPACT

Since the recovery from the Great Recession, the Inland Empire has experienced some of the highest employment growth rates in the state. As a primary national hub for Logistics, the Inland Empire has seen significant employment increases in the Transportation, Trade, and Warehouse sectors. Furthermore, greater housing affordability has allowed workers to move to the region and commute to nearby areas such as Los Angeles and Orange County.

TOTAL NONFARM GROWTH INDEX AT 100



Source: California Employment Development Department; Analysis by The Center for Economic Forecasting

Over the past ten years, total nonfarm employment growth in the Inland Empire has surpassed all other metropolitan areas in Southern California. In the first quarter of 2020, as the COVID-19 pandemic began to shut down economies, levels of growth in the Inland Empire were better sustained than Los Angeles, Orange County, or San Diego.

PRE-COVID ECONOMY:

JOB GROWTH BETWEEN FEBRUARY 2010 AND FEBRUARY 2020 IN SOUTHERN CALIFORNIA

Industry	Inland Empire Feb-2020 Employment (000s)	10-Year % Growth			
		Inland Empire	Los Angeles	Orange County	San Diego
Total Nonfarm	1,549.5	34.9	18.4	23.6	23.8
Construction	109.1	79.1	46.4	57.2	51.2
Education/Health	255.7	58.6	28.0	39.1	34.6
Logistics	397.1	47.7	16.3	7.0	13.5
Leisure and Hospitality	172.9	42.2	45.3	39.3	33.4
Wholesale Trade	66.8	38.7	10.1	3.6	6.7
Admin Support	106.8	38.4	27.9	33.7	23.9
Professional/Business	156.6	29.9	27.3	32.7	32.1
NR/Mining	1.2	18.4	-35.7	2.6	33.7
Other Services	44.8	18.0	18.3	25.5	20.3
Retail Trade	181.8	16.9	8.7	7.8	11.8
Manufacturing	98.7	15.5	-11.6	6.2	23.3
Government	258.4	9.6	3.0	7.8	11.4
Financial Activities	43.6	6.8	7.1	17.6	15.2
Information	11.3	-20.4	20.2	15.4	-8.1

Source: California Employment Development Department; Analysis by The Center for Economic Forecasting

Compared to its neighbors, growth in the Inland Empire over the past decade has been astonishing. Between 2010 and 2020, growth in Construction, Education/Health, Wholesale Trade, and Admin Support was significantly higher than other regions in Southern California. However, it is in Logistics that growth has dwarfed nearby counties. With a growth of 47.7% between February 2010 and February 2020, the Inland Empire's percentage growth was almost three times higher than the next highest growing county in Southern California.

While the Inland Empire economy has enjoyed a strong resurgence over the last ten years, in line with nationwide trends, the outbreak of COVID-19 halted the largest U.S. economic expansion in history, effectively shutting down the economy. Because mitigation efforts have largely allowed only essential businesses to remain open, customer-reliant industries such as Leisure and Hospitality, In-store Retail, and Other Services (barbershops, nail salons, dry cleaners and so on) have taken a huge hit. Industries that have traditionally proved resilient during economic cycles, such as Health Care, have also suffered substantial job losses, since changes in consumer demand have caused people to book less routine and elective procedures due to concerns over health risks.

The uncertainty surrounding the timeline of the virus outbreak, and severity of the surge in cases has resulted in businesses being forced to close and re-open. Between February and June of 2020, the impact of the COVID-19 shutdowns in the Inland Empire has mirrored statewide figures. Total nonfarm employment has declined 10% over the last four months, compared to 11% statewide. Although the Leisure and Hospitality and Other Services industries have been hit hardest, the pandemic has caused declines in every industry, across both the Inland Empire and California.

Logistics, the Inland Empire’s largest employer, contracted 7.6% between February and June, slightly less than the 9.3% figure for California overall. However, demand for Transportation and Warehousing has increased considerably in the COVID-19 economy as the pandemic has spurred e-commerce and direct-to-consumer shopping. As long-term changes in consumer behavior continue, the Inland Empire will be well positioned to capitalize on these structural shifts.

The economic effects in other sectors of the Inland Empire economy will be contingent on the length and severity of each stage of the re-opening process; the degree to which each sector has been impacted throughout the mitigation phase; and any structural changes that have occurred within the industry. A crucial component of the recovery will be the number of people circulating within the economy (i.e. consumers returning to pre-pandemic behaviors). This is contingent on public policy and mandated business closures and consumers’ willingness to engage in high contact environments.

COVID’S IMPACT ON JOBS: INLAND EMPIRE VS CALIFORNIA

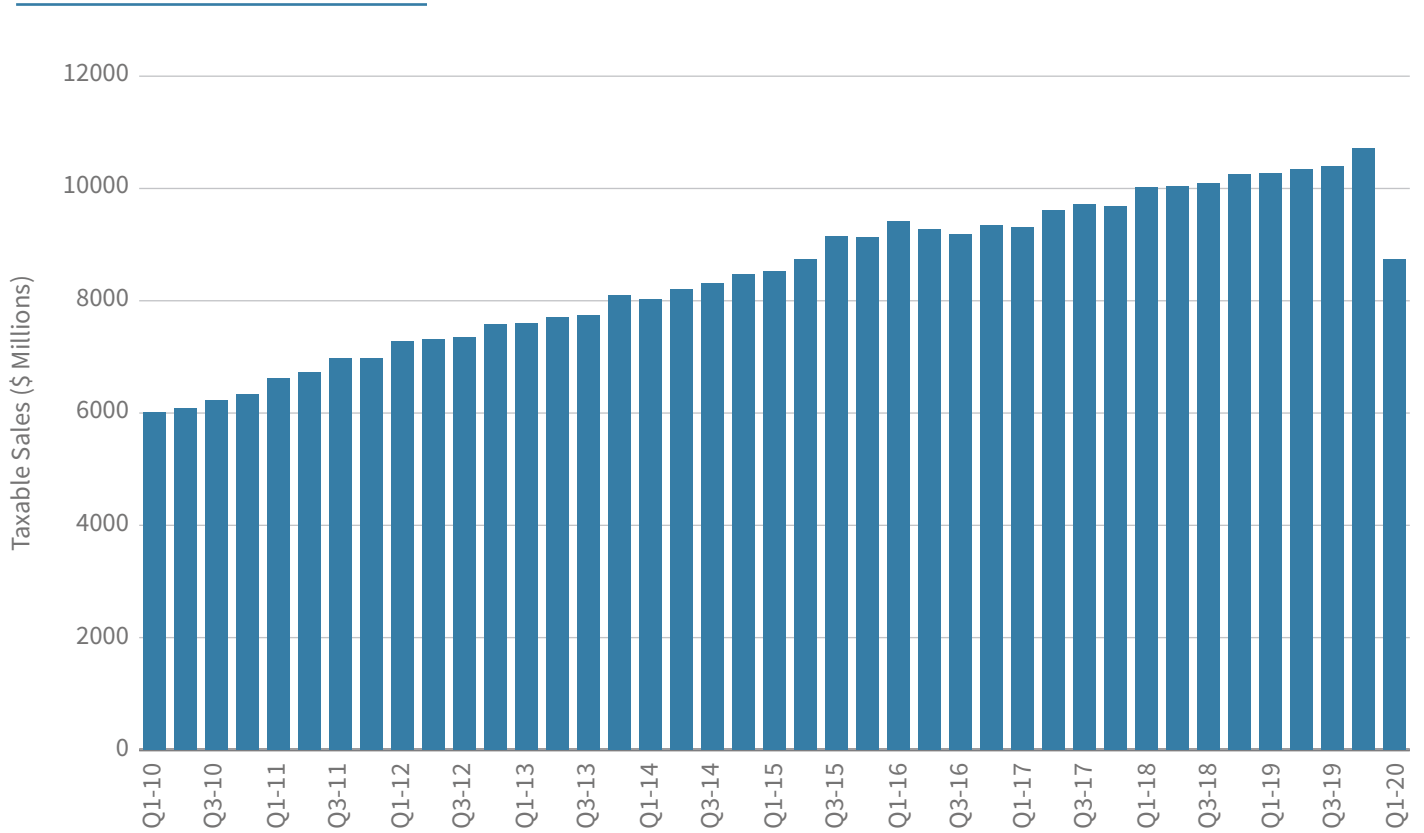
Industry	June 2020 Employment (000s)	% Growth February to June 2020	
		Inland Empire	California
Total Nonfarm	1,393.9	-10.0	-11.0
Logistics	367.1	-7.6	-9.3
Government	242.7	-6.1	-8.6
Education/Health	239.2	-6.4	-7.0
Retail Trade	159.2	-12.4	-11.6
Professional/Business	145.6	-7.0	-7.6
Leisure and Hospitality	118.2	-31.6	-30.8
Construction	102.4	-6.2	-5.4
Admin Support	97.4	-8.8	-11.5
Manufacturing	90.0	-8.8	-7.4
Wholesale Trade	64.0	-4.3	-6.5
Financial Activities	42.1	-3.5	-2.4
Other Services	36.0	-19.7	-24.1
Information	9.5	-16.4	-12.9
NR/Mining	1.1	-7.2	-1.8

Source: California Employment Development Department; Analysis by The Center for Economic Forecasting

Along with employment, consumer spending has also been hit hard by the COVID-19 crisis. The resulting freeze-up of consumer-driven revenues, such as sales and use tax and transient occupancy tax, have left local governments with multiyear budget shortfalls. Additionally, the freeze in consumer demand is keeping jobs sidelined, especially in customer-facing service sectors such as Leisure and Hospitality and Retail Trade, where consumers must engage in environments requiring close personal contact.

Prior to the pandemic, taxable sales in the Inland Empire, and especially San Bernardino, had been growing significantly. Between the fourth quarter of 2010 and the fourth quarter of 2019, taxable sales in San Bernardino County grew by 82.4% to over \$11.3 billion. Over the decade from 2010 to 2019, San Bernardino had the second largest percent growth in taxable sales after Riverside County (89.7%).

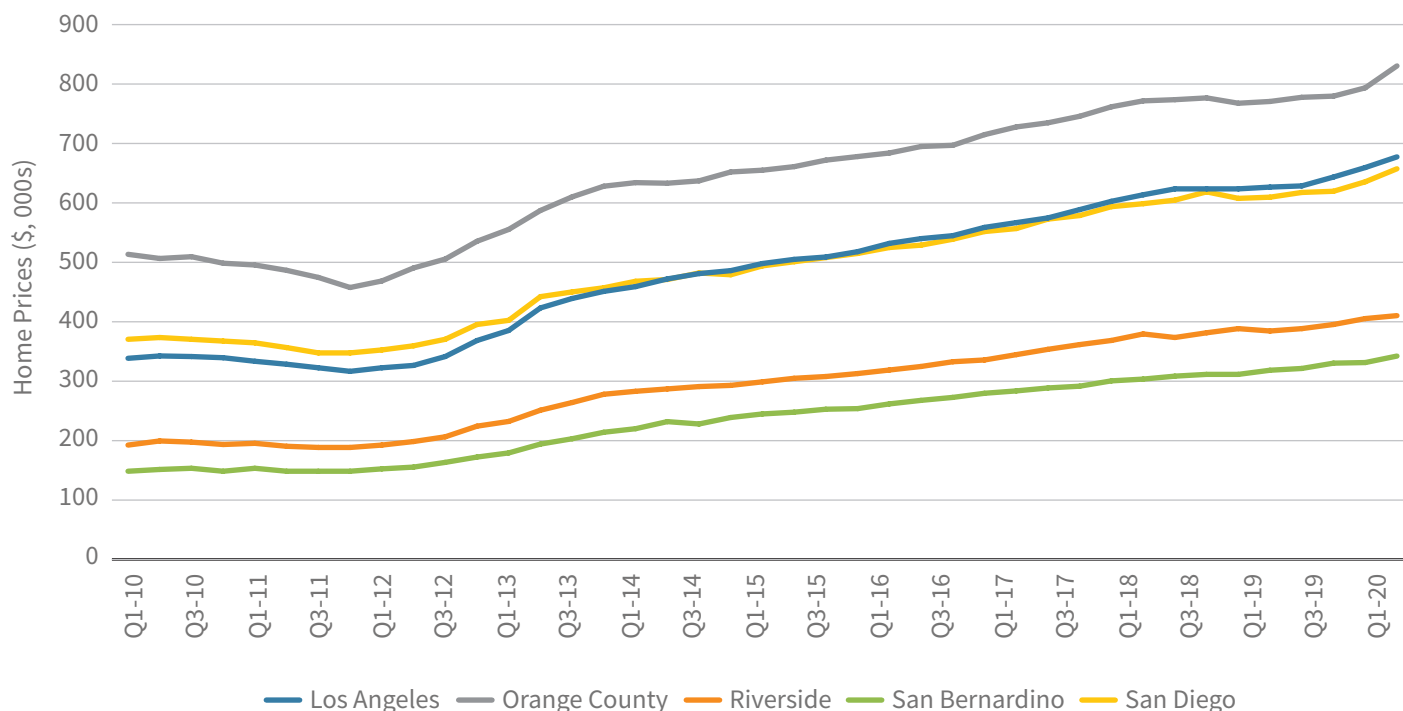
TAXABLE SALES
SAN BERNARDINO COUNTY, Q1-2010 TO Q1-2020



Source: California Department of Tax and Fee Administration; Analysis by The Center for Economic Forecasting

Prior to COVID's impact on the economy, housing shortage was one of the biggest problems facing California. In terms of population growth, housing supply has fallen drastically short of requirements. The severity of the matter is spread unevenly among California's major metropolitan regions. The Inland Empire, and San Bernardino County in particular, remain an affordable haven compared to other areas, with median home prices the lowest of the five major counties in Southern California.

MEDIAN HOME PRICES



Source: CoreLogic; Analysis by The Center for Economic Forecasting

As of the first quarter of 2020, the Inland Empire also had the lowest office and retail rents (both at \$23.3 per square foot). In fact, it is the only region in Southern California where office and retail rents are below \$30 per square foot.

Q1-2020 Cost of Rent (\$ per Square Foot)

Region	Office	Retail	Warehouse/Distribution
Los Angeles	40.6	34.0	7.9
Orange County	35.1	34.5	7.6
San Diego	34.2	32.6	9.2
Inland Empire	23.3	23.3	5.8

Source: REIS; Analysis by The Center for Economic Forecasting

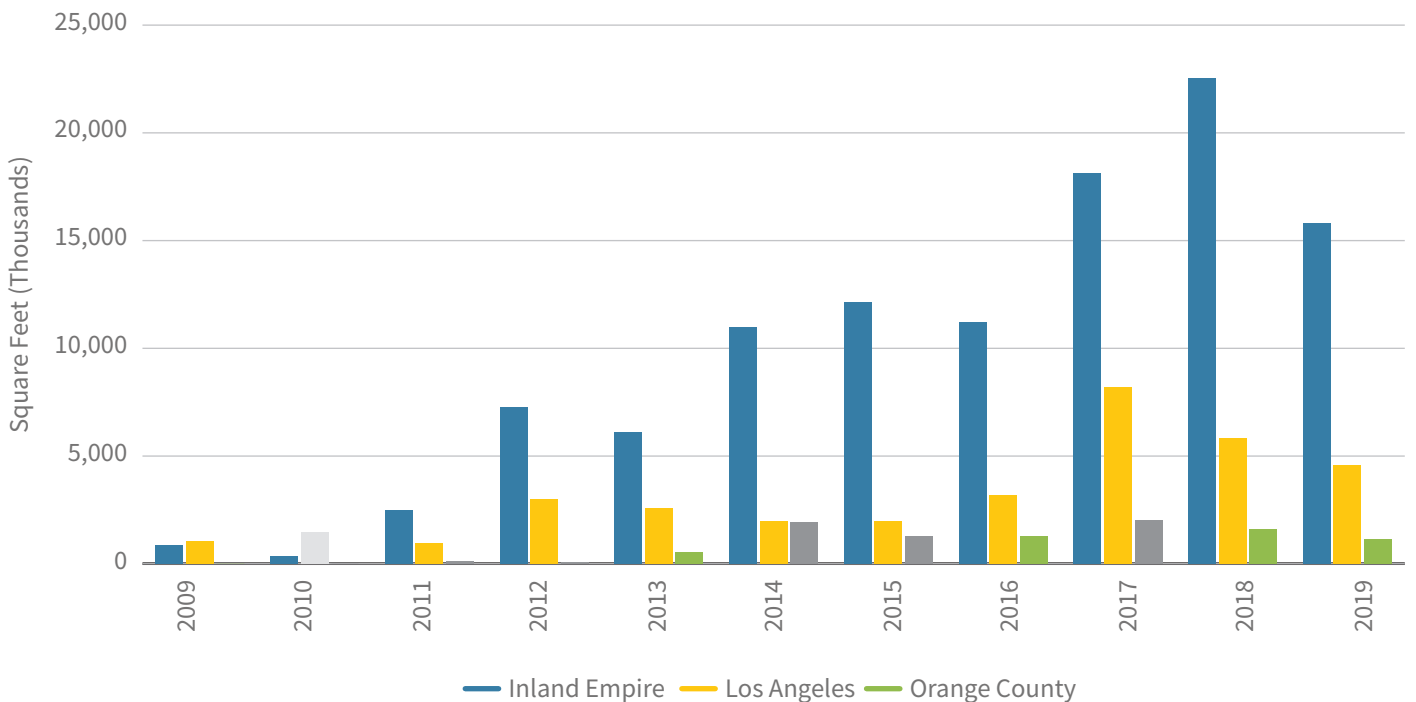
Despite tremendous growth in Logistics over the past ten years, the Inland Empire still offers cheaper rents for warehousing and distribution, and more availability, since its vacancy rate of 10.2% is higher than any other region in Southern California.

Region	Q1-2020 Vacancy Rate (%)		
	Office	Retail	Warehouse/Distribution
Los Angeles	14.2	7.2	5.7
Orange County	16.6	5.6	7.5
San Diego	16.0	6.0	8.7
Inland Empire	16.7	9.8	10.2

Source: REIS; Analysis by The Center for Economic Forecasting

Compared to other Southern California regions, vacancy rates in the Inland Empire are generally higher across commercial real estate properties. However, this is more a result of construction activity in the region rather than a lack of demand for commercial real estate. The square footage of office, retail, and industrial property completed in the Inland Empire vastly outpaces neighboring Los Angeles and Orange County. Additionally, substantial and sustained levels of net absorption over the last ten years suggest that the high commercial vacancy rates in the Inland Empire are due to construction activity fueled by high demand for space.

COMMERCIAL REAL ESTATE COMPLETIONS



Source: REIS; Analysis by The Center for Economic Forecasting

DOES AFFORDABILITY DRIVE MIGRATION?

Domestic and foreign migration patterns differ considerably in California. For the most part, foreign net migration has been positive, with an average of around 150,000 net migrants coming from abroad every year since 2010. Domestically however, the story is quite different. Over the last decade, the average annual net domestic migration has been -110,000. In 2018, roughly 698,300 people left California, the most popular destinations being Texas (12%), Arizona (10%), and Washington (7.5%).

San Bernardino County's migration patterns are similar to California's. Domestic migration has been negative for the past few years, while foreign migration has been largely positive. So how is it that an exceptionally affordable region has seen negative domestic migration? One reason is the different economic composition and workforce development opportunities in San Bernardino County compared to other regions. Given the rapid economic growth in Texas and Arizona, some Californians are opting to move there to take advantage of housing affordability and a lower cost of living. Alongside Riverside, San Bernardino is without doubt a powerhouse in the Logistics and Leisure industries. However, those sectors offer relatively low paying jobs. Cost of living and diverse economic opportunities are persuading many Californians to resettle out-of-state.

There's no doubt that housing affordability has its advantages in attracting migrants. However, in order to compete with states such as Arizona and Texas, San Bernardino County would also have to offer economic and workforce development opportunities to attract people to various industries. With population forecasts being revised down as birth rates across all races and ethnicities are expected to drop or flatten, it will ultimately be migration patterns that drive population growth.

MOJAVE WATER AGENCY POPULATION FORECAST

In 2019, the Mojave Water Agency (MWA) service area was estimated to include roughly 487,923 people, or 22.3% of the total estimated San Bernardino County population. At the turn of the 21st century, the MWA region accounted for only 16.0% of the San Bernardino County population. Movement to the MWA region grew significantly in the early 2000s, specifically in its incorporated cities and towns. The average year-over-year growth for San Bernardino County between 2000 and 2010 was 1.9%, lower than Adelanto (5.9%), Apple Valley (2.5%), Hesperia (3.6%), and Victorville (5.8%). However, in the last ten years, these growth levels have flattened out. Between 2011 and 2019, average year-over-year growth in the county was 0.8%, lower than Adelanto (1.1%) and Victorville (1.0%).

Statewide population trends have been revised down in accordance with changes in birth rates and migration patterns. San Bernardino County is no different, but the MWA region has many advantages that could attract migrants given the right economic opportunities. This section explores the housing supply and affordability patterns of the MWA region, as well as how its economic indicators shape up future population estimates.

In terms of home prices, the MWA region is one of the most affordable areas in Southern California. While San Bernardino's home values are already far lower than neighboring counties, the incorporated cities and towns of the MWA service areas offer even lower home prices. In fact, as of December 2019, all of the incorporated cities and towns offer home prices below \$300,000, while the county average hovers well above that.

HOME PRICES IN SAN BERNARDINO COUNTY AND MWA INCORPORATED CITIES/TOWNS

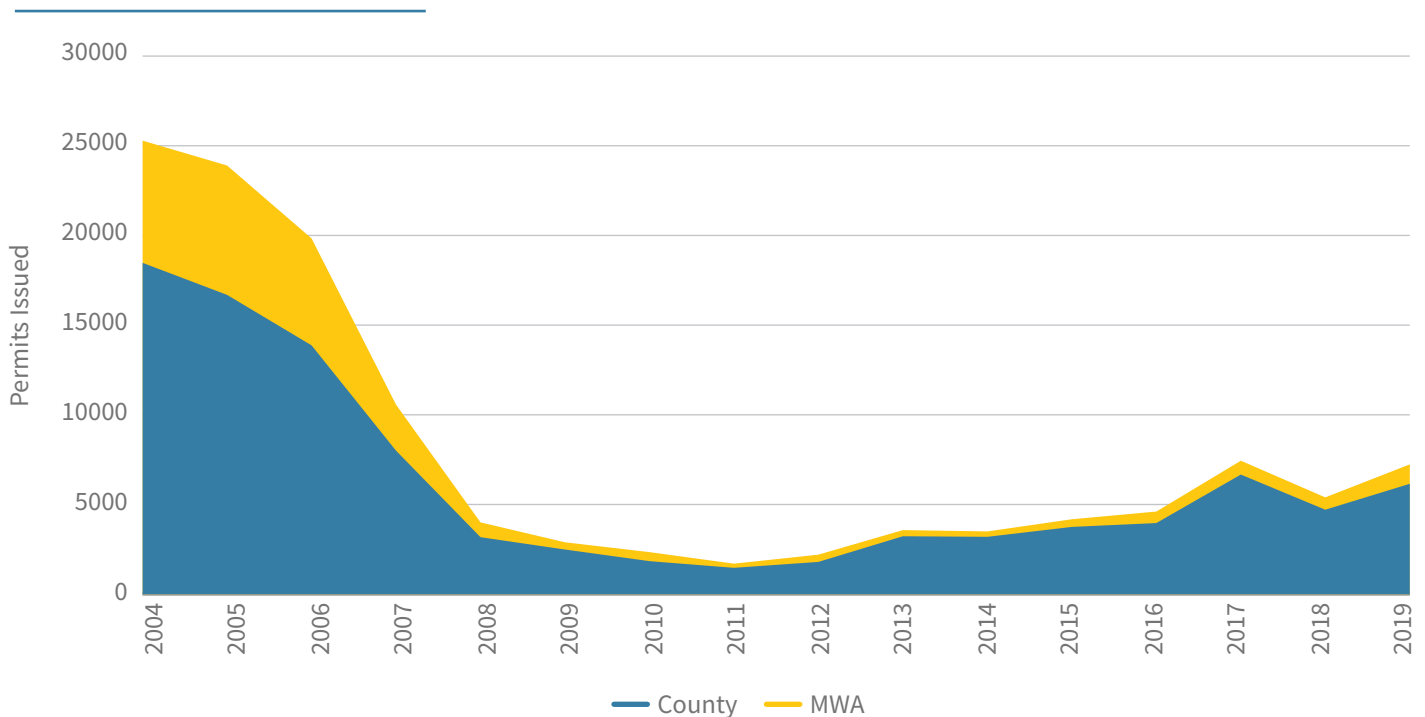
	Dec-2019 Value (\$, 000s)	1-Year % Growth	9-Year % Growth
San Bernardino County	360.6	3.3%	89.7%
Hesperia	279.3	3.5%	119.5%
Apple Valley	265.9	3.3%	95.4%
Victorville	264.6	4.1%	116.0%
Adelanto	235.8	4.1%	139.0%
Yucca Valley	215.5	6.9%	80.0%
Barstow	144.6	3.3%	107.5%

Source: Zillow; Analysis by The Center for Economic Forecasting

Growth in home prices in the incorporated cities and towns of the MWA service area has been significant. Between December 2010 and 2019, home values doubled in four of the incorporated cities and towns in the MWA service area (Hesperia, Victorville, Adelanto, and Barstow), and of the six incorporated cities, only Yucca Valley's home value growth between 2010 and 2019 was lower than the San Bernardino County average. More recently, home value growth in the MWA service area has generally been higher than the San Bernardino County average, with only Barstow and Apple Valley on the same level as the county at 3.3%. The increase in home value growth over the past ten years is indicative of both increased demand for housing in the MWA service area, and of the tight available supply.

TOTAL PERMITS

MWA VS SAN BERNARDINO COUNTY



Source: CIRB; Analysis by The Center for Economic Forecasting

In 2004, at the pre-Recession peak of housing permit activity, San Bernardino County issued over 18,400 permits, of which 36.9% came from the MWA incorporated towns and cities. Fast forward to 2019, and county's permit issuance is down to just over 6,150, while only 17.5% of them originate from MWA incorporated towns and cities. In fact, the MWA service area issued more housing permits in 2004 than the total issued by the region between 2010 and 2019. Nonetheless, things are slowly starting to pick up. In 2019, a total of 1,081 home permits were issued in the MWA service area, the highest annual figure in twelve years.

Compared to the county overall, economic activity, specifically consumption and spending, has been slow in the MWA service area over the past few years. Between 2009 and 2019, taxable sales in San Bernardino County grew by 76.6%. In comparison, incorporated cities in the MWA service area have lagged behind. At 77.1%, Hesperia is the only city to have achieved a growth rate higher than the county, while Barstow and Yucca Valley had significantly lower growth rates at 19.1% and 31.0% respectively. This indicates that most regions of the MWA service area are not yet experiencing the spending patterns associated with most of San Bernardino County, or Southern California as a whole.

PRE-COVID TAXABLE SALES | SAN BERNARDINO COUNTY AND MWA INCORPORATED CITIES/TOWNS

Region	2019 Taxable Sales (\$, Millions)	10-year % Growth
County Total	41,770.3	76.6
Victorville	2,040.4	54.1
Hesperia	889.7	77.1
Barstow	619.5	19.1
Apple Valley	602.5	40.0
Yucca Valley	327.4	31.0
Adelanto	177.0	50.9

Source: California Department of Tax and Fee Administration ; Analysis by The Center for Economic Forecasting

In terms of taxable sales, early damage from COVID-19 has been worse in the MWA service area's incorporated cities relative to San Bernardino County. San Bernardino's taxable sales declined by 5.4% between the first quarter of 2019 and the first quarter of 2020, while certain MWA incorporated cities such as Apple Valley, Barstow, and Hesperia saw drops of 31.2%, 20.3%, and 18.0% respectively. The least damage was seen in Yucca Valley, where taxable sales fell by 16.6% in year-over-year terms, still more than five times the decline seen by the county.

COVID TAXABLE SALES IMPACT

Region	Q1-2020 Taxable Sales (\$, Millions)	1-year % Growth
County Total	9,120.1	-5.4
Victorville	387.3	-18.2
Hesperia	168.7	-18.0
Barstow	117.6	-20.3
Apple Valley	103.3	-31.2
Yucca Valley	66.5	-16.6
Adelanto	43.6	-6.5

Source: California Department of Tax and Fee Administration; Analysis by The Center for Economic Forecasting



CONCLUSION

The outlook on population growth across most areas in California has been revised downwards as the trend becomes clear that there are fewer births and less people moving into the state – especially domestically. This pattern is also seen in regional demographic forecasts. The MWA service area has a lot to offer, specifically affordable housing in a region where affordability is scarce. However, given the overall sociodemographic trends – lower home prices will not be enough to accelerate population growth.

While population forecasts in the MWA service area have been revised down compared to previous iterations, the region's population growth is nonetheless expected to outpace those of both San Bernardino County and California between 2020 and 2060, driven primarily by strong increases in larger cities such as Victorville and Hesperia.

APPENDIX A

MWA SERVICE AREA TOTAL AND MWA INCORPORATED CITIES/TOWNS FORECASTS

Year	MWA Service Area Total	Adelanto	Apple Valley	Barstow	Hesperia	Victorville	Yucca Valley
1990	266,232	6,751	46,159	24,260	50,705	50,579	16,442
2000	321,264	17,895	54,240	22,699	62,740	64,165	16,855
2010	453,649	31,760	69,144	22,757	90,170	115,913	20,656
2011	457,776	31,786	69,770	22,939	90,968	117,447	20,920
2012	462,455	31,351	70,319	23,251	91,597	119,992	21,077
2013	467,393	31,904	70,643	23,571	91,714	122,329	21,222
2014	470,748	33,282	71,016	23,574	91,728	123,106	21,222
2015	473,810	33,791	71,765	23,663	92,459	123,465	21,543
2016	477,940	34,367	72,234	23,875	93,173	124,600	21,672
2017	481,932	35,192	72,412	24,037	94,233	125,338	21,859
2018	484,593	35,162	72,891	24,075	95,127	125,782	21,905
2019	487,923	35,136	73,464	24,150	96,362	126,543	22,050
2020	492,319	35,811	74,205	24,193	97,846	127,696	22,230
2025	533,170	39,238	78,616	24,497	107,564	148,196	23,128
2030	567,855	41,958	82,169	24,813	115,845	165,513	23,887
2035	592,849	44,242	84,990	25,115	122,562	176,241	24,551
2040	614,931	46,159	87,601	25,390	128,858	185,270	25,136
2045	634,934	47,770	89,923	25,630	134,578	193,580	25,651
2050	653,017	49,125	91,967	25,840	139,698	201,298	26,105
2055	669,424	50,269	93,791	26,025	144,324	208,430	26,505
2060	684,247	51,238	95,409	26,185	148,478	214,977	26,858
2065	697,603	52,062	96,843	26,326	152,196	220,954	27,169

Forecast by The Center for Economic Forecasting

APPENDIX B
MWA SUB AREA FORECASTS

Year	Alto	Alto Transition Zone	Baja	Centro	Este	Morongo	Oeste
1990	165,100	17,468	5,782	35,046	5,167	31,001	5,501
2000	222,012	14,636	5,035	33,392	5,822	31,375	7,838
2010	334,862	23,366	4,729	34,167	7,370	38,177	10,595
2011	338,235	23,514	4,779	34,470	7,448	38,623	10,707
2012	341,966	23,530	4,821	34,884	7,514	38,937	10,802
2013	345,491	23,905	4,874	35,331	7,596	39,277	10,920
2014	347,856	24,486	4,911	35,424	7,654	39,415	11,003
2015	350,137	24,704	4,925	35,546	7,676	39,788	11,034
2016	353,161	25,019	4,966	35,858	7,740	40,069	11,127
2017	355,998	25,403	5,005	36,113	7,800	40,399	11,213
2018	358,116	25,466	5,041	36,239	7,857	40,580	11,295
2019	360,879	25,528	5,067	36,376	7,897	40,822	11,353
2020	364,694	25,826	5,073	36,432	7,906	41,022	11,366
2025	401,345	28,025	5,146	36,913	8,020	42,191	11,530
2030	432,258	29,848	5,226	37,422	8,145	43,247	11,709
2035	454,174	31,218	5,294	37,888	8,251	44,163	11,861
2040	473,548	32,379	5,357	38,315	8,349	44,980	12,002
2045	491,137	33,393	5,416	38,698	8,441	45,714	12,135
2050	507,071	34,285	5,471	39,040	8,526	46,370	12,256
2055	521,557	35,070	5,521	39,345	8,604	46,957	12,369
2060	534,661	35,763	5,568	39,620	8,677	47,483	12,475
2065	546,475	36,376	5,612	39,866	8,745	47,956	12,572

Forecast by The Center for Economic Forecasting

APPENDIX C

MWA WATER PURVEYOR FORECASTS

Year	Liberty Utilities - Apple Valley Water Company	Bighorn- Desert View Water Agency	City of Adelanto Water District	County Service Area 64	County Service Area 70 J	Golden State Water Company – Barstow System
1990	37,228	1,200	6,751	5,353	3,328	29,905
2000	45,207	2,892	17,895	7,595	5,652	29,337
2010	57,847	3,839	31,760	9,075	9,467	30,173
2011	58,372	3,880	31,781	10,552	9,566	30,435
2012	58,831	3,914	31,346	10,666	9,650	30,811
2013	59,106	3,957	31,899	10,792	9,750	31,211
2014	59,419	3,987	33,277	10,871	9,821	31,277
2015	60,042	3,998	33,786	10,907	9,851	31,388
2016	60,435	4,032	34,362	10,998	9,933	31,664
2017	60,587	4,063	35,186	11,077	10,013	31,887
2018	60,988	4,093	35,156	11,151	10,087	31,986
2019	61,466	4,114	35,130	11,212	10,143	32,103
2020	62,081	4,118	35,811	11,244	10,162	32,154
2025	65,745	4,178	39,238	11,691	10,356	32,574
2030	68,699	4,243	41,958	12,099	10,554	33,017
2035	71,045	4,298	44,242	12,390	10,721	33,427
2040	73,215	4,349	46,159	12,646	10,876	33,801
2045	75,146	4,397	47,770	12,884	11,021	34,135
2050	76,847	4,441	49,125	13,103	11,153	34,432
2055	78,364	4,482	50,269	13,304	11,275	34,697
2060	79,710	4,520	51,238	13,490	11,387	34,934
2065	80,904	4,555	52,062	13,661	11,491	35,145

Forecast by The Center for Economic Forecasting

Year	Helendale Community Services District	Hesperia Water District	Hi-Desert Water District	Joshua Basin County Water District	Phelan Pinon Hills Community Services District	Victorville Water District
1990	3,273	50,976	19,060	7,515	9,688	54,539
2000	4,704	62,592	19,198	8,062	13,770	69,095
2010	6,180	89,742	23,760	9,534	19,423	122,051
2011	6,245	90,536	24,145	9,635	19,628	123,649
2012	6,301	91,163	24,330	9,720	19,803	126,246
2013	6,369	91,280	24,511	9,826	20,018	128,649
2014	6,418	91,294	24,536	9,901	20,171	129,475
2015	6,436	92,022	24,866	9,929	20,229	129,852
2016	6,490	92,732	25,023	10,012	20,398	131,040
2017	6,541	93,787	25,236	10,090	20,557	131,829
2018	6,588	94,676	25,307	10,164	20,706	132,321
2019	6,622	95,905	25,469	10,216	20,813	133,115
2020	6,629	97,380	25,653	10,227	20,836	134,273
2025	6,725	107,045	26,600	10,375	21,136	154,831
2030	6,830	115,279	27,414	10,536	21,465	172,220
2035	6,919	121,959	28,124	10,673	21,744	183,018
2040	7,001	128,221	28,751	10,800	22,003	192,113
2045	7,078	133,910	29,306	10,919	22,245	200,486
2050	7,149	139,001	29,796	11,029	22,469	208,262
2055	7,215	143,602	30,231	11,131	22,676	215,447
2060	7,276	147,734	30,615	11,225	22,869	222,044
2065	7,333	151,431	30,956	11,313	23,048	228,069

Forecast by The Center for Economic Forecasting

MOJAVE WATER AGENCY

POPULATION FORECAST | 2020 EDITION



Appendix E- 2016 – 2020 Water Audit Reports



AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0
American Water Works Association
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?	Click to access definition
+	Click to add a comment

Water Audit Report for: Phelan Piñon Hills Community Services District (3610120)
Reporting Year: 2015-2016 7/2015 - 6/2016

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

WATER SUPPLIED

Volume from own sources:	<input type="button" value="+"/> <input type="button" value="?"/> 7	2,485.050	acre-ft/yr
Water imported:	<input type="button" value="+"/> <input type="button" value="?"/> 4	1.260	acre-ft/yr
Water exported:	<input type="button" value="+"/> <input type="button" value="?"/> 2	0.000	acre-ft/yr

Master Meter and Supply Error Adjustments

<input type="button" value="+"/> <input type="button" value="?"/> 2	Pcnt:	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	Value:	3.657	acre-ft/yr
<input type="button" value="+"/> <input type="button" value="?"/> 1		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>		0.015	acre-ft/yr
<input type="button" value="+"/> <input type="button" value="?"/> 1		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>			acre-ft/yr

WATER SUPPLIED: 2,482.638 acre-ft/yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/> <input type="button" value="?"/> 6	2,147.340	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/> <input type="button" value="?"/> n/a		acre-ft/yr
Unbilled metered:	<input type="button" value="+"/> <input type="button" value="?"/> 3		acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/> <input type="button" value="?"/> 5	14.308	acre-ft/yr

AUTHORIZED CONSUMPTION: 2,161.648 acre-ft/yr

Click here: for help using option buttons below

Pcnt:	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	Value:	14.308	acre-ft/yr
-------	--	--------	--------	------------

Use buttons to select percentage of water supplied
OR
value

Pcnt:	<input type="radio"/> 0.25% <input checked="" type="radio"/> <input type="radio"/>	Value:		acre-ft/yr
-------	--	--------	--	------------

<input type="radio"/> 0.50% <input checked="" type="radio"/> <input type="radio"/>				acre-ft/yr
<input type="radio"/> 0.25% <input checked="" type="radio"/> <input type="radio"/>				acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

320.990 acre-ft/yr

Apparent Losses

Unauthorized consumption: **6.207** acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: 4 **10.791** acre-ft/yr

Systematic data handling errors: **5.368** acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 22.366 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **298.624** acre-ft/yr

WATER LOSSES: 320.990 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 335.298 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	<input type="button" value="+"/> <input type="button" value="?"/> 8	345.0	miles
Number of <u>active AND inactive</u> service connections:	<input type="button" value="+"/> <input type="button" value="?"/> 8	6,932	
Service connection density:	<input type="button" value="?"/> 20		conn./mile main

Are customer meters typically located at the curbside or property line? Yes

Average length of customer service line: 101.6

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 2 **101.6** psi

(length of service line, beyond the property boundary, that is the responsibility of the utility)

COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/> <input type="button" value="?"/> 10	\$5,885,309	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/> <input type="button" value="?"/> 9	\$2.49	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/> <input type="button" value="?"/> 4	\$737.55	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 65 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Customer metering inaccuracies
- 3: Variable production cost (applied to Real Losses)



AWWA Free Water Audit Software:

WAS v5.0

American Water Works Association
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Reporting Worksheet

Click to access definition
 Click to add a comment

Water Audit Report for: **Phelan Piñon Hills Community Services District (3610120)**
 Reporting Year: **2017** / **7/2016 - 6/2017**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

WATER SUPPLIED

----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	<input type="button" value="+"/> <input type="button" value="7"/>	2,624.400	acre-ft/yr
Water imported:	<input type="button" value="+"/> <input type="button" value="7"/>	0.000	acre-ft/yr
Water exported:	<input type="button" value="+"/> <input type="button" value="2"/>	14.260	acre-ft/yr

Master Meter and Supply Error Adjustments

<input type="button" value="+"/> <input type="button" value="2"/>	Pcnt:	<input type="radio"/> <input checked="" type="radio"/>	Value:	4.229	acre-ft/yr
<input type="button" value="+"/> <input type="button" value="2"/>		<input checked="" type="radio"/> <input type="radio"/>			acre-ft/yr
<input type="button" value="+"/> <input type="button" value="2"/>		<input type="radio"/> <input checked="" type="radio"/>		0.030	acre-ft/yr

WATER SUPPLIED: 2,605.941 acre-ft/yr

Enter negative % or value for under-registration
 Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/> <input type="button" value="6"/>	2,278.690	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/> <input type="button" value="n/a"/>		acre-ft/yr
Unbilled metered:	<input type="button" value="+"/> <input type="button" value="3"/>	22.170	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/> <input type="button" value="5"/>	8.130	acre-ft/yr

AUTHORIZED CONSUMPTION: 2,308.990 acre-ft/yr

Click here: for help using option buttons below

Pcnt: Value: 8.130 acre-ft/yr

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

296.951 acre-ft/yr

Apparent Losses

Unauthorized consumption: **6.515** acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	<input type="button" value="+"/> <input type="button" value="4"/>	11.562	acre-ft/yr
Systematic data handling errors:	<input type="button" value="+"/> <input type="button" value="8"/>	5.697	acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 23.774 acre-ft/yr

Pcnt: 0.25% Value:

0.50% Value:

0.25% Value:

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **273.177** acre-ft/yr

WATER LOSSES: 296.951 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 327.251 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	<input type="button" value="+"/> <input type="button" value="8"/>	345.9	miles
Number of <u>active AND inactive</u> service connections:	<input type="button" value="+"/> <input type="button" value="8"/>	6,953	
Service connection density:	<input type="button" value="2"/>	20	conn./mile main

Are customer meters typically located at the curbside or property line? (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 101.6 psi

COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/> <input type="button" value="10"/>	\$6,436,324	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/> <input type="button" value="9"/>	\$2.68	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/> <input type="button" value="4"/>	\$649.28	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 63 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Unbilled metered
- 3: Customer metering inaccuracies



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WAS v5.0

American Water Works Association
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Reporting Worksheet

? Click to access definition
+ Click to add a comment

Water Audit Report for: **Phelan Piñon Hills Community Services District (3610120)**
 Reporting Year: **2018** / 7/2017 - 6/2018

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

WATER SUPPLIED

<----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	+ ?	7	2,721.960	acre-ft/yr
Water imported:	+ ?	7	7.184	acre-ft/yr
Water exported:	+ ?	n/a	0.000	acre-ft/yr

Master Meter and Supply Error Adjustments

Pcmt:	2	Value:	-13.087	acre-ft/yr
Pcmt:	1	Value:	0.083	acre-ft/yr
Pcmt:		Value:		acre-ft/yr

WATER SUPPLIED: **2,742.149** acre-ft/yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Billed metered:	+ ?	6	2,368.250	acre-ft/yr
Billed unmetered:	+ ?	n/a	0.000	acre-ft/yr
Unbilled metered:	+ ?	5	10.400	acre-ft/yr
Unbilled unmetered:	+ ?	6	24.590	acre-ft/yr

AUTHORIZED CONSUMPTION: **2,403.240** acre-ft/yr

Click here: ?
for help using option buttons below

Pcmt: Value: 24.590 acre-ft/yr

Use buttons to select percentage of water supplied
OR value

Pcmt: Value: 0.25% 0.50% 0.25% acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption) **338.909** acre-ft/yr

Apparent Losses

Unauthorized consumption:	+ ?		6.855	acre-ft/yr
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed				
Customer metering inaccuracies:	+ ?	4	11.953	acre-ft/yr
Systematic data handling errors:	+ ?	5	5.921	acre-ft/yr
Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed				
Apparent Losses:	?		24.729	acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **314.180** acre-ft/yr

WATER LOSSES: **338.909** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **373.899** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+ ?	8	346.0	miles
Number of active AND inactive service connections:	+ ?	8	7,013	
Service connection density:	?		20	conn./mile main

Are customer meters typically located at the curbside or property line? **Yes**
 (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: **2** 101.6 psi

COST DATA

Total annual cost of operating water system:	+ ?	10	\$6,869,736	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?	9	\$1.57	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ?	6	\$574.62	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 66 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Customer metering inaccuracies
- 3: Billed metered



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Reporting Worksheet

American Water Works Association

Click to access definition
 Click to add a comment

Water Audit Report for: **Phelan Piñon Hills Community Services District (3610120)**
 Reporting Year: **2019** 7/2018 - 6/2019

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the

WATER SUPPLIED

<----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	<input type="button" value="+"/>	<input type="button" value="?"/>	7	2,650.371	acre-ft/yr
Water imported:	<input type="button" value="+"/>	<input type="button" value="?"/>	n/a	0.000	acre-ft/yr
Water exported:	<input type="button" value="+"/>	<input type="button" value="?"/>	5	16.960	acre-ft/yr

Master Meter and Supply Error Adjustments

<input type="button" value="+"/>	<input type="button" value="?"/>	2	<input type="radio"/>	<input checked="" type="radio"/>	-14.562	acre-ft/yr
<input type="button" value="+"/>	<input type="button" value="?"/>		<input type="radio"/>	<input checked="" type="radio"/>		acre-ft/yr
<input type="button" value="+"/>	<input type="button" value="?"/>	2	<input type="radio"/>	<input checked="" type="radio"/>	-0.100	acre-ft/yr

WATER SUPPLIED: **2,647.873** acre-ft/yr

Enter negative % or value for under-registration
 Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/>	<input type="button" value="?"/>	6	2,270.700	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/>	<input type="button" value="?"/>	n/a	0.000	acre-ft/yr
Unbilled metered:	<input type="button" value="+"/>	<input type="button" value="?"/>	8	6.900	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/>	<input type="button" value="?"/>	7	4.170	acre-ft/yr

AUTHORIZED CONSUMPTION: **2,281.770** acre-ft/yr

Click here: for help using option buttons below

Pcmt: Value: acre-ft/yr

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

366.103 acre-ft/yr

Apparent Losses

Unauthorized consumption: **6.620** acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	<input type="button" value="+"/>	<input type="button" value="?"/>	4	11.445	acre-ft/yr
Systematic data handling errors:	<input type="button" value="+"/>	<input type="button" value="?"/>	5	5.677	acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: **23.742** acre-ft/yr

Pcmt: Value:

0.25%

0.50%

0.25%

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **342.361** acre-ft/yr

WATER LOSSES: **366.103** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **377.173** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	<input type="button" value="+"/>	<input type="button" value="?"/>	8	346.0	miles
Number of active AND inactive service connections:	<input type="button" value="+"/>	<input type="button" value="?"/>	8	7,064	
Service connection density:	<input type="button" value="?"/>			20	conn./mile main

Are customer meters typically located at the curbstop or property line? (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: **3** **98.2** psi

COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/>	<input type="button" value="?"/>	10	\$7,454,263	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/>	<input type="button" value="?"/>	9	\$1.62	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/>	<input type="button" value="?"/>	6	\$718.98	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

Retail costs are less than (or equal to) production costs; please review and correct if necessary

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 68 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Customer metering inaccuracies
- 3: Billed metered



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WAS v5.0

Reporting Worksheet

American Water Works Association

?	Click to access definition
+	Click to add a comment

Water Audit Report for: **Phelan Piñon Hills Community Services District (3610120)**
 Reporting Year: **2020** 7/2019 - 6/2020

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the

WATER SUPPLIED

Volume from own sources:	<input type="button" value="+"/> <input type="button" value="?"/>	8	2,743.374	acre-ft/yr
Water imported:	<input type="button" value="+"/> <input type="button" value="?"/>	n/a	0.000	acre-ft/yr
Water exported:	<input type="button" value="+"/> <input type="button" value="?"/>	n/a	0.000	acre-ft/yr

Master Meter and Supply Error Adjustments

<input type="button" value="+"/> <input type="button" value="?"/>	2	<input type="radio"/>	<input checked="" type="radio"/>	-8.191	acre-ft/yr
<input type="button" value="+"/> <input type="button" value="?"/>		<input type="radio"/>	<input checked="" type="radio"/>		acre-ft/yr
<input type="button" value="+"/> <input type="button" value="?"/>		<input type="radio"/>	<input checked="" type="radio"/>		acre-ft/yr

WATER SUPPLIED: 2,751.565 acre-ft/yr

Enter negative % or value for under-registration
 Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/> <input type="button" value="?"/>	8	2,332.380	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/> <input type="button" value="?"/>	n/a	0.000	acre-ft/yr
Unbilled metered:	<input type="button" value="+"/> <input type="button" value="?"/>	8	5.740	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/> <input type="button" value="?"/>	6	1.210	acre-ft/yr

AUTHORIZED CONSUMPTION: 2,339.330 acre-ft/yr

Click here: for help using option buttons below

Pcmt: Value: 1.210 acre-ft/yr

Use buttons to select percentage of water supplied
 OR
 value

Pcmt: 0.25% Value: acre-ft/yr

0.50% acre-ft/yr

0.25% acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

412.235 acre-ft/yr

Apparent Losses

Unauthorized consumption: **6.879** acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	<input type="button" value="+"/> <input type="button" value="?"/>	6	11.749	acre-ft/yr
Systematic data handling errors:	<input type="button" value="+"/> <input type="button" value="?"/>	5	5.831	acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 24.459 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **387.775** acre-ft/yr

WATER LOSSES: 412.235 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 419.185 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	<input type="button" value="+"/> <input type="button" value="?"/>	8	346.6	miles
Number of active AND inactive service connections:	<input type="button" value="+"/> <input type="button" value="?"/>	8	7,137	
Service connection density:	<input type="button" value="+"/> <input type="button" value="?"/>		21	conn./mile main

Are customer meters typically located at the curbside or property line? (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 3 **101.0** psi

COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/> <input type="button" value="?"/>	10	\$9,220,403	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/> <input type="button" value="?"/>	9	\$1.75	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/> <input type="button" value="?"/>	6	\$747.25	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 75 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Customer metering inaccuracies
- 3: Variable production cost (applied to Real Losses)

Appendix F- 2020 Compliance Form

SB X7-7 Table 0: Units of Measure Used in 2020 UWMP*

(select one from the drop down list)

Acre Feet

**The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.*

NOTES:

SB X7-7 Table 2: Method for 2020 Population Estimate

Method Used to Determine 2020 Population (may check more than one)	
<input type="checkbox"/>	1. Department of Finance (DOF) or American Community Survey (ACS)
<input type="checkbox"/>	2. Persons-per-Connection Method
<input type="checkbox"/>	3. DWR Population Tool
<input checked="" type="checkbox"/>	4. Other DWR recommends pre-review
NOTES: MWA Population Forecast-2020 Edition	

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	20,836
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use

Compliance Year 2020	2020 Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use*	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
	2,948			-		-	2,948

* Units of measure (AF, MG , or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.

NOTES:

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source		Groundwater	
This water source is (check one) :			
<input checked="" type="checkbox"/>	The supplier's own water source		
<input type="checkbox"/>	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System ¹	Meter Error Adjustment ² Optional (+/-)	Corrected Volume Entering Distribution System
	2,948	-	2,948
¹ <i>Units of measure (AF, MG , or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.</i>			
² <i>Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>			
NOTES			

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)

2020 Gross Water <i>Fm SB X7-7 Table 4</i>	2020 Population <i>Fm</i> <i>SB X7-7 Table 3</i>	2020 GPCD
2,948	20,836	126

NOTES:

SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD ¹	Optional Adjustments to 2020 GPCD				2020 Confirmed Target GPCD ^{1,2}	Did Supplier Achieve Targeted Reduction for 2020?	
	Enter "0" if Adjustment Not Used			TOTAL Adjustments ¹			Adjusted 2020 GPCD ¹ <i>(Adjusted if applicable)</i>
	Extraordinary Events ¹	Weather Normalization ¹	Economic Adjustment ¹				
126	-	-	-	-	126	162	YES

¹ All values are reported in GPCD

² **2020 Confirmed Target GPCD** is taken from the Supplier's SB X7-7 Verification Form Table SB X7-7, 7-F.

NOTES:

Appendix G- MWA Watermaster Annual Report Water Year 2019 to 2020

WATERMASTER:
Jeanette Hayhurst, Chairman
Kimberly Cox, Vice Chairman
Carl Coleman
Richard D. Hall
Mike Page
Thurston Smith
Jim Ventura

Kathy Cortner, Executive Officer
Joanne James, Secretary
Karry LaClair, Treasurer
William J. Brunick, Attorney
Robert C. Wagner, Engineer

FINAL DRAFT

TWENTY-SEVENTH ANNUAL REPORT

OF THE

MOJAVE BASIN AREA WATERMASTER

WATER YEAR 2019-20

CITY OF BARSTOW, ET AL, VS. CITY OF ADELANTO, ET AL,
CASE NO. 208568 -- RIVERSIDE COUNTY SUPERIOR COURT

MARCH 24, 2021

MAY 1, 2021

**TWENTY-SEVENTH ANNUAL REPORT OF THE
MOJAVE BASIN AREA WATERMASTER
FOR WATER YEAR 2019-20**

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CHAPTER 1

INTRODUCTION

This is the Twenty-seventh Annual Report of the Mojave Basin Area Watermaster to the Riverside County Superior Court pursuant to the Stipulated Judgment in City of Barstow, et al., vs. City of Adelanto, et al. and related cross-complaints, which were consolidated into Case No. 208568. The Stipulated Judgment addresses water supply shortages in the Mojave Basin Area through the creation of a Physical Solution based upon the allocation of responsibility for correction of annual overdraft and for maintaining historical average annual flows between Subareas.

The Stipulated Judgment requires the Watermaster to file an annual report with the Court by May 1 of each year. The required contents of the annual report are set forth in Section V (B), Paragraph 24 (k) of the Judgment.

Scope of Report

This Report summarizes most of the information required by the Stipulated Judgment and includes a summary of the Watermaster activities and water supply conditions for Water Year 2019-20. Appendix L to this report consists of a detailed accounting of surface water and groundwater production for Water Year 2019-20. Also included in Appendix L is a list of Base Annual Production (“BAP”) transfers and changes in ownership. Following is a list of the specific items required by the Judgment and where they may be found in the Report.

- a. Fiscal Report: Chapter 6
- b. Review of Watermaster Activities: Chapter 2
- c. Replacement and Makeup Obligations: Chapter 4 and Appendix B
- d. Hydrologic Data: Chapter 3
- e. Purchase of Supplemental Water: Chapter 6
- f. Recharge with Supplemental Water: Chapter 4
- g. Notice List: Appendix J
- h. Rules and Regulations Adopted: Chapter 2
- i. Proposed Administrative Budget for 2021-22: Chapter 6
- j. Transfers of Base Annual Production Rights: Appendix E, K & L (Table 8)

- k. Transfers of Free Production Allowance during 2019-20: Appendix E
- l. Proposed Free Production Allowances for Subareas: Chapter 5 and Appendix H
- m. Summary of Water Production: Appendix B and Appendix L (Tables 1-7)
- n. Replacement Water Assessments: Appendix B
- o. Makeup Water Assessments: Appendix B
- p. Proposed Administrative and Biological Assessment Rates for 2021-22: Chapter 6
- q. Projected Replacement and Makeup Water Assessment Rates for 2020-21 and 2021-22: Chapter 6
- r. Status of Subarea Obligations: Chapter 4
- s. Biological Trust Fund Financial Report: Chapter 6
- t. Auditor's Report: Appendix G

History of Litigation

Complaint. The original complaint was filed by the City of Barstow and Southern California Water Company in San Bernardino County Superior Court on May 30, 1990 and was transferred to Riverside County Superior Court on November 27, 1990. The complaint alleged that the cumulative water production upstream of the City of Barstow has overdrafted the Mojave River system and requested an average annual flow of 30,000 acre-feet of surface water to the City of Barstow area. The complaint also included a request for a writ of mandate to require the Mojave Water Agency ("MWA") to act pursuant to its statutory authority to obtain and provide supplemental water for use within the Mojave Basin Area.

MWA Cross-Complaint. On July 26, 1991, the MWA filed its first amended cross-complaint in the case, naming substantially all Producers of water within the Mojave Basin Area, including Parties downstream of the City of Barstow. The MWA cross-complaint requested a declaration that the available native water supply to the Mojave Basin Area is inadequate to meet the demands of the combined Parties and requested a determination of all of the water production of whatever nature within the Mojave Basin Area.

Arc Las Flores Cross-Complaint. On July 3, 1991, Arc Las Flores (Rancho Las Flores Ltd. Partnership) filed a cross-complaint asking that the appropriative, overlying and riparian rights of Arc Las Flores be determined to be prior and paramount to any rights of the Plaintiffs and other appropriators.

Negotiations, Trial and Judgment. Because of the magnitude and complexity of the case, numerous parties agreed to conduct good faith negotiations, beginning in early 1992, with the objective of devising an equitable solution to the Basin Area's water supply problems and avoiding extensive and expensive litigation. In the ensuing months a committee of attorneys, engineers and other individuals that were generally representative of all types of producers and all Subareas of the Basin Area conducted intense negotiations that resulted in a proposed Stipulated Judgment. The proposal created a class of Minimal Producers (that is, Producers using ten acre-feet of water per year or less) who were dismissed from the case. The proposal also directed the MWA to create an administrative procedure, acceptable to the Court, by which Minimal Producers could participate fairly in the Physical Solution.

Over 75 percent of the parties agreed to the Stipulated Judgment, which was entered by the Court on September 22, 1993, binding all stipulating parties. After entry of the Stipulated Judgment, additional parties agreed to its terms. These parties represented over 80 percent of the verified water production in the Basin. A trial of the claims of the non-stipulating parties began on February 6, 1995 and was completed on March 21, 1995. Final Judgment was entered on January 10, 1996 adopting the physical solution set forth in the Stipulated Judgment.

Fourth District Court of Appeal and California Supreme Court Review. Nine non-stipulating parties referred to as the "Cardozo Group" chose to appeal the Judgment entered by the Superior Court. The Appellate Court issued a Tentative Opinion in April 1998 and received oral argument from both the stipulating and non-stipulating parties in May 1998. The Appellate Court issued its final opinion on June 1, 1998. The final opinion affirmed in part and reversed in part the Superior Court Judgment by excluding specific non-stipulating parties (the Cardozo Group) from the Superior Court Judgment and at the same time affirming it as to the stipulating parties. The decision also remanded the issue of the amount of transferable production rights for Jess Ranch Water Company back to the Superior Court for a new determination.

The MWA board voted in June 1998 to seek California Supreme Court Review of the Appellate Court's decision. A petition for review was filed with the Supreme Court in July 1998 and the Supreme Court granted review of the case on August 26, 1998. Oral Arguments were heard by the Supreme Court on June 5, 2000 and its opinion was issued on August 21, 2000. The Supreme Court's opinion affirmed in part and reversed in part the June 1, 1998 opinion of the Fourth District Court of Appeal. The Supreme Court affirmed the Court of Appeal's decision "in

all respects,” except it reversed the Court of Appeal decision as to the Jess Ranch Water Company.

The Court of Appeal had affirmed the Judgment as to the stipulating parties but had reversed it as to the Cardozo Appellants and as to Jess Ranch Water Company. The Court of Appeal opinion essentially excluded the Cardozo Appellants from the Stipulated Judgment, including the Judgment’s assessment provisions. Further, the Court of Appeal granted Judgment to the Cardozo Appellants in the form of injunctive relief to protect their riparian and overlying water rights to the current and prospective reasonable and beneficial need for water on their respective properties.

Final Resolution of Cardozo Group and Jess Ranch Water Company Appellants.

Effective August 6, 2002 the Cardozo appellants and MWA, on behalf of the stipulating parties, reached agreement regarding the Cardozo appellants’ water rights. Consistent with the ruling from the California Supreme Court in this case, Cardozo Group’s right to pump water from the ground underneath their respective lands for the current and prospective reasonable and beneficial need for water on their respective properties was recognized by the Stipulating parties. Further, to settle all outstanding issues in connection with the Cardozo Group water rights, MWA and Cardozo agreed that “if the parties who stipulated to the Judgment are in full compliance with the Judgment there shall be a rebuttable presumption that the Cardozo Appellants’ water rights are not being interfered with.”

In addition, all remaining water rights issues related to Jess Ranch Water Company and the Stipulating Parties were settled on August 16, 2002. Stipulation for Intervention and Entry of Judgment for Jess Ranch Water Company was filed in Riverside County Superior Court on August 23, 2002.

Summary of the Judgment

For purposes of defining and implementing a physical solution, the Basin is considered to consist of five distinct but hydrologically interrelated “Subareas.” Each Subarea was found to be in overdraft to some extent due to the use of water by all of the producers in that Subarea. In addition, historically some Subareas were found to have received at least a part of their natural water supply from water flowing to them from upstream Subareas either on the surface or as subsurface flow. To maintain that historical relationship, the average annual obligation of any Subarea to another is set equal to the estimated average annual natural flow (excluding storm flow)

between the Subareas over the 60-year period 1930-31 through 1989-90. If the Subarea obligation is not met, Producers of water that does not bear a replacement obligation in the upstream Subarea must provide makeup water.

To maintain proper water balances within each Subarea, the Judgment establishes a decreasing Free Production Allowance (“FPA”) in each Subarea during the first five years and provides for the Court to review and adjust, as appropriate, the FPA for each Subarea annually thereafter. The FPA is allocated among the Producers in the Subarea based on each Producer’s percentage share of the FPA. All water produced in excess of any Producer’s share of the FPA must be replaced by the Producer, normally by payment to the Watermaster of funds sufficient to purchase Replacement Water.

Each Producer’s percentage share of FPA in a Subarea was determined by first verifying the maximum annual production (called BAP) for each Producer during the five year, 1986-90, Base Period and then calculating each Producer’s percentage share of the total of all of such BAP in the Subarea. All such percentage allocations are of equal priority.

Producers in each Subarea are allowed to produce as much water as they need annually to meet their requirements, subject only to compliance with the Physical Solution set forth in the Judgment. An underlying assumption of the Judgment is that sufficient water will be made available to meet the needs of the Basin in the future from a combination of natural supply, imported water, water conservation, water reuse and transfers of FPA among parties.

Special provisions for environmental protection are included in the Judgment, including the creation of a Biological Resources Trust Fund.

MWA was appointed as the initial Watermaster by the Court to administer the Judgment and the Physical Solution set forth therein.

The Physical Solution

Replacement Water: Keeping Subareas in Balance. The amount of water that may be produced in a Subarea in any year by a Producer free of any replacement obligation is that Producer's share of the Subarea's FPA. During the first five years that the Judgment is in effect each Producer's share of the FPA in each of the five Subareas, expressed as a percentage of that Producer's BAP is as follows:

Water Year 1993-94	-	100 %
Water Year 1994-95	-	95 %
Water Year 1995-96	-	90 %
Water Year 1996-97	-	85 %
Water Year 1997-98	-	80 %

Before the end of the fifth year and each year thereafter, the Watermaster must analyze conditions in each Subarea and recommend to the Court any increase or further reduction in FPA. The Judgment specifies factors that must be taken into consideration by the Watermaster in the development of an FPA adjustment recommendation. Beginning with the sixth year and each year thereafter, the FPA established by the Court for each Subarea will be allocated to Producers in the ratio of their respective share of the BAP in the Subarea.

Any Producer who produces in any year an amount of water in excess of that Producer's share of the FPA for a Subarea must pay the Watermaster a Replacement Water Assessment. The Watermaster then assumes responsibility for replacing such excess production. The Replacement Water Assessment for a Producer will be equal to the number of acre-feet of excess production by that Producer multiplied by the Replacement Water Assessment Rate per acre-foot as adopted annually by the Watermaster. It is the Watermaster's responsibility to acquire Replacement Water.

Makeup Water: Meeting Subarea Obligations. Both average and minimum annual flows must be maintained between adjoining Subareas. Each year an accounting will be made of the amount of such flows. Whenever the amount is less than the minimum amount required by the Judgment the Producers in the upstream Subarea must pay the Watermaster for Makeup Water to be delivered to the downstream Subarea.

If the actual flow in a year is more or less than the average Subarea Obligation, then the upstream Subarea may receive a “credit” or “debit” that can offset any future deficiencies or surpluses.

The cost of Makeup Water will be recovered from Producers within the Subarea incurring the Makeup Obligation through a Makeup Water Assessment. Such assessment will be pro-rated among all production that does not bear a Replacement Obligation. It is the Watermaster’s responsibility to acquire Makeup Water.

Administrative Assessment: Paying the Cost to Administer the Judgment. Costs of monitoring flows, verifying annual production, collecting assessments, preparing an annual report to the Court and other such costs will be recovered through a uniform Administrative Assessment against all production within the Basin Area. The Administrative Assessment will be payable quarterly when quarterly production reports are filed.

Transfers: Buying, Selling or Leasing BAP or FPA. The Judgment provides a framework for BAP or FPA to be bought, sold or leased within Subareas and between Subareas. For instance, a party who was allocated one percent of the FPA in a Subarea could lease that allocation to a second party in a private transaction. The second party could then produce additional water free of a Replacement Obligation.

The Judgment sets forth some rules governing transfers. The rules are designed to assure that the total consumptive use within a Subarea does not increase as a result of any transfer.

Biological Resource Mitigation: Protecting Species and Habitat. The Judgment contains unique provisions for assuring that the water needs of endangered and other species and of riparian habitat in the Mojave Basin Area are protected. Groundwater level standards are set in several key areas along the River. The Judgment must be administered in certain respects with the intent to meet the standards.

In the event standards are not met, a trust fund is established by the Judgment to provide money to buy water, construct wells or other projects proposed by the California Department of Fish and Wildlife (“DFW”). The trust fund, which is capped initially at \$1,000,000.00 (in 1993 dollars), will be financed by an escalating per acre-foot assessment on production beginning at \$0.50.

Producer Responsibilities: Reporting and Assessments. Each Producer is responsible for reporting accurately the amount of water produced and for paying all applicable assessments promptly. Any transfer of BAP or FPA or change in purpose of use must also be reported.

Subarea Advisory Committees. The Producers in each Subarea have elected a committee to advise the Watermaster on the administration of the Judgment. The California Department of Fish and Wildlife is an ex-officio member of the Subarea Advisory Committees for the Alto and Baja Subareas.

Watermaster: Administering the Judgment for the Court. MWA was appointed the Watermaster initially. MWA or any subsequent appointee can be removed by the Court for failure to administer the Judgment properly and fairly.

The Watermaster is responsible for monitoring flows, verifying water production, reporting to the Court, collecting assessments and conducting studies.

The Watermaster must comply with the Brown Act regarding notices and meetings and with the Public Records Act regarding access to data and records.

CHAPTER 2

SUMMARY OF WATERMASTER ACTIVITIES

During Water Year 2019-20, the Mojave Basin Area Watermaster consisted of Carl Coleman, Kimberly Cox, Richard Hall, Jeanette Hayhurst, Mike Page, Thurston Smith, and Jim Ventura. Jeanette Hayhurst and Kimberly Cox served as Chairman and Vice Chairman respectively. Kathy Cortner served as Executive Officer, Joanne James as Secretary and Karry LaClair as Treasurer.

The first Watermaster meeting of the 2019-20 Water Year was held on October 23, 2019 and eight additional meetings were held throughout the year. Copies of the minutes of the meetings as well as other official records are maintained and available at the office of the Watermaster, which is located at 13846 Conference Center Drive, Apple Valley, CA 92307.

As required by the Judgment, the Watermaster prepared the Twenty-sixth Annual Report of the Mojave Basin Area Watermaster for Water Year 2018-19, which was published under the date May 1, 2020.

Watermaster adopted recommendations for FPA for Water Year 2020-21 as indicated in Watermaster's Twenty-sixth Annual Report to the Court. The Court subsequently adopted Watermaster's recommendations but modified the recommendation for Alto Agriculture and Oeste. The modifications are included in the Court's Orders dated June 11, 2020 and August 13, 2020.

Actions taken by the Watermaster during the year included acceptance of the Report on Audit for Fiscal Year 2018-19, approval of the Administrative Budget for Water Year 2020-21, and approval of Replacement, Makeup, Administrative and Biological Assessment Rates for Water Year 2020-21. The Administrative Budget and Assessment Rates for 2020-21 were adopted and are summarized on Table 2-1.

Transfers

There were 222 transfers of FPA and Carryover FPA during the year. These transfers are reported in Appendix E. There were 30 transfers of BAP. Transfers of BAP are reported in Appendix E, K & L (Table 8). Any additional transfers of unused 2019-20 FPA that may take place prior to June 1, 2021 will be reported in Appendix E of the Watermaster's Annual Report for 2020-21.

Rules and Regulations

The Rules and Regulations that were adopted by Watermaster June 30, 1994 and revised December 11, 1996, March 23, 2005 and October 29, 2008 remain in effect.

Biological Resources Trust Fund

The Biological Resources Assessment Rate for 2019-20 was \$0.95 per acre-foot. Expenditures from the Biological Resources Trust Fund during the year for DFW projects totaled \$91,428.94. The Biological Resources Assessment Rate for 2020-21 was increased to \$0.96 per acre-foot.

Storage Agreements

A Storage Agreement between Watermaster and MWA covering each Subarea was approved during the 1994-95 Water Year. In September 2016 an amendment and a 20-year extension to 2036 was approved by Watermaster, per the terms of the agreement. In October 2018, an amendment was approved by Watermaster to increase the storage limit for Baja from 23,000 acre-feet to 50,000 acre-feet.

Watermaster entered into a storage agreement with Victorville Water District (formerly VVWD) in June 2002. Per the terms of the agreement, an extension to June 30, 2022 was approved by Watermaster. Another Storage Agreement was entered into with Victorville Water District under different terms in July 2016 for a period of two years. This agreement was extended by Watermaster for an additional 10 years in Oct 2018.

The status of each storage account is reported in Appendix F.

TABLE 2-1

MOJAVE BASIN AREA WATERMASTER
ADMINISTRATIVE BUDGET AND ASSESSMENT RATES
FOR WATER YEAR 2020-21

ADMINISTRATIVE BUDGET

1.	Administrative Services	\$ 386,358.00
2.	Engineering Services	\$ 118,500.00
3.	Legal Services	\$ 60,000.00
4.	Audit Services	\$ 3,800.00
	Total Estimated Budget	\$ <u>568,658.00</u>

ASSESSMENT RATES

1. Administrative
\$3.55/acre-foot of Production
2. Biological
\$ 0.96/acre-foot of Production
3. Replacement and Makeup Water
2019-20 \$604.00 /acre-foot¹
(6/1/21 Invoice Date)
2020-21 “Not to exceed” \$665.00 /acre-foot²
(6/1/22 Invoice Date)

¹. The rate adopted for Water Year 2019-20 was adopted by the Mojave Water Agency on January 28, 2021 pursuant to Resolution No. 1095-21 in accordance with the changes to the Watermaster Rules and Regulations adopted October 29, 2008.

². This rate is for obligations incurred in the 2020-21 Water Year which will be billed in June 2022. The fixed rate that will be used for invoicing will be determined by the Mojave Water Agency by February 2022.

Subarea Advisory Committees

The Judgment requires that every third year the Subarea Advisory Committees elect new members. Each Subarea Advisory Committee consists of five members elected by the producers, with the California Department of Fish and Wildlife acting as an ex-officio member on the Alto and Baja Committees. Nominations, voting and tabulation of results were conducted by Watermaster during January, February and March 2018.

The Subarea Advisory Committees during the 2019-20 Water Year were made up as follows:

ALTO SUBAREA

City of Victorville*
Steve Samaras
San Bernardino County Service Areas
Craig Carlson
Helendale Community Services District
Tina Souza
Hesperia Water District
Bobby Boytor
Mojave Resource Management LLC
California Department of Fish & Game **

BAJA SUBAREA

Annette (Netta) DeJong
Ellen Johnson*
Calico Lakes Homeowners Association
Jeff Gaastra
Newberry Springs Recreational Lake
Association
Lee Hiett
Daggett Community Services District
California Department of Fish & Game **

CENTRO SUBAREA

Dale Ruisch
Golden State Water Company*
Eldert Van Dam
City of Victorville
Bobby Boytor
Mojave Resource Management LLC

ESTE SUBAREA

Chuck Bell*
Golden State Water Company
James Pettigrew
David Rib
Mitsubishi Cement Corporation
Richard Selby

OESTE SUBAREA

Kent T. Christensen
Aerochem, Inc.
--Vacant Seat--
--Vacant Seat--
--Vacant Seat--
--Vacant Seat--

* Chairperson
** Ex-officio Member

Water Production and Verification

In order to document water usage and to determine each Producer's Replacement Water and Makeup Water Obligations, the Judgment provides for the collection, analysis and verification of annual water production by Producers within each of the five Subareas beginning with Water Year 1993-94. All Producers are required to file quarterly statements (or as otherwise specified in the Rules and Regulations) of production. Verification of production for Water Year 2019-20 was conducted by the Watermaster staff and included verification of all parties to the Judgment. The verified production of all parties for Water Year 2019-20 is assembled and presented in Appendix B and Appendix L (Tables 1-7).

The Watermaster obtained protective orders from the Court in 1992 and 2005 for access and use of annual electrical data from the local service provider Southern California Edison Company (SCE). This data is essential for the verification of water production of parties within the Mojave Basin Area. Pursuant to the protective order, all data is confidential and can only be used by Watermaster for the purpose of calculating water production. This data may not be disseminated to the public in any way. All parties are notified of the release of this information at least 30 days ahead of time and have the option to decline the release of this data. An indemnity clause within the order protects SCE from any potential complaint.

Section 11 of the Rules and Regulations sets forth the criteria for monitoring production. The Watermaster informed Producers of their responsibility to measure production in accordance with the terms of the Judgment and the Rules and Regulations by letter on June 25, 2020. Watermaster will continue its efforts to obtain voluntary compliance with the Rules and Regulations from each Producer.

Quantifying Production not Under the Judgment

Starting in 2015, Watermaster began an effort to review, catalog and quantify uses of water that may be over 10 acre-feet per year which are not currently included in the Judgment. Watermaster obtains aerial photographs encompassing the Mojave Basin Area annually and uses them to assist in annual water production verification for parties to the Judgment. In that effort Watermaster also reviews the photographs to identify properties where water might be produced but where the property and owner are not currently subject to the Judgment. Properties are identified and the extent (acreage) of disturbed lands is estimated from the aerial photographs.

Identifying these parties requires detailed evaluation of hundreds of photographs throughout the 3,400 square mile area of the basin.

Watermaster maintains a database of the parties identified with information such as current owner, addresses, assessor parcel number, estimates of potential water use, crops and land uses. Potential water use was calculated based on climate data and assumptions about crops and land uses as seen on the aerial photographs. In some cases, physical inspection of the property is performed (on a drive by basis) if warranted from the size of the disturbance shown on the photographs or to fully identify crop types. Watermaster has coordinated with the Subarea Advisory Committees as well as obtained information from local residents and water purveyors to identify subject properties.

In 2016 and 2017 (follow-up in 2018) from the evaluations conducted and at the direction of the Watermaster Board, Watermaster staff and the engineer engaged the parties that were identified through a detailed letter describing the Judgment and potential obligations of producers pumping in excess of 10 acre-feet under the Judgment. Subsequently, staff personally met with over half of the identified parties on a voluntary basis. Voluntary stipulations to the Judgment were obtained from 7 of these parties (generally the larger pumpers). Many of those engaged indicated that they were not pumping more than 10 acre-feet per year, however, most did not have data to support their level of water production. Many of the small producers that pump less than 10 acre-feet per year have established small orchards with young trees where water demand is small. The demand will increase as the trees age, grow, and produce fruit. Those producers may in time exceed 10 acre-feet per year and will need to be managed in some manner so as not to exacerbate overdraft.

Watermaster continues to pursue obtaining voluntary compliance from these pumpers and ask that they consider stipulating to the Judgment. The process of identifying, tracking and public outreach continues as part of Watermaster's annual evaluations of the Basin Area.

Streamflow, Precipitation and Other Data

Various data, including streamflow and precipitation data, are needed to estimate the natural water supplies accruing to each Subarea and to calculate compliance with certain Subarea obligations. Streamflow data required by the Watermaster was furnished by the U.S. Geological Survey ("USGS"). The MWA, under a Cooperative Agreement with the USGS, currently funds 50 percent of the stream gage operation and maintenance at the Deep Creek, Lower Narrows,

Barstow and Afton stations. The U.S. Army Corps of Engineers (“ACOE”) funds the West Fork Mojave River gage. Beginning with the 1993-94 Water Year, the frequency of direct measurements at the Lower Narrows was increased from once to twice monthly in order to improve the record. The measurements were subsequently increased from twice monthly to weekly during the 1995-96 Water Year, a practice which continued through the 2019-20 Water Year.

The USGS conducted a review of its measurement procedures and statistical data analysis procedures for the Lower Narrows gage in 1998 and reported that the “published stream flow records represent the best determinations of flow possible given the primary data collected in support of the stream flow gaging stations”. The USGS concluded by saying that it is confident that its flow measurement and computation techniques will be found adequate and stream flow records validated.

Records of the discharge of reclaimed wastewater to the Mojave River downstream from the Lower Narrows gage were furnished by the Victor Valley Wastewater Reclamation Authority (“VWVRA”) and the City of Victorville, Public Works Department (Victorville). These discharge records are used to determine the contribution of the combined VWVRA and Victorville discharge to the Alto Subarea’s annual flow obligation to the Centro Subarea.

Precipitation data utilized by Watermaster is compiled from records obtained from the National Oceanographic and Atmospheric Administration (“NOAA”) for Victorville and Barstow precipitation stations and for Lake Arrowhead from the San Bernardino County, Department of Public Works precipitation Station #5140 (Lake Arrowhead Fire Station #1).

Related MWA Activities

MWA approved a request for proposals for consulting services to evaluate the potential for a large-scale Groundwater Banking Program. The technical study will evaluate water banking alternatives and associated necessary capital improvements, financial benefits and implications, basin effects, environmental/permitting requirements, coordination with the Judgment and other technical issues associated with initiating a groundwater bank. Work began in February 2020 and will be a multi-year project.

Environmental work has been completed to build a groundwater recharge facility in the Este Subarea. A test site will be developed in the area for demonstration purposes prior to building the larger recharge facility. A demonstration recharge project in Oeste is being developed on a site owned by MWA in the western part of Oeste and is expected to be operational by the end of

2022. A feasibility study for an Oeste managed aquifer recharge area began in January 2019 and will help assess the regional suitability for the project. The study will characterize surface infiltration rates, subsurface hydrogeologic zones and properties, groundwater levels, hydraulic properties and alluvial sediments of the aquifer as well as identify favorable areas for recharge facilities.

Geotechnical and geohydrology investigations in the upper Alto, Oeste and western Este Subareas continued that will provide better information and data to use in determining the best locations for future off-river recharge basins. Two monitoring wells will be installed in the west Victorville area to help characterize the subsurface geology and provide permanent high-quality groundwater monitoring data points. The Agency's groundwater model for the upper Mojave River Basin will be updated as part of the ongoing investigations.

The Regional, Recharge and Recovery Project (R3) was constructed by MWA as a basin management tool that could be used to help manage where water is recharged and pumped in the Alto Subarea in order to help alleviate basin pumping stresses. MWA maintains three Mojave River recharge sites in the upper Alto Subarea, all upstream of the six R3 Wells that were constructed for the project. Water from the R3 project is pumped on behalf of a stipulating party, as requested, and is subject to the same rules and assessments under the Judgment. Watermaster reports the amount of R3 water delivered to specific stipulating parties in Appendix B. The total amount of deliveries for the 2019-20 Water Year was 4,220 acre-feet. Operational water associated with this project is the responsibility of MWA and is also shown on Appendix B. In May 2019 the design phase of a pipeline extension for R3 began and construction commenced in September 2020. The extension will provide for delivery locations farther west in the Alto Subarea.

The MWA entered into a Memorandum of Understanding with the Mojave Desert Resource Conservation District (MDRCD) for the removal of invasive, non-native plants along the Mojave River riparian corridor. The invasive plants, primarily tamarisk, displace native riparian plants species, increase the risk for flooding and fire hazard and use disproportionate quantities of groundwater within the Mojave River floodplain aquifer. About 10,400 acres have been canvassed for invasive plant species along the Mojave River riparian corridor and approximately 1,780 weed acres have been removed and treated. MWA contributed \$25,000 to the program in 2019-20, and another \$20,000 in 2020-21, which will focus on retreatment and monitoring in the previously treated areas. Department of Fish and Wildlife contributed \$30,000

in 2019-20 and another \$40,000 in 2020-21 to the project for removal and retreatment in the Exhibit H areas identified in the Judgment in the Alto and Baja Subareas.

Launched in 2008, the Cash for Grass program was used by MWA to help achieve a goal of helping local communities meet the state mandated goals of reducing water usage by 20 percent among residential users by the year 2020. Funded with local money and grants from the Department of Water Resources, the program has surpassed its goals resulting in the removal of more than 9 million square feet of residential turf. In 2015, the large-scale Cash for Grass program was initiated and has focused on removal of turf from larger landscape areas such as schools, homeowner associations, golf courses and commercial properties. This program has been very successful and has currently removed 2 million square feet of turf and will remove 1.3 million more by the end of 2021. Ten years ago, per capita water use in the region was 250 gallons a day. Today, that figure has dropped to under 150 gallons per person. The conservation programs instituted have resulted in a reduction of water consumption of more than 30 percent.

The MWA completed a technical study for the Mojave Basin Area to estimate the groundwater production of minimal producers by using aerial photography, sophisticated land use software and local control groups. The data was used to better understand the amount of minimal producer production and to develop a system to account for future minimal producer water use. The estimate of water use by minimal pumpers as of 2011 is substantially less than the amount estimated at the time of trial in 1995. Consequently, the amount of pumping attributed to minimal producers cannot affect a given Party's Base Annual Production Right relative to the Judgment. MWA will continue to evaluate and update estimated water use by the minimal producers.

CHAPTER 3

WATER SUPPLY CONDITIONS

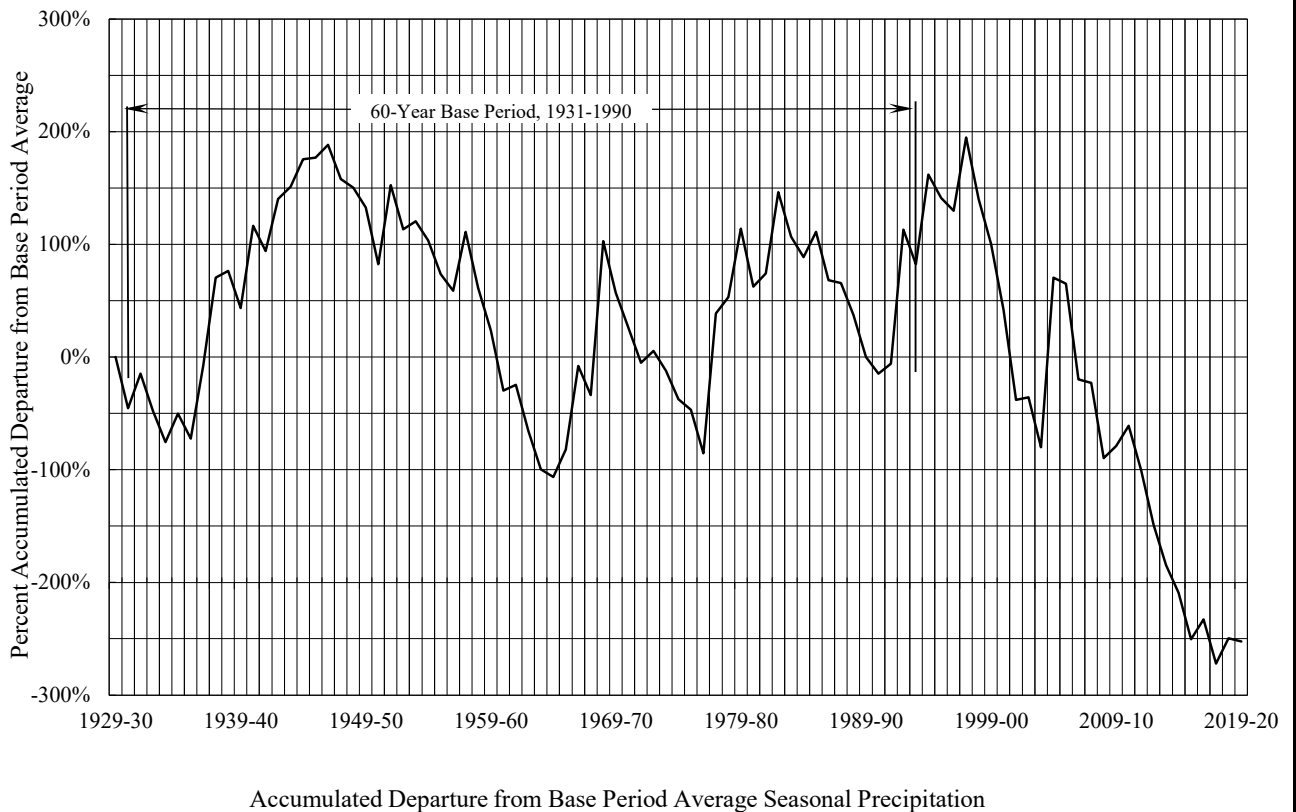
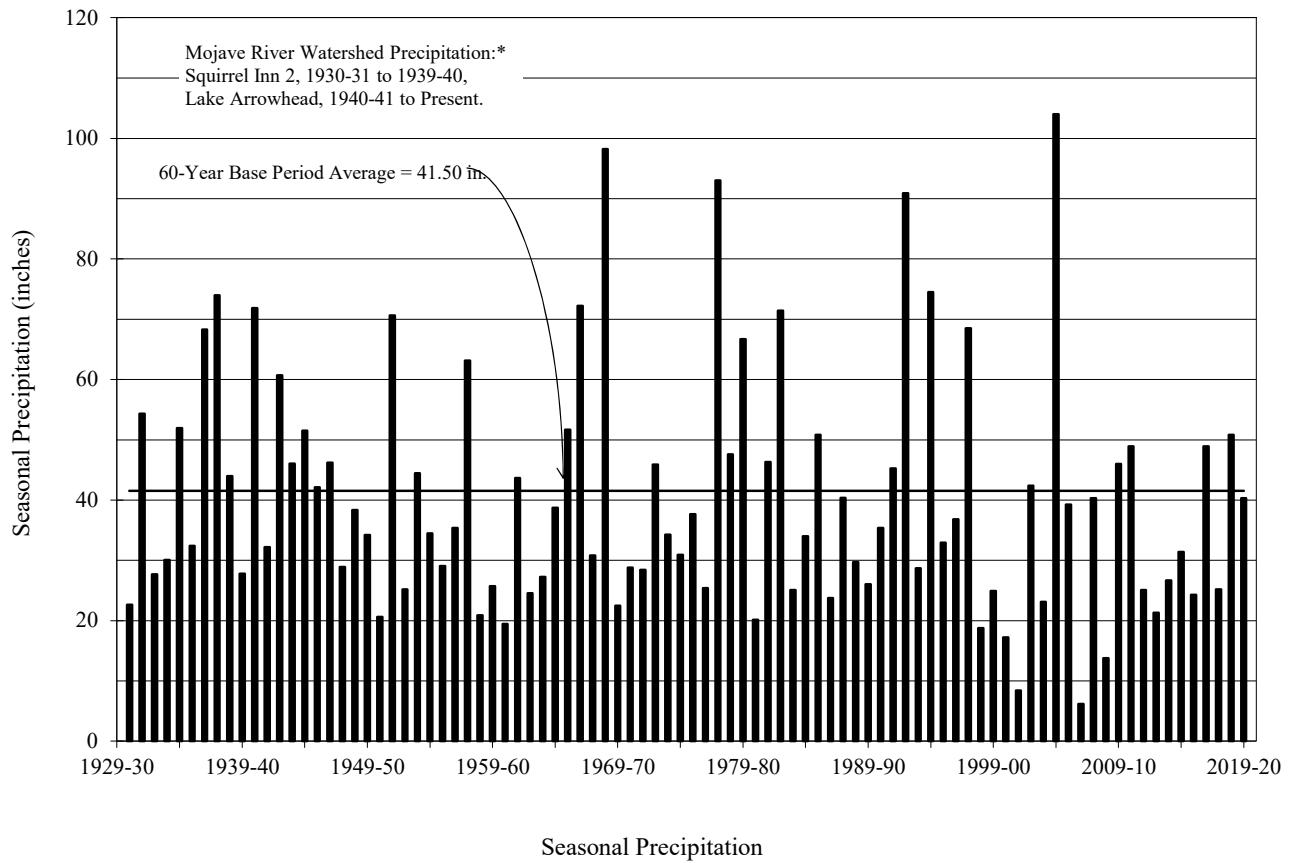
After experiencing above average precipitation during 2018-19, the precipitation in the Mojave River Watershed during 2019-20, as measured at Lake Arrowhead was slightly below average at about 97 percent of the 60 Year Base Period average. The combined flow of the West Fork Mojave River and Deep Creek during the 2019-20 Water Year was about 68 percent of the 60-Year Base Period average.

Precipitation During 2019-20

Rainfall in the mountain areas is the principal source of natural water supply to the Mojave Basin Area. During the 2019-20 Water Year the precipitation at Lake Arrowhead amounted to 40.30 inches, which is about 97 percent of the Base Period average of 41.5 inches. The maximum monthly rainfall of 11.96 inches occurred in December 2019, with 11.04 inches and 7.42 inches occurring during March 2020 and November 2019, respectively. Figure 3-1 shows the seasonal precipitation from 1930-31 through 2019-20 and the accumulated departure from the 1930-31 through 1989-90 Base Period average. Seasonal rainfall within the Basin Area as measured at Victorville and Barstow totaled 8.83 inches and 6.81 inches, respectively. The amount recorded at Victorville represents approximately 161 percent of the annual average of 5.47 inches and the amount recorded at Barstow represents approximately 148 percent of the annual average of 4.59 inches. Figure 3-2 shows the seasonal precipitation at Victorville and Barstow.

Runoff During 2019-20

Locations of stream flow gages for the Mojave River system are shown on Appendix A. Table 3-1 shows monthly discharge amounts for 2019-20 at these locations.



Precipitation Characteristics, Mojave River Watershed

FIGURE 3-1

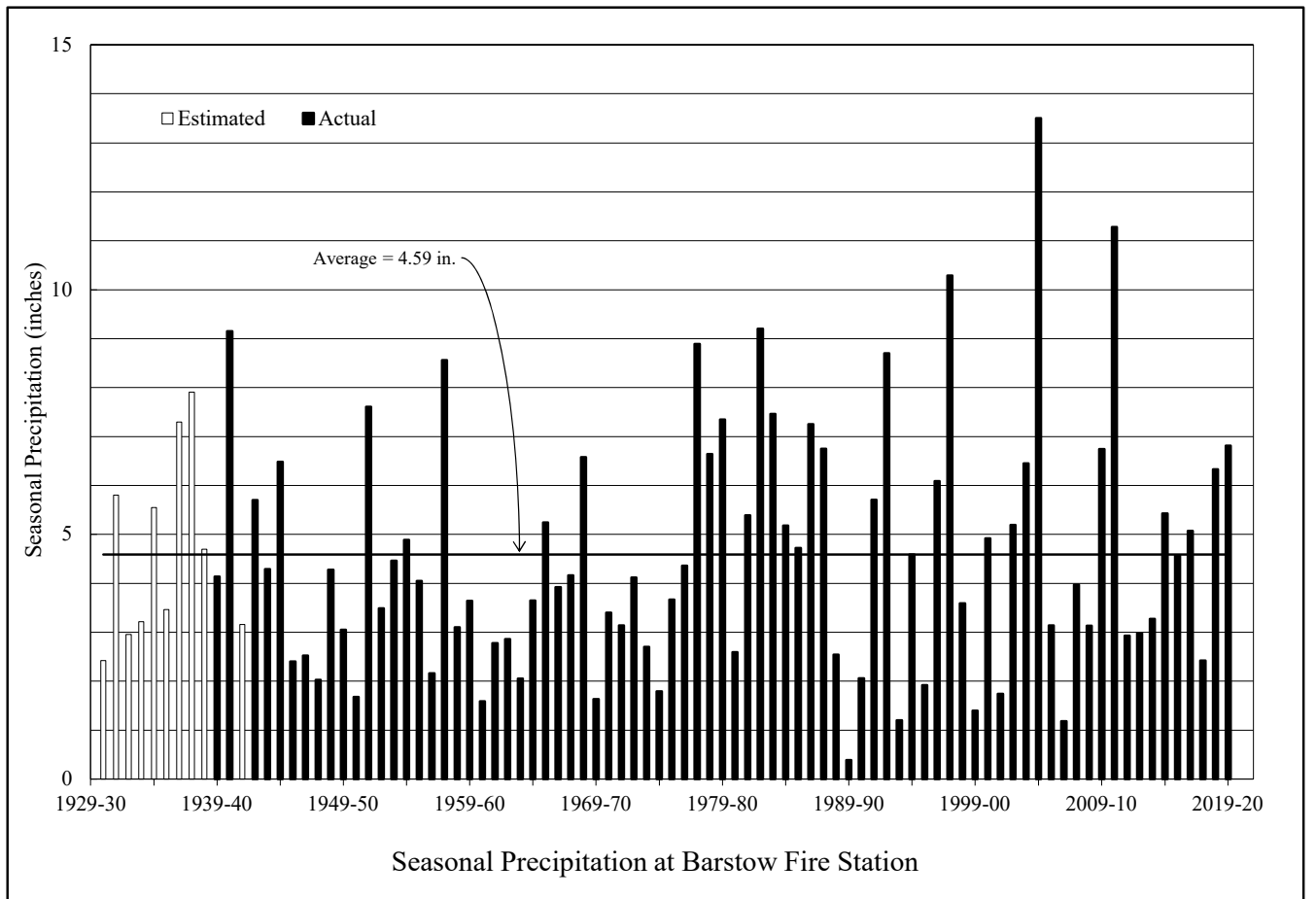
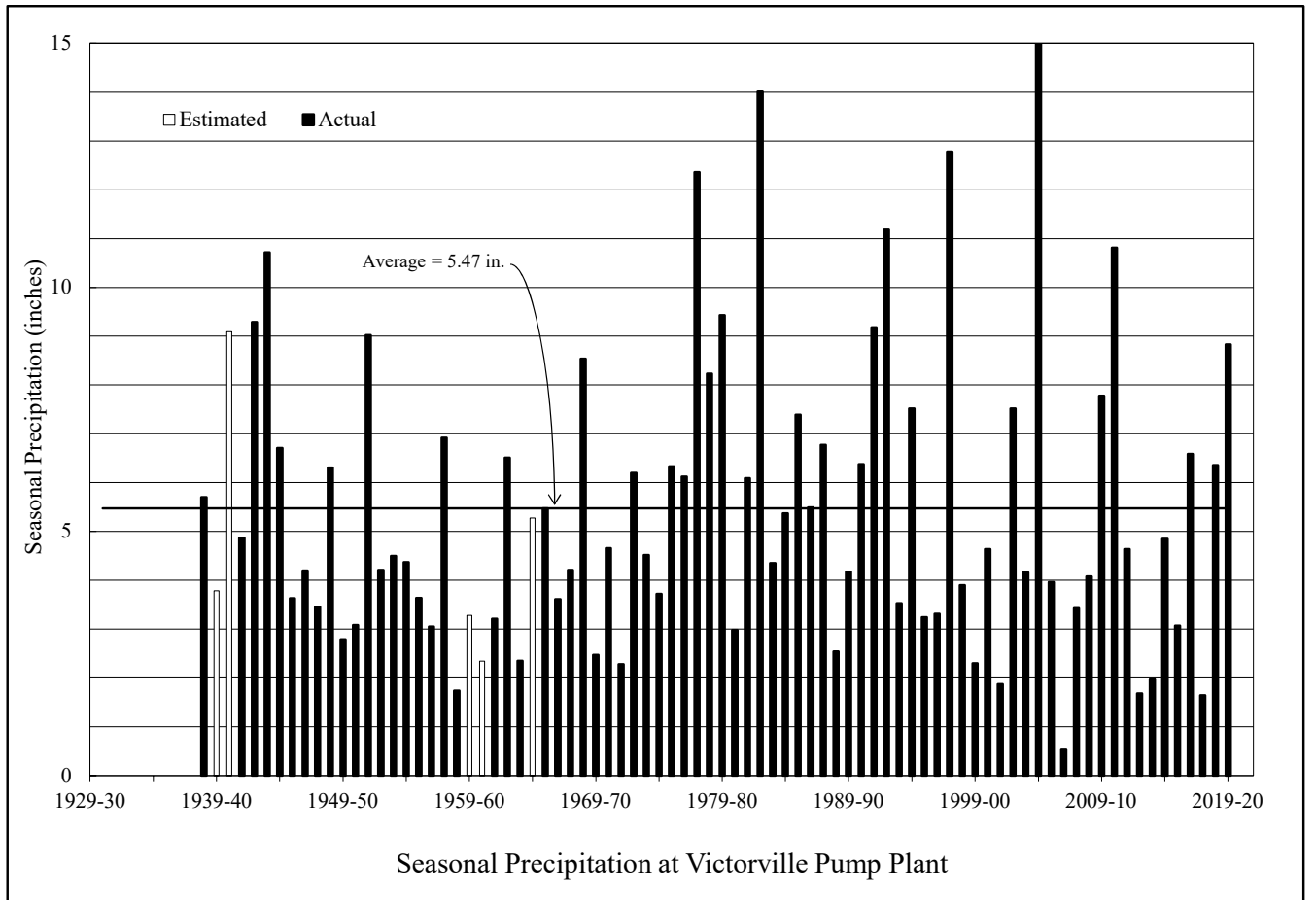


FIGURE 3-2

TABLE 3-1

**MONTHLY DISCHARGE AMOUNTS
FOR WATER YEAR 2019-20
(Acre-Feet)**

Month	Forks ¹	Lower Narrows ²			Barstow ³	Afton ⁴		
	Measured Discharge	Base Flow	Storm Flow	Total	Measured Discharge	Base Flow	Storm Flow	Total
October	3,472.0	121	0	121	0.0	0.00	0.0	0.00
November	1,683.0	394	517	911	0.0	0.28	0.0	0.28
December	4,358.0	778	894	1,672	0.0	7.20	0.0	7.20
January	1,618.0	789	23	812	0.0	7.70	0.0	7.70
February	1,247.0	704	0	704	0.0	11.80	0.0	11.80
March	6,492.0	698	864	1,562	0.0	35.00	0.0	35.00
April	22,183.0	644	8,003	8,647	0.0	177.00	0.0	177.00
May	2,391.0	463	0	463	0.0	6.09	0.0	6.09
June	674.0	213	0	213	0.0	0.00	0.0	0.00
July	120.8	150	0	150	0.0	0.00	0.0	0.00
August	34.8	121	0	121	0.0	0.00	0.0	0.00
September	27.6	110	0	110	0.0	0.00	0.0	0.00
Total (AF)	44,301	5,185	10,301	15,486	0	245	0	245

1 U.S.G.S. Station No. 10260500 Deep Creek near Hesperia, CA combined with
U.S.G.S. Station No. 10260950 West Fork Mojave River near Hesperia, CA

2 U.S.G.S. Station No. 10261500 Mojave River at Lower Narrows, near Victorville, CA

3 U.S.G.S. Station No. 10262500 Mojave River at Barstow, CA

4 U.S.G.S. Station No. 10263000 Mojave River at Afton, CA

At the Forks

The total surface flow of the Mojave River at the Forks during 2019-20 as measured by the combined discharges of the West Fork Mojave River and Deep Creek was 44,301 acre-feet or about 68 percent of the Base Period average of 65,540 acre-feet. The combined discharges of the West Fork Mojave River and Deep Creek for the period 1930-31 through 2019-20 and the accumulated departure from the Base Period average are shown on Figure 3-3.

At Lower Narrows

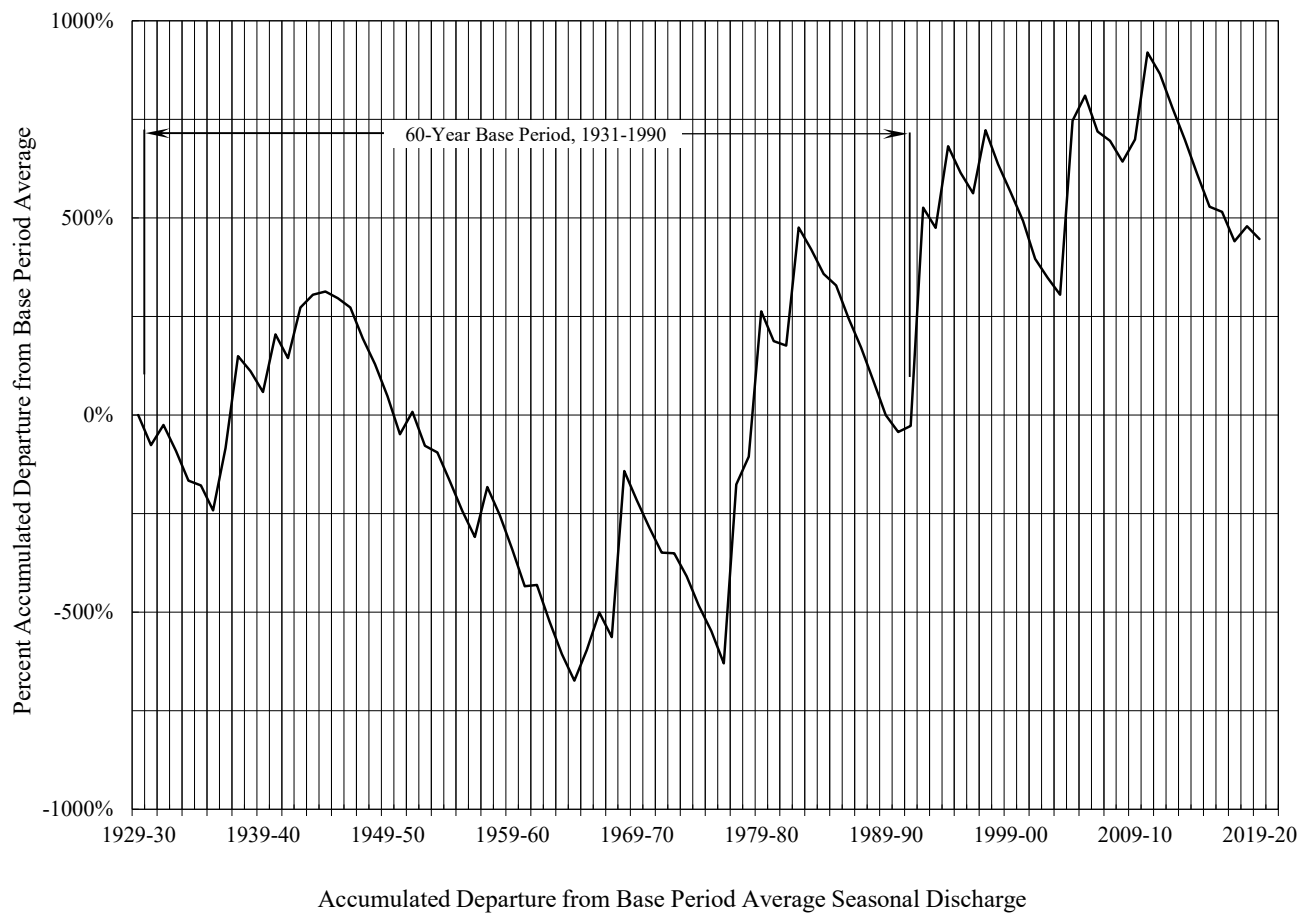
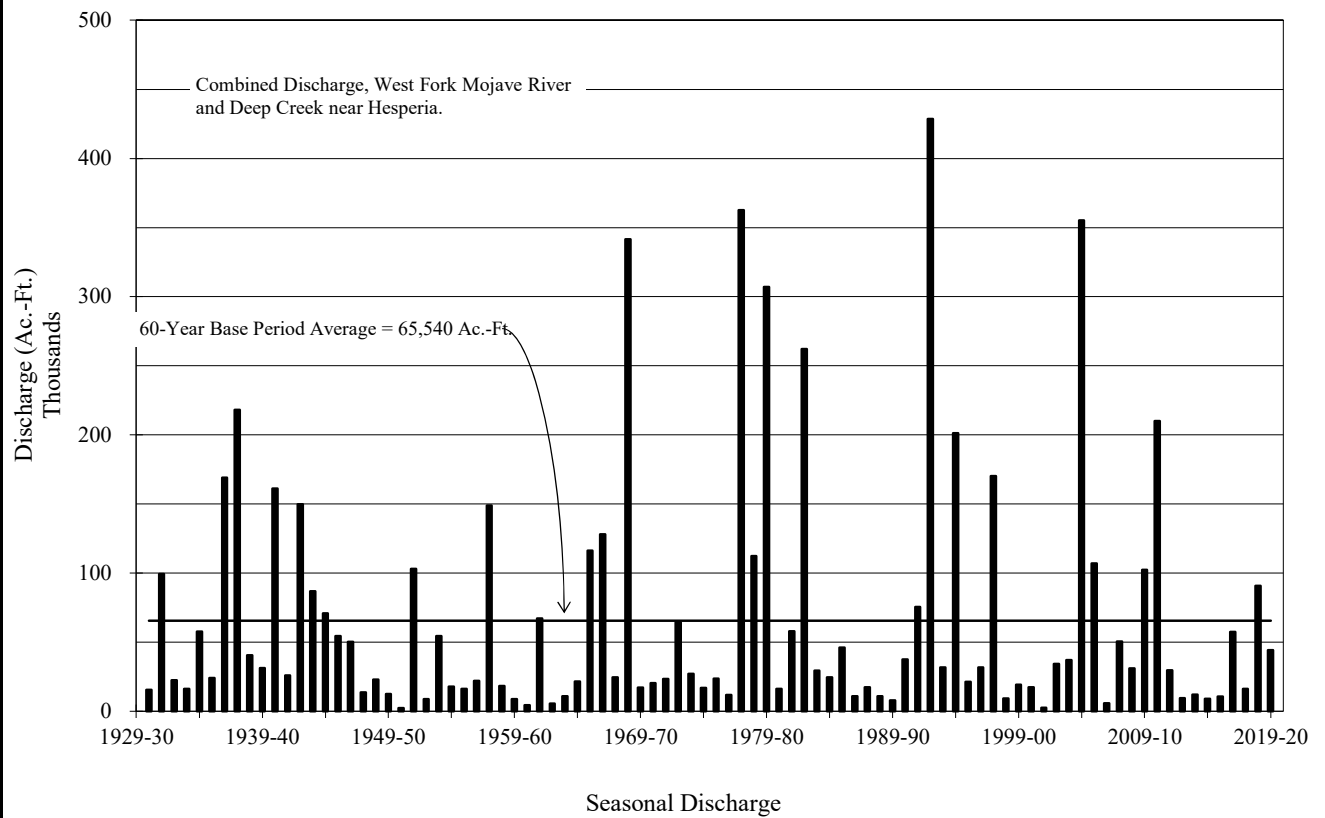
The total surface flow of the Mojave River at the Lower Narrows was 15,486 acre-feet, which is about 29.8 percent of the 60-Year Base Period average of 51,960 acre-feet. During Water Year 2019-20 the total flow accruing to the Lower Narrows Gage was estimated to consist of 10,301 acre-feet of storm flow and 5,185 acre-feet of base flow. Figure 3-4 shows the storm and base flow components of the total flow in the Mojave River at the Lower Narrows for the period 1930-31 through 2019-20.

At Barstow

The total surface flow of the Mojave River at Barstow was 0 acre-feet. Figure 3-5 shows the total flow in the Mojave River at Barstow for the period 1930-31 through 2019-20.

At Afton

The total surface flow of the Mojave River at Afton was 245 acre-feet, which is about 3.0 percent of the Base Period average of 8,247 acre-feet. During 2019-20 the total flow accruing to the Afton Gage was estimated to consist of 0 acre-feet of storm flow and 245 acre-feet of base flow. Figure 3-5 shows the storm and base flow components of the total flow in the Mojave River at Afton for the period 1930-31 through 2019-20.



Discharge Characteristics, Mojave River at the Forks

FIGURE 3-3

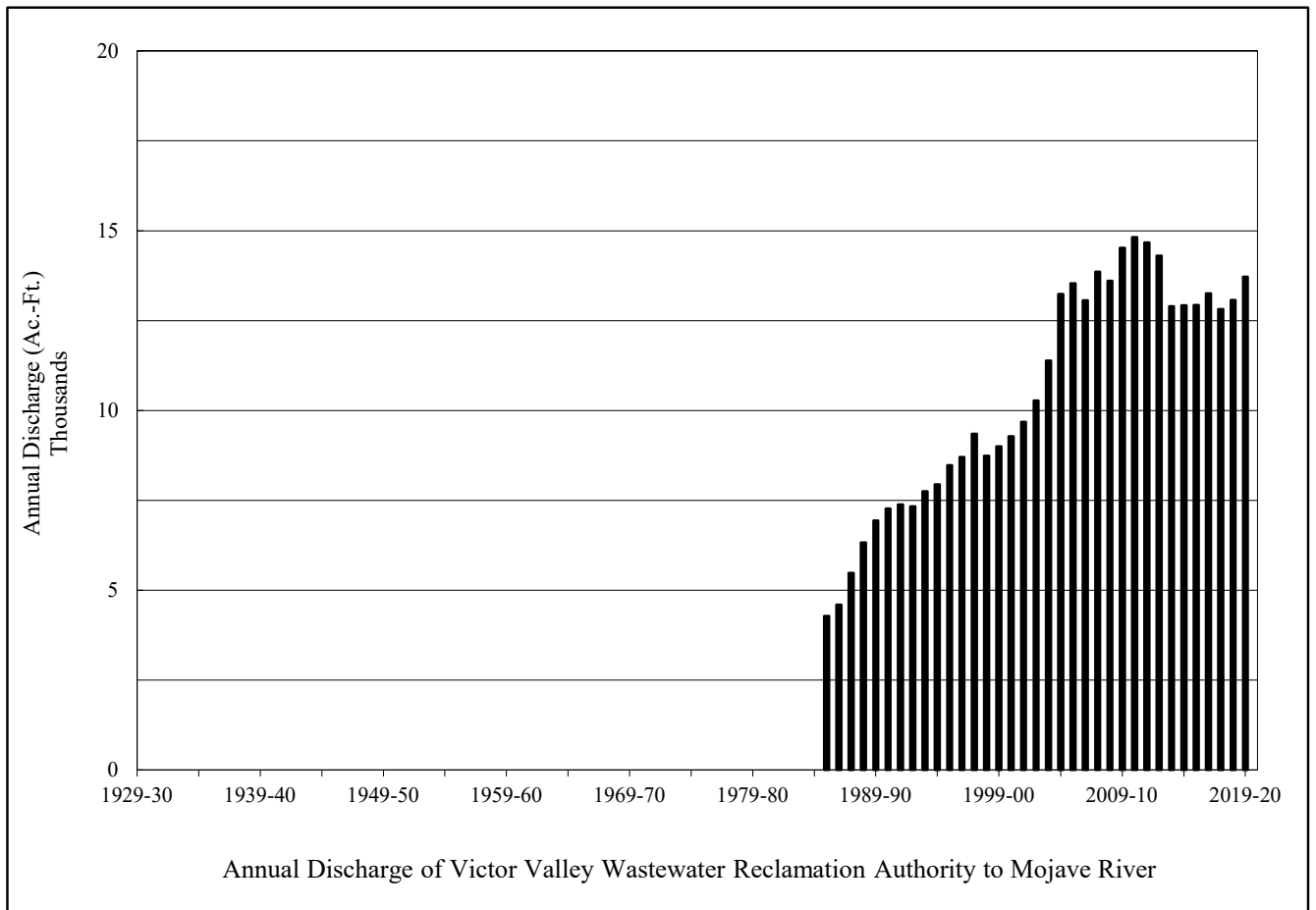
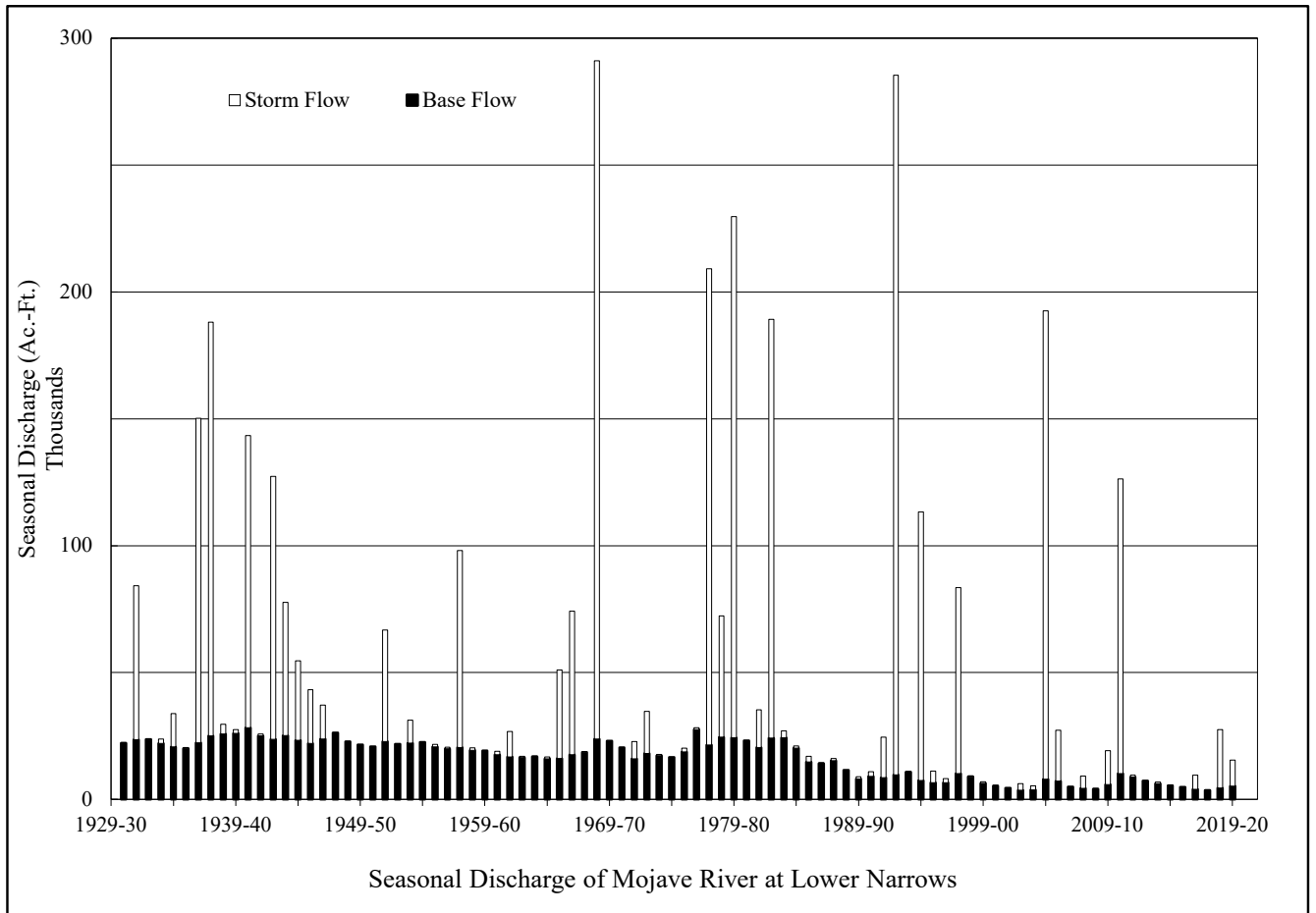


FIGURE 3-4

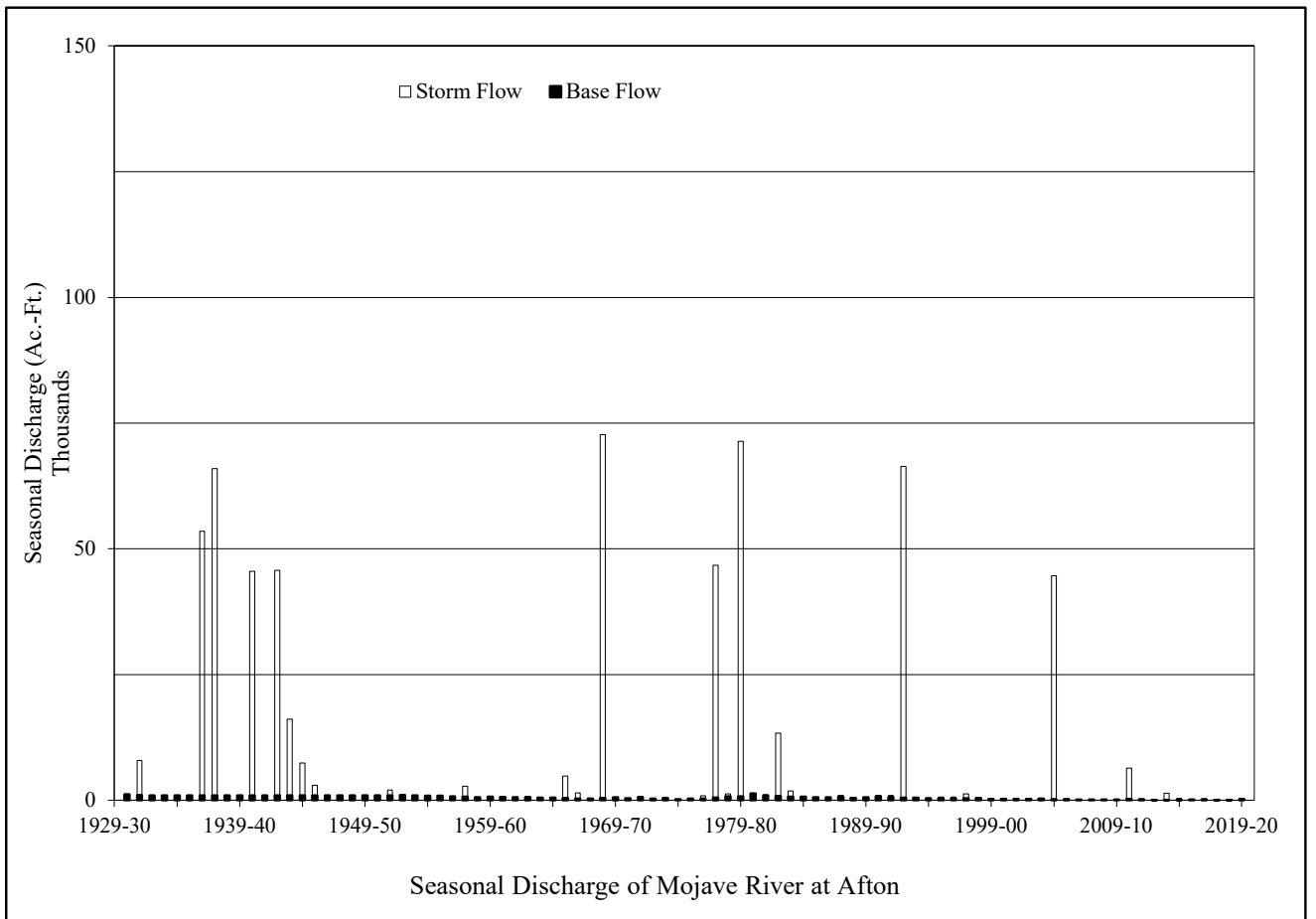
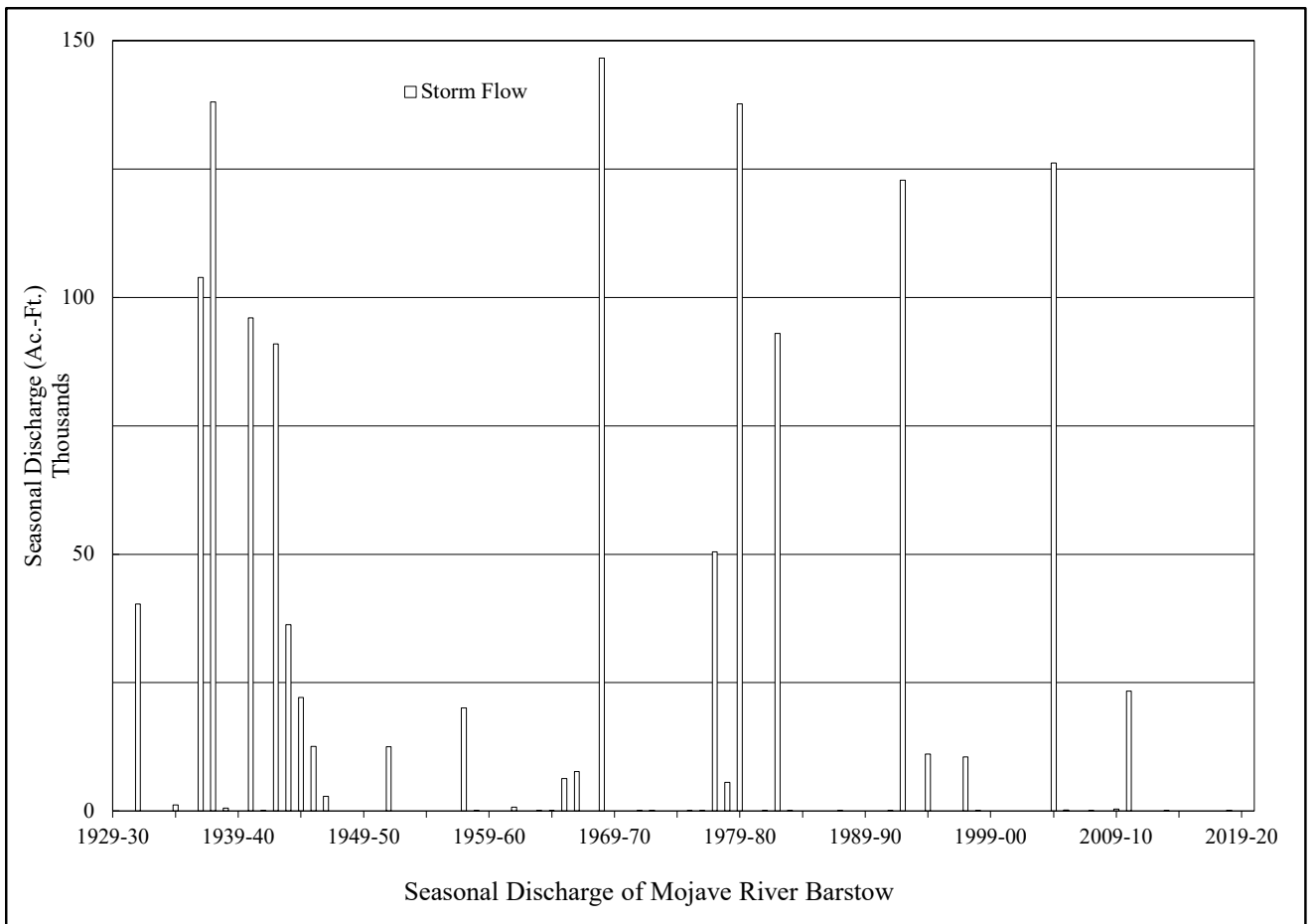


FIGURE 3-5

Wastewater Imports

During 2019-20 reclaimed wastewater was delivered to the Mojave Basin Area for disposal by the following agencies:

	Amount Delivered <u>(acre-feet)</u>
Lake Arrowhead Community Services District	1,059
Crestline Sanitation District	714
Big Bear Area Regional Wastewater Agency	<u>2,246</u>
	4,019

Victor Valley Wastewater Reclamation Authority Wastewater Effluent Discharges

The VVWRA and Victorville deliver treated wastewater effluent to the Mojave River downstream from the Lower Narrows. This water is credited toward the Alto Subarea’s Obligation to the Centro Subarea and amounted to 13,719 acre-feet for Water Year 2019-20. The annual wastewater effluent discharge to the Mojave River for the period 1985-86 through 2019-20 is shown on Figure 3-4.

Imported Water Deliveries by MWA

During 2019-20 MWA delivered 9,397 acre-feet of State Water Project water to the Alto, Centro and Baja Subareas.

<u>Month</u>	(All Amounts in Acre-feet)					<u>Total</u>
	<u>Alto</u>¹	<u>Alto</u>²	<u>Centro</u>³	<u>Centro</u>⁴	<u>Baja</u>⁵	
(2019) October	0	5,365	38	274	348	6,025
November	0	893	3	263	263	1,385
December	0	209	2	0	0	211
(2020) January	0	1,737	1	0	0	1,738
February	0	0	3	1	0	4
March	0	0	3	0	0	3
April	0	0	0	0	0	0
May	0	0	1	0	0	1
June	0	0	0	0	0	0
July	0	30	0	0	0	30
August	0	0	0	0	0	0
September	0	0	0	0	0	0
Total	<u>0</u>	<u>8,234</u>	<u>51</u>	<u>501</u>	<u>611</u>	<u>9,397</u>

¹ Deliveries to the power plant at SCLA.

² Deliveries to recharge facilities in the Alto Subarea pursuant to a storage agreement with Watermaster.

³ Deliveries to the solar generating facility at Kramer Junction.

⁴ Deliveries to recharge facilities in the Centro Subarea pursuant to a storage agreement with Watermaster.

⁵ Deliveries to recharge facilities in the Baja Subarea pursuant to a storage agreement with Watermaster.

Transition Zone Water Levels

The Judgment requires that minimum water levels be established in the Transition Zone primarily for the purpose of prioritizing recharge within the Alto Subarea. According to the Judgment, until minimum water levels are established, recharge of supplemental water must be delivered to the Transition Zone first, if there is a mandatory replacement obligation in the Transition Zone. Since entry of the Judgment, there has not been a mandatory replacement obligation in the Transition Zone.

Watermaster submitted to the Court in April 2007, and the Court approved recommended water levels in the Transition Zone and a water level monitoring procedure as required by the Judgment.

There are three areas within the Transition Zone that are to be evaluated annually. Water level data will be collected from wells in these areas and presented in the Watermaster's Annual Report to the Court. Well locations are shown on Figure 3-6. Water level hydrographs for Transition Zone wells are shown on Figures 3-7, 3-8 and 3-9.

Figure 3-7 shows water levels in three wells near the Helendale Fault. Well number 08N04W20N01 & P02 provides historical reference for water levels dating back to 1930. The composite water level has changed nominally since 1930. Because this well has been discontinued, Watermaster proposes to monitor wells 08N04W19G04 and 08N04W29E06. Both of these wells indicate water level stability over the period of record (since 1994). Water level variation over a two-year period exceeding 20 feet will be considered to have encroached on the minimum Transition Zone Water Levels and will require corrective measures. Water levels in this area remained stable during the previous Water Year and exhibit the same seasonal variation as the past 5 years.

Figure 3-8 shows water levels in wells downstream from Victor Valley Wastewater Reclamation Authority's (VWVRA) point of discharge to the Mojave River. VWVRA discharged 13,719 acre-feet during 2019-20 which supports water levels within the Transition Zone. These water levels remained stable during Water Year 2019-20.

Figure 3-9 shows water levels in two shallow wells and a multi-nested well in the vicinity of the City of Adelanto's municipal water supply wells, and downstream of the United States Geological Survey (USGS) gage, "Mojave River at Lower Narrows near Victorville". These wells

show seasonal variability but no long-term downward trend. The multi-nested well was installed by MWA and the California Department of Fish and Wildlife (DFW) in February 2008. Watermaster reported to the Court that it would revisit minimum water levels in the Transition Zone after collecting data for five (5) years from this new well. The water level measurements since installation in 2008 indicate seasonal fluctuation and year over year stability. The decreasing seasonal water level fluctuation is an indication of an equilibrium condition in the Transition Zone. As the data from this well has only been collected since 2008 (date of installation), and indicates a rising or stable condition, there is insufficient information to recommend a reasonable minimum water level. If the condition of rising water or stable water level over time continues, there may be no reason for a control point for minimum levels.

Transition Zone Water Balance

Watermaster prepares a water balance calculation for each subarea annually pursuant to the Judgment. For purposes of tracking annual variability in Transition Zone water supply, we are including a water balance calculation specifically for the Transition Zone. Figure 3-10 shows the annual calculated Transition Zone outflow since 1991, versus the 60-year base period average (1931-1990 “Base Period”). Total outflow from the Transition Zone is inflow to Centro. On an annual basis, outflow to Centro is highly variable consistent with the infrequent storms typical of desert environments. Transition Zone water levels have been stable or rising since 1994, suggesting that change in storage within the Transition Zone is nearly zero.

The elements of Transition Zone water supply include:

- Surface water inflow from the Mojave River, measured at the USGS Gaging Station at Lower Narrows (Table 3-1)
- Measured Victor Valley Wastewater Reclamation Authority (VWRA) effluent discharges (Chapter 3)
- Ungaged estimated contributions from urban development
- Long-term subsurface flow (Table 5-1)
- Return flows from production

Return flows are determined by analyzing verified production and use data maintained by Watermaster to provide estimates of consumptive use for all uses within the subarea since 2012

(see the State of the Basin section for more information about the consumptive use analysis). Return flow from production for water years 1994 through 2011 is estimated based on verified production and historic consumptive use in Alto Subarea, analysis of irrigation demands for Silver Lakes Golf Course, lake evaporation, Helendale Community Services District (HCSD) wastewater flow, and estimations of domestic use based on HCSD flows. Verified production less estimated consumptive use becomes return flow to the Transition Zone.

The elements of use from the Transition Zone are:

- Groundwater extractions (production)
- Consumptive use by native vegetation (phreatophytes)

Verified production is compiled, verified, and maintained by Watermaster annually. Consumptive use for phreatophytes in the Transition Zone is based on a 2011 study by USBR which quantified consumptive use by phreatophytes in 2007 and 2010 (USBR 2011). Consumptive use for phreatophytes for 2010 was independently analyzed by Wagner & Bonsignore and compared to the findings of the USBR study, from which a coefficient was derived and used to adjust subsequent years. It is assumed the biomass recorded in 2010 by USBR remains the same through the current year, while consumptive use varies year-over-year based on changes in climate conditions.

The elements for calculating outflow from the Transition Zone to the Centro Subarea include:

- Long-term subsurface outflow (Table 5-1)
- Surface water outflow leaving the Transition Zone (which becomes inflow to the Centro Subarea)

Surface water outflow from the Transition Zone to the Centro Subarea is calculated based on the assumption that change in storage in the Transition Zone is zero. Historical water levels in the Transition Zone are stable over long periods of time (Figure 3-13). Therefore, for simplicity, surface water outflow is determined as the sum of water supply, less the sum of consumptive use and subsurface flow. Figure 3-10 shows that since the end of the hydrologic Base Period (1931-1990), average flow to Centro (1991-2020) has exceeded the Base Period average.

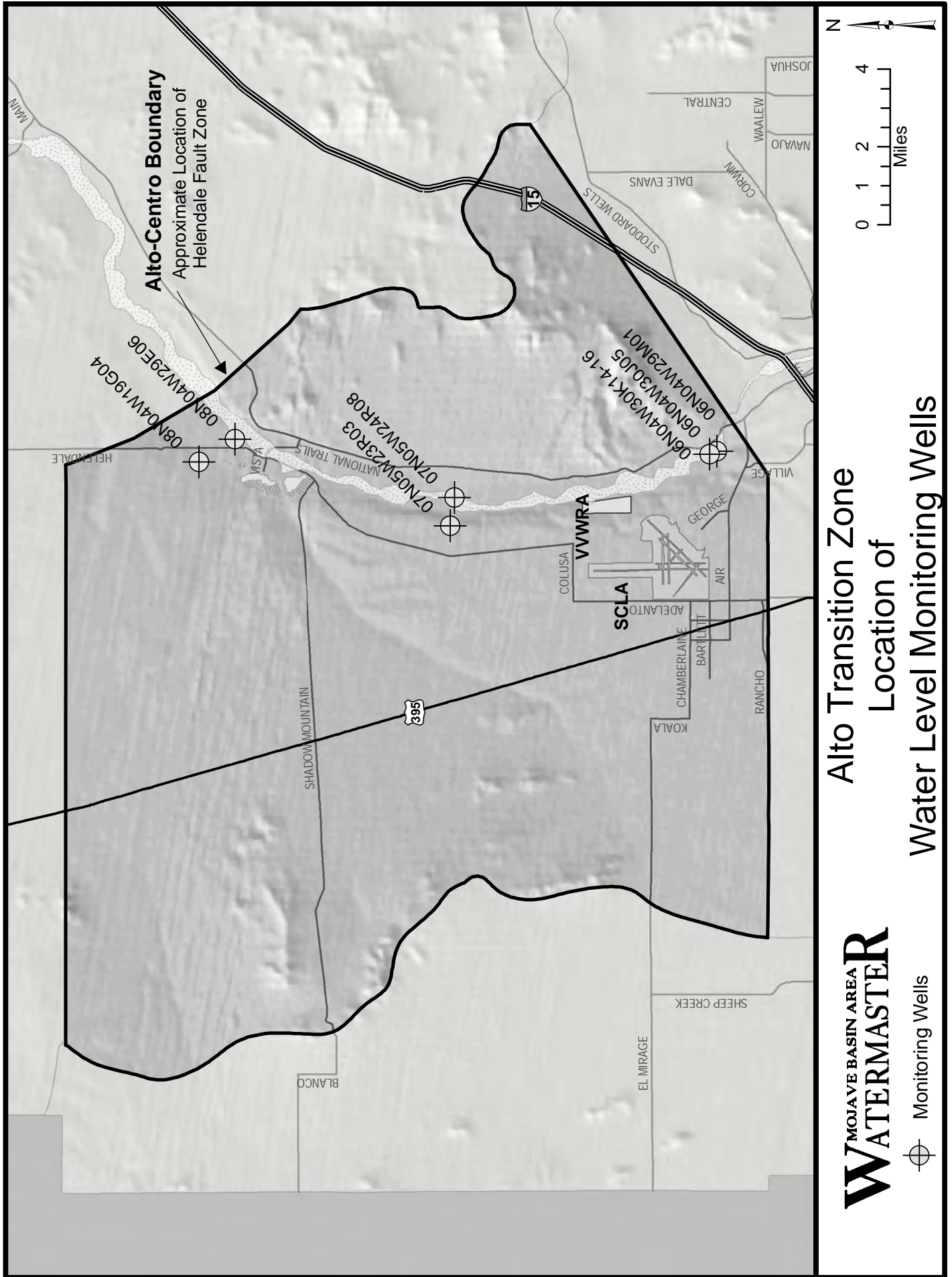


FIGURE 3-6

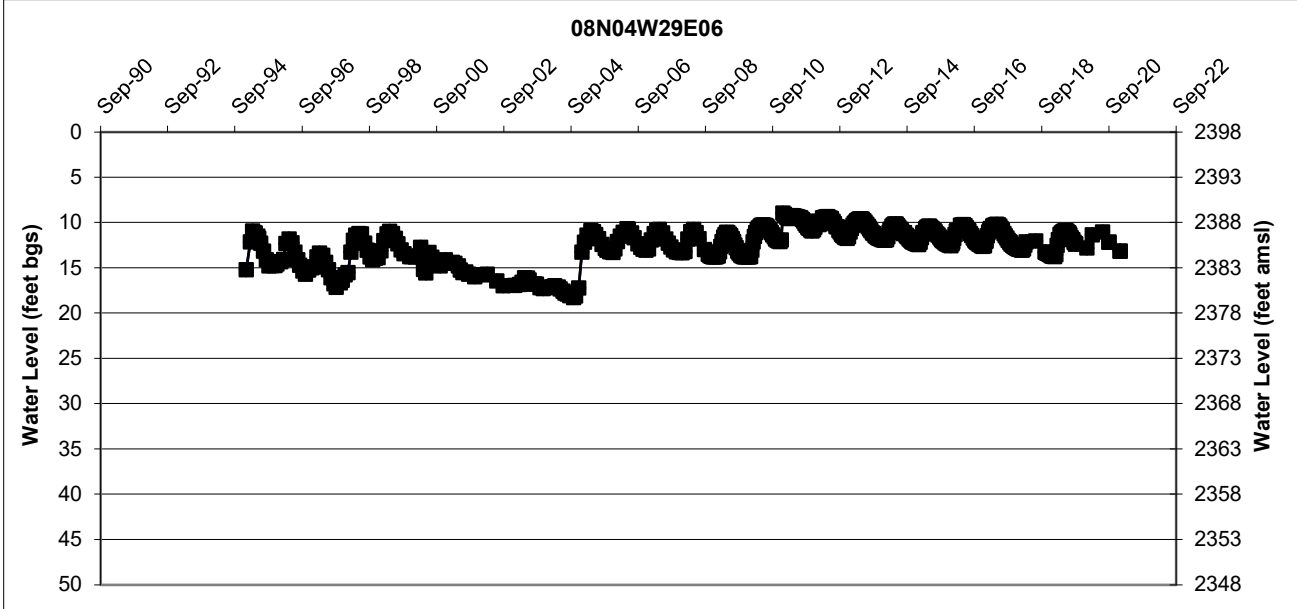
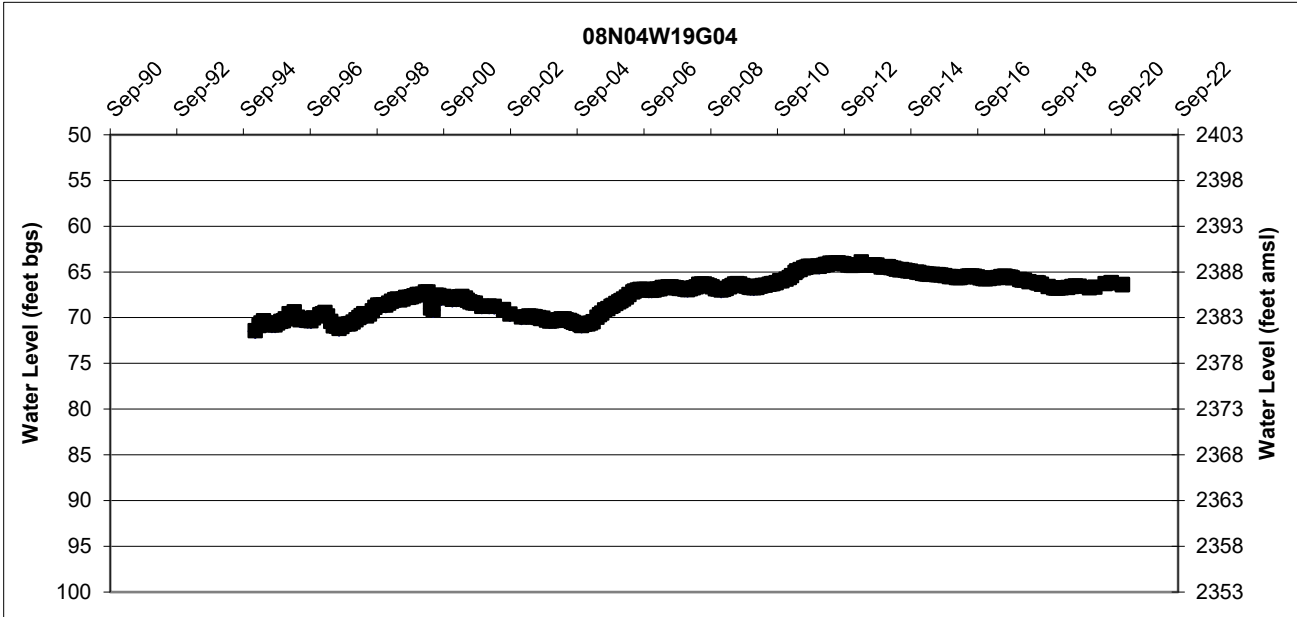
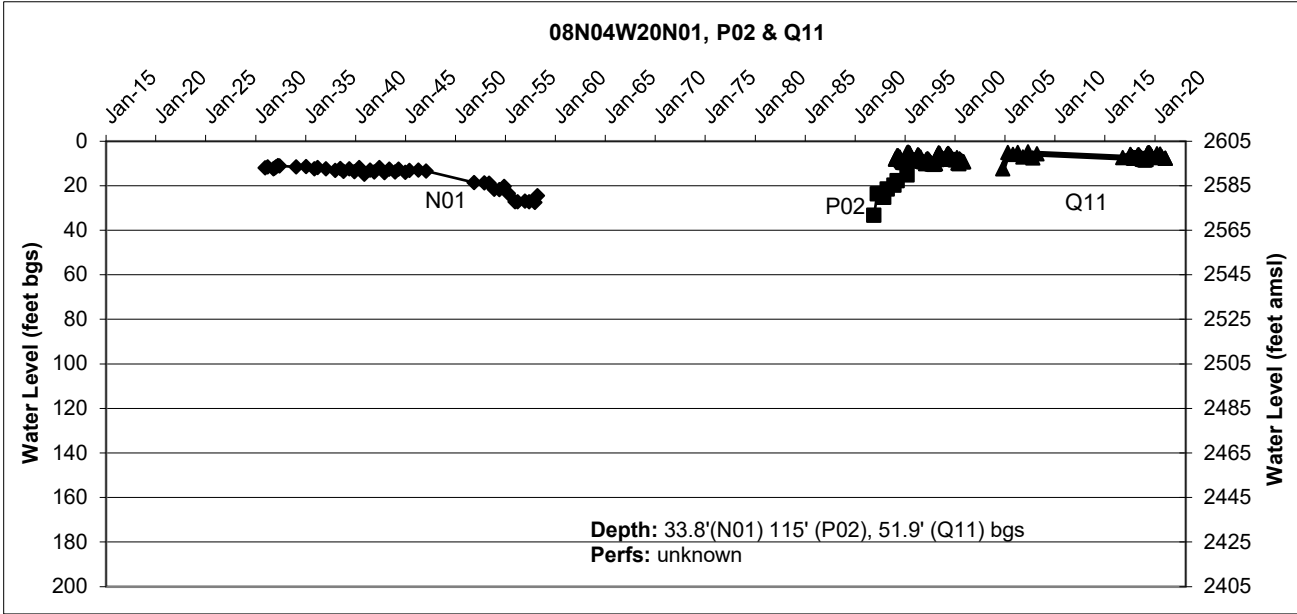


FIGURE 3-7

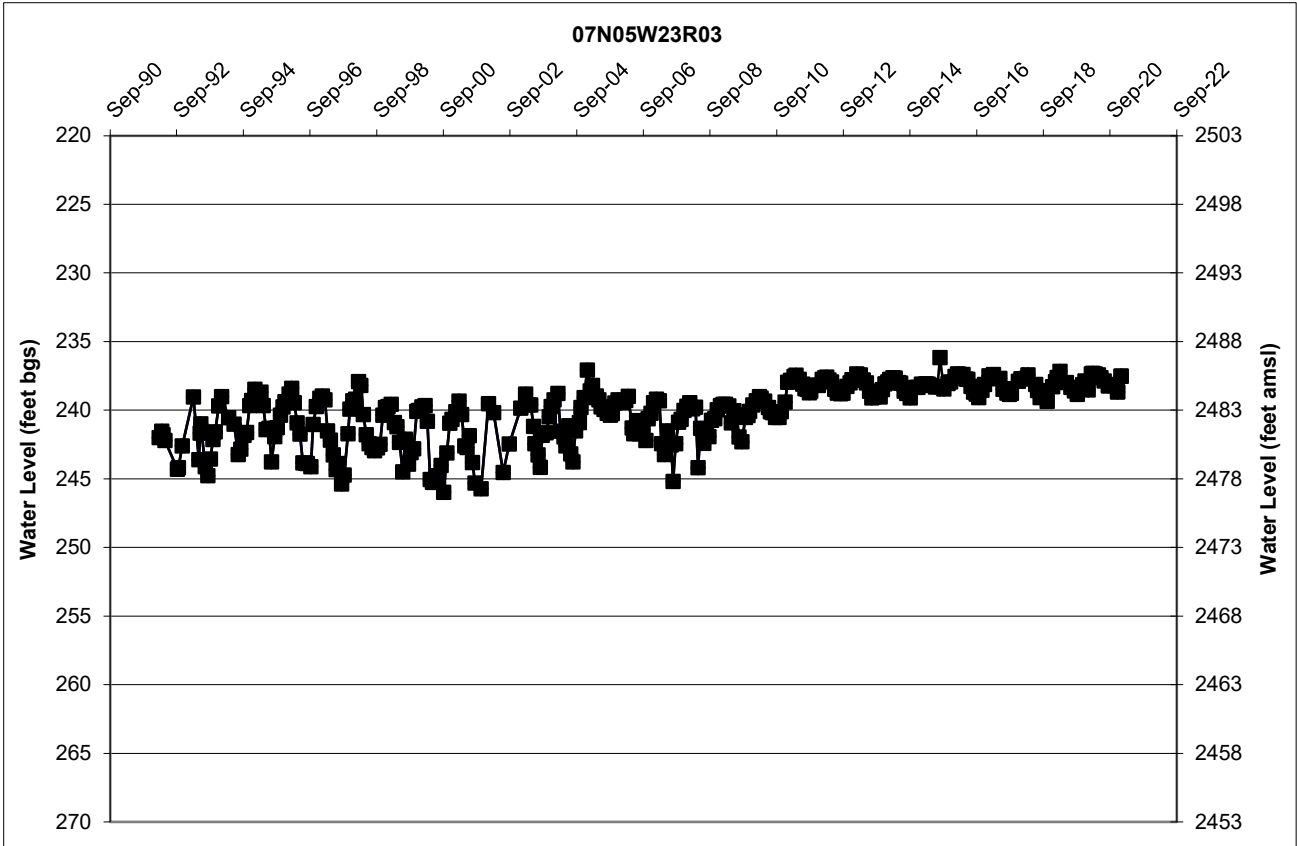
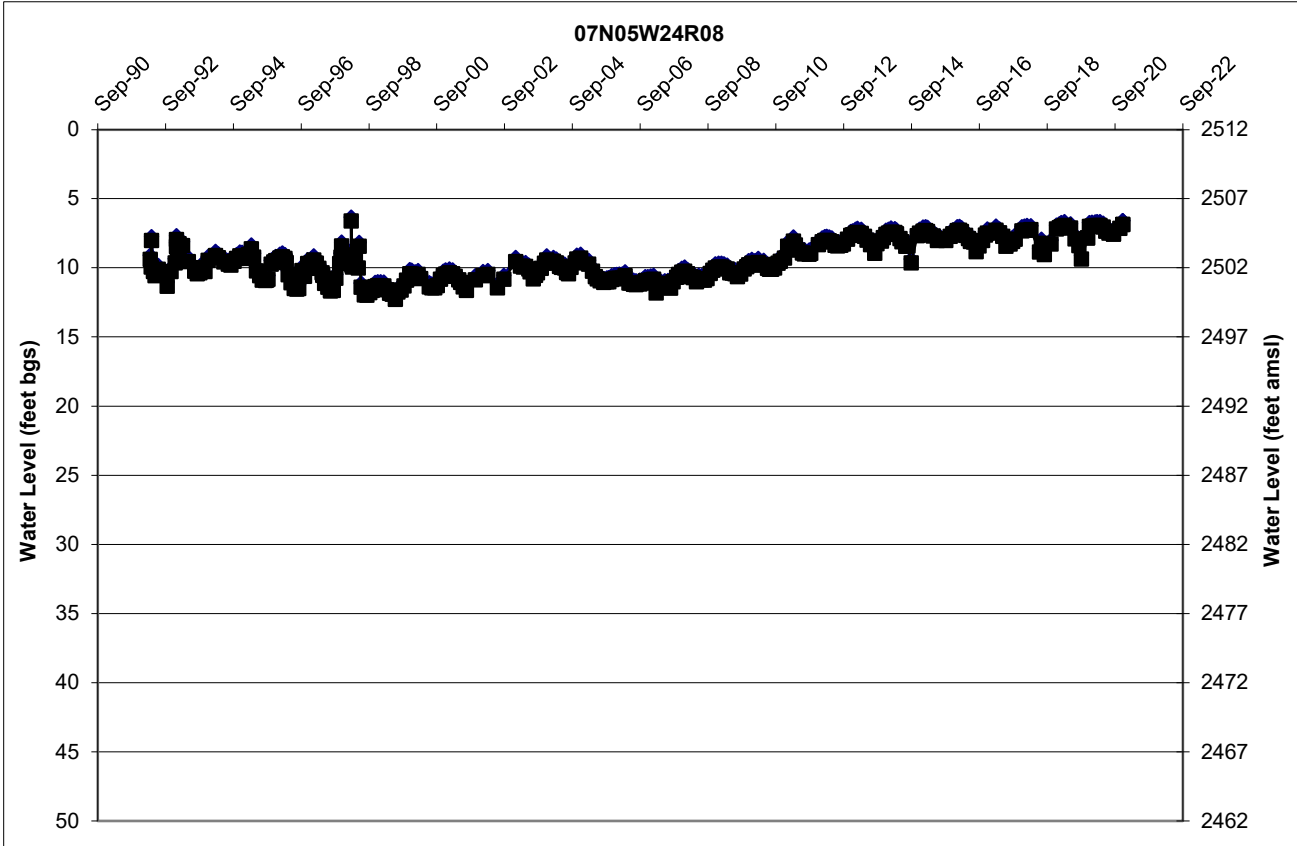


FIGURE 3-8

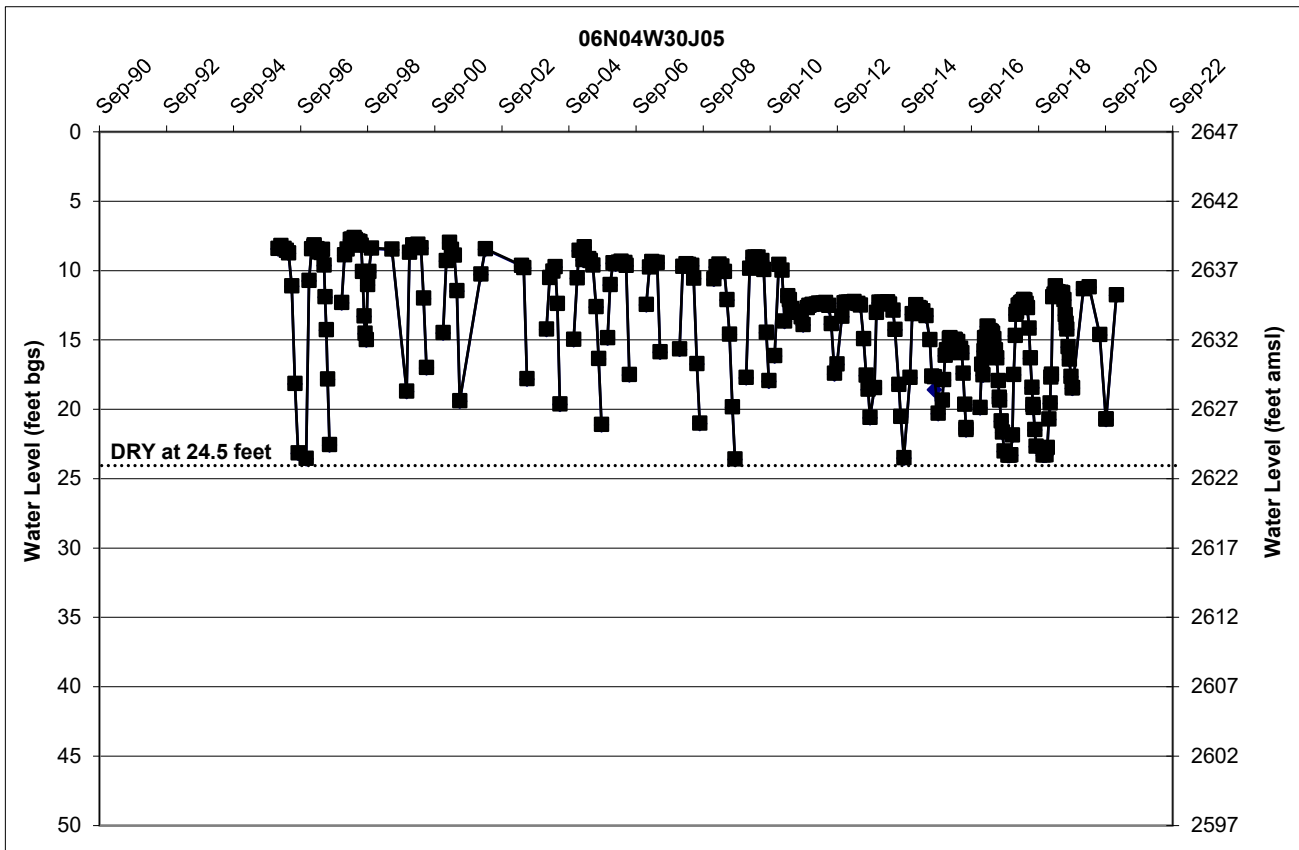
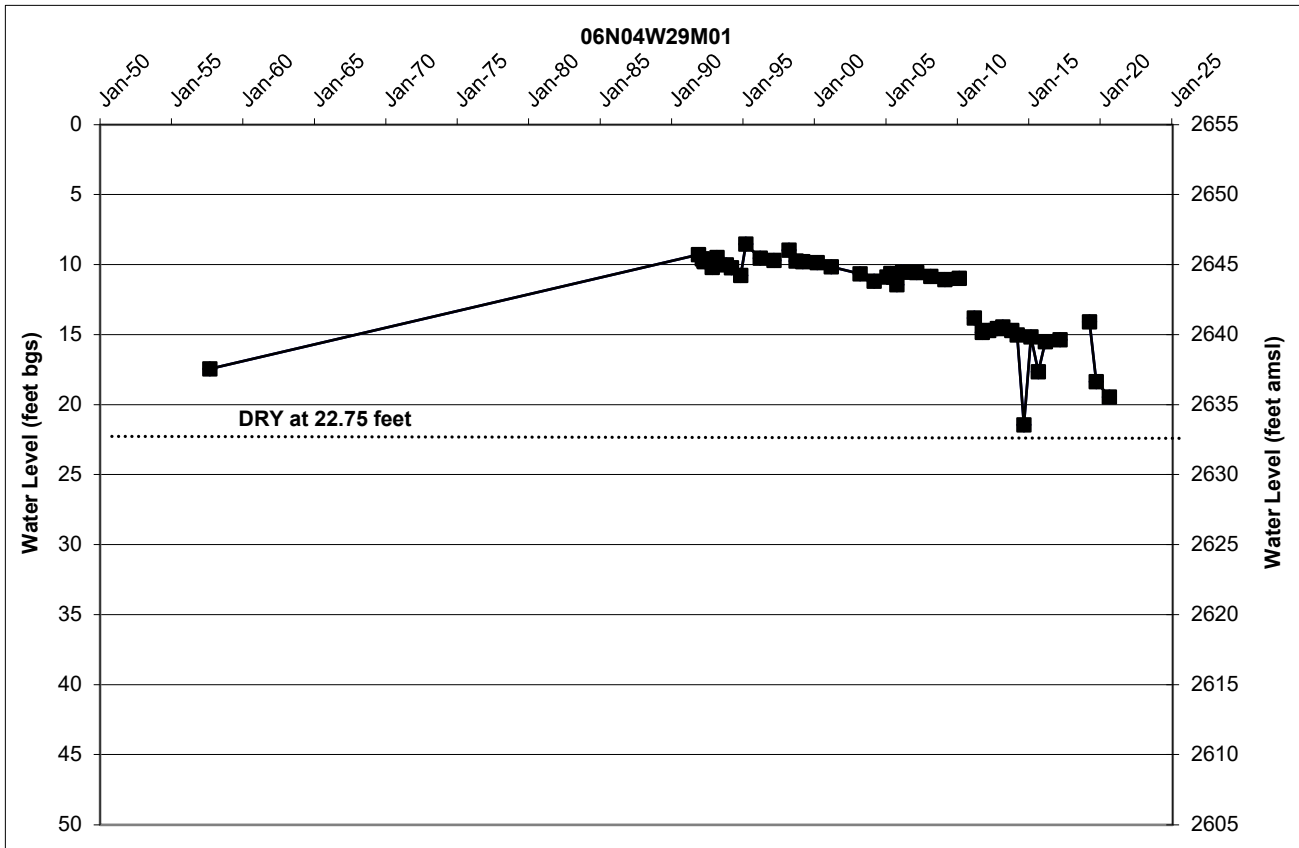


FIGURE 3-9

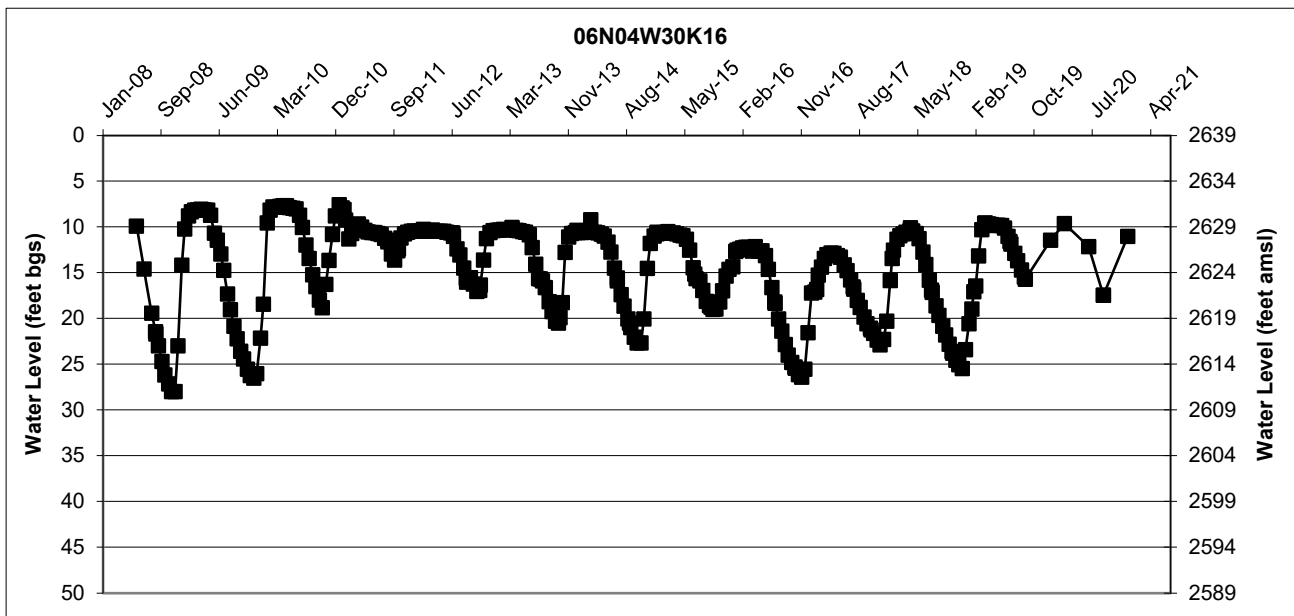
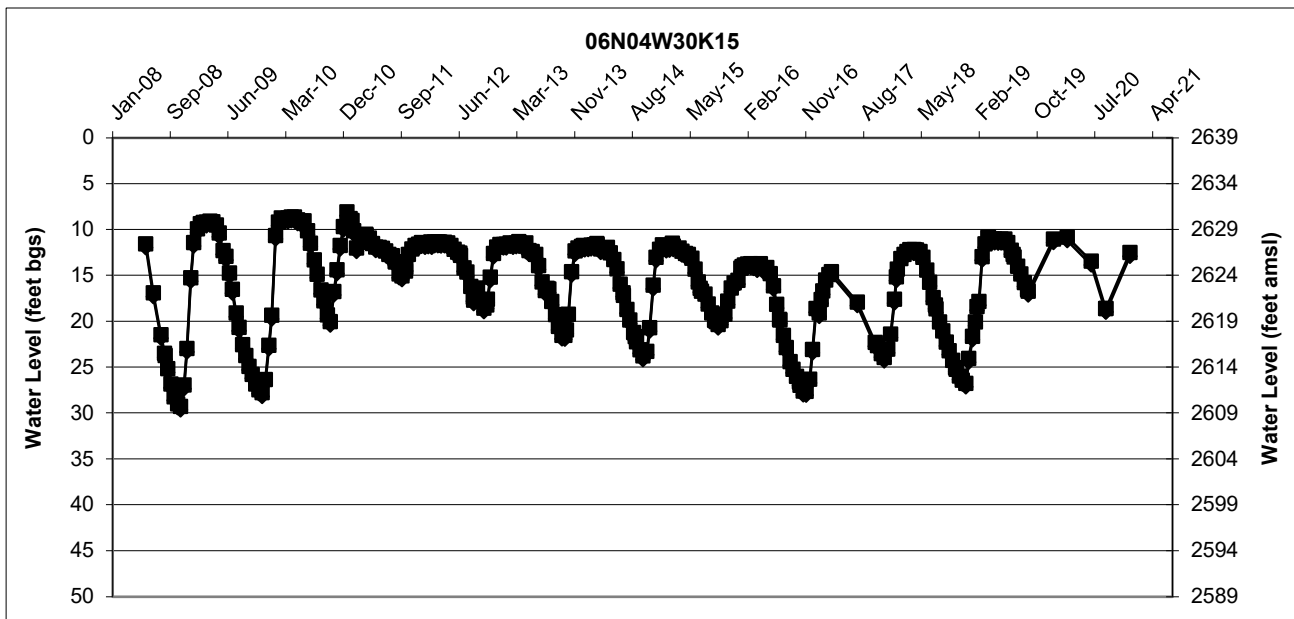
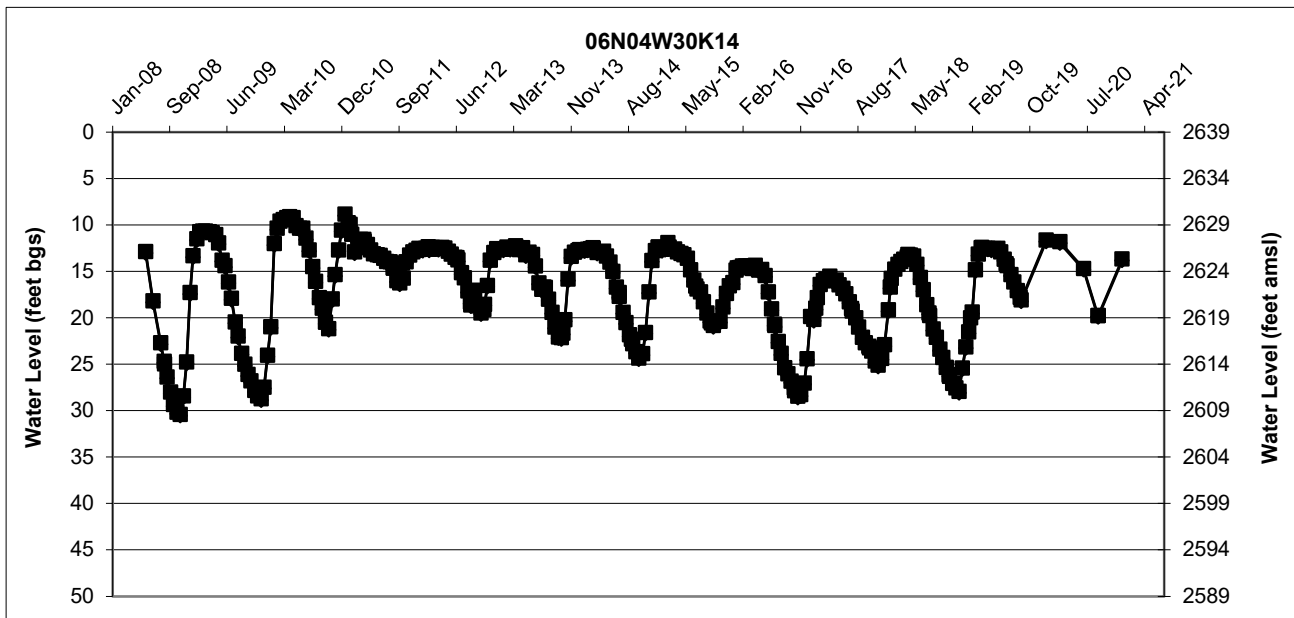


FIGURE 3-9

Transition Zone Water Balance

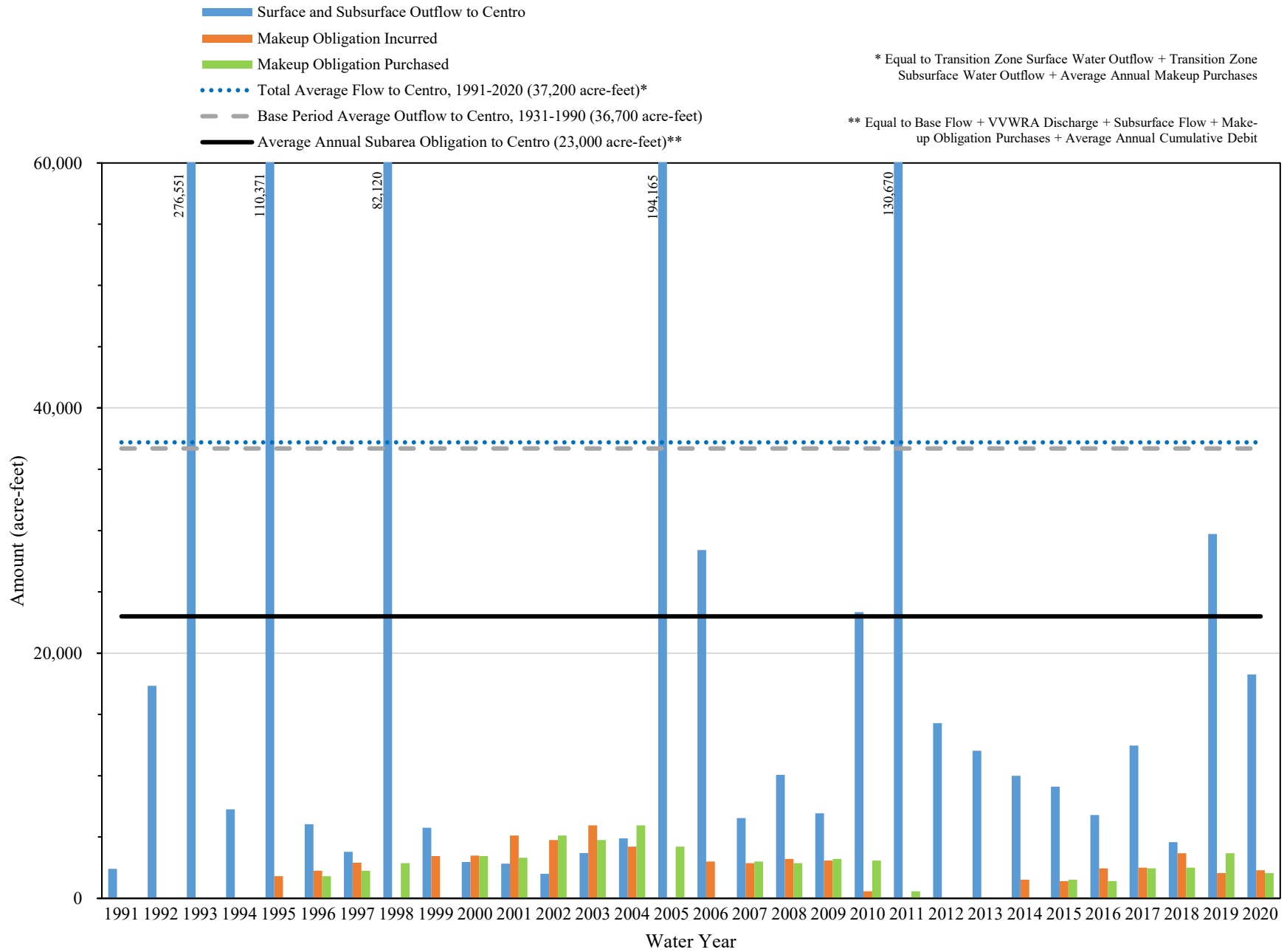


FIGURE 3-10

Subarea Water Levels

Water levels within each of the five Subareas were reviewed as part of the Watermaster's investigation into Subarea conditions and recommendations on Free Production Allowance. Water levels are measured by the Mojave Water Agency and are also reported to the California Statewide Groundwater Elevation Monitoring (CASGEM) program. The Judgment does not specifically require that Watermaster consider changes in water levels in its investigation but Paragraph 24 (o) of the Judgment requires Watermaster to consider changes of water in storage. Rising and falling water levels within the Basin Area are indications of changes in storage over time. While the amount of water level data collected and maintained by MWA is extensive, it is not sufficient to determine changes in storage in each Subarea by using changes in water levels. However, the data is sufficient to make generalizations about the conditions in each Subarea. Watermaster has estimated the annual change in storage for each Subarea in Table 3-2.

Hydrographs of wells generally representative of Subarea conditions are maintained by MWA for public review at: <http://www.mojavewater.org/subarea-hydrograph-gallery.html>

A more extensive set of water level data is reported by Mojave Water Agency to the CASGEM program at: http://www.water.ca.gov/groundwater/casgem/online_system.cfm

The hydrographs were presented for inspection at the February and March 2020 Watermaster meetings and discussed in detail by the Engineer. Figures 3-11 through 3-17 are reduced copies of the exhibits available on the MWA website. A summary of the water levels for each Subarea is presented below.

Alto Subarea

Water levels in Alto are presented on three maps depicting hydrographs that represent conditions throughout Alto. 1) Western portion is generally west of the Mojave River (the river is included in the western portion); 2) Eastern portion is generally east of the Mojave River; and 3) Alto Transition Zone. Alto water levels near the river exhibit seasonal variation, rising in winter and falling in summer. We note that variability showing lower lows and lower highs is an indication of extractions exceeding recharge over time. Water levels in the western portion of Alto in the regional aquifer exhibit declines consistent with locally heavy pumping and limited local recharge. Water levels in the eastern portion of Alto indicate similar trends although to a lesser extent, most likely due to limited pumping in the regional aquifer east of the river. Continued pumping in depleted areas of the regional system may result in long-term local negative impacts

such as declining yields and water quality problems. Water levels in near river wells, particularly in the south part of Alto, experienced a trend of decline for 6 years consistent with limited recharge due to drier than average conditions. Water supply conditions for the past 9 years have been dry (47% of Base Period average). Continuation of dry conditions will result in water level declines.

Baja Subarea

Baja water levels continue to decline due to over pumping and limited recharge opportunities. Wells near the river in the Daggett area respond to recharge when it is available but continue to fall immediately following storm events. Water levels elsewhere in Baja show declines without indicating recovery after storms.

Centro Subarea

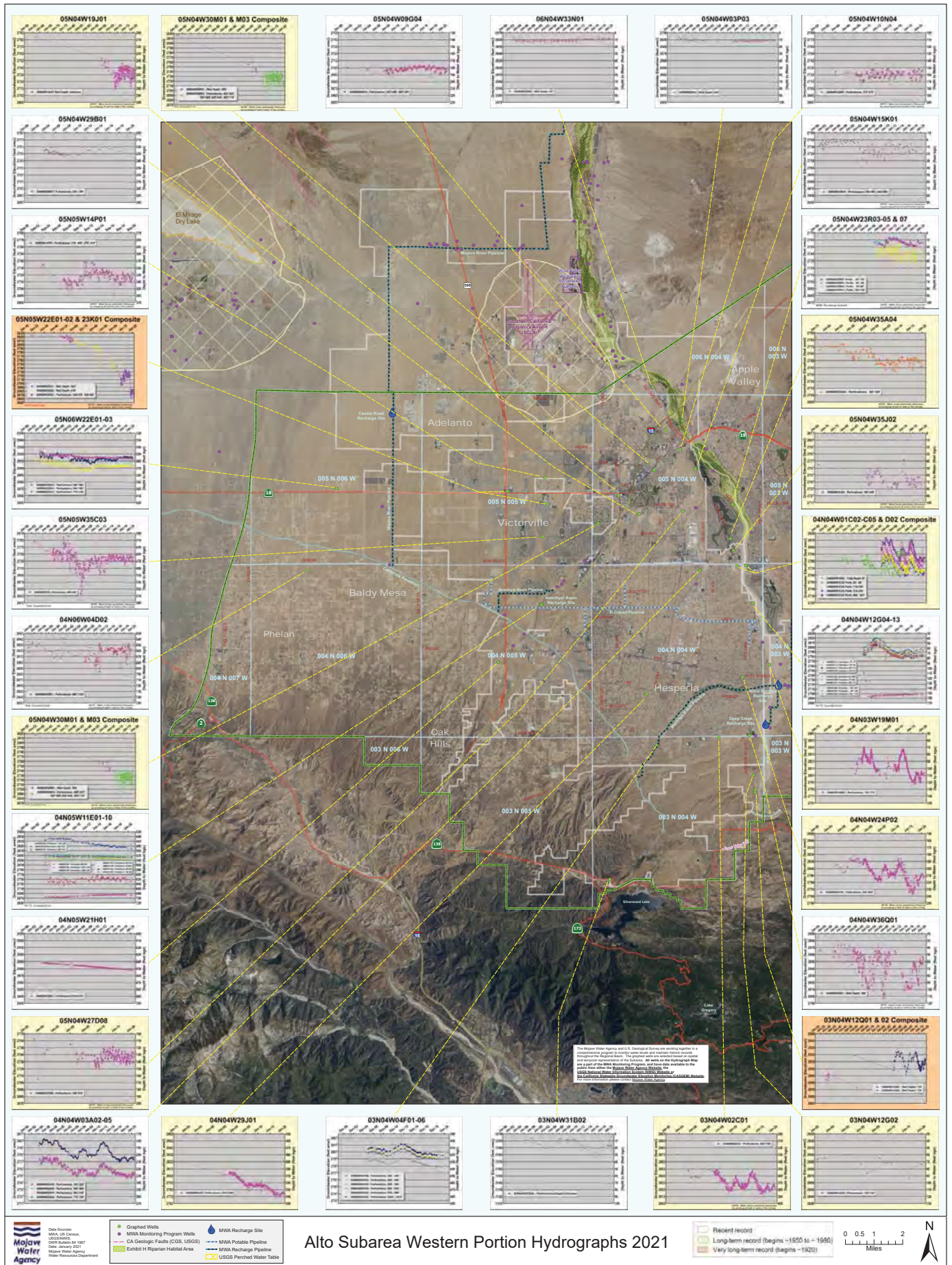
Water levels in Centro have been stable showing seasonal variability and declines during dry years but generally recover during wet periods. Water levels in the Harper Lake area indicate a slow recovery due primarily to cessation of pumping during the past several years. Water levels near Hodge and Lenwood road show the effects of pumping and limited recharge during at least the past 8 years.

Este Subarea

Water levels in Este have remained stable for the past several years indicating a relative balance between recharge and outflow.

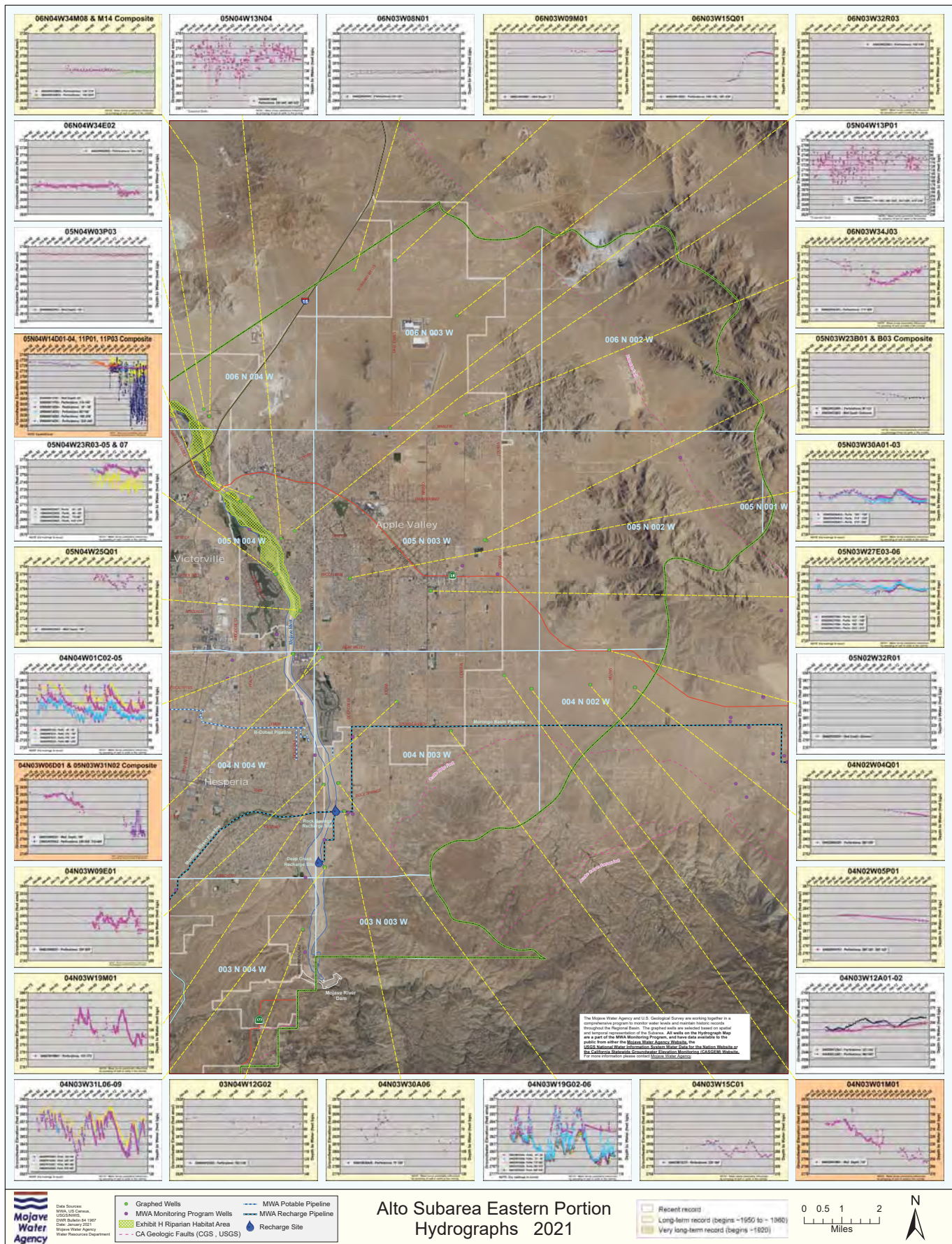
Oeste Subarea

Water levels in Oeste have declined over time and are likely to continue to decline as water production increases in-step with projected population growth. However, reviewing the available data on a shorter time frame of 15-20 years indicates that, in the short-term, water levels are variable but stable. Water production, water use and water level data indicate that over the past 15-20 years, water supply and demands (local precipitation, return flow from pumping, extractions, and outflow) are about equal. However, the past 15-20 years may not be representative of the longer-term water supply conditions in Oeste. Further, population and thus water demand is expected to increase in the future, which will result in continued water level decline.



Alto Subarea Western Portion Hydrographs 2021

FIGURE 3-11



The Mojave Water Agency and U.S. Geological Survey are working together in a comprehensive program to monitor water levels and maintain historic records throughout the Report Basin. The graphed wells are selected based on spatial and temporal coverage of the Subarea. All wells on the Hydrograph Map are a part of the MWA Monitoring Program, and have data available to the public from either the Mojave Water Agency Website or the USGS National Water Information System. For more information please contact Mojave Water Agency.



- Data Source: MWA, USGS, USGS Wells, USGS Stream Gage, Date: January 2021, Mojave Water Agency, Water Resource Department
- Graphed Wells
- MWA Monitoring Program Wells
- Exhibit H Riparian Habitat Area
- CA Geologic Faults (CGS, USGS)
- MWA Potable Pipeline
- MWA Recharge Pipeline
- Recharge Site

Alto Subarea Eastern Portion Hydrographs 2021

- Recent record
- Long-term record (begins ~1950 to ~1960)
- Very long-term record (begins ~1820)



FIGURE 3-12

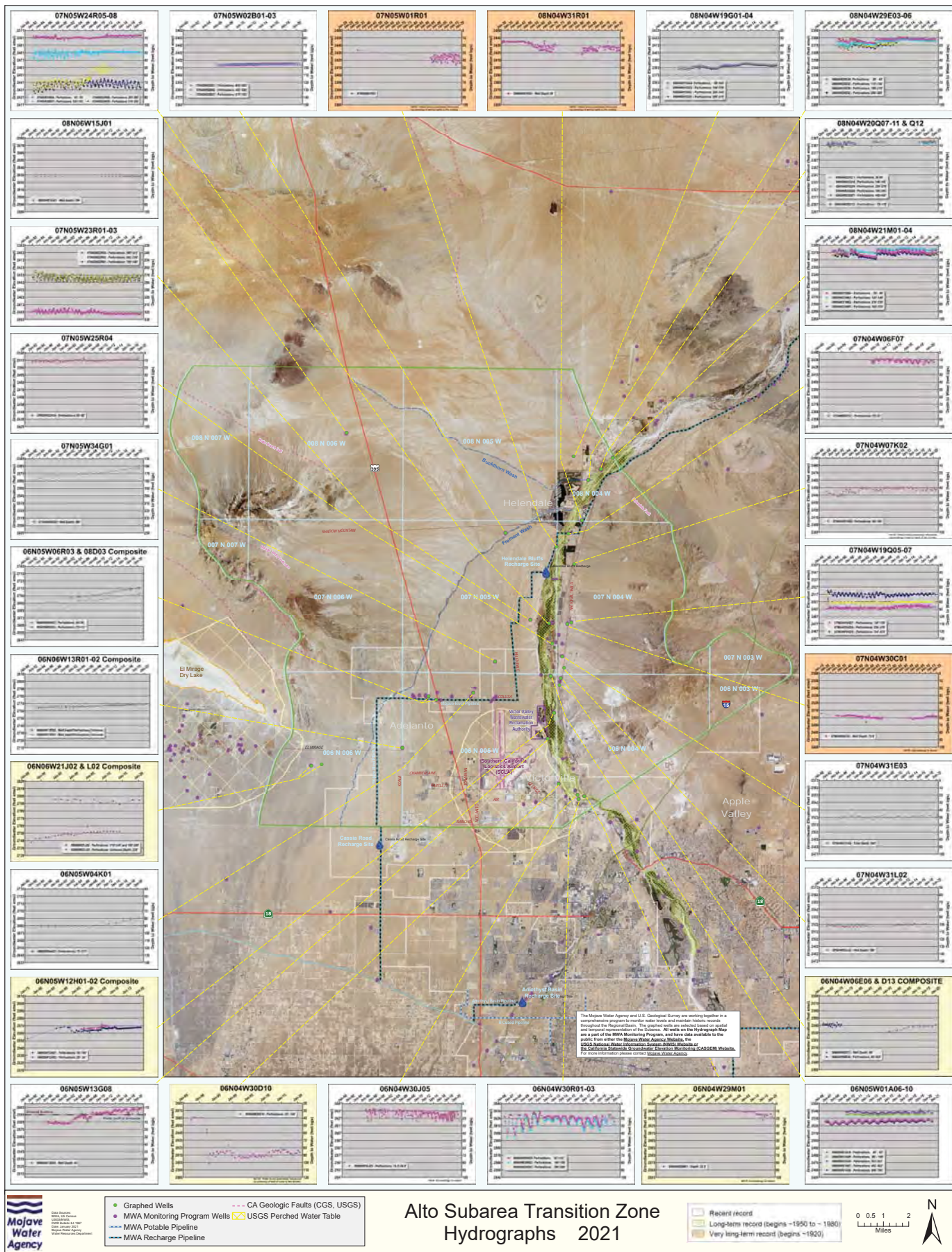
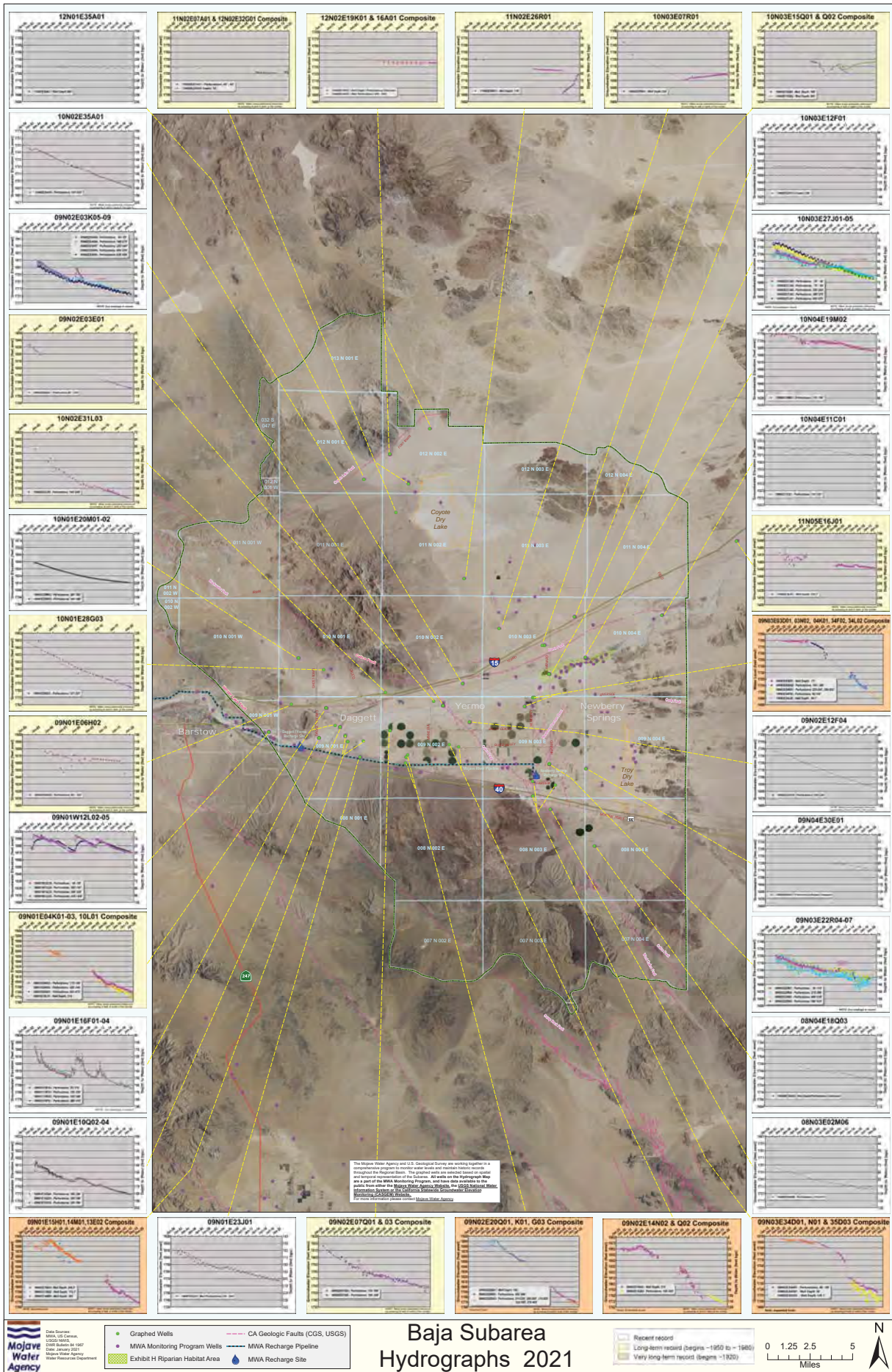


FIGURE 3-13



The Mojave Water Agency and U.S. Geological Survey are working together in a comprehensive program to monitor the water levels and trends in the subarea to support the Riparian Habitat Program. The data presented in this report are for informational purposes only and do not constitute a warranty of any kind. All wells on the Hydrograph Map are a part of the MWA Monitoring Program, and have data reported to the Mojave Water Agency. For more information, please contact the Mojave Water Agency at (760) 325-1234 or visit our website at www.mojawateragency.com.

Baja Subarea Hydrographs 2021

FIGURE 3-14

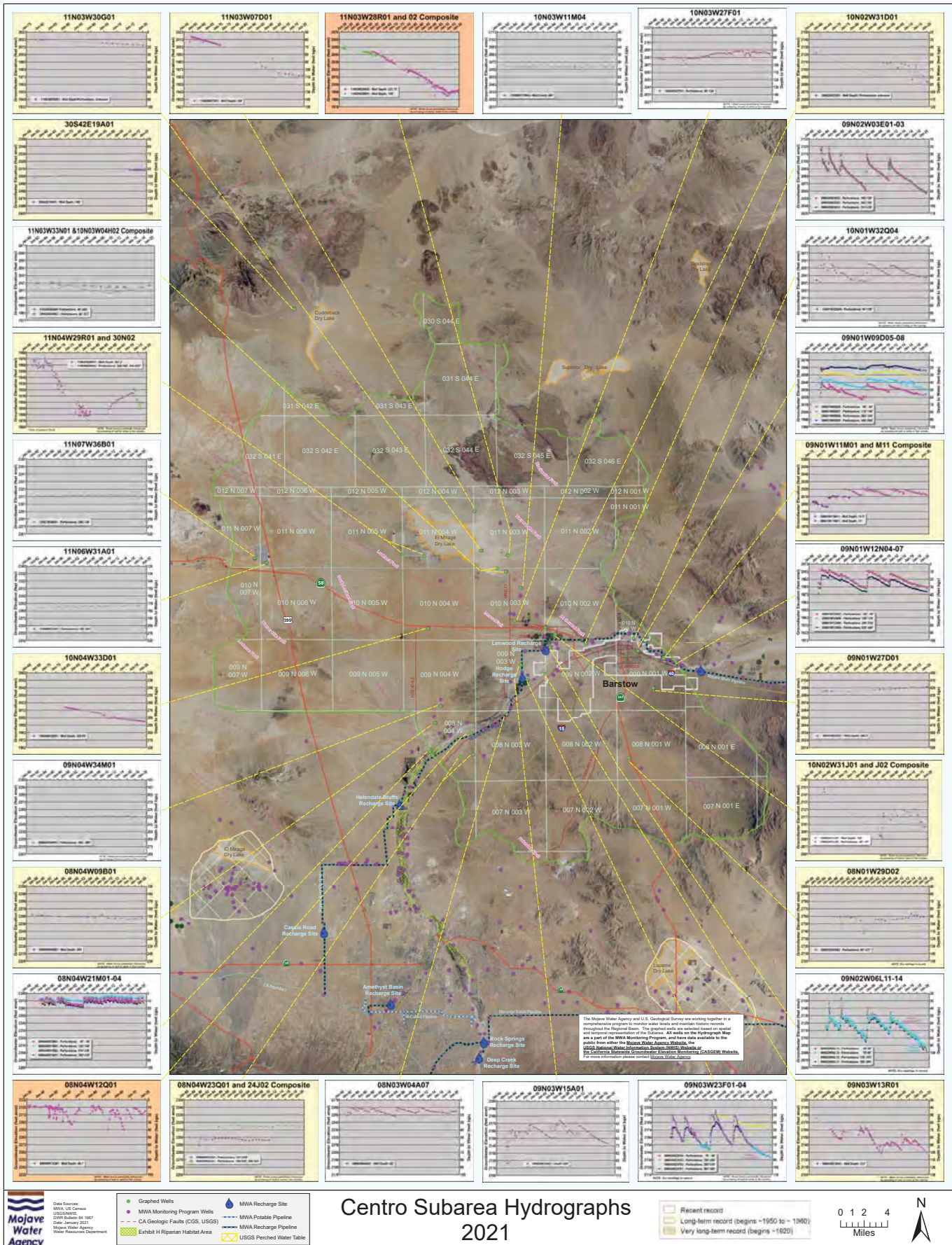
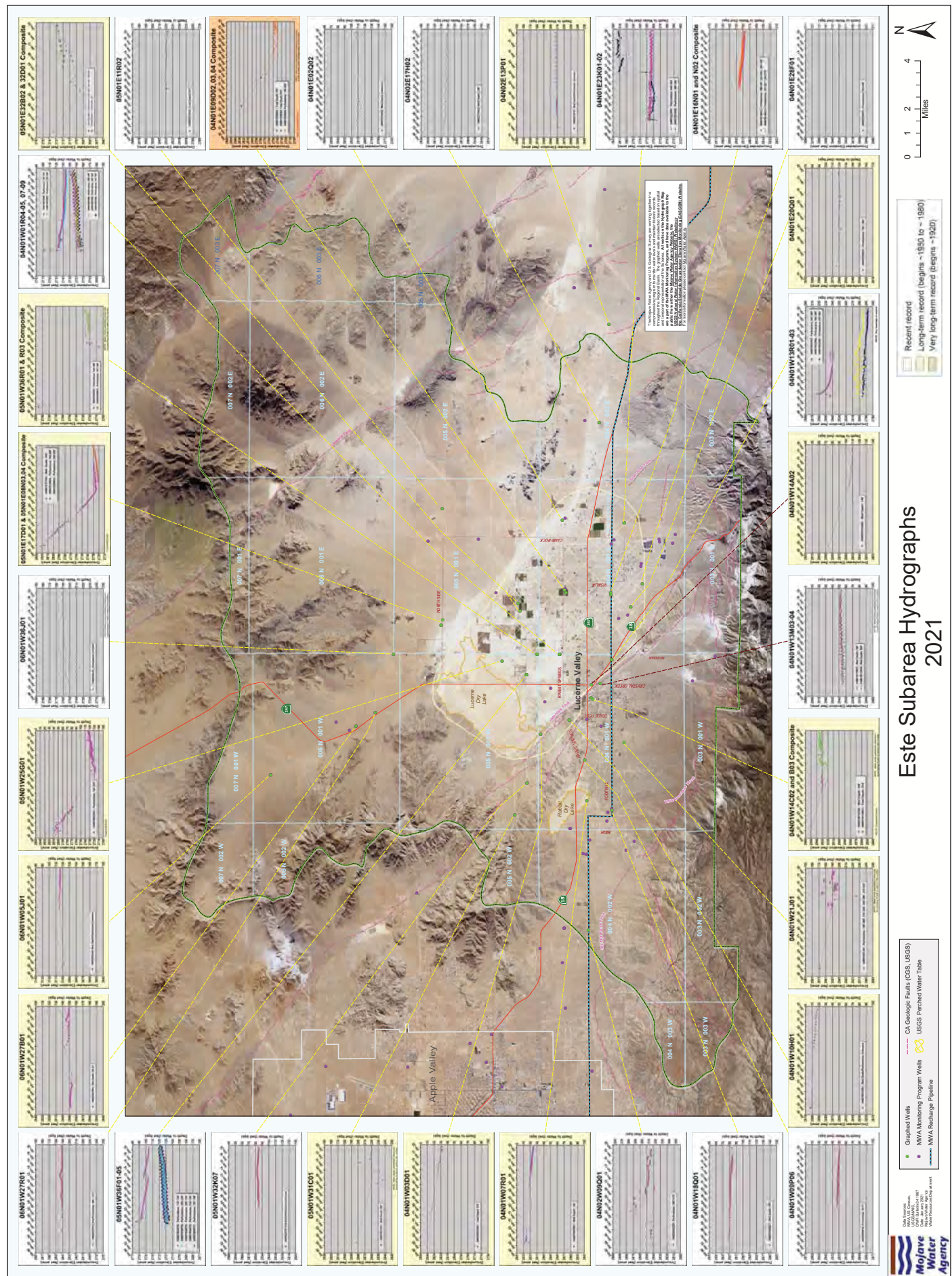
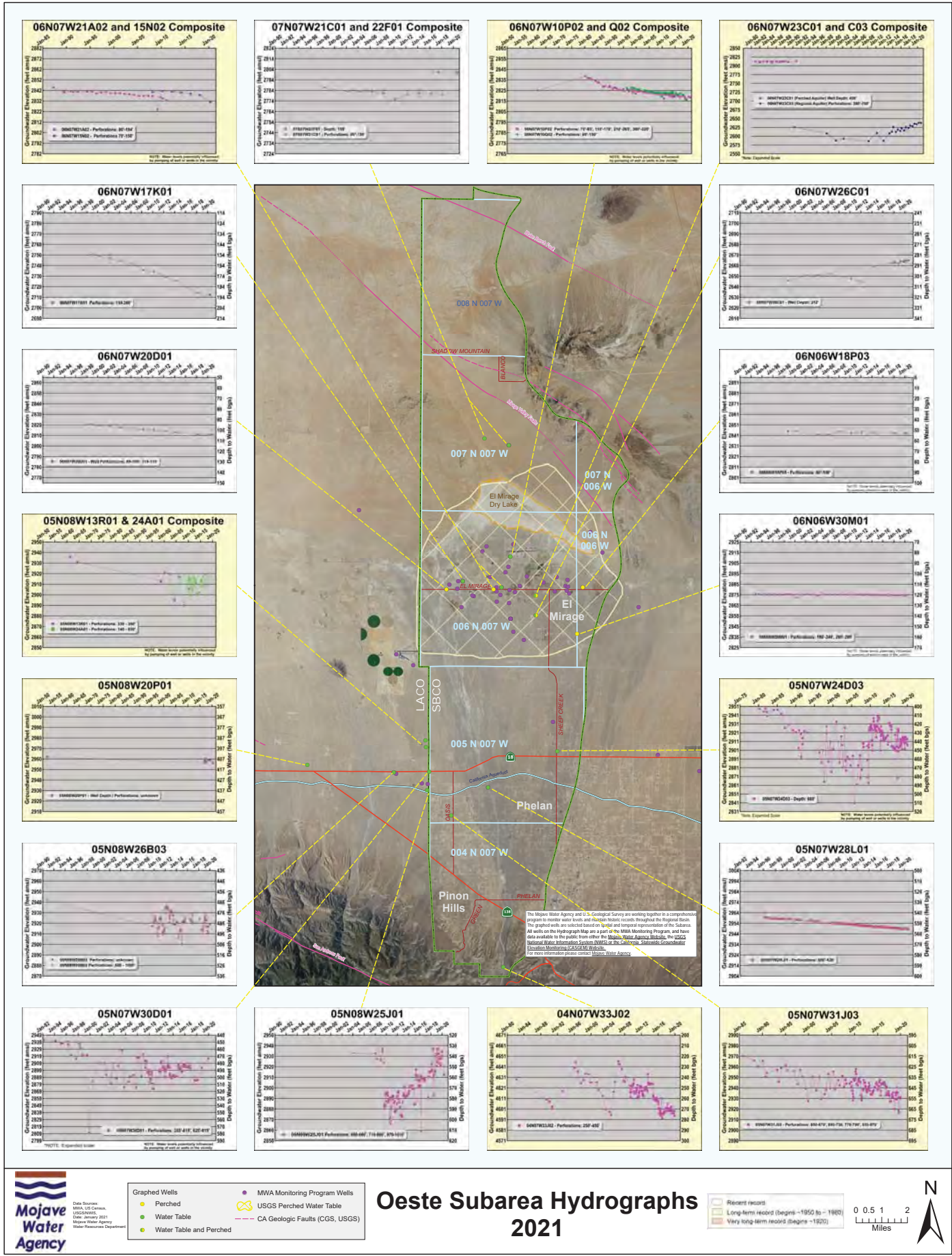


FIGURE 3-15



Este Subarea Hydrographs 2021

FIGURE 3-16



- Graphed Wells
 - Perched
 - Water Table
 - Water Table and Perched
- MWA Monitoring Program Wells
- ⊗ USGS Perched Water Table
- CA Geologic Faults (CGS, USGS)

Oeste Subarea Hydrographs 2021

Recent record
 Long-term record (begins ~1950 to ~1980)
 Very long-term record (begins ~1920)

0 0.5 1 2
 Miles

FIGURE 3-17

State of the Basin

Watermaster has developed a graphical decision-making tool to assess changes of water in storage over time. Developed cooperatively with MWA, the tool is part of a larger program to track changes in water levels and match the changes with an annual calculation of inflow, outflow, and consumptive uses. Watermaster has developed a methodology for evaluating and estimating consumptive uses on an individual producer basis providing a more precise estimate of water use in each Subarea resulting in a more reliable calculation of change in storage. Consumptive use has been evaluated for the last eight years and continues to become increasingly fine-tuned as individual producer's use and each Subarea's hydrogeology are fully understood.

Watermaster has conducted an annual estimate of consumptive uses concurrent with Watermaster annual water production verification. Water production and use data compiled, verified and maintained by Watermaster were analyzed to determine the portion of water produced that was consumptively used.

The consumptive use analysis has been conducted annually since Water Year 2011-12 to provide estimates for irrigation demands for crops, septic return flow, sewage return flow, municipal and domestic outdoor return flow, as well as estimates of consumptive use for golf courses, parks and recreational lakes. The analysis breaks down each producer's water production into component parts, calculates a consumptive use for each sequential use and sums the results. Production records and land uses are evaluated annually for each individual producer. Daily climate data, soil survey information, crop development characteristics (crop coefficients, maximum effective rooting depth, and allowable soil water depletion), and producer's agricultural uses are analyzed to determine an irrigation demand. For municipal uses, available water purveyor data is evaluated to estimate per capita indoor and outdoor use for single-family and multi-family residential uses as well as industrial and commercial uses where applicable. Domestic uses are also evaluated on an individual producer level and indoor and outdoor use is estimated. The aggregate of each individual producer's consumptive use, in conjunction with available surface flow data, estimates of subsurface flow between subareas, and imported water result in the annual change in storage calculation.

Figures 3-18 through 3-22 show the accumulated storage change annually in each Subarea. Change in storage in the groundwater basin is calculated by subtracting the sum of the elements of inflow including imports, from outflow, consumptive uses, and exports. The information shown on the figures is indicative of the sustainability of the water supply conditions in each subarea.

Various ranges, shown by color gradations from blue to red, were developed for the Alto and Centro Subareas. In Alto (Figure 3-18), the minimum operating level is the amount of calculated storage change as of 2005, during which time the basin was considered to be healthy. The maximum operating level is the minimum level plus 5 years of average annual consumptive use. Average annual consumptive use in Alto is about 56,000 acre-feet, representing a year of pumping under the land and water use conditions existing since 1996.

In Centro (Figure 3-19) the minimum operating range is the amount of calculated storage change since 1997, the lowest since the Judgment, during which time the basin was considered to be healthy. The maximum operating level is the minimum level plus a supply of 5 average annual consumptive uses, with an average annual consumptive use being about 18,000 acre-feet from 1996 to 2020.

Conditions in Baja (Figure 3-20) have yet to stabilize since 1996. As such, optimal operating parameters have not been established. Figure 3-20, (for Baja), shows the continued overdraft and continued depletion of groundwater in storage.

The optimal operating parameters for Este (Figure 3-21) have not been established, though the elements of water supply use and disposal appear to be balanced based on water level data for at least the past 20 years. As shown on Table 3-2, water supply for Este for 2019-20 is approximately 4,300 acre-feet, assuming annual average change in storage is approximately zero.

Elements of water production, water supply, and outflow in Oeste (Figure 3-22) are roughly in balance over the past 19 years. A detailed review of the water levels in Oeste over the past several years indicates a short-term stability in some areas. In order to reflect the relatively stable water levels as indicated in the regional well hydrographs, Table 3-2 reflects “no change in storage.” Optimal operating parameters for Oeste have not been established.

MWA’s 2015 Urban Water Management Plan considered three water shortage scenarios for evaluating water supply reliability. The scenarios included a six-month outage of the State Water Project (SWP) as well as a single year historic drought on the SWP and the historic four-

year SWP drought. In part, the Operating Ranges for healthy long-term subarea operation as shown on Figures 3-18 and 3-19 are reflective of the dry year scenarios referenced in the 2015 UWMP. During the 20 years since Entry of Judgment, basin operating storage has ranged from a decline of approximately 3.4 years of consumptive use in Alto (189,342 acre-feet), and 3 years in Centro (55,058 acre-feet), to an increase of 4 years in Alto (226,489 acre-feet), and 7.5 years in Centro (137,389 acre-feet). The operating ranges, about 282,000 acre-feet in Alto and about 92,000 acre-feet in Centro, are well within the limits identified for dry year reliability envisioned by the 2015 UWMP. Since 1996, Baja has lost about 478,166 acre-feet of groundwater storage. There is concern that the Baja subarea could not sustain a continued reduction in storage.

Watermaster uses the State of the Basin analysis for documenting sustainability of the groundwater basin in reference to legislation enacted as Water Code sections 10720-10720.9 known as the Sustainable Groundwater Management Act (SGMA). The annual change in storage determined from the methodology described above for Water Year 2019-20 is shown on Table 3-2.

TABLE 3-2

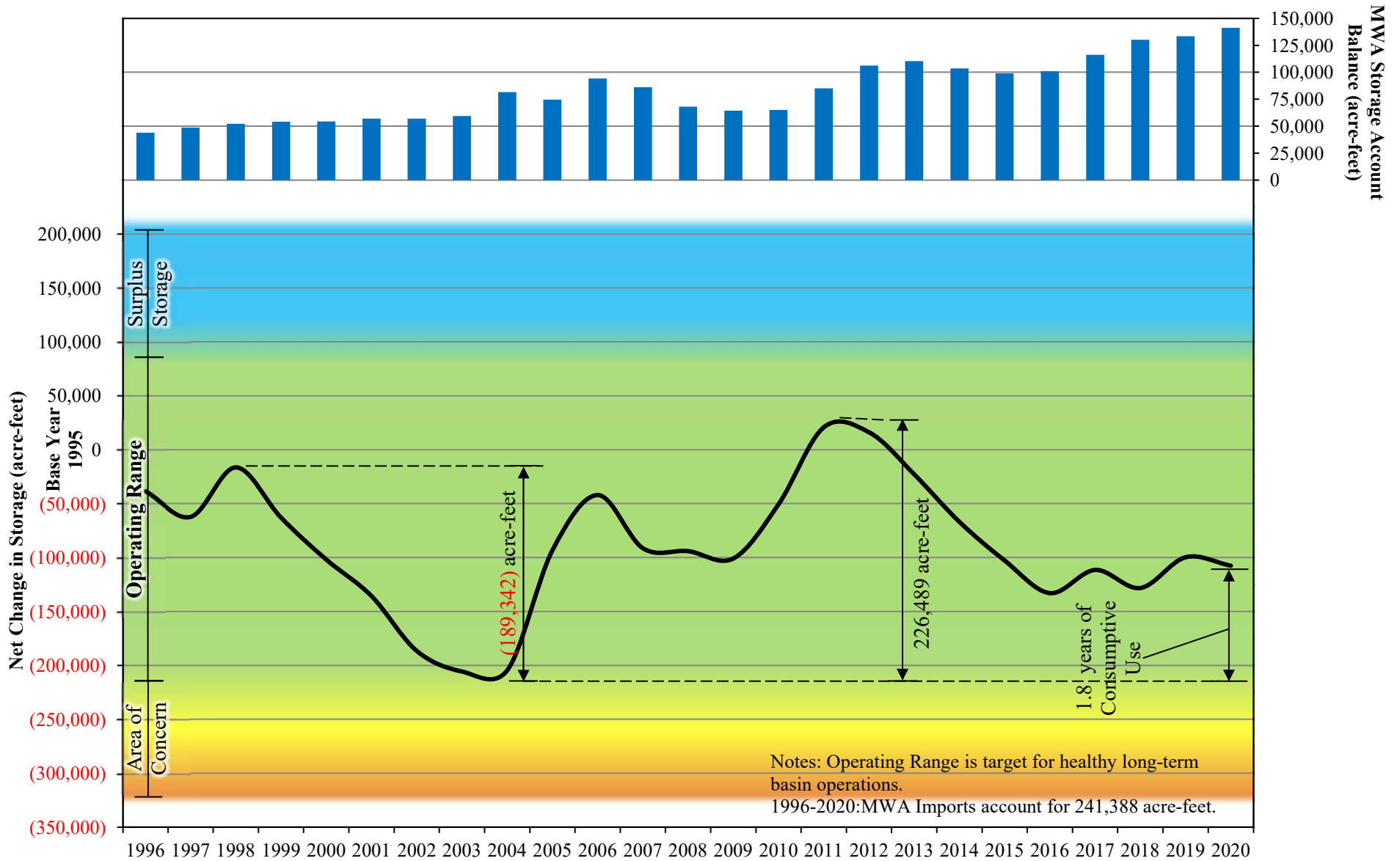
**ANNUAL CHANGE IN STORAGE BY SUBAREA
WATER YEAR 2019-20
(AMOUNTS IN ACRE-FEET)**

	<u>Este</u> ¹	<u>Oeste</u> ²	<u>Alto</u>	<u>Centro</u>	<u>Baja</u>	<u>Total</u>
Total Water Supply	4,318	3,328	62,873	18,749	2,274	91,542
Total Outflow and Consumptive Use	4,318	3,328	70,804	18,625	22,389	119,464
Net Change in Storage	0	0	(7,931)	124	(20,115)	(27,922)

Notes

- 1. Water level data indicates little or no change in storage on an average annual basis; water supply is estimated to balance outflow and consumptive use.**
- 2. Short term water levels indicate balance supply and demand for the past 15-20 years. This condition is unstable as population and water demand is expected to increase.**

Alto Subarea Net Change in Storage and MWA Storage Account Balance Water Years 1996 through 2020



Notes: Operating Range is target for healthy long-term basin operations.
1996-2020: MWA Imports account for 241,388 acre-feet.

FIGURE 3-18

Operating range based on lowest amount in storage of -205,635af, during which the basin was considered to be healthy, plus a supply of 5 average annual consumptive uses, with an average annual consumptive use equating to 56,045 af from 1996 through present. Surplus Storage and Area of Concern each represent 2 average annual consumptive uses.

Source: Consumptive Use for 1996-2011 per Robert C. Wagner, Watermaster Engineer. Consumptive Use for 2012-2020 based on analysis of individual producers, Robert C. Wagner, Watermaster Engineer, 2021.

Centro Subarea Net Change in Storage and MWA Storage Account Balance Water Years 1996 through 2020

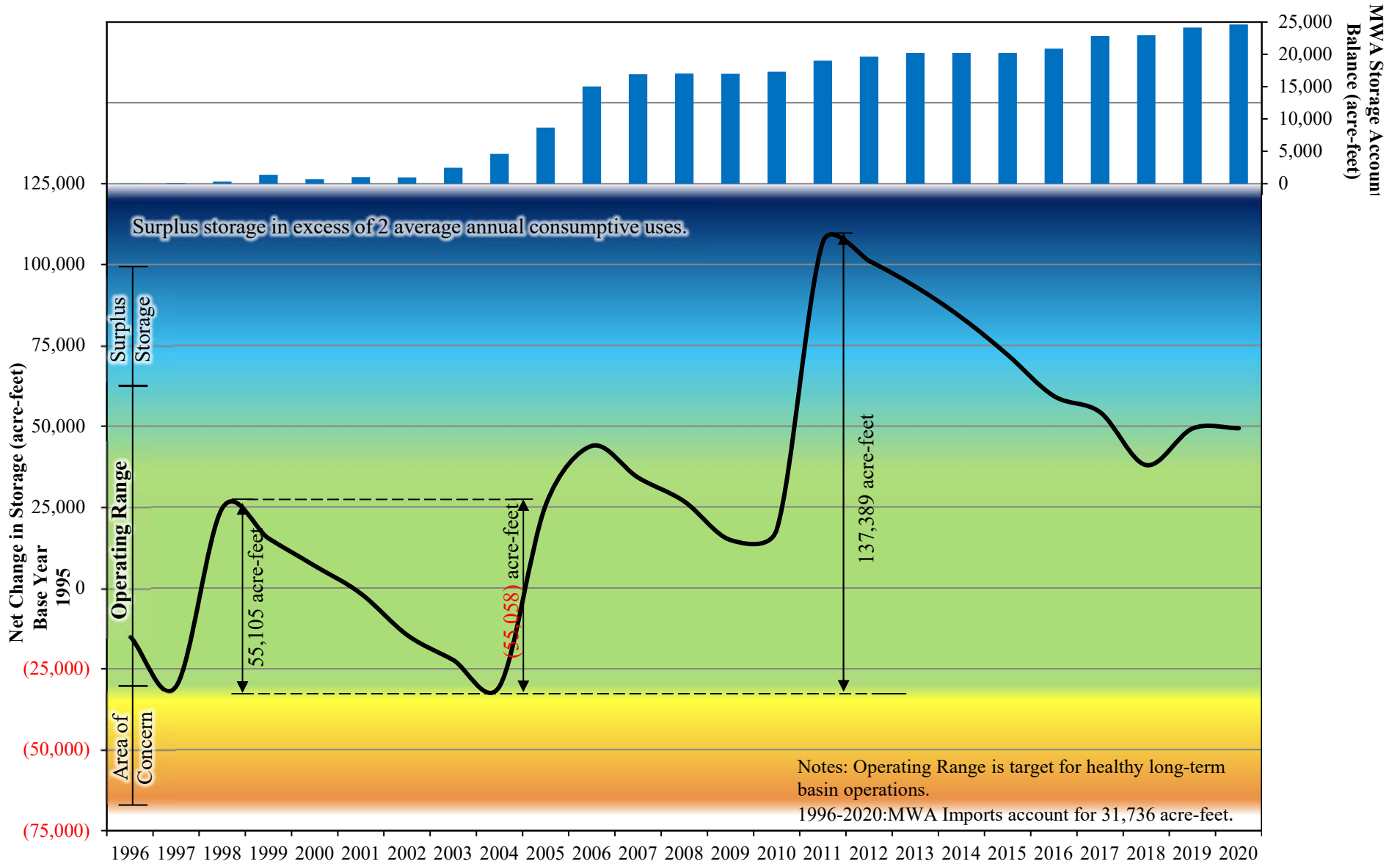
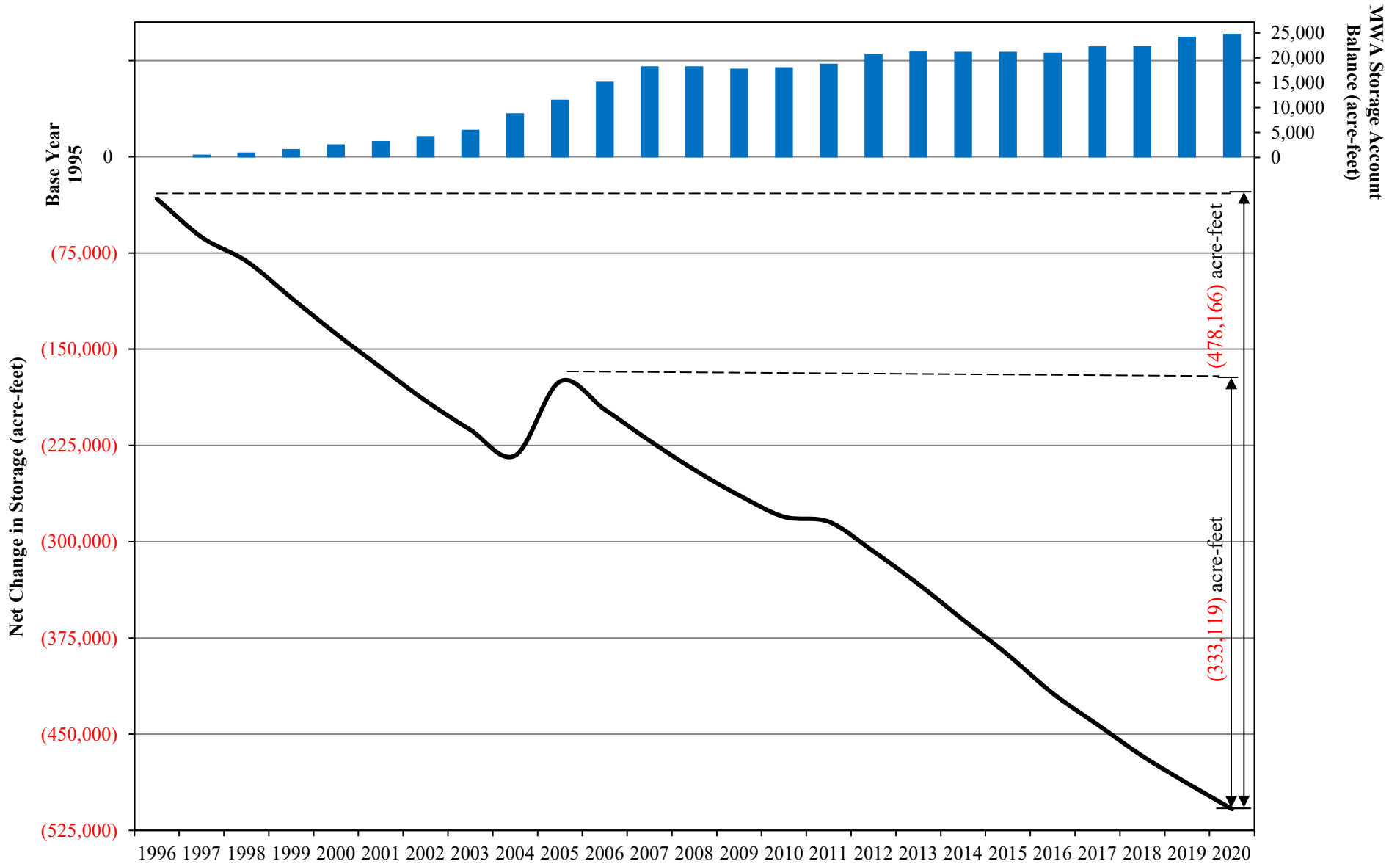


FIGURE 3-19

Operating range based on lowest amount in storage of -30,407af, during which the basin was considered to be healthy, plus a supply of 5 average annual consumptive uses, with an average annual consumptive use equating to 18,428 af from 1996 through present. Surplus Storage and Area of Concern each represent 2 average annual consumptive uses.
Source: Consumptive Use for 1996-2011 per Robert C. Wagner, Watermaster Engineer. Consumptive Use for 2012-2020 based on analysis of individual producers, Robert C. Wagner, Watermaster Engineer, 2021.

Baja Subarea Net Change in Storage and MWA Storage Account Balance Water Years 1996 through 2020



Note: Operating Range is not yet established.

FIGURE 3-20

Source: Consumptive Use for 1996-2011 per Robert C. Wagner, Watermaster Engineer. Consumptive Use for 2012-2020 based on analysis of individual producers, Robert C. Wagner, Watermaster Engineer, 2021.

Este Subarea
Net Change in Storage and MWA Storage Account Balance
Water Years 1996 through 2020

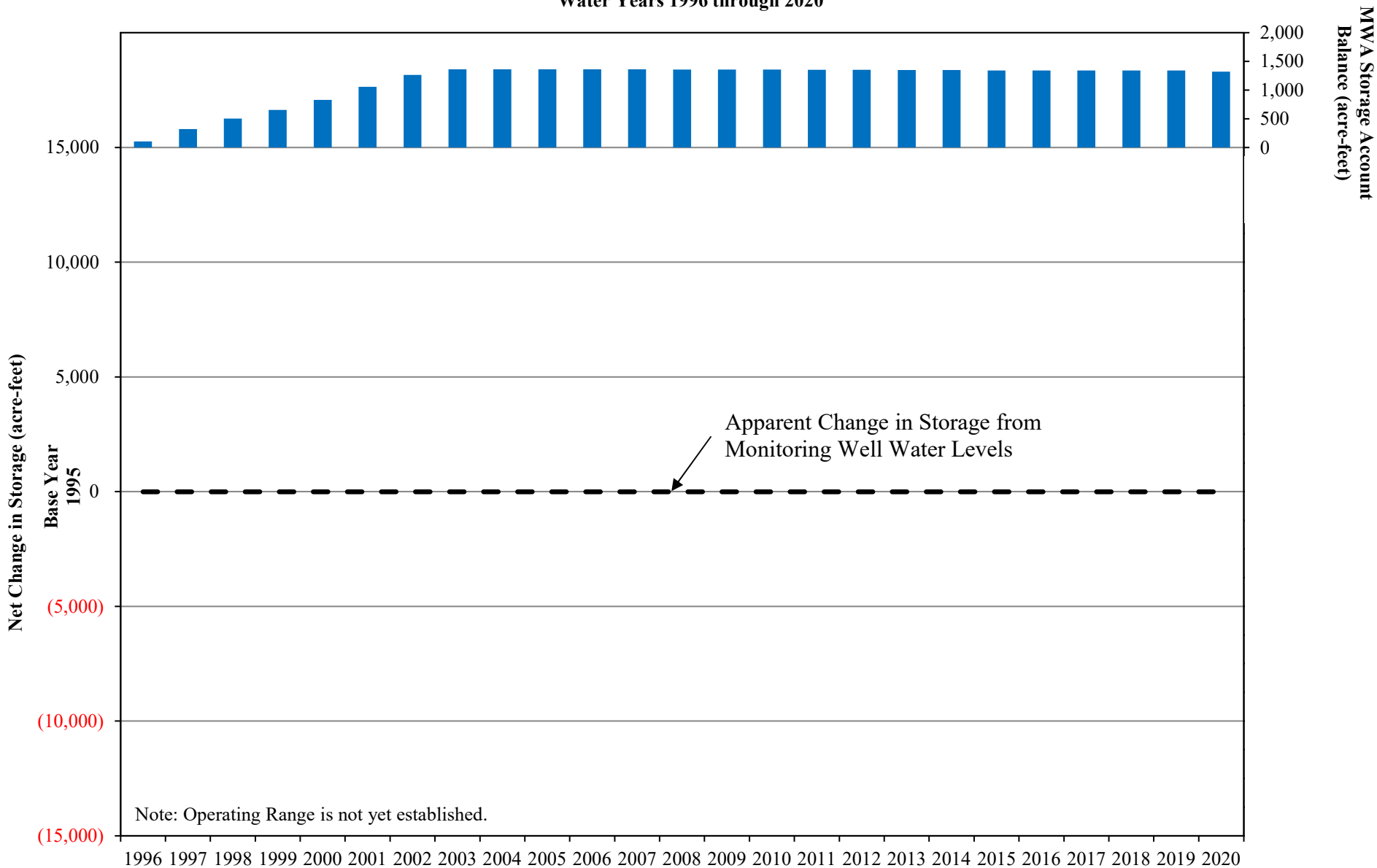


FIGURE 3-21

Oeste Subarea
Net Change in Storage and MWA Storage Account Balance
Water Years 1996 through 2020

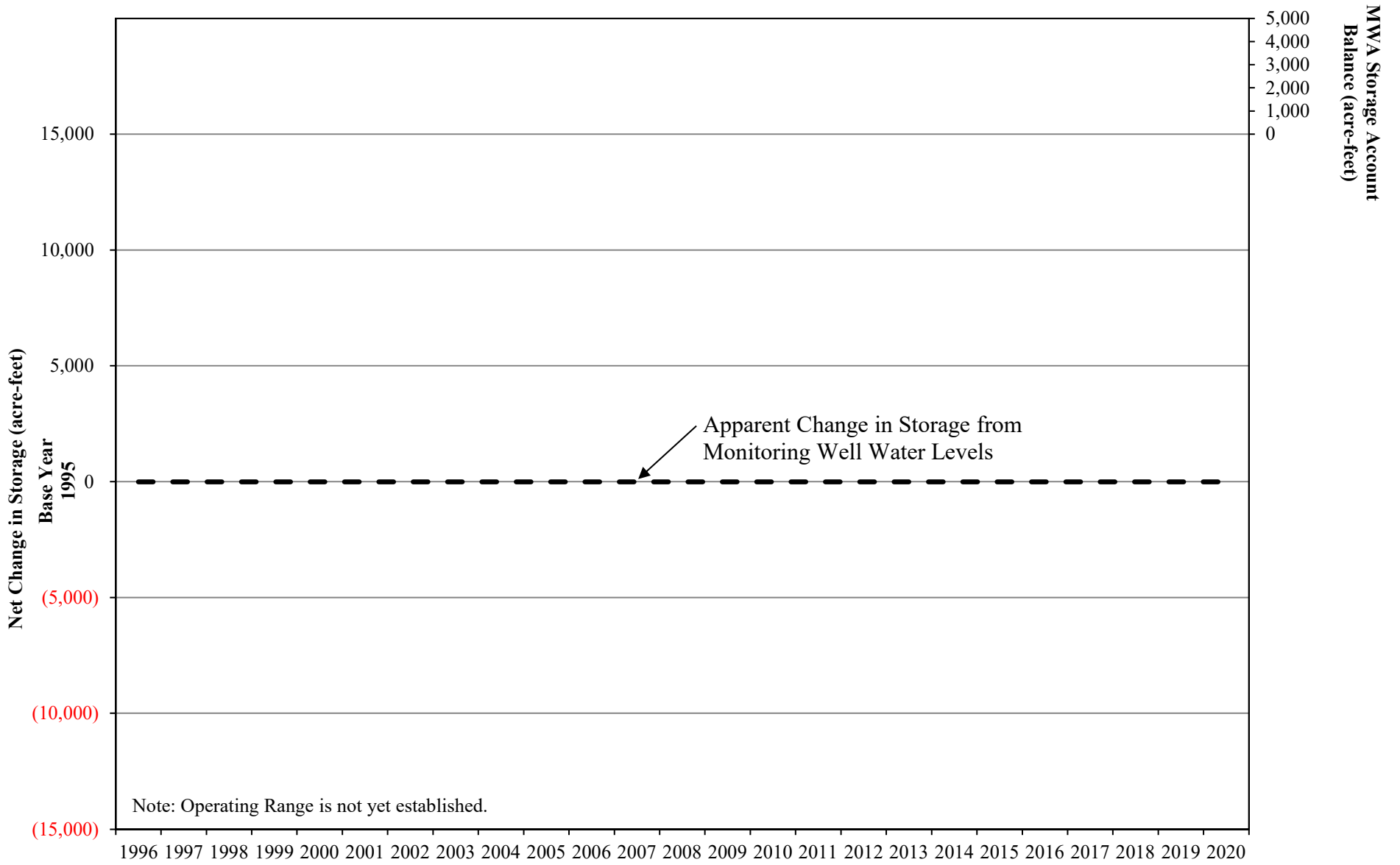


FIGURE 3-22

CHAPTER 4

STATUS OF REPLACEMENT WATER AND MAKEUP WATER OBLIGATIONS

Appendix B summarizes each Producer's Replacement Water and Makeup Water Obligations as well as any related assessments due and payable by July 1, 2021.

Replacement Water

Each Producer's Replacement Water Obligation in each Subarea was calculated by subtracting that Producer's 2019-20 share of FPA (plus any transferred or carryover FPA) from that Producer's verified production in 2019-20. Each Producer's Replacement Water Assessment was calculated by multiplying that Producer's Replacement Water Obligation by the 2019-20 Replacement Water Assessment Rate of \$604.00 per acre-foot. In lieu of paying Replacement Water Assessments, a Producer may satisfy a Replacement Water Obligation in a Subarea by acquiring another Producer's Unused FPA from 2019-20 in the same Subarea (subject to any consumptive use adjustments) and reporting such acquisition to the Watermaster on appropriate forms provided by the Watermaster not later than 30 days prior to the regularly scheduled Watermaster Meeting in May 2021. Unused FPA during 2019-20 for each Producer within each Subarea is set forth in Appendix B.

Table 4-1 summarizes the Replacement Water Obligations and Assessments and Unused FPA for 2019-20 in each Subarea.

TABLE 4-1

**SUMMARY OF REPLACEMENT WATER OBLIGATIONS
AND
REPLACEMENT WATER ASSESSMENTS FOR
WATER YEAR 2019-20**

<u>Subarea</u>	<u>Replacement Water Obligations</u> (acre-feet)	<u>Replacement Water Assessments</u>	<u>Unused FPA</u> (acre-feet)
Este	442	\$266,968.00	14,227
Oeste	0	\$0.00	4,750
Alto	18,791	\$11,349,764.00	17,621
Centro	86	\$51,944.00	34,592
Baja	1,006	\$607,624.00	11,696
Total	20,325	\$12,276,300.00	82,886

Makeup Water

The Base Flow determination of 5,185 acre-feet prepared by the Watermaster Engineer was presented to the Watermaster at the regularly scheduled meeting January 27, 2021. Table 4-2 summarizes the flows credited to each Subarea obligation during Water Year 2019-20, the status of each Subarea at the end of the year and each minimum obligation for Water Year 2019-20. The Makeup Obligation from the Alto Subarea to the Centro Subarea for Water Year 2019-20 is 2,285 acre-feet. Table 4-3 shows the year over year Makeup Obligation from Alto to Centro beginning in Water Year 2009-10.

During the first ten years of implementation of the Judgment, the subsurface flow obligations between Subareas were assumed to be met. Subsequently, Watermaster revisited the subsurface flow assumptions in the Judgment and recommended no changes. Subject to continued monitoring, the Makeup Obligations are assumed to be met.

TABLE 4-2

**STATUS OF SUBAREA OBLIGATIONS
AT THE END OF WATER YEAR 2019-20**

Subareas	<u>Este</u>	<u>Oeste</u>	<u>Alto</u>	<u>Centro</u>	<u>Baja</u>
Obligation to	Alto	Alto	Transition Zone	Baja	Afton
Average Annual Obligation in acre-feet	200	800	23,000	1,200	400
Status at Beginning of 2019-20					
Cumulative Obligation	5,200	20,800	598,000	31,200	10,400
Cumulative Flow	5,200	20,800	577,480	31,200	7,291
Net cumulative Credit (Debit)	0	0	(20,520)	0	(3,109)
Flow During 2019-20					
Base Flow	---	---	5,185	---	---
Subsurface Flow	200	800	2,000	1,200	249
Other Water	0	0	13,719	0	0
Makeup Water Purchased	<u>0</u>	<u>0</u>	<u>2,051</u>	<u>0</u>	<u>0</u>
Total Flow	200	800	22,955	1,200	249
Minimum Obligations for 2019-20	160	640	25,240	960	3,029
Makeup Obligation Incurred	0	0	2,285	0	2,780
Status at End of 2019-20					
Cumulative Obligation	5,400	21,600	621,000	32,400	10,800
Cumulative Flow	<u>5,400</u>	<u>21,600</u>	<u>600,435</u>	<u>32,400</u>	<u>7,540</u>
Net Cumulative Credit (Debit)	0	0	(20,565)	0	(3,260)
Minimum Obligation for 2020-21					
Annual Minimum	160	640	18,400	960	320
+ 1/3 of Cumulative Debit	0	0	6,855	0	1,087
+ Additional to reduce Cumulative Debit to Annual Obligation	0	0	0	0	1,773
Alternative Minimum for Alto ¹	---	---	---	---	---
Minimum Obligation for 2020-21	160	640	25,255	960	3,180 ²

1) Annual Minimum minus Cumulative Credit but not less than 15,000 acre-feet.

2) The accounting for the Baja Subarea Obligation is shown for illustrative purposes only. Pursuant to Paragraph 6 of Appendix G of the Judgment, subsurface flow obligations are assumed to have been met. Pursuant to the Court order dated 6/5/2006, Watermaster is relieved of evaluation of the subsurface flow from BAJA across the Mojave Water Agency administrative boundary about six miles upstream of Afton.

TABLE 4-3

**STATUS OF ALTO SUBAREA OBLIGATIONS
WATER YEARS 2010-11 THROUGH 2019-20**

Water Year	<u>2010-11</u>	<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>2016-17</u>	<u>2017-18</u>	<u>2018-19</u>	<u>2019-20</u>
Average Annual Obligation in acre-feet	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000
Status at Beginning of Water Year										
Cumulative Obligation	391,000	414,000	437,000	460,000	483,000	506,000	529,000	552,000	575,000	598,000
Cumulative Flow	<u>370,609</u>	<u>398,148</u>	<u>423,651</u>	<u>447,286</u>	<u>468,411</u>	<u>490,268</u>	<u>511,465</u>	<u>533,205</u>	<u>554,196</u>	<u>577,480</u>
Net cumulative Credit (Debit)	(20,391)	(15,852)	(13,349)	(12,714)	(14,589)	(15,732)	(17,535)	(18,795)	(20,804)	(20,520)
Flow During Water Year										
Base Flow	10,149	8,829	7,325	6,227	5,418	4,851	4,031	3,662	4,533	5,185
Subsurface Flow	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Other Water	14,825	14,674	14,310	12,898	12,926	12,940	13,262	12,824	13,077	13,719
Makeup Water Purchased	<u>565</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1,513</u>	<u>1,406</u>	<u>2,447</u>	<u>2,505</u>	<u>3,674</u>	<u>2,051</u>
Total Flow	27,539	25,503	23,635	21,125	21,857	21,197	21,740	20,991	23,284	22,955
Minimum Obligations	25,197	23,684	22,850	22,638	23,263	23,644	24,245	24,665	25,335	25,240
Makeup Obligation Incurred	0	0	0	1,513	1,406	2,447	2,505	3,674	2,051	2,285
Status at End of Water Year										
Cumulative Obligation	414,000	437,000	460,000	483,000	506,000	529,000	552,000	575,000	598,000	621,000
Cumulative Flow	<u>398,148</u>	<u>423,651</u>	<u>447,286</u>	<u>468,411</u>	<u>490,268</u>	<u>511,465</u>	<u>533,205</u>	<u>554,196</u>	<u>577,480</u>	<u>600,435</u>
Net Cumulative Credit (Debit)	(15,852)	(13,349)	(12,714)	(14,589)	(15,732)	(17,535)	(18,795)	(20,804)	(20,520)	(20,565)
Minimum Obligation for Next Year										
Annual Minimum	18,400	18,400	18,400	18,400	18,400	18,400	18,400	18,400	18,400	18,400
+ 1/3 of Cumulative Debit	5,284	4,450	4,238	4,863	5,244	5,845	6,265	6,935	6,840	6,855
+ Additional to reduce Cumulative Debit to Annual Obligation	0	0	0	0	0	0	0	0	0	0
Alternative Minimum ¹	---	---	---	---	---	---	---	---	---	---
Minimum Obligation for Next Year	23,684	22,850	22,638	23,263	23,644	24,245	24,665	25,335	25,240	25,255

1) Annual Minimum minus Cumulative Credit but not less than 15,000 acre-feet.

CHAPTER 5

FREE PRODUCTION ALLOWANCE FOR WATER YEAR 2021-22

Pursuant to paragraph 24 (o) of the Judgment After Trial dated January 10, 1996, the Watermaster is required to make a recommendation to the Court for adjusting the FPA of each Subarea, if necessary.

Exhibit H of the Judgment provides that in the event that the FPA exceeds the estimated Production Safe Yield (PSY) by five percent or more (of the Subarea BAP), Watermaster shall recommend a reduction in FPA equal to a full five percent of the aggregate Subarea BAP.

In 2018 an update to Production Safe Yield and Consumptive Use for each subarea was completed at the court's request. Previously, PSY was updated in August 2000. Consumptive use and PSY are defined by the Judgment as follows:

- Production Safe Yield - The highest average Annual Amount of water that can be produced from a Subarea: (1) over a sequence of years that is representative of long-term average annual natural water supply to the Subarea net of long-term average annual natural outflow from the Subarea, (2) under given patterns of Production, applied water, return flows and Consumptive Use, and (3) without resulting in a long-term net reduction of groundwater in storage in the Subarea.
- Consumption or Consumptive Use - The permanent removal of water from the Mojave Basin Area through evaporation or evapo-transpiration.

Consumptive use is important because it is used to estimate return flow. Return flow is the difference between water production for a particular use and the estimated consumptive use of the production. Return flow is therefore considered part of the water supply.

The PSY estimate includes long-term hydrology as specified in the Judgment, consumptive uses for 2017-18 (updated), phreatophyte use as indicated in the Judgment, Subarea subsurface obligations and surface obligations between Alto and Centro (there are no other surface obligations in the Judgment). Table 5-1 shows the current PSY calculation.

The following table shows the current FPA for each Subarea and the estimated PSY.

<u>Subarea</u>	<u>Base Annual Production</u>	<u>2020-21 FPA</u>	<u>Production Safe Yield</u>	<u>Percent Difference¹</u>	<u>2019-20 Verified Production</u>
Alto	116,412	65,924	64,406	1.3%	73,441
Baja	66,157	18,270	12,189	9.2%	18,677
Centro	51,030	36,214	21,088	29.6%	16,756
Este	20,205	14,453	4,728	48.1%	4,227
Oeste	7,095	4,667	1,712	41.6%	3,439

¹This value represents the percent of BAP that PSY departs from FPA.

The Judgment’s purpose is to balance supply and demand and allocate the cost to parties that over pump FPA. The purpose of Rampdown is not to cause a reduction in pumping but a reduction in FPA to cause imported water supply to be purchased to offset deficits.

The following is the recommendation for setting FPA for Water Year 2021-22:

<u>Subarea</u>	<u>Proposed 2021-22 Free Production Allowance</u>
Alto – Agriculture	60% of Base Annual Production
Alto – Municipal & Industrial	55% of Base Annual Production
Centro	65% of Base Annual Production
Baja	20% of Base Annual Production
Este	65% of Base Annual Production
Oeste	60% of Base Annual Production

**Alto – 55% of BAP for M&I
60% of BAP for Agriculture**

FPA in Alto is within 5% of PSY of BAP (1.3%). Municipal and Industrial (M&I) producers’ FPA is within 5% of the indicated PSY at the current level of 55%. It is recommended that Agricultural producers FPA be reduced by 5% to 60% for Water Year 2021-22. M&I FPA will remain at 55% for Water Year 2021-22. As noted above, FPA is within 5% (percentage of BAP) of PSY and thus, Exhibit H does not compel Watermaster to recommend rampdown. While FPA is only 1.3% (percentage of BAP) greater than the estimated PSY, additional rampdown in Alto could be made if conditions warranted. Water levels in some wells show a continuing downward trend in response to locally drier than average water supply during the past 9 years. During 2019-20, inflow measured at Deep Creek and West Fork Mojave River (the forks), was

about 68% of base period average however the average water supply during the recent 9-year period 2012 to 2020, was only 47% of the long-term average. Sustained periods of below average inflow will cause continued water level declines.

Centro – 65% of BAP

FPA in Centro exceeds PSY by more than 5% of BAP (29.6%). Water levels in Centro are stable in most of Centro, and generally respond to storm flow when available in sufficient amounts to partially recharge the aquifer. However, in some areas, localized pumping causes water levels to be depressed. In order to balance FPA with PSY under the Judgment additional Rampdown is required. It is recommended that Centro FPA be reduced by 5% to 65% for Water Year 2021-22.

Baja – 20% of BAP

FPA in Baja exceeds PSY by more than 5% of BAP (9.2%). Overdraft continues as water levels continue to fall. Continuous declines result from pumping in excess of supply. It is recommended that FPA be reduced by 5% to 20% for Water Year 2021-22.

Este – 65% of BAP

FPA in Este exceeds PSY by more than 5% of BAP (48.1%). Water levels in Este are stable as water production has declined. Water production has declined in Este from 15,700 acre-feet in 1990 to 4,227 acre-feet in 2020. In order to balance FPA with PSY under the Judgment additional Rampdown is required. It is recommended that Este FPA be reduced by 5% to 65% for Water Year 2021-22.

Oeste – 60% of BAP

FPA in Oeste exceeds PSY by more than 5% of BAP (41.6%). Some water levels in Oeste exhibit steady decline and others are stable, although variable, over the past 15 years. Water levels in Oeste wells will decline as population growth increases water demands. In order to balance FPA with PSY under the Judgment additional Rampdown is required. It is recommended that Oeste FPA be reduced by 5% to 60% for Water Year 2021-22.

**--SAMPLE CALCULATION--
TABLE C-1 OF JUDGMENT**

**Mojave Basin Area Adjudication
Subarea Hydrological Inventory Based On
Long-Term Average Natural Water Supply and Outflow
and Current Year Imports and Consumptive Use
(All Amounts in Acre-Feet)**

	<u>Este</u>	<u>Oeste</u>	<u>Alto</u>	<u>Centro</u>	<u>Baja</u>	<u>Basin Totals</u>
WATER SUPPLY						
Surface Water Inflow						
Gaged	0	0	65,000	0	0	65,000
Ungaged	1,700	1,500	3,000	37,300 ¹	14,300 ²	6,500 ³
Subsurface Inflow	0	0	1,000	2,000	1,200	0 ⁴
Deep Percolation of Precipitation	0	0	3,500	0	100	3,600
Imports						
Lake Arrowhead CSD	0	0	1,500	0	0	1,500
Big Bear ARWWA	2,000	0	0	0	0	2,000
TOTAL	<u>3,700</u>	<u>1,500</u>	<u>74,000</u>	<u>39,300</u>	<u>15,600</u>	<u>78,600</u>
CONSUMPTIVE USE AND OUTFLOW						
Surface Water Outflow						
Gaged	0	0	0	0	8,200	8,200
Ungaged	0	0	37,300 ¹	14,000 ⁵	0	0
Subsurface Outflow	200	800	2,000	1,200	0	0
Consumptive Use						
Agriculture	6,800	2,900	16,300	20,300	30,200	76,500
Urban	1,900	1,200	36,300	9,500	9,700	58,600
Phreatophytes	0	0	5,100	900	1,500	7,500 ⁶
Exports	0	0	0	0	0	0
TOTAL	<u>8,900</u>	<u>4,900</u>	<u>97,000</u>	<u>45,900</u>	<u>49,600</u>	<u>150,800</u>
Surplus / (Deficit)	(5,200)	(3,400)	(23,000)	(6,600)	(34,000)	(72,200)
Total Estimated Production (Current Year) ⁷	<u>15,700</u>	<u>7,600</u>	<u>98,900</u>	<u>46,500</u>	<u>54,300</u>	<u>223,000</u>
PRODUCTION SAFE YIELD (Current Year)⁷	10,500	4,200	75,900	39,900	20,300	150,800

¹ Estimated from reported flows at USGS gaging station, Mojave River at Victorville Narrows.

² Includes 14,000 acre-feet of Mojave River surface flow across the Waterman Fault estimated from reported flows at USGS gaging station, Mojave River at Barstow and 300 acre-feet of local surface inflow from Kane Wash.

³ Represents the sum of Este (1,700 af), Oeste (1,500 af), Alto (3,000 af) and Baja (300 af from Kane Wash).

⁴ Inter subarea subsurface flows do not accrue to the total basin water supply.

⁵ Estimated from reported flows at USGS gaging station, Mojave River at Barstow.

⁶ Estimated by Bookman-Edmonston.

⁷ For purposes of this Table, the current year is 1990.

TABLE 5-1

**SUBAREA HYDROLOGICAL INVENTORY BASED ON
LONG TERM AVERAGE NATURAL WATER SUPPLY AND OUTFLOW
AND 2017-18 IMPORTS AND CONSUMPTIVE USE**

(ALL AMOUNTS IN ACRE-FEET)

WATER SUPPLY	Este	Oeste	Alto	Centro	Baja	Basin Totals
Surface Water Inflow	1,700	1,500	68,500 ¹	33,600 ²	17,358 ³	72,652 ⁴
Subsurface Inflow	0	0	1,000	2,000	1,581 ⁵	0 ⁶
Deep Percolation of Precipitation	0	0	3,500	0	100	3,600
Imports ⁷	2,000	0	2,234	2,262	0	6,496
TOTAL	3,700	1,500	75,234	37,862	19,039	82,748
CONSUMPTIVE USE AND OUTFLOW						
Surface Water Outflow	0	0	33,600 ²	16,406 ⁸	5,372 ⁹	5,372
Subsurface Outflow	200	800	2,000	1,581 ⁵	0	0
Consumptive use						
Agriculture ¹⁰	2,327	1,208	1,311	8,895	17,664	31,405
Urban ^{10,11}	1,500	1,724	40,603	7,557	6,338	57,722
Phreatophytes	0	0	11,000	3,000	2,000	16,000 ¹²
TOTAL	4,027	3,732	88,514	37,439	31,374	110,499
Surplus / (Deficit)	(327)	(2,232)	(13,280)	423	(12,335)	(27,751)
Total Estimated Production ¹³	5,055	3,944	77,686	20,665	24,524	131,874
PRODUCTION SAFE YIELD¹⁴	4,728	1,712	64,406	21,088	12,189	104,123

¹ Average discharge of Mojave River at The Forks, 1931-1990 (The Forks is the addition of reported values from USGS stations at West Fork Mojave River Near Hesperia, CA (10261000) and Deep Creek Near Hesperia, CA (10260500). Includes 3,000 af of ungaged inflow (Judgment, 1996).

² Estimated based on reported flows at USGS gaging station, Mojave River at Victorville Narrows and 1991-2018 Transition Zone water balance (Watermaster Engineer, 2019).

³ Estimated from reported flows at USGS gaging station, Mojave River at Barstow. Includes 16,406 af of Mojave River surface flow across the Waterman Fault estimated by "Evaluations of Potential Mojave River Recharge Losses between Barstow and Waterman Fault", Wagner & Bonsignore, 2012 (see Appendix A, Table 6), and 747 af of local surface inflow from Kane Wash and Boom Creek, and 205 af from washes (Wagner, 2011).

⁴ Represents the sum of Este (1,700 af), Oeste (1,500 af), Alto (68,500 af) and Baja (747 af from Kane Wash and Boom Creek, 205 af from washes).

⁵ Stamos, 2001 (USGS).

⁶ Inter subarea subsurface flows do not accrue to the total basin water supply.

⁷ Imports for Este are from the Big Bear Area Regional Wastewater Authority; Alto are from Lake Arrowhead Community Services District and pre-purchased groundwater storage for HDPP; Centro are the average make-up water purchases, 1995-2018.

⁸ Estimated from reported flows at USGS gaging station, Mojave River at Barstow (see note #2 above).

⁹ Based on USGS station Mojave River at Afton, CA (10263000) reported discharge for 1931, 1953-2018. Water Years 1979 and 1980 estimated by Mojave Basin Area Watermaster.

¹⁰ 2018 Consumptive Use Analysis by Watermaster.

¹¹ Includes consumptive use of "Minimals Pool" (estimated Minimal's production is 7,077 af).

¹² From USGS Water-Resurces Investigation Report 96-4241 "Riparian Vegetation and Its Water Use During 1995 Along the Mojave River, Southern California" 1996.

¹³ Water production for 2017-18. Included in the production values are the estimated minimal producer's water use by Subarea.

¹⁴ Imported State Water Project water purchased by MWA is not reflected in the above table.

CHAPTER 6

FINANCIAL REPORT PROPOSED BUDGET AND ASSESSMENT RATES

Statements of Revenues, Expenses and Changes in Net Position

	<u>2019</u>	<u>2020</u>
Operating Revenue	\$ 1,392,018.00	\$ 618,648.00
Operating Expenses	1,466,170.00	607,091.00
Non-operating Revenue (Expense)	(256,258.00)	(62,264.00)
Change in Net Position	(330,410.00)	(50,707.00)
Net Position, beginning of year	1,373,559.00	1,043,149.00
Net Position, end of year	\$ 1,043,149.00	\$ 992,442.00

The Auditor's Report for Fiscal Year 2019-20 ending June 30, 2020 is presented in Appendix G and includes a summary of the significant categories of receivables and other current assets.

Biological Resources Trust Fund Summary

The Biological Resources Trust Fund balance as of June 30, 2020 was \$681,841.00.

Administrative Budget for 2021-22

The Administrative Budget for 2021-22 is \$550,406 and is shown on Table 6-1.

Summary of Makeup Water Purchases

The Watermaster purchased 11 acre-feet of Makeup water during the 2019-20 Water Year for the Centro Subarea.

Summary of Replacement Water Purchases

Replacement water purchases by Watermaster during 2019-20 are as follows:

Alto ¹	2,093	acre-feet
Baja	23	acre-feet
Centro	0	acre-feet
Este	0	acre-feet
Oeste	0	acre-feet
Total	2,116	acre-feet

¹ 244 acre-feet of Alto Replacement water was pre-purchased under the MWA Claim Program. 1,788 acre-feet was pre-stored under a storage agreement.

Administrative and Biological Assessment Rates for 2021-22

The Administrative and Biological Assessment Rates for 2021-22 adopted by the Watermaster on March 24, 2021 are as follows:

Administrative	\$ 4.10 per acre-foot of Production
Biological Resources	\$ 0.96 per acre-foot of Production

Projected Replacement and Makeup Water Assessment Rates for 2020-21 and 2021-22

The Replacement and Makeup Water Assessment Rates projected by the Watermaster on March 24, 2021 are as follows:

Replacement and Makeup Water Rate

2020-21	<i>Not to Exceed</i> \$665.00 per acre-foot ¹ (Invoice Date 6-1-2022)
2021-22	\$679.00 per acre-foot (projected) ² (Invoice Date 6-1-2023)

¹ This rate is for obligations incurred in the 2020-21 Water Year which will be billed in June 2022. The fixed rate that will be used for invoicing will be determined by the Mojave Water Agency in February 2022.

² This is a projected rate for obligations incurred in the 2021-22 Water Year which will be billed in June 2023. The fixed rate that will be used for invoicing will be determined by the Mojave Water Agency in February 2023.

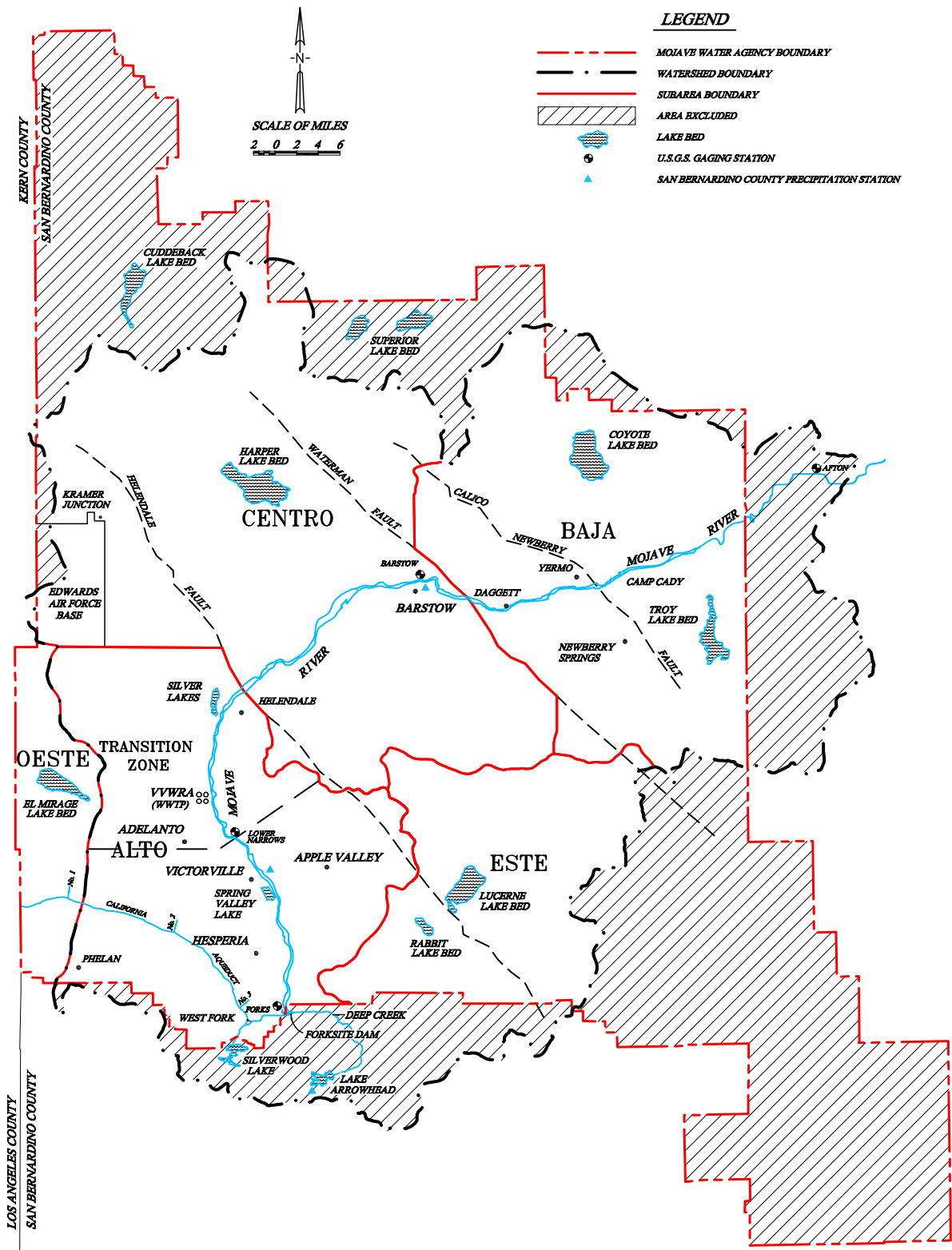
TABLE 6-1

**MOJAVE BASIN AREA WATERMASTER
ADMINISTRATIVE BUDGET
FOR WATER YEAR 2021-22**

1.	Administrative Services	\$ 386,006.00
2.	Engineering Services	\$ 93,500.00
3.	Legal Services	\$ 67,000.00
4.	Audit Services	\$ 3,900.00
	Total Estimated Budget	<u>\$ 550,406.00</u>

APPENDIX A

MAP OF THE MOJAVE BASIN AREA



APPENDIX B

PRODUCER REPLACEMENT WATER AND MAKEUP WATER OBLIGATIONS

AND ASSESSMENTS DUE FOR 2019-20

APPENDIX B
PRODUCER REPLACEMENT WATER
AND
MAKEUP WATER OBLIGATIONS
AND
ASSESSMENTS DUE FOR 2019-20
(UNLESS OTHERWISE NOTED ALL AMOUNTS SHOWN ARE IN ACRE-FEET)
ESTE SUBAREA

PRODUCER	2019-20 FREE PRODUCTION ALLOWANCE						ASSESSMENTS DUE BY JULY 1, 2021 (AMOUNTS IN DOLLARS)							
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2019-20 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL
				2018-19 CARRYOVER ³	2019-20 FPA ⁴							WATER	WATER	
ABDUL, HARRY AND ANITA	194	146	156	0	0	302	118	146	0	118	0.00	0.00	0.00	0.00
ABSHIRE, DAVID V.	24	18	2	0	0	20	18	2	0	18	0.00	0.00	0.00	0.00
AHN REVOCABLE LIVING TRUST	0	0	0	0	0	0	63	0	63	0	0.00	38,052.00	0.00	38,052.00
AHN REVOCABLE TRUST	28	21	23	0	0	44	16	21	0	16	0.00	0.00	0.00	0.00
AHN, CHUN SOO AND DAVID	400	300	320	(138)	0	482	0	300	0	0	0.00	0.00	0.00	0.00
AMERICA UNITED DEVELOPMENT, LLC (FORMERLY: PETTIGREW, JAMES AND CHERLYN)	500	375	0	400	0	775	0	375	0	0	0.00	0.00	0.00	0.00
ANDERSON, ROSS C. AND BETTY J.	34	26	28	0	0	54	0	26	0	0	0.00	0.00	0.00	0.00
AVILA, ANGEL AND EVALIA	573	430	459	0	0	889	237	430	0	237	0.00	0.00	0.00	0.00
BAR H MUTUAL WATER COMPANY	53	40	43	0	0	83	23	40	0	23	0.00	0.00	0.00	0.00
BELL, CHARLES H. TRUST DATED MARCH 7, 2014	494	371	396	0	0	767	346	371	0	346	0.00	0.00	0.00	0.00
BRACTH, WILLIAM F. AND ALEXANDER, ALICIA M.	50	38	13	0	0	51	27	24	0	27	0.00	0.00	0.00	0.00
CASA COLINA FOUNDATION	90	68	72	0	0	140	50	68	0	50	0.00	0.00	0.00	0.00
CENTER WATER COMPANY	40	30	32	0	0	62	21	30	0	21	0.00	0.00	0.00	0.00
CHUNG, ET AL.	0	0	0	0	0	0	38	0	38	0	0.00	22,952.00	0.00	22,952.00
CLUB VIEW PARTNERS	1,276	957	1,021	(9)	0	1,969	0	957	0	0	0.00	0.00	0.00	0.00
CROSS, SHARON I.	23	18	19	0	0	37	1	18	0	1	0.00	0.00	0.00	0.00
CROWN CAMBRIA, LLC (FORMERLY: WEISER, ET AL.)	90	68	0	0	0	68	4	64	0	4	0.00	0.00	0.00	0.00
DACOSTA, DEAN EDWARD	56	42	45	0	0	87	1	42	0	1	0.00	0.00	0.00	0.00
DAHLQUIST, GEORGE R.	524	393	420	0	0	813	0	393	0	0	0.00	0.00	0.00	0.00
DESERT DAWN MUTUAL WATER COMPANY	15	12	0	0	0	12	20	0	8	12	0.00	4,832.00	0.00	4,832.00
DESERT SPRINGS MUTUAL WATER COMPANY	78	59	63	0	0	122	40	59	0	40	0.00	0.00	0.00	0.00
GABRYCH, EUGENE	2,201	1,651	1,761	0	0	3,412	0	1,651	0	0	0.00	0.00	0.00	0.00
GAETA, MIGUEL AND MARIA	1,500	1,125	1,200	(15)	0	2,310	80	1,125	0	80	0.00	0.00	0.00	0.00
GAETA, TRINIDAD (SEE NOTE 15)	512	384	410	0	0	794	296	384	0	296	0.00	0.00	0.00	0.00
GARDENA MISSION CHURCH, INC.	0	0	0	0	0	0	1	0	1	0	0.00	604.00	0.00	604.00
GAYJIKIAN, SAMUEL AND HAZEL	102	77	82	0	0	159	1	77	0	1	0.00	0.00	0.00	0.00
GOLDEN STATE WATER COMPANY	178	134	143	0	0	277	151	126	0	151	0.00	0.00	0.00	0.00
GORDON ACRES WATER COMPANY	54	41	44	0	0	85	21	41	0	21	0.00	0.00	0.00	0.00
GUBLER, HANS	30	23	24	0	0	47	10	23	0	10	0.00	0.00	0.00	0.00
HARVEY, LISA M.	300	225	240	0	0	465	4	225	0	4	0.00	0.00	0.00	0.00
HERT, SCOTT	276	207	218	0	0	425	213	207	0	213	0.00	0.00	0.00	0.00
HI-GRADE MATERIALS COMPANY	442	332	354	0	0	686	193	332	0	193	0.00	0.00	0.00	0.00
HITCHIN LUCERNE, INC.	16	12	13	0	0	25	11	12	0	11	0.00	0.00	0.00	0.00
JONES TRUST DATED MARCH 16, 2002	89	67	72	0	0	139	21	67	0	21	0.00	0.00	0.00	0.00
JUBILEE MUTUAL WATER COMPANY	142	107	50	0	0	157	117	40	0	117	0.00	0.00	0.00	0.00

APPENDIX B
PRODUCER REPLACEMENT WATER
AND
MAKEUP WATER OBLIGATIONS
AND
ASSESSMENTS DUE FOR 2019-20
(UNLESS OTHERWISE NOTED ALL AMOUNTS SHOWN ARE IN ACRE-FEET)
ESTE SUBAREA

PRODUCER	2019-20 FREE PRODUCTION ALLOWANCE						PRODUCTION						ASSESSMENTS DUE BY JULY 1, 2021 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2019-20 VERIFIED PRODUCTION ⁶	UNUSED ⁷ FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL	
				2018-19 CARRYOVER ³	2019-20 FPA ⁴							WATER \$604.00/AF	WATER N/A		
JUNIPER RIVIERA COUNTY WATER DISTRICT	37	28	0	0	0	28	70	0	42	28	0.00	25,368.00	0.00	25,368.00	
KIM, JU SANG	30	23	24	0	0	47	1	23	0	1	0.00	0.00	0.00	0.00	
LEE, ANNA K. AND ESHBAN K.	33	25	27	0	0	52	0	25	0	0	0.00	0.00	0.00	0.00	
LEE, DOO HWAN	78	59	63	0	0	122	0	59	0	0	0.00	0.00	0.00	0.00	
LOPEZ, BALTAZAR	385	289	308	0	0	597	1	289	0	1	0.00	0.00	0.00	0.00	
LUA, MICHAEL T. AND DONNA S.	348	261	279	0	0	540	0	261	0	0	0.00	0.00	0.00	0.00	
LUCERNE VALLEY MUTUAL WATER COMPANY	54	41	44	0	0	85	37	41	0	37	0.00	0.00	0.00	0.00	
LUCERNE VALLEY PARTNERS	1,213	910	971	0	0	1,881	0	910	0	0	0.00	0.00	0.00	0.00	
LUCERNE VISTA MUTUAL WATER COMPANY	21	16	16	0	0	32	17	15	0	17	0.00	0.00	0.00	0.00	
M.B. LANDSCAPING AND NURSERY, INC.	1,773	1,330	1,419	0	0	2,749	1,037	1,330	0	1,037	0.00	0.00	0.00	0.00	
MITSUBISHI CEMENT CORPORATION	1,395	1,047	1,116	(172)	0	1,991	330	1,047	0	330	0.00	0.00	0.00	0.00	
MONACO INVESTMENT COMPANY	70	53	56	0	0	109	0	53	0	0	0.00	0.00	0.00	0.00	
MOSS, LAWRENCE W. AND HELEN J.	43	33	34	0	0	67	31	33	0	31	0.00	0.00	0.00	0.00	
NORRIS TRUST, MARY ANN	73	55	59	0	0	114	1	55	0	1	0.00	0.00	0.00	0.00	
OASIS WORLD MISSION	0	0	0	0	0	0	71	0	71	0	0.00	42,884.00	0.00	42,884.00	
OMYA CALIFORNIA, INC.	23	18	0	0	0	18	43	0	25	18	0.00	15,100.00	0.00	15,100.00	
PAK, KAE SOO AND MYONG HUI KANG	247	186	198	(34)	0	350	16	186	0	16	0.00	0.00	0.00	0.00	
PETTIGREW, DAN	22	17	18	0	0	35	0	17	0	0	0.00	0.00	0.00	0.00	
PETTIGREW, JAMES AND CHERLYN	0	0	400	(400)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
REED, MIKE	58	44	47	0	0	91	1	44	0	1	0.00	0.00	0.00	0.00	
RHEE, ANDREW N.	70	53	33	0	0	86	23	53	0	23	0.00	0.00	0.00	0.00	
ROBERTSON'S READY MIX	0	0	0	0	0	0	155	0	155	0	0.00	93,620.00	0.00	93,620.00	
ROYAL WAY	200	150	160	0	0	310	61	150	0	61	0.00	0.00	0.00	0.00	
S AND E 786 ENTERPRISES, LLC	597	448	478	0	0	926	0	448	0	0	0.00	0.00	0.00	0.00	
SABA FAMILY TRUST DATED JULY 24, 2018	1,120	840	896	0	0	1,736	0	840	0	0	0.00	0.00	0.00	0.00	
SAN BERNARDINO COUNTY SERVICE AREA 29	40	30	0	0	0	30	52	0	22	30	0.00	13,288.00	0.00	13,288.00	
SON'S RANCH	140	105	112	0	0	217	69	105	0	69	0.00	0.00	0.00	0.00	
SPECIALTY MINERALS, INC.	42	32	0	0	0	32	49	0	17	32	0.00	10,268.00	0.00	10,268.00	
SPILLMAN, JAMES R. AND NANCY J.	23	18	19	0	0	37	5	18	0	5	0.00	0.00	0.00	0.00	
THE CUSHENBURY TRUST, C/O SPECIALTY MINERALS, INC.	10	8	8	0	0	16	0	8	0	0	0.00	0.00	0.00	0.00	
WEST END MUTUAL WATER COMPANY	30	23	22	(8)	0	37	15	22	0	15	0.00	0.00	0.00	0.00	
WILSHIRE ROAD PARTNERS	692	519	554	0	0	1,073	0	519	0	0	0.00	0.00	0.00	0.00	
TOTAL	19,251	14,458	15,084	(376)	0	29,166	4,227	14,227	442	3,785	0.00	266,968.00	0.00	266,968.00	

APPENDIX B

MARCH 24, 2021

PRODUCER REPLACEMENT WATER
AND
MAKEUP WATER OBLIGATIONS
AND
ASSESSMENTS DUE FOR 2019-20
(UNLESS OTHERWISE NOTED ALL AMOUNTS SHOWN ARE IN ACRE-FEET)

OESTE SUBAREA

PRODUCER	2019-20 FREE PRODUCTION ALLOWANCE						PRODUCTION						ASSESSMENTS DUE BY JULY 1, 2021 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2019-20 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT WATER \$604.00/AF	MAKEUP WATER N/A	TOTAL	
				2018-19 CARRYOVER ³	2019-20 FPA ⁴										
AEROCHEM, INC.	660	495	528	0	0	1,023	8	495	0	8	0.00	0.00	0.00	0.00	
BROWN, SUE	0	0	37	(37)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
CHAMISAL MUTUAL WATER COMPANY	96	72	52	0	0	124	30	72	0	30	0.00	0.00	0.00	0.00	
HANDRINOS, NICOLE A.	7	6	6	0	0	12	1	6	0	1	0.00	0.00	0.00	0.00	
HETTINGA REVOCABLE TRUST	1,302	977	440	37	0	1,454	871	583	0	871	0.00	0.00	0.00	0.00	
PHELAN PIÑON HILLS COMMUNITY SERVICES DISTRICT (SEE NOTE 10)	4,680	3,510	3,744	0	0	7,254	2,525	3,510	0	2,525	0.00	0.00	0.00	0.00	
TROEGER FAMILY TRUST, RICHARD H.	112	84	90	0	0	174	4	84	0	4	0.00	0.00	0.00	0.00	
TOTAL	6,857	5,144	4,897	0	0	10,041	3,439	4,750	0	3,439	0.00	0.00	0.00	0.00	

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PRODUCER REPLACEMENT WATER
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ASSESSMENTS DUE FOR 2019-20
(UNLESS OTHERWISE NOTED ALL AMOUNTS SHOWN ARE IN ACRE-FEET)

ALTO SUBAREA

PRODUCER	2019-20 FREE PRODUCTION ALLOWANCE						ASSESSMENTS DUE BY JULY 1, 2021 (AMOUNTS IN DOLLARS)								
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2019-20 VERIFIED PRODUCTION ⁶	UNUSED ⁷ FPA	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL	
				2018-19 CARRYOVER ³	2019-20 FPA ⁴							WATER	WATER		
ADELANTO, CITY OF	5,182	2,851	0	73	0	2,924	3,734	0	810	2,924	125.54	489,240.00	75,826.16	565,066.16	
ADES, JOHN AND DEVON	37	28	25	(25)	0	28	4	24	0	4	0.17	0.00	102.68	102.68	
AGCON, INC.	384	212	0	0	0	212	305	0	93	212	9.10	56,172.00	5,496.40	61,668.40	
AMERICAN STATES WATER COMPANY	1,000	550	600	(600)	0	550	0	550	0	0	0.00	0.00	0.00	0.00	
APPLE VALLEY FOOTHILL COUNTY WATER DISTRICT	167	92	30	0	0	122	85	37	0	85	3.65	0.00	2,204.60	2,204.60	
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT	125	69	3	18	0	90	103	0	13	90	3.86	7,852.00	2,331.44	10,183.44	
APPLE VALLEY UNIFIED SCHOOL DISTRICT	0	0	0	0	0	0	47	0	47	0	0.00	28,388.00	0.00	28,388.00	
APPLE VALLEY VIEW MUTUAL WATER COMPANY	36	20	0	0	0	20	25	0	5	20	0.86	3,020.00	519.44	3,539.44	
APPLE VALLEY, TOWN OF	1,082	596	650	0	0	1,246	434	596	0	434	18.63	0.00	11,252.52	11,252.52	
BASS TRUST, NEWTON T.	514	386	409	(409)	0	386	4	382	0	4	0.17	0.00	102.68	102.68	
BASTIANON REVOCABLE TRUST	77	58	61	(61)	0	58	1	57	0	1	0.04	0.00	24.16	24.16	
BEEBE, DOROTHEY K.	0	0	5	(5)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
BEINSCHROTH FAMILY TRUST	275	207	20	(20)	0	207	3	204	0	3	0.13	0.00	78.52	78.52	
BEINSCHROTH, ANDY ERIC	250	188	0	0	0	188	1	187	0	1	0.04	0.00	24.16	24.16	
BOX, GEARY S. AND LAURA	22	17	13	(13)	0	17	6	11	0	6	0.26	0.00	157.04	157.04	
BROWN, BOBBY G. AND VALERIA R.	42	32	33	(33)	0	32	1	31	0	1	0.04	0.00	24.16	24.16	
BROWN, JENNIFER	41	31	27	(27)	0	31	5	26	0	5	0.21	0.00	126.84	126.84	
BRUNEAU, KAREN	10	8	8	0	0	16	2	8	0	2	0.09	0.00	54.36	54.36	
BRYANT, IAN	29	22	24	(24)	0	22	0	22	0	0	0.00	0.00	0.00	0.00	
BUNNELL, DICK	24	18	18	(18)	0	18	2	16	0	2	0.09	0.00	54.36	54.36	
CALMAT COMPANY	25	14	11	(11)	0	14	4	10	0	4	0.17	0.00	102.68	102.68	
CALPORTLAND COMPANY - AGRICULTURE	643	483	515	(515)	0	483	0	483	0	0	0.00	0.00	0.00	0.00	
CALPORTLAND COMPANY - ORO GRANDE PLANT	2,809	1,545	1,088	(1,088)	0	1,545	961	584	0	961	41.26	0.00	24,921.04	24,921.04	
CDFW - MOJAVE NARROWS REGIONAL PARK	2,107	1,159	0	0	0	1,159	1,734	0	575	1,159	49.76	347,300.00	30,055.04	377,355.04	
CDFW - MOJAVE RIVER FISH HATCHERY (SEE NOTE 11)	20	15	0	0	0	15	20	0	0	0	0.00	0.00	0.00	0.00	
CEMEX, INC.	1,499	825	0	0	0	825	1,371	0	546	825	35.42	329,784.00	21,393.68	351,177.68	
DLW REVOCABLE TRUST	70	53	56	(56)	0	53	0	53	0	0	0.00	0.00	0.00	0.00	
DOLCH LIVING TRUST ROBERT AND JUDITH	90	68	76	(76)	0	68	1	67	0	1	0.04	0.00	24.16	24.16	
DORA LAND, INC.	15	12	12	(12)	0	12	0	12	0	0	0.00	0.00	0.00	0.00	
EAST DESERT LAND COMPANY, LLC (SEE NOTE 12)	0						1,267								
EVENSON, EDWIN H. AND JOYCELAINE C.	70	53	56	0	0	109	1	53	0	1	0.04	0.00	24.16	24.16	
FEDERAL BUREAU OF PRISONS, VICTORVILLE	686	378	0	0	(378)	0	0	0	0	0	0.00	0.00	0.00	0.00	
FINCH, JENIFER	30	23	24	(24)	0	23	0	23	0	0	0.00	0.00	0.00	0.00	
FISCHER REVOCABLE LIVING TRUST	36	27	28	(28)	0	27	1	26	0	1	0.04	0.00	24.16	24.16	
FISHER TRUST, JEROME R.	633	475	507	(507)	0	475	0	475	0	0	0.00	0.00	0.00	0.00	

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PRODUCER REPLACEMENT WATER
AND
MAKEUP WATER OBLIGATIONS
AND
ASSESSMENTS DUE FOR 2019-20
(UNLESS OTHERWISE NOTED ALL AMOUNTS SHOWN ARE IN ACRE-FEET)**

ALTO SUBAREA

PRODUCER	2019-20 FREE PRODUCTION ALLOWANCE						PRODUCTION						ASSESSMENTS DUE BY JULY 1, 2021 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2019-20 VERIFIED PRODUCTION ⁶	UNUSED ⁷ FPA	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT WATER \$604.00/AF	MAKEUP WATER \$604.00/AF	TOTAL	
				2018-19 CARRYOVER ³	2019-20 FPA ⁴										
FITZWATER, R. E. (SEE NOTE 12)	291						1								
FRAZIER, ET AL.	50	38	40	(40)	0	38	0	38	0	0	0.00	0.00	0.00	0.00	
GOLDEN STATE WATER COMPANY	940	517	0	0	0	517	934	0	417	517	22.20	251,868.00	13,408.80	265,276.80	
GREEN ACRES ESTATES	25	14	15	0	0	29	8	14	0	8	0.34	0.00	205.36	205.36	
GULBRANSON, MERLIN	5	4	4	0	0	8	0	4	0	0	0.00	0.00	0.00	0.00	
HAAS, BRYAN C. AND HINKLE, MARY H.	9	7	8	(8)	0	7	0	7	0	0	0.00	0.00	0.00	0.00	
HALANNA EQUITIES III	19	15	12	(12)	0	15	9	6	0	9	0.39	0.00	235.56	235.56	
HAMILTON FAMILY TRUST	108	81	72	(72)	0	81	16	65	0	16	0.69	0.00	416.76	416.76	
HELENDALE COMMUNITY SERVICES DISTRICT	4,009	2,045	1,041	(1,041)	0	2,045	1,555	650	0	1,555	66.76	0.00	40,323.04	40,323.04	
HELENDALE SCHOOL DISTRICT	18	10	11	0	0	21	1	10	0	1	0.04	0.00	24.16	24.16	
HESPERIA - GOLF COURSE, CITY OF	678	373	0	0	0	373	573	0	200	373	16.01	120,800.00	9,670.04	130,470.04	
HESPERIA VENTURE I, LLC	0	0	0	0	0	0	1	0	1	0	0.00	604.00	0.00	604.00	
HESPERIA WATER DISTRICT	14,171	7,795	0	267	274	8,336	13,957	0	5,621	8,336	351.88	3,395,084.00	212,535.52	3,607,619.52	
HESPERIA, CITY OF	6,736	3,705	4,042	(4,042)	0	3,705	0	3,705	0	0	0.00	0.00	0.00	0.00	
HI-GRADE MATERIALS COMPANY	149	82	72	(72)	0	82	22	60	0	22	0.94	0.00	567.76	567.76	
HOLWAY JEFFREY R AND PATRICIA GAGE	8	6	7	(7)	0	6	0	6	0	0	0.00	0.00	0.00	0.00	
HOLWAY, JEFFREY R	11	9	9	(9)	0	9	0	9	0	0	0.00	0.00	0.00	0.00	
HOLY HEAVENLY LAKE, LLC (FORMERLY: BEEBE, DOROTHEY K.)	6	5	0	0	0	5	0	5	0	0	0.00	0.00	0.00	0.00	
HUNT, CONNIE	66	50	53	(53)	0	50	0	50	0	0	0.00	0.00	0.00	0.00	
JAMBOREE HOUSING CORPORATION	0	0	0	53	0	53	41	0	0	41	1.76	0.00	1,063.04	1,063.04	
JESS RANCH WATER COMPANY	7,230	3,977	3,354	(3,354)	0	3,977	1,384	2,593	0	1,384	59.42	0.00	35,889.68	35,889.68	
JOHNSON, CARLEAN	23	18	0	0	8	26	26	0	0	26	1.12	0.00	676.48	676.48	
JOHNSON, RONALD	31	24	25	(25)	0	24	0	24	0	0	0.00	0.00	0.00	0.00	
JOHNSTON, HARRIET AND JOHNSTON, LAWRENCE W.	127	96	99	(99)	(8)	88	6	82	0	6	0.26	0.00	157.04	157.04	
KANESAKA, KENJI AND YUKARI	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
KEMPER CAMPBELL RANCH	473	355	314	(314)	0	355	59	296	0	59	2.53	0.00	1,528.12	1,528.12	
LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT	658	494	527	(527)	0	494	0	494	0	0	0.00	0.00	0.00	0.00	
LANGLEY, JAMES	5	4	4	(4)	0	4	0	4	0	0	0.00	0.00	0.00	0.00	
LANGLEY, JAMES - INDUSTRIAL	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
LAWSON, ERNEST AND BARBARA	15	12	11	(11)	0	12	1	11	0	1	0.04	0.00	24.16	24.16	
LENHERT, RONALD AND TONI	37	28	30	0	0	58	8	28	0	8	0.34	0.00	205.36	205.36	
LHC ALLIGATOR, LLC	498	374	0	0	(374)	0	0	0	0	0	0.00	0.00	0.00	0.00	
LIBERTY UTILITIES (APPLE VALLEY RANCHOS WATER) CORP. (SEE NOTE 13)	13,610	7,486	2,808	0	0	10,294	8,420	1,874	0	8,420	361.50	0.00	218,346.00	218,346.00	
LOW, DEAN	199	150	160	(160)	0	150	0	150	0	0	0.00	0.00	0.00	0.00	
LUCKEY 2010 REVOCABLE TRUST	300	225	239	(239)	0	225	1	224	0	1	0.04	0.00	24.16	24.16	

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PRODUCER	2019-20 FREE PRODUCTION ALLOWANCE						PRODUCTION						ASSESSMENTS DUE BY JULY 1, 2021 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2019-20 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT WATER \$604.00/AF	MAKEUP WATER \$604.00/AF	TOTAL	
				2018-19 CARRYOVER ³	2019-20 FPA ⁴										
MARIANA RANCHOS COUNTY WATER DISTRICT	270	149	0	0	0	149	212	0	63	149	6.40	38,052.00	3,865.60	41,917.60	
MCKINNEY, PAULA	33	25	27	(27)	0	25	0	25	0	0	0.00	0.00	0.00	0.00	
MLH, LLC	13	10	4	0	0	14	8	6	0	8	0.34	0.00	205.36	205.36	
MOJAVE DESERT LAND TRUST	40	30	31	0	0	61	1	30	0	1	0.04	0.00	24.16	24.16	
MOJAVE WATER AGENCY (SEE NOTE 14)	0	0	0	0	0	0	20	0	20	0	0.00	12,080.00	0.00	12,080.00	
NAVAJO MUTUAL WATER COMPANY	88	49	53	0	0	102	26	49	0	26	1.12	0.00	676.48	676.48	
NUÑEZ, LUIS SEGUNDO	0	0	0	0	0	0	1	0	1	0	0.00	604.00	0.00	604.00	
NUNN FAMILY TRUST	36	27	28	(28)	0	27	1	26	0	1	0.04	0.00	24.16	24.16	
ORO GRANDE SCHOOL DISTRICT	107	59	55	0	0	114	90	24	0	90	3.86	0.00	2,331.44	2,331.44	
PAUSTELL, JOAN BEINSCHROTH	170	128	0	0	0	128	0	128	0	0	0.00	0.00	0.00	0.00	
PERRY REVOCABLE LIVING TRUST, THOMAS AND PATRICIA	0	0	0	0	0	0	1	0	1	0	0.00	604.00	0.00	604.00	
PHELAN PIÑON HILLS COMMUNITY SERVICES DISTRICT	355	196	207	0	0	403	176	196	0	176	7.56	0.00	4,566.24	4,566.24	
PITTMAN REVOCABLE TRUST, DIANA J.	148	111	119	0	0	230	1	111	0	1	0.04	0.00	24.16	24.16	
POLICH, DONNA	65	49	52	(52)	0	49	0	49	0	0	0.00	0.00	0.00	0.00	
RANCHERITOS MUTUAL WATER COMPANY	169	93	0	0	0	93	112	0	19	93	3.99	11,476.00	2,409.96	13,885.96	
RIM PROPERTIES, A GENERAL PARTNERSHIP	9	7	8	(8)	0	7	0	7	0	0	0.00	0.00	0.00	0.00	
RUE RANCH, INC.	30	23	15	(15)	0	23	7	16	0	7	0.30	0.00	181.20	181.20	
SAN BERNARDINO COUNTY - HIGH DESERT DETENTION CENT	0	0	0	0	0	0	157	0	157	0	0.00	94,828.00	0.00	94,828.00	
SAN BERNARDINO COUNTY SERVICE AREA 42	465	256	225	(225)	0	256	58	198	0	58	2.49	0.00	1,503.96	1,503.96	
SAN BERNARDINO COUNTY SERVICE AREA 64	3,822	2,103	139	(139)	0	2,103	2,687	0	584	2,103	90.29	352,736.00	54,535.16	407,271.16	
SAN BERNARDINO COUNTY SERVICE AREA 70J	1,015	559	0	302	0	861	1,625	0	764	861	36.97	461,456.00	22,329.88	483,785.88	
SCRAY, MICHELLE A. TRUST	15	12	11	(11)	0	12	1	11	0	1	0.04	0.00	24.16	24.16	
SERVICE ROCK PRODUCTS CORPORATION	20	11	12	0	0	23	7	11	0	7	0.30	0.00	181.20	181.20	
SHEEP CREEK WATER COMPANY	0	0	0	0	0	0	19	0	19	0	0.00	11,476.00	0.00	11,476.00	
SILVER LAKES ASSOCIATION	4,987	2,743	0	734	0	3,477	3,235	242	0	3,235	138.89	0.00	83,889.56	83,889.56	
SNOWBALL DEVELOPMENT, INC.	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
SPRING VALLEY LAKE ASSOCIATION	3,768	2,073	121	137	0	2,331	2,393	0	62	2,331	100.08	37,448.00	60,448.32	97,896.32	
SPRING VALLEY LAKE COUNTRY CLUB	977	538	250	0	0	788	742	46	0	742	31.86	0.00	19,243.44	19,243.44	
STORM, RANDALL	62	47	50	(50)	0	47	0	47	0	0	0.00	0.00	0.00	0.00	
SUDMEIER, GLENN W.	20	15	15	(15)	0	15	1	14	0	1	0.04	0.00	24.16	24.16	
SUMMIT VALLEY RANCH, LLC	57	43	43	(43)	0	43	8	35	0	8	0.34	0.00	205.36	205.36	
THOMPSON LIVING TRUST, JAMES A. AND SULA B.	418	314	331	(331)	0	314	3	311	0	3	0.13	0.00	78.52	78.52	
THOMPSON LIVING TRUST, R.L. AND R.A.	2	2	1	0	0	3	1	2	0	1	0.04	0.00	24.16	24.16	
THRASHER, GARY	373	280	291	(291)	0	280	5	275	0	5	0.21	0.00	126.84	126.84	
THUNDERBIRD COUNTY WATER DISTRICT	118	65	0	0	0	65	109	0	44	65	2.79	26,576.00	1,685.16	28,261.16	
TRANSAMERICA FIN'L SVC - SPEARS, LARRY B. AND ERLINDA	26	20	21	0	0	41	0	20	0	0	0.00	0.00	0.00	0.00	
VANHOOPS HOLDINGS, LP	360	270	288	(288)	0	270	1	269	0	1	0.04	0.00	24.16	24.16	

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	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2019-20 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	PRODUCTION SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL	
				2018-19 CARRYOVER ³	2019-20 FPA ⁴							WATER	WATER		
VICTOR VALLEY COMMUNITY COLLEGE DISTRICT	240	132	0	0	0	132	357	0	225	132	5.67	135,900.00	3,424.68	139,324.68	
VICTOR VALLEY MEMORIAL PARK	0	0	0	0	0	0	37	0	37	0	0.00	22,348.00	0.00	22,348.00	
VICTORVILLE WATER DISTRICT, ID#1 (SEE NOTE 13)	23,020	12,661	0	1,029	378	14,068	19,234	0	5,166	14,068	603.99	3,120,264.00	364,809.95	3,485,073.95	
VICTORVILLE WATER DISTRICT, ID#2 (SEE NOTE 13)	2,932	1,613	0	0	0	1,613	4,913	0	3,300	1,613	69.25	1,993,200.00	41,827.00	2,035,027.00	
VOGLER, ALBERT H.	62	47	49	(49)	0	47	1	46	0	1	0.04	0.00	24.16	24.16	
WAGNER LIVING TRUST	1,224	918	980	(980)	0	918	0	918	0	0	0.00	0.00	0.00	0.00	
WAKULA FAMILY TRUST	11	9	8	(8)	0	9	1	8	0	1	0.04	0.00	24.16	24.16	
WARD, KEN AND BARBARA	65	49	36	(36)	0	49	14	35	0	14	0.60	0.00	362.40	362.40	
WEST, HOWARD AND SUZY	72	54	58	(58)	0	54	0	54	0	0	0.00	0.00	0.00	0.00	
WEST, JIMMIE E.	10	8	7	(7)	0	8	1	7	0	1	0.04	0.00	24.16	24.16	
WESTERN WATER COMPANY	15	12	12	0	0	24	0	12	0	0	0.00	0.00	0.00	0.00	
WESTLAND INDUSTRIES, INC.	54	30	33	0	0	63	29	30	0	29	1.25	0.00	755.00	755.00	
WIENER, MELVIN AND MARIAM S.	30	17	18	0	0	35	0	17	0	0	0.00	0.00	0.00	0.00	
WOOD, MICHAEL AND DENISE	0	0	0	0	0	0	1	0	1	0	0.00	604.00	0.00	604.00	
TOTAL	114,308	64,357	20,854	(13,689)	(100)	71,422	73,441	17,621	18,791	53,362	2,284.95	11,349,764.00	1,380,109.79	12,729,873.79	

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				2018-19 CARRYOVER ³	2019-20 FPA ⁴							WATER \$604.00/AF	WATER N/A		
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT	29	22	24	(15)	0	31	0	22	0	0	0.00	0.00	0.00	0.00	
AQUA CAPITAL MANAGEMENT LP	2,106	1,604	783	(783)	(603)	1,001	0	977	0	0	0.00	0.00	0.00	0.00	
ATCHISON, TOPEKA, SANTA FE RAILWAY COMPANY	120	90	0	0	0	90	0	90	0	0	0.00	0.00	0.00	0.00	
BAR-LEN MUTUAL WATER COMPANY	48	36	39	0	0	75	28	36	0	28	0.00	0.00	0.00	0.00	
BARSTOW COMMUNITY DEVELOPERS, LLC	0	0	0	0	0	0	1	0	1	0	0.00	604.00	0.00	604.00	
BEST, BYRON L.	21	16	17	0	0	33	0	16	0	0	0.00	0.00	0.00	0.00	
BROMMER HOUSE TRUST	361	271	289	(23)	0	537	0	271	0	0	0.00	0.00	0.00	0.00	
CALMAT COMPANY	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
CHAFSA, LARRY R. AND DELINDA C.	46	35	37	0	0	72	1	35	0	1	0.00	0.00	0.00	0.00	
CHOL, YONG IL AND JOUNG AE	38	29	31	0	0	60	0	29	0	0	0.00	0.00	0.00	0.00	
CHONG, JOAN	10	8	8	34	8	58	28	16	0	28	0.00	0.00	0.00	0.00	
CHRISTISON, JOEL	75	57	60	0	0	117	0	57	0	0	0.00	0.00	0.00	0.00	
CONTRATTO, ERSULA	151	114	120	(120)	0	114	1	113	0	1	0.00	0.00	0.00	0.00	
DARR, JAMES S.	408	306	327	0	0	633	60	306	0	60	0.00	0.00	0.00	0.00	
DE VRIES, NEIL AND MARY FAMILY TRUST	3,800	2,850	3,040	0	0	5,890	1	2,850	0	1	0.00	0.00	0.00	0.00	
DORRANCE, DAVID W. AND TAMELA L.	19	15	0	0	(15)	0	0	0	0	0	0.00	0.00	0.00	0.00	
EYGNOR, ROBERT E.	50	38	40	0	0	78	0	38	0	0	0.00	0.00	0.00	0.00	
FEDERAL NATIONAL MORTGAGE ASSOCIATION - FANNIE MA	30	23	24	0	0	47	0	23	0	0	0.00	0.00	0.00	0.00	
FOURFREE USA, INC.	42	32	34	(34)	(8)	24	0	24	0	0	0.00	0.00	0.00	0.00	
FRATES, D. COLE	13	10	0	0	(10)	0	0	0	0	0	0.00	0.00	0.00	0.00	
FRIEND, JOSEPH AND DEBORAH	60	45	48	0	0	93	11	45	0	11	0.00	0.00	0.00	0.00	
GABRYCH, EUGENE	132	99	106	0	0	205	0	99	0	0	0.00	0.00	0.00	0.00	
GAINES FAMILY TRUST, JACK AND MARY	92	69	74	0	0	143	0	69	0	0	0.00	0.00	0.00	0.00	
GOLDEN STATE WATER COMPANY	14,407	10,806	11,526	(2,713)	0	19,619	5,624	10,806	0	5,624	0.00	0.00	0.00	0.00	
GRILL, NICHOLAS P. AND MILLIE D.	0	0	0	0	0	0	80	0	80	0	0.00	48,320.00	0.00	48,320.00	
GUTIERREZ, JOSE AND GLORIA	130	98	104	0	0	202	67	98	0	67	0.00	0.00	0.00	0.00	
HANIFY, MICHAEL D., DBA - WHITE BEAR RANCH	152	114	39	(39)	(60)	54	0	54	0	0	0.00	0.00	0.00	0.00	
HARMSEN FAMILY TRUST	722	542	578	0	0	1,120	306	542	0	306	0.00	0.00	0.00	0.00	
HARPER LAKE COMPANY VIII	1,433	1,075	1,147	0	0	2,222	949	1,075	0	949	0.00	0.00	0.00	0.00	
HASKINS, JAMES J.	30	(1)	0	0	(20)	(21)	0	3	0	0	0.00	0.00	0.00	0.00	
HELENDALE COMMUNITY SERVICES DISTRICT	219	165	0	0	(113)	52	0	52	0	0	0.00	0.00	0.00	0.00	
HENSLEY, MARK P.	27	21	22	0	0	43	22	21	0	22	0.00	0.00	0.00	0.00	
HI DESERT MUTUAL WATER COMPANY	34	26	28	0	0	54	16	26	0	16	0.00	0.00	0.00	0.00	
HIGH DESERT ASSOCIATES, INC.	513	385	411	0	0	796	0	385	0	0	0.00	0.00	0.00	0.00	
HI-GRADE MATERIALS COMPANY	0	0	0	0	0	0	1	0	1	0	0.00	604.00	0.00	604.00	
HILL FAMILY TRUST AND HILL'S RANCH, INC.	2,335	1,752	1,868	(375)	0	3,245	38	1,752	0	38	0.00	0.00	0.00	0.00	
HOWARD, ET AL.	43	33	35	0	0	68	0	33	0	0	0.00	0.00	0.00	0.00	
HUERTA, HECTOR	656	492	525	800	0	1,817	692	492	0	692	0.00	0.00	0.00	0.00	

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				2018-19 CARRYOVER ³	2019-20 FPA ⁴							WATER	WATER	
JONES, JOETTE	22	17	18	0	0	35	0	17	0	0	0.00	0.00	0.00	0.00
JORDAN FAMILY TRUST	460	345	364	(364)	0	345	4	341	0	4	0.00	0.00	0.00	0.00
KASNER FAMILY LIMITED PARTNERSHIP	421	316	337	(116)	0	537	0	316	0	0	0.00	0.00	0.00	0.00
KIM, JIN S. AND HYUN H.	190	143	152	(152)	0	143	0	143	0	0	0.00	0.00	0.00	0.00
LEE, ET AL., SEPOONG AND WOO POONG	77	58	62	0	0	120	0	58	0	0	0.00	0.00	0.00	0.00
LEYERLY, GENEVA (SEE NOTE 12)	65						3							
MCCOLLUM, CHARLES L.	115	87	92	0	0	179	0	87	0	0	0.00	0.00	0.00	0.00
MEAD FAMILY TRUST	115	87	92	0	0	179	1	87	0	1	0.00	0.00	0.00	0.00
MOJAVE SOLAR, LLC	5,239	3,930	4,192	0	0	8,122	1,471	3,930	0	1,471	0.00	0.00	0.00	0.00
MOST FAMILY TRUST	56	42	45	0	0	87	0	42	0	0	0.00	0.00	0.00	0.00
ODESSA WATER DISTRICT	299	225	240	0	0	465	0	225	0	0	0.00	0.00	0.00	0.00
OHAL REYNOLDS AND DOROTHY	137	103	110	0	0	213	1	103	0	1	0.00	0.00	0.00	0.00
OSTERKAMP, GEROLD (SEE NOTE 12)	260						125							
PACIFIC GAS AND ELECTRIC COMPANY	4,474	3,356	3,580	0	0	6,936	2,911	3,356	0	2,911	0.00	0.00	0.00	0.00
RIOS, MARIANO V.	8	6	7	0	0	13	1	6	0	1	0.00	0.00	0.00	0.00
RIVERO, FIDEL V.	20	15	16	0	0	31	1	15	0	1	0.00	0.00	0.00	0.00
RUISCH TRUST, DALE W. AND NELLIE H.	650	488	390	0	0	878	594	284	0	594	0.00	0.00	0.00	0.00
RUISCH, ET AL. (SEE NOTE 12)	862						366							
SERVICE ROCK PRODUCTS CORPORATION	766	575	613	0	0	1,188	15	575	0	15	0.00	0.00	0.00	0.00
SEXTON, RODNEY A. AND SEXTON, DEREK R.	232	174	186	0	0	360	0	174	0	0	0.00	0.00	0.00	0.00
SOPPELAND REVOCABLE TRUST	478	359	383	(383)	0	359	2	357	0	2	0.00	0.00	0.00	0.00
SYNAGRO-WWT, INC. (DBA NURSURY PRODUCTS, LLC)	0	0	0	0	0	0	4	0	4	0	0.00	2,416.00	0.00	2,416.00
TALLAKSON FAMILY REVOCABLE TRUST	17	13	14	0	0	27	6	13	0	6	0.00	0.00	0.00	0.00
VALENTI, VITO	17	13	14	0	0	27	0	13	0	0	0.00	0.00	0.00	0.00
VAN DAM REVOCABLE TRUST, E AND S	722	542	578	(124)	0	996	138	542	0	138	0.00	0.00	0.00	0.00
VAN LEEUWEN, JOHN	1,465	1,099	1,137	0	0	2,236	956	1,099	0	956	0.00	0.00	0.00	0.00
VERNOLA TRUST, PAT AND MARY ANN	3,116	2,337	2,493	1,600	0	6,430	2,230	2,337	0	2,230	0.00	0.00	0.00	0.00
VICTORVILLE WATER DISTRICT, ID#1	796	597	0	0	(597)	0	0	0	0	0	0.00	0.00	0.00	0.00
WERNER, ANDREW J.	18	14	0	0	(14)	0	0	0	0	0	0.00	0.00	0.00	0.00
WESTERN DEVELOPMENT AND STORAGE, LLC	6	5	0	0	(5)	0	0	0	0	0	0.00	0.00	0.00	0.00
WITHEY, CONNIE	22	17	18	0	0	35	1	17	0	1	0.00	0.00	0.00	0.00
TOTAL	49,477	36,181	36,517	(2,807)	(1,437)	68,454	16,756	34,592	86	16,176	0.00	51,944.00	0.00	51,944.00

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	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2019-20 VERIFIED PRODUCTION ⁶	UNUSED ⁷ FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL	
				2018-19 CARRYOVER ³	2019-20 FPA ⁴							WATER	WATER		
35250 YERMO, LLC	24	8	9	0	0	17	5	8	0	5	0.00	0.00	0.00	0.00	
AHN, CHUN SOO AND WHA JA	50	15	18	0	0	33	1	15	0	1	0.00	0.00	0.00	0.00	
AKE, CHARLES J. AND MARJORIE M.	23	7	9	0	0	16	0	7	0	0	0.00	0.00	0.00	0.00	
ARCHIBEK, ERIC	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
ARGUELLES REVOCABLE TRUST, ALFREDO A. AND ANA. M.	0	0	227	(227)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
ATCHISON, TOPEKA, SANTA FE RAILWAY COMPANY	80	24	5	27	0	56	46	10	0	46	0.00	0.00	0.00	0.00	
BAILEY 2007 LIVING REVOCABLE TRUST, SHERÉ R.	27	9	10	0	0	19	0	9	0	0	0.00	0.00	0.00	0.00	
BARBER, JAMES B.	167	51	59	0	0	110	33	51	0	33	0.00	0.00	0.00	0.00	
BARON, SUSAN AND PALMER, CURTIS	26	8	10	0	0	18	0	8	0	0	0.00	0.00	0.00	0.00	
BENDER TRUST, DOLORES M.	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
BORGOGNO REVOCABLE LIVING TRUST	0	0	646	(646)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
BORJA, LEONIL T. AND TITAL L.	20	6	7	0	0	13	0	6	0	0	0.00	0.00	0.00	0.00	
BREDELIS, RONALD C. AND JEAN	64	20	18	(17)	0	21	10	11	0	10	0.00	0.00	0.00	0.00	
BUBIER, DIANE GAIL	54	17	19	0	0	36	1	17	0	1	0.00	0.00	0.00	0.00	
BUDGET FINANCE COMPANY	32	10	12	0	0	22	0	10	0	0	0.00	0.00	0.00	0.00	
BUSH, KEVIN	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
CALICO JUNCTION	0	0	7	(7)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
CALICO LAKES HOMEOWNERS ASSOCIATION	1,296	389	453	(85)	0	757	255	389	0	255	0.00	0.00	0.00	0.00	
CALIFORNIA DEPARTMENT OF TRANSPORTATION	71	22	25	0	0	47	11	22	0	11	0.00	0.00	0.00	0.00	
CALMAT COMPANY	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
CAMANGA, TONY AND MARIETTA	47	15	17	0	0	32	1	15	0	1	0.00	0.00	0.00	0.00	
CAMPBELL, M. A. AND DIANNE	22	7	8	0	0	15	0	7	0	0	0.00	0.00	0.00	0.00	
CARLTON, SUSAN	155	47	55	0	0	102	1	47	0	1	0.00	0.00	0.00	0.00	
CDFW - CAMP CADY	921	277	323	0	0	600	69	277	0	69	0.00	0.00	0.00	0.00	
CHEYENNE LAKE, INC.	665	200	183	84	0	467	196	200	0	196	0.00	0.00	0.00	0.00	
CLARK, ARTHUR	50	15	18	0	0	33	0	15	0	0	0.00	0.00	0.00	0.00	
CLARK, GARY AND BETH A. (FORMERLY: NEWBERRY SPRINGS RECREATIONAL ASSOCIATION)	0	0	0	254	45	299	250	45	0	250	0.00	0.00	0.00	0.00	
CONNER, WILLIAM H.	25	8	9	0	0	17	0	8	0	0	0.00	0.00	0.00	0.00	
CORBRIDGE, LINDA S.	32	10	12	0	0	22	4	10	0	4	0.00	0.00	0.00	0.00	
CROSS, FRANCIS AND BEVERLY	40	12	14	0	0	26	0	12	0	0	0.00	0.00	0.00	0.00	
CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	844	254	246	389	0	889	422	254	0	422	0.00	0.00	0.00	0.00	
DAGGETT COMMUNITY SERVICES DISTRICT	304	92	0	0	0	92	237	0	145	92	0.00	87,580.00	0.00	87,580.00	
DAGGETT RANCH, LLC	76	23	16	0	0	39	32	7	0	32	0.00	0.00	0.00	0.00	
DE JONG FAMILY TRUST	3,131	940	1,096	178	0	2,214	1,680	534	0	1,680	0.00	0.00	0.00	0.00	
DENNISON, QUENTIN D. - CLEGG, FRIZELL AND JOKE	29	9	11	0	0	20	0	9	0	0	0.00	0.00	0.00	0.00	
DONALDSON, JERRY AND BEVERLY	90	27	32	0	0	59	1	27	0	1	0.00	0.00	0.00	0.00	
DOWELL, LEONARD	23	7	9	0	0	16	0	7	0	0	0.00	0.00	0.00	0.00	

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				2018-19 CARRYOVER ³	2019-20 FPA ⁴							WATER	WATER		
EVERT FAMILY TRUST	173	52	61	(35)	0	78	30	48	0	30	0.00	0.00	0.00	0.00	
FEJFAR, MONICA KAY	20	6	7	0	0	13	0	6	0	0	0.00	0.00	0.00	0.00	
FERNANDEZ, ARTURO	76	23	27	0	0	50	1	23	0	1	0.00	0.00	0.00	0.00	
FERRO, DENNIS AND NORMA	32	10	12	0	0	22	0	10	0	0	0.00	0.00	0.00	0.00	
FIRST CPA LLC	57	18	13	0	0	31	15	16	0	15	0.00	0.00	0.00	0.00	
FOOTHILL ESTATES MHP, LLC	54	17	0	0	0	17	18	0	1	17	0.00	604.00	0.00	604.00	
FUNDAMENTAL CHRISTIAN ENDEAVORS, INC.	425	128	149	0	0	277	112	128	0	112	0.00	0.00	0.00	0.00	
GABRYCH, EUGENE	1,637	492	219	(53)	0	658	388	270	0	388	0.00	0.00	0.00	0.00	
GARCIA, DANIEL	23	7	9	0	0	16	2	7	0	2	0.00	0.00	0.00	0.00	
GARG, OM P.	483	145	170	(75)	0	240	1	145	0	1	0.00	0.00	0.00	0.00	
GENON CALIFORNIA SOUTH, LP (SEE NOTE 16)	0	0	1,983	(1,983)	600	600	461	139	0	461	0.00	0.00	0.00	0.00	
GRAY, GEORGE F. AND BETTY E.	94	29	33	(33)	0	29	0	29	0	0	0.00	0.00	0.00	0.00	
HACKBARTH, EDWARD E.	1,517	456	342	0	0	798	627	171	0	627	0.00	0.00	0.00	0.00	
HANSON AGGREGATES WRP, INC.	31	10	11	0	0	21	0	10	0	0	0.00	0.00	0.00	0.00	
HARESON, NICHOLAS AND MARY	8	3	3	0	0	6	0	3	0	0	0.00	0.00	0.00	0.00	
HARTER, JOE AND SUE	5,234	1,571	1,292	(50)	0	2,813	2,315	498	0	2,315	0.00	0.00	0.00	0.00	
HASS, PAULINE L.	35	11	12	(12)	0	11	1	10	0	1	0.00	0.00	0.00	0.00	
HAWKINS, JAMES B.	854	257	299	(299)	(257)	0	0	0	0	0	0.00	0.00	0.00	0.00	
HENDLEY, RICK AND BARBARA	48	15	17	0	0	32	10	15	0	10	0.00	0.00	0.00	0.00	
HIETT, HARRY L.	29	9	11	(11)	0	9	1	8	0	1	0.00	0.00	0.00	0.00	
HILARIDES 1998 REVOCABLE FAMILY TRUST	303	91	105	(105)	0	91	2	89	0	2	0.00	0.00	0.00	0.00	
HO, TING-SENG AND AH-GIT	300	90	105	(82)	0	113	0	90	0	0	0.00	0.00	0.00	0.00	
HOLLISTER, ROBERT H. AND RUTH M.	44	14	16	0	0	30	1	14	0	1	0.00	0.00	0.00	0.00	
HONG, PAUL B. AND MAY	85	26	30	0	0	56	0	26	0	0	0.00	0.00	0.00	0.00	
HOOD FAMILY TRUST	41	13	15	0	0	28	11	13	0	11	0.00	0.00	0.00	0.00	
HORTON, JOHN	242	73	85	(85)	0	73	0	73	0	0	0.00	0.00	0.00	0.00	
HORTON'S CHILDREN'S TRUST	199	60	0	23	0	83	96	0	59	83	0.00	35,636.00	0.00	35,636.00	
HUBBARD, ESTER AND MIZUNO, ARLEAN	28	9	10	0	0	19	1	9	0	1	0.00	0.00	0.00	0.00	
HUNT, RALPH M. AND LILLIAN F.	51	16	18	0	0	34	1	16	0	1	0.00	0.00	0.00	0.00	
HYATT, JAMES AND BRENDA	210	63	57	(57)	0	63	6	57	0	6	0.00	0.00	0.00	0.00	
IM, NICHOLAS NAK-KYUN	397	120	53	65	0	238	49	120	0	49	0.00	0.00	0.00	0.00	
IRVIN, BERTRAND W.	29	9	11	5	0	25	11	9	0	11	0.00	0.00	0.00	0.00	
ITALMOOD INC., ET. AL.	190	57	67	0	0	124	41	57	0	41	0.00	0.00	0.00	0.00	
JACKS, JAMES F.	10	3	4	0	0	7	1	3	0	1	0.00	0.00	0.00	0.00	
JACKSON, JAMES N. JR REVOCABLE LIVING TRUST	54	17	19	(19)	0	17	0	17	0	0	0.00	0.00	0.00	0.00	
JACKSON, RAY REVOCABLE TRUST NO. 45801	1	1	1	0	0	2	0	1	0	0	0.00	0.00	0.00	0.00	
JOHNSON, JAMES R. AND ELLEN	0	0	65	(65)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	

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				2018-19 CARRYOVER ³	2019-20 FPA ⁴							WATER	WATER	
KARIMI, HOOSHANG	70	21	25	0	0	46	1	21	0	1	0.00	0.00	0.00	0.00
KASNER FAMILY LIMITED PARTNERSHIP	843	253	0	0	257	510	727	0	217	510	0.00	131,068.00	0.00	131,068.00
KASNER, ROBERT	5,713	1,714	1,285	(767)	0	2,232	2,400	0	168	2,232	0.00	101,472.00	0.00	101,472.00
KATCHER, AUGUST M. AND MARCELINE	23	7	9	0	0	16	1	7	0	1	0.00	0.00	0.00	0.00
KEMP, ROBERT AND ROSE	32	10	12	0	0	22	0	10	0	0	0.00	0.00	0.00	0.00
KIM, JOON HO AND MAL BOON REVOCABLE TRUST	764	230	268	(24)	0	474	243	230	0	243	0.00	0.00	0.00	0.00
KIM, SEON JA	50	15	18	0	0	33	1	15	0	1	0.00	0.00	0.00	0.00
KOEGLER, RONALD R. AND CAROLYN V.	26	8	9	0	0	17	10	7	0	10	0.00	0.00	0.00	0.00
KOERING, RICHARD AND KOERING, DONNA	20	6	7	0	0	13	1	6	0	1	0.00	0.00	0.00	0.00
KOSHAREK, JOHN AND JOANN	54	17	19	0	0	36	16	17	0	16	0.00	0.00	0.00	0.00
LAKE JODIE PROPERTY OWNERS ASSOCIATION	454	137	109	200	0	446	290	44	0	290	0.00	0.00	0.00	0.00
LAKE WAIKIKI	98	30	35	0	0	65	0	30	0	0	0.00	0.00	0.00	0.00
LAKE WAINANI OWNERS ASSOCIATION	1,725	518	289	227	0	1,034	412	469	0	412	0.00	0.00	0.00	0.00
LAM, PHILLIP	105	32	37	0	0	69	6	32	0	6	0.00	0.00	0.00	0.00
LANGLEY, MICHAEL R. AND SHARON	20	6	0	0	0	6	4	2	0	4	0.00	0.00	0.00	0.00
LAVANH, ET AL.	24	8	9	0	0	17	4	8	0	4	0.00	0.00	0.00	0.00
LAWRENCE, WILLIAM W.	45	14	16	0	0	30	1	14	0	1	0.00	0.00	0.00	0.00
LEE, VIN JANG T.	630	189	221	0	0	410	0	189	0	0	0.00	0.00	0.00	0.00
LEM, HOY	32	10	12	0	0	22	0	10	0	0	0.00	0.00	0.00	0.00
LIANG, YUAN - I AND TZU - MEI CHEN	200	60	70	(70)	0	60	0	60	0	0	0.00	0.00	0.00	0.00
LIBERTY UTILITIES (APPLE VALLEY RANCHOS WATER) CORP.	453	136	159	0	0	295	104	136	0	104	0.00	0.00	0.00	0.00
LIN, KUAN JUNG AND CHUNG, DER-BING	451	136	158	(158)	0	136	0	136	0	0	0.00	0.00	0.00	0.00
LO, ET AL.	59	18	0	0	0	18	37	0	19	18	0.00	11,476.00	0.00	11,476.00
M BIRD CONSTRUCTION	41	13	15	0	0	28	1	13	0	1	0.00	0.00	0.00	0.00
MAHJOUBI, AFSAR S.	63	19	23	0	0	42	0	19	0	0	0.00	0.00	0.00	0.00
MALONEY, JANICE	36	11	13	0	0	24	2	11	0	2	0.00	0.00	0.00	0.00
MANNING, SHARON S.	63	19	23	0	0	42	31	11	0	31	0.00	0.00	0.00	0.00
MARCROFT, JAMES A. AND JOAN	38	12	2	0	0	14	20	0	6	14	0.00	3,624.00	0.00	3,624.00
MARSHALL, CHARLES	20	6	7	0	0	13	0	6	0	0	0.00	0.00	0.00	0.00
MARTIN, MICHAEL D. AND ARLENE D.	63	19	0	23	0	42	37	5	0	37	0.00	0.00	0.00	0.00
MILBRAT, IRVING H.	73	22	25	0	0	47	33	14	0	33	0.00	0.00	0.00	0.00
MILLER LIVING TRUST	18	6	7	0	0	13	0	6	0	0	0.00	0.00	0.00	0.00
MIZRAHIE, ET AL.	145	44	51	(51)	0	44	0	44	0	0	0.00	0.00	0.00	0.00
MOJAVE WATER AGENCY (FORMERLY: GENON CALIFORNIA SOUTH, LP)	7,194	2,159	0	1,983	(600)	3,542	0	1,559	0	0	0.00	0.00	0.00	0.00
MORRIS TRUST, JULIA V.	304	92	107	(107)	0	92	1	91	0	1	0.00	0.00	0.00	0.00
MULLIGAN, ROBERT AND INEZ	35	11	13	0	0	24	0	11	0	0	0.00	0.00	0.00	0.00
MURPHY, JEAN	24	8	4	0	0	12	5	7	0	5	0.00	0.00	0.00	0.00

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				2018-19 CARRYOVER ³	2019-20 FPA ⁴							WATER	WATER	
MUSIC, ZAJO (FORMERLY: KOROGHLIAN, TED AND NAJWA)	15	5	0	1	0	6	0	5	0	0	0.00	0.00	0.00	0.00
NEW SPRINGS LIMITED PARTNERSHIP	2,329	699	816	(816)	0	699	0	699	0	0	0.00	0.00	0.00	0.00
NEWBERRY COMMUNITY SERVICES DISTRICT	23	7	0	0	0	7	7	0	0	7	0.00	0.00	0.00	0.00
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	1	1	380	(380)	0	1	0	1	0	0	0.00	0.00	0.00	0.00
NSSL, INC.	109	33	2	126	0	161	65	33	0	65	0.00	0.00	0.00	0.00
O. F. D. L., INC.	443	133	105	136	0	374	165	133	0	165	0.00	0.00	0.00	0.00
P AND H ENGINEERING AND DEVELOPMENT CORPORATION	667	201	234	0	0	435	0	201	0	0	0.00	0.00	0.00	0.00
PATINO, JOSÉ	22	7	8	0	0	15	5	7	0	5	0.00	0.00	0.00	0.00
PEARCE, CRAIG L.	150	45	53	(50)	(45)	3	13	0	10	3	0.00	6,040.00	0.00	6,040.00
PERKO, BERT K.	132	40	47	0	0	87	9	40	0	9	0.00	0.00	0.00	0.00
POLAND, JOHN R. AND KATHLEEN A.	92	28	33	0	0	61	1	28	0	1	0.00	0.00	0.00	0.00
PORTER, TIMOTHY M.	30	9	11	0	0	20	0	9	0	0	0.00	0.00	0.00	0.00
PRECISION INVESTMENTS SERVICES, LLC	845	254	296	(35)	0	515	293	222	0	293	0.00	0.00	0.00	0.00
PRICE, DONALD AND RUTH	42	13	15	0	0	28	1	13	0	1	0.00	0.00	0.00	0.00
PRUETT, ANDREA	36	11	13	0	0	24	0	11	0	0	0.00	0.00	0.00	0.00
QUAKENBUSH, SAMUEL R.	19	6	7	0	0	13	5	6	0	5	0.00	0.00	0.00	0.00
QUIROS, FRANCISCO J. AND HERRMANN, RONALD	38	12	0	35	0	47	36	11	0	36	0.00	0.00	0.00	0.00
RICE, HENRY C. AND DIANA	24	8	9	0	0	17	0	8	0	0	0.00	0.00	0.00	0.00
RIZVI, S.R ALI	27	9	10	0	0	19	0	9	0	0	0.00	0.00	0.00	0.00
ROSSI, JAMES L. AND NAOMI I.	614	185	0	0	0	185	213	0	28	185	0.00	16,912.00	0.00	16,912.00
S AND B BROTHERS, LLC	221	67	78	0	0	145	87	32	0	87	0.00	0.00	0.00	0.00
SAGABEAN-BARKER, KANOELOKELANI L.	34	11	11	0	0	22	14	7	0	14	0.00	0.00	0.00	0.00
SAMPLES, BERNARD D. AND JANICE E.	43	13	16	0	0	29	2	13	0	2	0.00	0.00	0.00	0.00
SAMRA, JAGTAR S.	30	9	11	0	0	20	2	9	0	2	0.00	0.00	0.00	0.00
SAN BERNARDINO CO BARSTOW - DAGGETT AIRPORT	168	51	59	0	0	110	14	51	0	14	0.00	0.00	0.00	0.00
SERVICE ROCK PRODUCTS CORPORATION	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00
SHENG, JEN	33	10	12	0	0	22	1	10	0	1	0.00	0.00	0.00	0.00
SHEPPARD, THOMAS AND GLORIA	217	66	76	0	0	142	11	66	0	11	0.00	0.00	0.00	0.00
SHORT, JEROME E.	30	9	1	0	0	10	17	0	7	10	0.00	4,228.00	0.00	4,228.00
SINGH, ET AL.	31	10	11	0	0	21	10	10	0	10	0.00	0.00	0.00	0.00
SMITH, DENISE DBA AMEREQUINE BEAUTY, INC	0	0	0	0	0	0	90	0	90	0	0.00	54,360.00	0.00	54,360.00
SMITH, PORTER AND ANITA	25	8	9	0	0	17	0	8	0	0	0.00	0.00	0.00	0.00
SOUTHERN CALIFORNIA EDISON COMPANY	600	180	210	0	0	390	0	180	0	0	0.00	0.00	0.00	0.00
SOUTHERN CALIFORNIA GAS COMPANY	98	30	35	0	0	65	3	30	0	3	0.00	0.00	0.00	0.00
SPERRY, WESLEY	4	2	2	0	0	4	0	2	0	0	0.00	0.00	0.00	0.00
ST. ANTONY COPTIC ORTHODOX MONASTERY	130	39	8	240	0	287	174	39	0	174	0.00	0.00	0.00	0.00
STARKE, GEORGE A. AND JAYNE E.	23	7	9	0	0	16	0	7	0	0	0.00	0.00	0.00	0.00

APPENDIX B
PRODUCER REPLACEMENT WATER
AND
MAKEUP WATER OBLIGATIONS
AND
ASSESSMENTS DUE FOR 2019-20
(UNLESS OTHERWISE NOTED ALL AMOUNTS SHOWN ARE IN ACRE-FEET)
BAJA SUBAREA

PRODUCER	2019-20 FREE PRODUCTION ALLOWANCE						PRODUCTION					ASSESSMENTS DUE BY JULY 1, 2021 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2019-20 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL
				2018-19 CARRYOVER ³	2019-20 FPA ⁴							WATER	WATER	
SUNDOWN LAKES, INC.	523	157	147	132	0	436	168	157	0	168	0.00	0.00	0.00	0.00
SUNRAY LAND COMPANY, LLC	63	19	23	0	0	42	9	19	0	9	0.00	0.00	0.00	0.00
SZYNKOWSKI, RUTH J.	29	9	11	0	0	20	2	9	0	2	0.00	0.00	0.00	0.00
TAPIE, RAYMOND L.	18	6	7	0	0	13	1	6	0	1	0.00	0.00	0.00	0.00
TEISAN, JERRY	96	29	34	0	0	63	0	29	0	0	0.00	0.00	0.00	0.00
THAYER, SHARON	97	30	33	0	0	63	31	24	0	31	0.00	0.00	0.00	0.00
THOMAS, STEPHEN AND LORI	49	15	18	0	0	33	4	15	0	4	0.00	0.00	0.00	0.00
TRIPLE H PARTNERSHIP	218	66	77	0	0	143	48	66	0	48	0.00	0.00	0.00	0.00
TURNER, TERRY	30	9	11	0	0	20	1	9	0	1	0.00	0.00	0.00	0.00
UNION PACIFIC RAILROAD COMPANY	249	75	88	0	0	163	66	75	0	66	0.00	0.00	0.00	0.00
VACA, ANDY AND TERESITA S.	20	6	7	0	0	13	6	6	0	6	0.00	0.00	0.00	0.00
VAN BASTELAAR, ALPHONSE	78	24	0	0	0	24	74	0	50	24	0.00	30,200.00	0.00	30,200.00
VAN DAM FAMILY TRUST, GLEN AND JENNIFER	7,274	2,183	1,016	595	0	3,794	3,235	559	0	3,235	0.00	0.00	0.00	0.00
VAN LEEUWEN, JOHN	2,018	606	699	100	0	1,405	504	606	0	504	0.00	0.00	0.00	0.00
VANDER DUSSEN TRUST, AGNES AND EDWARD	1,792	538	330	0	0	868	408	460	0	408	0.00	0.00	0.00	0.00
WANG, STEVEN	10	3	4	0	0	7	0	3	0	0	0.00	0.00	0.00	0.00
WARD, RAYMOND	105	32	4	0	0	36	37	0	1	36	0.00	604.00	0.00	604.00
WEEMS, LIZZIE	53	16	19	0	0	35	0	16	0	0	0.00	0.00	0.00	0.00
WEERARINGHE, MAITHRI N.	15	5	6	0	0	11	1	5	0	1	0.00	0.00	0.00	0.00
WESTERN HORIZON ASSOCIATES, INC.	1,363	409	0	121	0	530	735	0	205	530	0.00	123,820.00	0.00	123,820.00
WET SET, INC.	547	165	142	56	0	363	130	165	0	130	0.00	0.00	0.00	0.00
WITTE, E. DANIEL AND MARCIA	27	9	10	0	0	19	1	9	0	1	0.00	0.00	0.00	0.00
WLSR, INC.	471	142	115	106	0	363	133	142	0	133	0.00	0.00	0.00	0.00
WORSEY, JOSEPH A. AND REVAE	29	9	11	0	0	20	0	9	0	0	0.00	0.00	0.00	0.00
TOTAL	63,929	19,246	17,370	(1,298)	0	35,318	18,677	11,696	1,006	17,717	0.00	607,624.00	0.00	607,624.00

APPENDIX B - SUMMARY
 PRODUCER REPLACEMENT WATER
 AND
 MAKEUP WATER OBLIGATIONS
 AND
 ASSESSMENTS DUE FOR 2019-20
 (UNLESS OTHERWISE NOTED ALL AMOUNTS SHOWN ARE IN ACRE-FEET)

SUBAREA	2019-20 FREE PRODUCTION ALLOWANCE						2019-20 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	PRODUCTION SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	ASSESSMENTS DUE BY JULY 1, 2021 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵						REPLACEMENT WATER	MAKEUP WATER	TOTAL
				2018-19 CARRYOVER ³	2019-20 FPA ⁴									
ESTE	19,251	14,458	15,084	(376)	0	29,166	4,227	14,227	442	3,785	0.00	266,968.00	0.00	266,968.00
OESTE	6,857	5,144	4,897	0	0	10,041	3,439	4,750	0	3,439	0.00	0.00	0.00	0.00
ALTO	114,308	64,357	20,854	(13,689)	(100)	71,422	73,441	17,621	18,791	53,362	2,284.95	11,349,764.00	1,380,109.79	12,729,873.79
CENTRO	49,477	36,181	36,517	(2,807)	(1,437)	68,454	16,756	34,592	86	16,176	0.00	51,944.00	0.00	51,944.00
BAJA	63,929	19,246	17,370	(1,298)	0	35,318	18,677	11,696	1,006	17,717	0.00	607,624.00	0.00	607,624.00
GRAND TOTAL	253,822	139,386	94,722	(18,170)	(1,537)	214,401	116,540	82,886	20,325	94,479	2,284.95	12,276,300.00	1,380,109.79	13,656,409.79

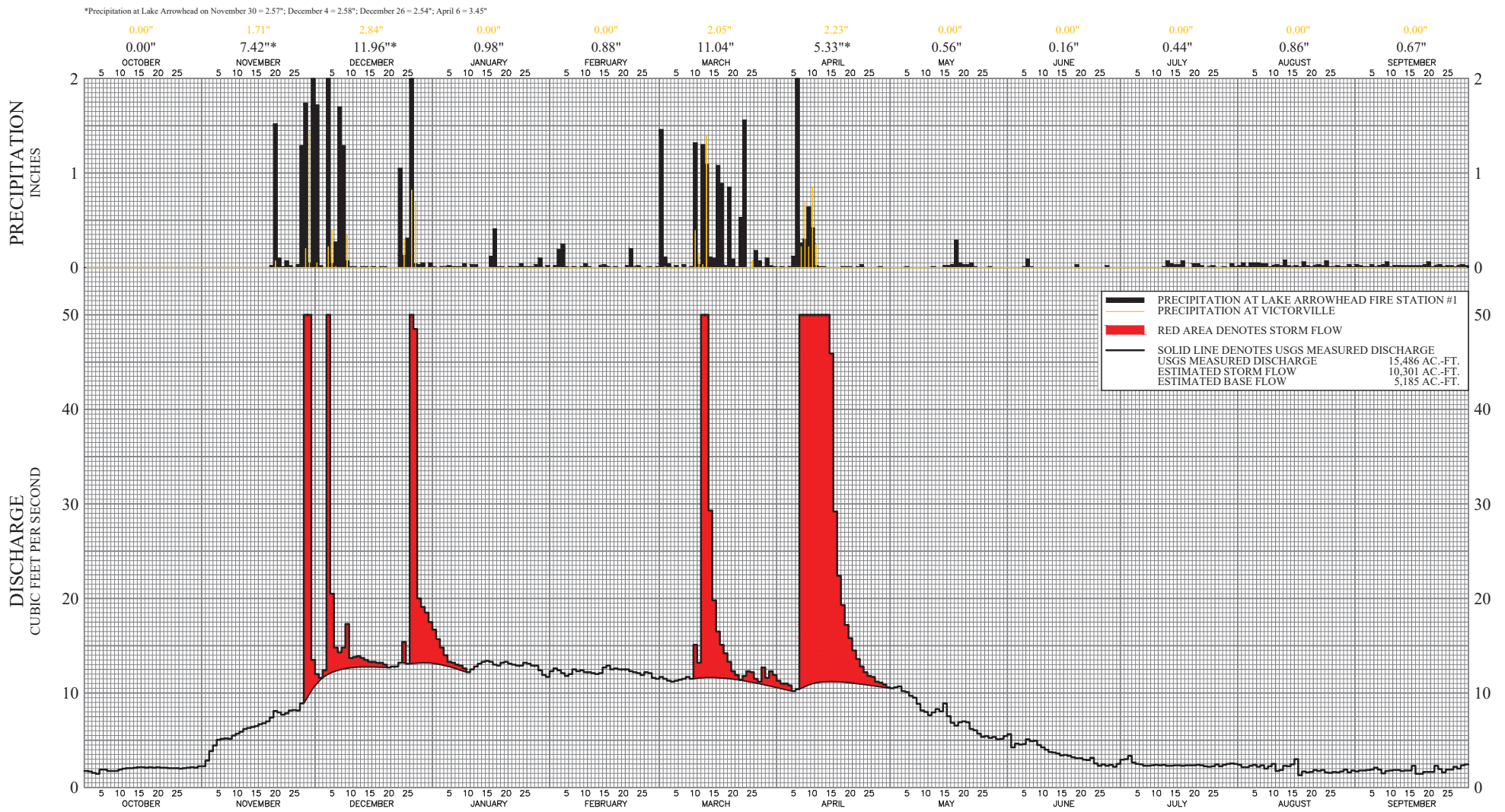
NOTES FOR APPENDIX B

- 1 EQUAL TO 75% OF BASE ANNUAL PRODUCTION IN THE ESTE, OESTE AND CENTRO SUBAREAS AND FOR THE AGRICULTURAL PRODUCERS IN THE ALTO SUBAREA. EQUAL TO 55% OF BASE ANNUAL PRODUCTION FOR THE MUNICIPAL AND INDUSTRIAL PRODUCERS IN THE ALTO SUBAREA. EQUAL TO 30% OF BASE ANNUAL PRODUCTION IN THE BAJA SUBAREA.
- 2 UNUSED FPA FROM 2018-19 NET OF ANY TRANSFERS DURING 2018-19.
- 3 TRANSFERS OF 2018-19 UNUSED FPA FOR USE DURING 2019-20. AMOUNTS SOLD OR OTHERWISE RELINQUISHED ARE SHOWN IN PARENTHESIS. SEE APPENDIX E.
- 4 TRANSFERS OF 2019-20 BASE FREE PRODUCTION ALLOWANCE. AMOUNTS SOLD OR OTHERWISE RELINQUISHED ARE SHOWN IN PARENTHESIS. SEE APPENDIX E.
- 5 TOTAL FREE PRODUCTION ALLOWANCE FOR 2019-20 IS EQUAL TO THE SUM OF BASE FREE PRODUCTION ALLOWANCE, CARRYOVER AND TRANSFERS.
- 6 2019-20 VERIFIED PRODUCTION.
- 7 UNUSED FPA IS EQUAL TO THE TOTAL FPA MINUS TOTAL VERIFIED PRODUCTION, BUT NOT GREATER THAN THE SUM OF BASE FREE PRODUCTION ALLOWANCE AND 2019-20 FPA TRANSFERS.
- 8 WATER PRODUCTION IN EXCESS OF TOTAL FREE PRODUCTION ALLOWANCE.
- 9 PRODUCTION SUBJECT TO MAKEUP OBLIGATION IS EQUAL TO THE TOTAL VERIFIED PRODUCTION NOT TO EXCEED THE TOTAL FREE PRODUCTION ALLOWANCE.
- 10 PHELAN PIÑON HILLS CSD'S WELL #14 IS NOT INCLUDED IN THE TOTAL VERIFIED PRODUCTION. THE MATTER OF PUMPING FROM WELL #14, LOCATED IN LA COUNTY, IS STILL UNRESOLVED AND MAY AFFECT FUTURE OBLIGATIONS UNDER THE JUDGMENT.
- 11 CDFW - MOJAVE RIVER FISH HATCHERY IS EXEMPT FROM ASSESSMENTS PURSUANT TO THE PROVISIONS OF EXHIBIT F OF THE JUDGMENT AFTER TRIAL, DATED JANUARY 10, 1996.
- 12 APPELLANTS NOT SUBJECT TO THE JUDGMENT AFTER TRIAL PURSUANT TO SUPREME COURT DECISION DATED AUGUST 21, 2000. THE AGGREGATE BASE ANNUAL PRODUCTION OF THESE PARTIES WAS DETERMINED PRIOR TO TRIAL AND CONSISTS OF 291 ACRE-FEET IN THE ALTO SUBAREA AND 1,187 ACRE-FEET IN THE CENTRO SUBAREA. THE VERIFIED PRODUCTION WAS ESTIMATED BY WATERMASTER FOR 2019-20 AND CONSISTS OF 1,268 ACRE-FEET IN THE ALTO SUBAREA AND 494 ACRE-FEET IN THE CENTRO SUBAREA.
- 13 THE VERIFIED PRODUCTION SHOWN INCLUDES MWA DELIVERIES THROUGH THE REGIONAL, RECHARGE AND RECOVERY PROJECT. DELIVERIES FOR 2019-20 WATER YEAR INCLUDE 0 ACRE-FEET FOR LIBERTY UTILITIES (APPLE VALLEY RANCHOS WATER) CORP., 2,287 ACRE-FEET FOR VICTORVILLE WATER DISTRICT, ID#1 AND 1,933 ACRE-FEET FOR VICTORVILLE WATER DISTRICT ID#2.
- 14 THE VERIFIED PRODUCTION SHOWN INCLUDES THE OPERATIONAL WATER USED FOR THE REGIONAL, RECHARGE AND RECOVERY PROJECT.
- 15 FPA HAS BEEN ADJUSTED 2 FOR 1 FOR THE CHANGE IN CONSUMPTIVE USE PURSUANT TO EXHIBIT F OF THE JUDGMENT.
- 16 UNUSED FPA SHOWN FOR GENON CALIFORNIA SOUTH, LP IS NOT TRANSFERRABLE PURSUANT TO THE PURCHASE AND SALE AGREEMENT WITH MOJAVE WATER AGENCY DATED SEPTEMBER 12, 2019.

APPENDIX C

SEPARATION OF FLOW COMPONENTS AT LOWER NARROWS

AND AFTON FOR 2019-20



DISCHARGE OF MOJAVE RIVER AT LOWER NARROWS,
 PRECIPITATION AT LAKE ARROWHEAD FIRE STATION #1,
 AND PRECIPITATION AT VICTORVILLE
 WATER YEAR 2019-20

MOJAVE RIVER AT LOWER NARROWS NEAR VICTORVILLE, CA

U.S.G.S. GAGING STATION NO. 10261500

WATER YEAR 2019-20

AVERAGE DAILY DISCHARGE, CUBIC FT PER SECOND

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.73	2.25	12.0	16.7	12.3	11.7	11.3	10.5	5.65	2.96	2.39	1.71
2	1.69	2.86	11.6	15.7	12.6	11.5	11.0	10.6	4.23	2.97	2.14	1.78
3	1.53	3.83	12.4	14.8	12.4	11.3	11.0	10.7	4.65	3.34	2.16	1.80
4	1.42	4.46	57.0	14.0	12.1	11.2	10.8	10.2	4.55	2.64	2.28	1.85
5	1.88	5.03	20.5	13.3	11.8	11.3	10.2	10.1	4.58	2.48	2.41	1.87
6	1.87	5.13	14.8	13.2	12.0	11.4	10.4	9.69	5.10	2.43	2.19	2.09
7	1.76	5.17	14.3	13.0	12.5	11.5	60.7	9.50	4.90	2.31	2.34	1.89
8	1.75	5.14	14.8	12.9	12.3	11.7	559	8.83	4.95	2.29	1.99	1.51
9	1.74	5.49	17.3	12.6	12.4	11.5	726	8.16	4.47	2.33	2.24	1.73
10	1.89	5.67	13.7	12.2	12.2	15.1	736	7.97	4.24	2.40	2.48	1.80
11	1.97	5.91	13.8	12.5	12.2	13.2	656	7.66	4.00	2.34	1.73	1.82
12	2.05	6.18	13.9	12.8	12.1	268	571	7.94	3.72	2.40	1.85	1.85
13	2.04	6.28	13.7	13.1	12.0	137	589	8.28	3.68	2.29	2.27	1.75
14	2.07	6.37	13.5	13.3	12.1	29.3	127	8.06	3.60	2.30	2.24	1.81
15	2.13	6.50	13.3	13.4	12.7	19.8	45.9	8.90	3.39	2.32	2.44	1.78
16	2.12	6.68	13.3	13.3	12.9	16.5	29.2	7.52	3.42	2.35	3.01	2.27
17	2.10	6.79	13.2	13.0	12.5	15.1	22.4	6.84	3.36	2.31	1.30	1.45
18	2.14	6.97	13.2	12.9	12.6	14.2	19.3	6.54	3.19	2.36	1.70	1.42
19	2.11	7.37	13.0	13.2	12.5	13.3	17.2	6.88	3.10	2.34	1.59	1.62
20	2.12	8.09	12.7	13.3	12.5	12.3	15.8	6.99	3.08	2.35	1.65	1.63
21	2.11	7.92	12.8	13.1	12.5	11.9	14.5	6.87	2.95	2.41	1.86	1.66
22	2.08	7.71	12.8	13.0	12.3	11.4	13.6	6.19	2.91	2.34	1.76	2.29
23	2.06	7.86	13.2	12.9	12.2	11.8	12.8	6.02	3.12	2.26	1.82	1.95
24	2.03	8.16	15.4	12.9	12.1	12.3	12.2	5.69	2.53	2.21	1.59	1.61
25	2.05	8.21	13.1	13.2	11.9	12.2	11.8	5.33	2.28	2.24	1.52	1.90
26	1.98	8.16	330	13.1	12.2	11.5	11.7	5.45	2.44	2.44	1.62	1.88
27	2.04	8.88	48.5	12.9	12.1	11.2	11.2	5.22	2.31	2.22	1.61	2.17
28	2.10	217	20.0	12.9	11.6	12.7	11.1	5.36	2.37	2.38	1.70	2.01
29	2.15	59.50	19.1	12.4	11.5	11.6	10.9	5.09	2.21	2.49	1.87	2.36
30	2.08	13.50	18.5	11.9		12.3	10.6	5.15	2.50	2.52	1.61	2.44
31	2.22		17.5	11.7		11.9		5.43		2.51	1.78	
TOTAL (CFS - DAYS)	61.0	459	843	409	355	788	4,360	234	107	75.5	61.1	55.7
ACRE-FEET	121	911	1,671	812	704	1,562	8,647	463	213	150	121	110

WATER YEAR TOTAL = 15,485 AC-FT

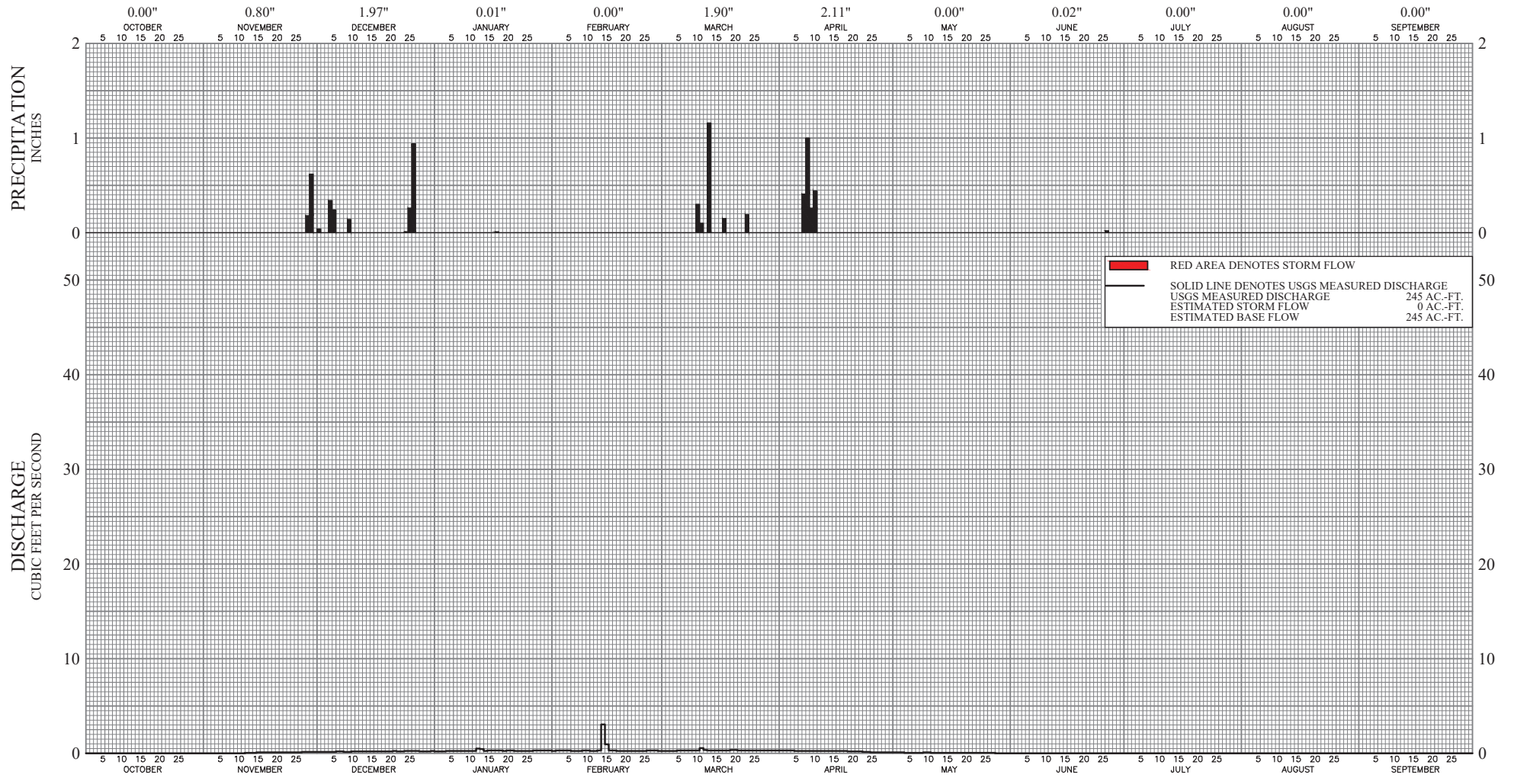
LAKE ARROWHEAD

SAN BERNARDINO COUNTY PRECIPITATION STATION 5140 - LAKE ARROWHEAD FIRE STATION #1

WATER YEAR 2019-20

PRECIPITATION, INCHES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	1.72	0.01	0.00	1.46	0.00	0.00	0.00	0.00	0.02	0.03
2	0.00	0.00	0.02	0.00	0.02	0.11	0.01	0.00	0.00	0.00	0.05	0.02
3	0.00	0.00	0.00	0.01	0.19	0.04	0.00	0.00	0.00	0.00	0.01	0.01
4	0.00	0.00	2.58	0.01	0.25	0.00	0.01	0.00	0.00	0.00	0.05	0.01
5	0.00	0.00	0.04	0.02	0.01	0.02	0.12	0.01	0.01	0.00	0.05	0.03
6	0.00	0.00	0.27	0.01	0.00	0.00	3.45	0.00	0.09	0.00	0.05	0.01
7	0.00	0.00	1.70	0.01	0.01	0.03	0.26	0.00	0.01	0.00	0.04	0.02
8	0.00	0.00	1.29	0.01	0.00	0.00	0.30	0.00	0.00	0.00	0.04	0.03
9	0.00	0.00	0.07	0.04	0.01	0.01	0.64	0.00	0.00	0.00	0.01	0.06
10	0.00	0.00	0.01	0.00	0.04	1.32	0.42	0.00	0.00	0.00	0.02	0.01
11	0.00	0.00	0.01	0.03	0.01	0.03	0.02	0.00	0.00	0.00	0.03	0.02
12	0.00	0.00	0.00	0.03	0.00	1.30	0.01	0.01	0.00	0.01	0.02	0.02
13	0.00	0.00	0.01	0.00	0.00	1.09	0.01	0.00	0.00	0.07	0.08	0.02
14	0.00	0.00	0.01	0.00	0.02	0.11	0.00	0.00	0.00	0.04	0.02	0.02
15	0.00	0.00	0.00	0.00	0.03	0.10	0.00	0.02	0.00	0.03	0.01	0.02
16	0.00	0.00	0.01	0.12	0.01	1.08	0.00	0.02	0.00	0.03	0.02	0.02
17	0.00	0.00	0.00	0.41	0.00	0.89	0.00	0.03	0.00	0.07	0.01	0.02
18	0.00	0.00	0.01	0.01	0.01	0.02	0.01	0.29	0.00	0.00	0.06	0.02
19	0.00	0.02	0.01	0.01	0.00	0.85	0.01	0.05	0.03	0.00	0.02	0.03
20	0.00	1.52	0.00	0.00	0.00	0.09	0.01	0.03	0.00	0.04	0.01	0.06
21	0.00	0.10	0.00	0.01	0.02	0.01	0.00	0.03	0.00	0.04	0.02	0.01
22	0.00	0.01	0.00	0.01	0.20	0.53	0.01	0.05	0.00	0.02	0.03	0.02
23	0.00	0.07	1.05	0.01	0.01	1.56	0.03	0.01	0.00	0.00	0.02	0.03
24	0.00	0.02	0.13	0.04	0.02	0.00	0.00	0.00	0.00	0.01	0.07	0.01
25	0.00	0.00	0.31	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.02
26	0.00	0.03	2.54	0.01	0.00	0.18	0.00	0.00	0.00	0.00	0.01	0.02
27	0.00	1.29	0.04	0.01	0.01	0.07	0.00	0.01	0.02	0.00	0.02	0.01
28	0.00	1.74	0.03	0.03	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.02
29	0.00	0.05	0.05	0.10	0.01	0.10	0.00	0.00	0.00	0.00	0.01	0.03
30	0.00	2.57	0.00	0.00		0.02	0.00	0.00	0.00	0.04	0.03	0.02
31	0.00		0.05	0.02		0.01		0.00		0.01	0.01	
TOTAL (IN)	0.00	7.42	11.96	0.98	0.88	11.04	5.33	0.56	0.16	0.44	0.86	0.67
WATER YEAR TOTAL =	40.30											



DISCHARGE OF MOJAVE RIVER AT AFTON
AND PRECIPITATION AT BARSTOW
WATER YEAR 2019-20

MOJAVE RIVER AT AFTON, CA

U.S.G.S. GAGING STATION NO. 10263000

WATER YEAR 2019-20

AVERAGE DAILY DISCHARGE, CUBIC FT PER SECOND

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.03	0.08	0.11	0.37	0.58	0.19	0.00	0.00	0.00	0.00
2	0.00	0.00	0.03	0.08	0.13	0.38	0.51	0.19	0.00	0.00	0.00	0.00
3	0.00	0.00	0.03	0.08	0.12	0.38	0.51	0.17	0.00	0.00	0.00	0.00
4	0.00	0.00	0.04	0.08	0.10	0.36	0.49	0.16	0.00	0.00	0.00	0.00
5	0.00	0.00	0.03	0.09	0.10	0.37	0.46	0.17	0.00	0.00	0.00	0.00
6	0.00	0.00	0.03	0.09	0.12	0.39	0.46	0.15	0.00	0.00	0.00	0.00
7	0.00	0.00	0.04	0.10	0.14	0.40	0.55	0.14	0.00	0.00	0.00	0.00
8	0.00	0.00	0.04	0.12	0.15	0.41	73.60	0.11	0.00	0.00	0.00	0.00
9	0.00	0.00	0.04	0.14	0.16	0.41	6.57	0.11	0.00	0.00	0.00	0.00
10	0.00	0.00	0.05	0.14	0.16	0.42	0.88	0.11	0.00	0.00	0.00	0.00
11	0.00	0.00	0.06	0.15	0.16	0.38	0.59	0.10	0.00	0.00	0.00	0.00
12	0.00	0.00	0.07	0.16	0.15	1.02	0.22	0.10	0.00	0.00	0.00	0.00
13	0.00	0.00	0.07	0.17	0.17	3.37	0.21	0.09	0.00	0.00	0.00	0.00
14	0.00	0.00	0.09	0.17	0.19	0.71	0.23	0.10	0.00	0.00	0.00	0.00
15	0.00	0.00	0.10	0.17	0.20	0.49	0.23	0.11	0.00	0.00	0.00	0.00
16	0.00	0.00	0.10	0.16	0.22	0.43	0.23	0.09	0.00	0.00	0.00	0.00
17	0.00	0.00	0.11	0.15	0.24	0.39	0.23	0.08	0.00	0.00	0.00	0.00
18	0.00	0.00	0.13	0.13	0.22	0.37	0.23	0.10	0.00	0.00	0.00	0.00
19	0.00	0.00	0.15	0.13	0.24	0.38	0.23	0.10	0.00	0.00	0.00	0.00
20	0.00	0.00	0.15	0.14	0.25	0.39	0.23	0.10	0.00	0.00	0.00	0.00
21	0.00	0.00	0.17	0.14	0.26	0.43	0.23	0.11	0.00	0.00	0.00	0.00
22	0.00	0.00	0.17	0.13	0.27	0.46	0.23	0.11	0.00	0.00	0.00	0.00
23	0.00	0.00	0.19	0.13	0.28	0.49	0.23	0.08	0.00	0.00	0.00	0.00
24	0.00	0.00	0.23	0.14	0.28	0.48	0.23	0.07	0.00	0.00	0.00	0.00
25	0.00	0.01	0.26	0.13	0.29	0.51	0.23	0.08	0.00	0.00	0.00	0.00
26	0.00	0.02	0.34	0.12	0.29	0.53	0.23	0.08	0.00	0.00	0.00	0.00
27	0.00	0.02	0.52	0.11	0.29	0.57	0.22	0.06	0.00	0.00	0.00	0.00
28	0.00	0.03	0.11	0.11	0.33	0.58	0.22	0.01	0.00	0.00	0.00	0.00
29	0.00	0.03	0.08	0.12	0.34	0.60	0.21	0.00	0.00	0.00	0.00	0.00
30	0.00	0.03	0.08	0.11	0.00	0.60	0.20	0.00	0.00	0.00	0.00	0.00
31	0.00	0.00	0.08	0.11	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL (CFS)	0.00	0.14	3.62	3.88	5.96	17.6	89.5	3.07	0.00	0.00	0.00	0.00
ACRE-FEET	0.00	0.28	7.2	7.7	11.8	35.0	177	6.09	0.00	0.00	0.00	0.00

WATER YEAR TOTAL = 245 AC-FT

BARSTOW

NOAA STATION NO. W04-0521-07

WATER YEAR 2019-20

PRECIPITATION, INCHES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.14	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.30	0.44	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	1.16	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.01	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
28	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00		0.00	0.00		0.00		0.00		0.00	0.00	
TOTAL (IN)	0.00	0.80	1.97	0.01	0.00	1.90	2.11	0.00	0.02	0.00	0.00	0.00
WATER YEAR TOTAL =	6.81											

APPENDIX D

CALCULATION OF SUBSURFACE FLOWS BETWEEN SUBAREAS

[RESERVED]

APPENDIX E

TRANSFERS OF BASE ANNUAL PRODUCTION,

FREE PRODUCTION ALLOWANCE

AND PRIOR YEAR CARRYOVER

APPENDIX E
TRANSFERS OF BASE ANNUAL PRODUCTION,
FREE PRODUCTION ALLOWANCE
AND PRIOR YEAR CARRYOVER
(ALL AMOUNTS IN ACRE-FOOT)
ESTE SUBAREA

TRANSFEROR	TRANSFER AMOUNT						TRANSFeree
	BASE ANNUAL PRODUCTION ¹	2018-19 CARRYOVER ²	2019-20 FPA ³	2018-19 CARRYOVER IN LIEU OF REPLACEMENT ⁴	2018-19 CARRYOVER IN LIEU OF MAKEUP ⁵	2019-20 FPA IN LIEU OF MAKEUP ⁶	
AHN, CHUN SOO AND DAVID				63			AHN REVOCABLE LIVING TRUST
AHN, CHUN SOO AND DAVID				9			GARDENA MISSION CHURCH, INC.
AHN, CHUN SOO AND DAVID				66			OASIS WORLD MISSION
CLUB VIEW PARTNERS				9			SAN BERNARDINO COUNTY SERVICE AREA 29
GAETA, MIGUEL AND MARIA				15			WEISER, ET AL.
MITSUBISHI CEMENT CORPORATION				34			JUNIPER RIVIERA COUNTY WATER DISTRICT
MITSUBISHI CEMENT CORPORATION				5			OMYA CALIFORNIA, INC.
MITSUBISHI CEMENT CORPORATION				124			ROBERTSON'S READY MIX
MITSUBISHI CEMENT CORPORATION				9			SPECIALTY MINERALS, INC.
PAK, KAE SOO AND MYONG HUI KANG				34			CHUNG, ET AL.
PETTIGREW, JAMES AND CHERLYN	500						AMERICA UNITED DEVELOPMENT, LLC
PETTIGREW, JAMES AND CHERLYN		400					AMERICA UNITED DEVELOPMENT, LLC
WEISER, ET AL.	90						CROWN CAMBRIA, LLC
WEST END MUTUAL WATER COMPANY				8			DESERT DAWN MUTUAL WATER COMPANY
TOTAL	590	400	0	376	0	0	

APPENDIX E
 TRANSFERS OF BASE ANNUAL PRODUCTION,
 FREE PRODUCTION ALLOWANCE
 AND PRIOR YEAR CARRYOVER
 (ALL AMOUNTS IN ACRE-FEET)
 OESTE SUBAREA

TRANSFEROR	TRANSFER AMOUNT						TRANSFEEE
	BASE ANNUAL PRODUCTION ¹	2018-19 CARRYOVER ²	2019-20 FPA ³	2018-19 CARRYOVER IN LIEU OF REPLACEMENT ⁴	2018-19 CARRYOVER IN LIEU OF MAKEUP ⁵	2019-20 FPA IN LIEU OF MAKEUP ⁶	
BROWN, SUE	46						HETTINGA REVOCABLE TRUST
BROWN, SUE		37					HETTINGA REVOCABLE TRUST
TOTAL	46	37	0	0	0	0	

APPENDIX E
TRANSFERS OF BASE ANNUAL PRODUCTION,
FREE PRODUCTION ALLOWANCE
AND PRIOR YEAR CARRYOVER
(ALL AMOUNTS IN ACRE-FEET)
ALTO SUBAREA

TRANSFEROR	TRANSFER AMOUNT						TRANSFEREE
	BASE ANNUAL PRODUCTION ¹	2018-19 CARRYOVER ²	2019-20 FPA ³	2018-19 CARRYOVER IN LIEU OF REPLACEMENT ⁴	2018-19 CARRYOVER IN LIEU OF MAKEUP ⁵	2019-20 FPA IN LIEU OF MAKEUP ⁶	
ADES, JOHN AND DEVON				25			VICTORVILLE WATER DISTRICT, ID#1
AMERICAN STATES WATER COMPANY				275			GOLDEN STATE WATER COMPANY
AMERICAN STATES WATER COMPANY				325			SAN BERNARDINO COUNTY SERVICE AREA 70J
AQUA CAPITAL MANAGEMENT, LP-INDUSTRIAL				11			VICTORVILLE WATER DISTRICT, ID#1
BASS TRUST, NEWTON T.				409			VICTORVILLE WATER DISTRICT, ID#1
BASTIANON REVOCABLE TRUST				61			VICTORVILLE WATER DISTRICT, ID#1
BEEBE, DOROTHEY K.				5			HESPERIA - GOLF COURSE, CITY OF
BEEBE, DOROTHEY K.	6						HOLY HEAVENLY LAKE, LLC
BEINSCHROTH FAMILY TRUST	250						BEINSCHROTH FAMILY TRUST
BEINSCHROTH FAMILY TRUST		192					BEINSCHROTH FAMILY TRUST
BEINSCHROTH FAMILY TRUST		200					BEINSCHROTH, ANDY ERIC
BEINSCHROTH FAMILY TRUST	250						BEINSCHROTH, ANDY ERIC
BEINSCHROTH FAMILY TRUST				60			MARIANA RANCHOS COUNTY WATER DISTRICT
BEINSCHROTH FAMILY TRUST		136					PAUSTELL, JOAN BEINSCHROTH
BEINSCHROTH FAMILY TRUST	170						PAUSTELL, JOAN BEINSCHROTH
BEINSCHROTH FAMILY TRUST				51			THUNDERBIRD COUNTY WATER DISTRICT
BEINSCHROTH FAMILY TRUST				101			VICTORVILLE WATER DISTRICT, ID#1
BEINSCHROTH, ANDY ERIC				200			VICTORVILLE WATER DISTRICT, ID#1
BOX, GEARY S. AND LAURA		13					LANGLEY, JAMES
BROWN, BOBBY G. AND VALERIA R.				33			VICTORVILLE WATER DISTRICT, ID#1
BROWN, JENNIFER		27					SPRING VALLEY LAKE ASSOCIATION
BRYANT, IAN				24			VICTORVILLE WATER DISTRICT, ID#1
BUNNELL, DICK				18			VICTORVILLE WATER DISTRICT, ID#1
CALMAT COMPANY		11					AQUA CAPITAL MANAGEMENT, LP-INDUSTRIAL
CALPORTLAND COMPANY - AGRICULTURE		515					LANGLEY, JAMES
CALPORTLAND COMPANY - ORO GRANDE PLANT		1,088					LANGLEY, JAMES - INDUSTRIAL
DLW REVOCABLE TRUST				56			VICTORVILLE WATER DISTRICT, ID#1
DOLCH LIVING TRUST ROBERT AND JUDITH	10						HELENDALE COMMUNITY SERVICES DISTRICT
DOLCH, ROBERT AND JUDY		76					SILVER LAKES ASSOCIATION
DORA LAND, INC.				12			WOOD, MICHAEL AND DENISE
FEDERAL BUREAU OF PRISONS, VICTORVILLE			378				VICTORVILLE WATER DISTRICT, ID#1
FINCH, JENIFER		24					APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT
FISCHER REVOCABLE LIVING TRUST		28					SILVER LAKES ASSOCIATION
FISHER TRUST, JEROME R.		100					ADELANTO, CITY OF

**APPENDIX E
 TRANSFERS OF BASE ANNUAL PRODUCTION,
 FREE PRODUCTION ALLOWANCE
 AND PRIOR YEAR CARRYOVER
 (ALL AMOUNTS IN ACRE-FEET)
 ALTO SUBAREA**

TRANSFEROR	TRANSFER AMOUNT						TRANSFEREE
	BASE ANNUAL PRODUCTION ¹	2018-19 CARRYOVER ²	2019-20 FPA ³	2018-19 CARRYOVER IN LIEU OF REPLACEMENT ⁴	2018-19 CARRYOVER IN LIEU OF MAKEUP ⁵	2019-20 FPA IN LIEU OF MAKEUP ⁶	
FISHER TRUST, JEROME R.		219					SILVER LAKES ASSOCIATION
FISHER TRUST, JEROME R.				188			VICTORVILLE WATER DISTRICT, ID#1
FRAZIER, ET AL.				40			VICTORVILLE WATER DISTRICT, ID#1
HAAS, BRYAN C. AND HINKLE, MARY H.				8			SAPP, ROBERT D. AND LEE, TERESA J.
HALANNA EQUITIES III				12			HESPERIA - GOLF COURSE, CITY OF
HAMILTON FAMILY TRUST		72					JAMBOREE HOUSING CORPORATION
HELENDALE COMMUNITY SERVICES DISTRICT		1,029					VICTORVILLE WATER DISTRICT, ID#1
HELENDALE COMMUNITY SERVICES DISTRICT				12			VICTORVILLE WATER DISTRICT, ID#2
HESPERIA, CITY OF		140					HESPERIA WATER DISTRICT
HESPERIA, CITY OF				3,902			HESPERIA WATER DISTRICT
HI-GRADE MATERIALS COMPANY				72			AGCON, INC.
HOLWAY JEFFREY R AND PATRICIA GAGE		7					HESPERIA WATER DISTRICT
HOLWAY, JEFFREY R		9					HESPERIA WATER DISTRICT
HUNT, CONNIE		53					HESPERIA WATER DISTRICT
JESS RANCH WATER COMPANY				326			VICTORVILLE WATER DISTRICT, ID#1
JESS RANCH WATER COMPANY				3,028			VICTORVILLE WATER DISTRICT, ID#2
JOHNSON, RONALD		25					HESPERIA WATER DISTRICT
JOHNSTON, HARRIET AND JOHNSTON, LAWRENCE W.			8				JOHNSON, CARLEAN
JOHNSTON, HARRIET AND JOHNSTON, LAWRENCE W.		99					LANGLEY, JAMES
KEMPER CAMPBELL RANCH		314					SILVER LAKES ASSOCIATION
LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT				527			ADELANTO, CITY OF
LANGLEY, JAMES				169			HESPERIA - GOLF COURSE, CITY OF
LANGLEY, JAMES				46			HESPERIA WATER DISTRICT
LANGLEY, JAMES		412					SAN BERNARDINO COUNTY SERVICE AREA 70J
LANGLEY, JAMES				18			SAN BERNARDINO COUNTY SERVICE AREA 70J
LANGLEY, JAMES				55			VICTOR VALLEY MEMORIAL PARK
LANGLEY, JAMES - INDUSTRIAL				11			AGCON, INC.
LANGLEY, JAMES - INDUSTRIAL				325			CDFW - MOJAVE NARROWS REGIONAL PARK
LANGLEY, JAMES - INDUSTRIAL				220			CEMEX, INC.
LANGLEY, JAMES - INDUSTRIAL				344			HESPERIA WATER DISTRICT
LANGLEY, JAMES - INDUSTRIAL				188			SAN BERNARDINO COUNTY - HIGH DESERT DETENTION CEN
LAWSON, ERNEST AND BARBARA				3			JOHNSON, CARLEAN
LAWSON, ERNEST AND BARBARA				1			PERRY REVOCABLE LIVING TRUST, THOMAS AND PATRICIA
LAWSON, ERNEST AND BARBARA				7			VICTORVILLE WATER DISTRICT, ID#1

APPENDIX E
TRANSFERS OF BASE ANNUAL PRODUCTION,
FREE PRODUCTION ALLOWANCE
AND PRIOR YEAR CARRYOVER
(ALL AMOUNTS IN ACRE-FEET)
ALTO SUBAREA

TRANSFEROR	TRANSFER AMOUNT						TRANSFEREE
	BASE ANNUAL PRODUCTION ¹	2018-19 CARRYOVER ²	2019-20 FPA ³	2018-19 CARRYOVER IN LIEU OF REPLACEMENT ⁴	2018-19 CARRYOVER IN LIEU OF MAKEUP ⁵	2019-20 FPA IN LIEU OF MAKEUP ⁶	
LHC ALLIGATOR, LLC			374				HESPERIA WATER DISTRICT
LOW, DEAN		160					SPRING VALLEY LAKE ASSOCIATION
LUCKEY 2010 REVOCABLE TRUST		239					SILVER LAKES ASSOCIATION
MCKINNEY, PAULA		27					HESPERIA WATER DISTRICT
NUNN FAMILY TRUST				28			VICTORVILLE WATER DISTRICT, ID#1
PAUSTELL, JOAN BEINSCHROTH				136			VICTORVILLE WATER DISTRICT, ID#1
POLICH, DONNA		52					HESPERIA WATER DISTRICT
RIM PROPERTIES, A GENERAL PARTNERSHIP				8			VICTORVILLE WATER DISTRICT, ID#1
RUE RANCH, INC.				15			ADELANTO, CITY OF
SAN BERNARDINO COUNTY SERVICE AREA 42				225			SAN BERNARDINO COUNTY SERVICE AREA 70J
SAN BERNARDINO COUNTY SERVICE AREA 64				139			SAN BERNARDINO COUNTY SERVICE AREA 70J
SCRAY, MICHELLE A. TRUST		11					LANGLEY, JAMES
STORM, RANDALL				50			ADELANTO, CITY OF
SUDMEIER, GLENN W.				15			VICTORVILLE WATER DISTRICT, ID#1
SUMMIT VALLEY RANCH, LLC				43			HESPERIA WATER DISTRICT
THOMPSON LIVING TRUST, JAMES A. AND SULA B.		75					SILVER LAKES ASSOCIATION
THOMPSON LIVING TRUST, JAMES A. AND SULA B.				256			VICTOR VALLEY COMMUNITY COLLEGE DISTRICT
THRASHER, GARY				291			VICTORVILLE WATER DISTRICT, ID#1
VANHOOPS HOLDINGS, LP				288			ADELANTO, CITY OF
VOGLER, ALBERT H.		49					SILVER LAKES ASSOCIATION
WAGNER LIVING TRUST				980			VICTORVILLE WATER DISTRICT, ID#1
WAKULA FAMILY TRUST				8			VICTORVILLE WATER DISTRICT, ID#1
WARD, KEN AND BARBARA				36			APPLE VALLEY UNIFIED SCHOOL DISTRICT
WEST, HOWARD AND SUZY		58					LANGLEY, JAMES
WEST, JIMMIE E.				7			VICTORVILLE WATER DISTRICT, ID#1
TOTAL	686	5,460	760	13,693	0	0	

**APPENDIX E
 TRANSFERS OF BASE ANNUAL PRODUCTION,
 FREE PRODUCTION ALLOWANCE
 AND PRIOR YEAR CARRYOVER
 (ALL AMOUNTS IN ACRE-Feet)**

CENTRO SUBAREA

TRANSFEROR	TRANSFER AMOUNT						TRANSFeree
	BASE ANNUAL PRODUCTION ¹	2018-19 CARRYOVER ²	2019-20 FPA ³	2018-19 CARRYOVER IN LIEU OF REPLACEMENT ⁴	2018-19 CARRYOVER IN LIEU OF MAKEUP ⁵	2019-20 FPA IN LIEU OF MAKEUP ⁶	
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT					7		APPLE VALLEY FOOTHILL COUNTY WATER DISTRICT
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT					8		APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT
AQUA CAPITAL MANAGEMENT, LP					244		ADELANTO, CITY OF
AQUA CAPITAL MANAGEMENT, LP					1		ADES, JOHN AND DEVON
AQUA CAPITAL MANAGEMENT, LP					36		APPLE VALLEY, TOWN OF
AQUA CAPITAL MANAGEMENT, LP					1		BASS TRUST, NEWTON T.
AQUA CAPITAL MANAGEMENT, LP					1		BEINSCHROTH FAMILY TRUST
AQUA CAPITAL MANAGEMENT, LP					1		BROWN, JENNIFER
AQUA CAPITAL MANAGEMENT, LP					1		CALMAT COMPANY
AQUA CAPITAL MANAGEMENT, LP						31	HESPERIA - GOLF COURSE, CITY OF
AQUA CAPITAL MANAGEMENT, LP						18	HESPERIA WATER DISTRICT
AQUA CAPITAL MANAGEMENT, LP					2		JOHNSON, CARLEAN
AQUA CAPITAL MANAGEMENT, LP					5		KEMPER CAMPBELL RANCH
AQUA CAPITAL MANAGEMENT, LP					10		PHELAN PIÑON HILLS COMMUNITY SERVICES DISTRICT
AQUA CAPITAL MANAGEMENT, LP					228		SILVER LAKES ASSOCIATION
AQUA CAPITAL MANAGEMENT, LP					163		SPRING VALLEY LAKE ASSOCIATION
AQUA CAPITAL MANAGEMENT, LP					1		THOMPSON LIVING TRUST, JAMES A. AND SULA B.
AQUA CAPITAL MANAGEMENT, LP					1		THRASHER, GARY
AQUA CAPITAL MANAGEMENT, LP					6		THUNDERBIRD COUNTY WATER DISTRICT
AQUA CAPITAL MANAGEMENT, LP					11		VICTOR VALLEY COMMUNITY COLLEGE DISTRICT
AQUA CAPITAL MANAGEMENT, LP					69		VICTORVILLE WATER DISTRICT, ID#1
AQUA CAPITAL MANAGEMENT, LP						420	VICTORVILLE WATER DISTRICT, ID#1
AQUA CAPITAL MANAGEMENT, LP						134	VICTORVILLE WATER DISTRICT, ID#2
AQUA CAPITAL MANAGEMENT, LP					2		WARD, KEN AND BARBARA
BROMMER FAMILY TRUST					13		MARIANA RANCHOS COUNTY WATER DISTRICT
BROMMER FAMILY TRUST					2		NAVAJO MUTUAL WATER COMPANY
BROMMER FAMILY TRUST					8		RANCHERITOS MUTUAL WATER COMPANY
CONTRATTO, ERSULA					120		HESPERIA WATER DISTRICT
DORRANCE, DAVID W. AND TAMELA L.						15	CALPORTLAND COMPANY - ORO GRANDE PLANT
FOURFREE USA, INC.			8				CHONG, JOAN
FOURFREE USA, INC.		34					CHONG, JOAN
FRATES, D. COLE						1	BOX, GEARY S. AND LAURA
FRATES, D. COLE						9	CALPORTLAND COMPANY - ORO GRANDE PLANT
GOLDEN STATE WATER COMPANY					2		APPLE VALLEY VIEW MUTUAL WATER COMPANY

**APPENDIX E
 TRANSFERS OF BASE ANNUAL PRODUCTION,
 FREE PRODUCTION ALLOWANCE
 AND PRIOR YEAR CARRYOVER
 (ALL AMOUNTS IN ACRE-FEET)
 CENTRO SUBAREA**

TRANSFEROR	TRANSFER AMOUNT						TRANSFeree
	BASE ANNUAL PRODUCTION ¹	2018-19 CARRYOVER ²	2019-20 FPA ³	2018-19 CARRYOVER IN LIEU OF REPLACEMENT ⁴	2018-19 CARRYOVER IN LIEU OF MAKEUP ⁵	2019-20 FPA IN LIEU OF MAKEUP ⁶	
GOLDEN STATE WATER COMPANY					43		GOLDEN STATE WATER COMPANY
GOLDEN STATE WATER COMPANY		800					HUERTA, HECTOR
GOLDEN STATE WATER COMPANY					5		SAN BERNARDINO COUNTY SERVICE AREA 42
GOLDEN STATE WATER COMPANY					200		SAN BERNARDINO COUNTY SERVICE AREA 64
GOLDEN STATE WATER COMPANY					63		SAN BERNARDINO COUNTY SERVICE AREA 70J
GOLDEN STATE WATER COMPANY		1,600					VERNOLA TRUST, PAT AND MARY ANN
HANIFY, MICHAEL D., DBA - WHITE BEAR RANCH						3	CALPORTLAND COMPANY - ORO GRANDE PLANT
HANIFY, MICHAEL D., DBA - WHITE BEAR RANCH					39		CDFW - MOJAVE NARROWS REGIONAL PARK
HANIFY, MICHAEL D., DBA - WHITE BEAR RANCH						57	CDFW - MOJAVE NARROWS REGIONAL PARK
HASKINS, JAMES J.						18	AGCON, INC.
HASKINS, JAMES J.						2	HI-GRADE MATERIALS COMPANY
HELENDALE COMMUNITY SERVICES DISTRICT						113	HELENDALE COMMUNITY SERVICES DISTRICT
HILL FAMILY TRUST AND HILL'S RANCH, INC.					114		JESS RANCH WATER COMPANY
HILL FAMILY TRUST AND HILL'S RANCH, INC.					261		LIBERTY UTILITIES (APPLE VALLEY RANCHOS WATER) COR
JORDAN FAMILY TRUST					364		HESPERIA WATER DISTRICT
KASNER FAMILY LIMITED PARTNERSHIP					69		CEMEX, INC.
KASNER FAMILY LIMITED PARTNERSHIP				4			HI-GRADE MATERIALS COMPANY
KASNER FAMILY LIMITED PARTNERSHIP					43		SPRING VALLEY LAKE COUNTRY CLUB
KIM, JIN S. AND HYUN H.					152		HESPERIA WATER DISTRICT
SOPPELAND REVOCABLE TRUST				6			BARSTOW COMMUNITY DEVELOPERS, LLC
SOPPELAND REVOCABLE TRUST					26		HESPERIA WATER DISTRICT
SOPPELAND REVOCABLE TRUST					341		LIBERTY UTILITIES (APPLE VALLEY RANCHOS WATER) COR
SOPPELAND REVOCABLE TRUST				10			SYNAGRO-WWT, INC. (DBA NURSURY PRODUCTS, LLC)
VAN DAM REVOCABLE TRUST, E AND S				124			GRILL, NICHOLAS P. AND MILLIE D.
VICTORVILLE WATER DISTRICT, ID#1						597	VICTORVILLE WATER DISTRICT, ID#1
WERNER, ANDREW J.						14	CALPORTLAND COMPANY - ORO GRANDE PLANT
WESTERN DEVELOPMENT AND STORAGE, LLC						5	CALPORTLAND COMPANY - ORO GRANDE PLANT
TOTAL	0	2,434	8	144	2,663	1,437	

**APPENDIX E
TRANSFERS OF BASE ANNUAL PRODUCTION,
FREE PRODUCTION ALLOWANCE
AND PRIOR YEAR CARRYOVER
(ALL AMOUNTS IN ACRE-FEET)**

BAJA SUBAREA

TRANSFER AMOUNT

TRANSFEROR	BASE ANNUAL PRODUCTION ¹	2018-19 CARRYOVER ²	2019-20 FPA ³	2018-19 CARRYOVER IN LIEU OF REPLACEMENT ⁴	2018-19 CARRYOVER IN LIEU OF MAKEUP ⁵	2019-20 FPA IN LIEU OF MAKEUP ⁶	TRANSFEREE
ARCHIBEK, ERIC		254					CLARK, GARY AND BETH A.
ARCHIBEK, ERIC			45				CLARK, GARY AND BETH A.
ARCHIBEK, ERIC			257				KASNER FAMILY LIMITED PARTNERSHIP
ARCHIBEK, ERIC				79			WESTERN HORIZON ASSOCIATES, INC.
ARCHIBEK, ERIC		121					WESTERN HORIZON ASSOCIATES, INC.
ARGUELLES REVOCABLE TRUST, ALFREDO A. AND ANA. M.		227					LAKE WAINANI OWNERS ASSOCIATION
ARGUELLES REVOCABLE TRUST, ALFREDO A. AND ANA. M.	647						LAKE WAINANI OWNERS ASSOCIATION
BORGOGNO REVOCABLE LIVING TRUST		646					VAN DAM FAMILY TRUST, GLEN AND JENNIFER
BORGOGNO REVOCABLE LIVING TRUST	1,844						VAN DAM FAMILY TRUST, GLEN AND JENNIFER
BREDELIS, RONALD C. AND JEAN		17					DE JONG FAMILY TRUST
CALICO JUNCTION		7					NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION
CALICO JUNCTION	20						NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION
CALICO LAKES HOMEOWNERS ASSOCIATION		85					NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION
EVERT FAMILY TRUST		35					NSSLC, INC.
GABRYCH, EUGENE				53			ROSSI, JAMES L. AND NAOMI I.
GARG, OM P.		75					NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION
GENON CALIFORNIA SOUTH, LP		1,983					MOJAVE WATER AGENCY
GENON CALIFORNIA SOUTH, LP	7,194						MOJAVE WATER AGENCY
GRAY, GEORGE F. AND BETTY E.		33					DE JONG FAMILY TRUST
HARTER, JOE AND SUE				50			DAGGETT COMMUNITY SERVICES DISTRICT
HASS, PAULINE L.		12					DE JONG FAMILY TRUST
HAWKINS, JAMES B.		299					ARCHIBEK, ERIC
HAWKINS, JAMES B.			257				ARCHIBEK, ERIC
HIETT, HARRY L.				11			DAGGETT COMMUNITY SERVICES DISTRICT
HILARIDES 1998 REVOCABLE FAMILY TRUST		105					ARCHIBEK, ERIC
HO, TING-SENG AND AH-GIT		42					NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION
HO, TING-SENG AND AH-GIT		40					NSSLC, INC.
HORTON, JOHN				62			HORTON'S CHILDREN'S TRUST
HORTON, JOHN		23					HORTON'S CHILDREN'S TRUST
HYATT, JAMES AND BRENDA		57					DE JONG FAMILY TRUST
JACKSON, JAMES N. JR REVOCABLE LIVING TRUST		5					IRVIN, BERTRAND W.
JACKSON, JAMES N. JR REVOCABLE LIVING TRUST				2			LANGLEY, MICHAEL R. AND SHARON
JACKSON, JAMES N. JR REVOCABLE LIVING TRUST				12			SMITH, DENISE DBA AMEREQUINE BEAUTY, INC
JOHNSON, JAMES R. AND ELLEN	247						IM, NICHOLAS NAK-KYUN

**APPENDIX E
TRANSFERS OF BASE ANNUAL PRODUCTION,
FREE PRODUCTION ALLOWANCE
AND PRIOR YEAR CARRYOVER
(ALL AMOUNTS IN ACRE-FOOT)**

BAJA SUBAREA

TRANSFER AMOUNT

TRANSFEROR	BASE ANNUAL PRODUCTION ¹	2018-19 CARRYOVER ²	2019-20 FPA ³	2018-19 CARRYOVER IN LIEU OF REPLACEMENT ⁴	2018-19 CARRYOVER IN LIEU OF MAKEUP ⁵	2019-20 FPA IN LIEU OF MAKEUP ⁶	TRANSFeree
JOHNSON, JAMES R. AND ELLEN		65					IM, NICHOLAS NAK-KYUN
KASNER, ROBERT				767			KASNER FAMILY LIMITED PARTNERSHIP
KIM, JOON HO AND MAL BOON REVOCABLE TRUST		24					DE JONG FAMILY TRUST
KOROGHLIAN, TED AND NAJWA		1					MUSIC, ZAJO
KOROGHLIAN, TED AND NAJWA	15						MUSIC, ZAJO
LAKE JODIE PROPERTY OWNERS ASSOCIATION				3			NEWBERRY COMMUNITY SERVICES DISTRICT
LIANG, YUAN - I AND TZU - MEI CHEN				70			SMITH, DENISE DBA AMEREQUINE BEAUTY, INC
LIN, KUAN JUNG AND CHUNG, DER-BING		158					NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION
MIZRAHIE, ET AL.		51					NSSLIC, INC.
MOJAVE WATER AGENCY			600				GENON CALIFORNIA SOUTH, LP
MORRIS TRUST, JULIA V.		107					NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION
NEW SPRINGS LIMITED PARTNERSHIP		54					ATCHISON, TOPEKA, SANTA FE RAILWAY COMPANY
NEW SPRINGS LIMITED PARTNERSHIP				14			FOOTHILL ESTATES MHP, LLC
NEW SPRINGS LIMITED PARTNERSHIP				19			MARTIN, MICHAEL D. AND ARLENE D.
NEW SPRINGS LIMITED PARTNERSHIP		23					MARTIN, MICHAEL D. AND ARLENE D.
NEW SPRINGS LIMITED PARTNERSHIP		252					NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION
NEW SPRINGS LIMITED PARTNERSHIP		35					QUIROS, FRANCISCO J. AND HERRMANN, RONALD
NEW SPRINGS LIMITED PARTNERSHIP				1			QUIROS, FRANCISCO J. AND HERRMANN, RONALD
NEW SPRINGS LIMITED PARTNERSHIP		240					ST. ANTONY COPTIC ORTHODOX MONASTERY
NEW SPRINGS LIMITED PARTNERSHIP				78			VAN BASTELAAR, ALPHONSE
NEW SPRINGS LIMITED PARTNERSHIP		100					VAN LEEUWEN, JOHN
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	3						CALICO LAKES HOMEOWNERS ASSOCIATION
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	3						CHEYENNE LAKE, INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION		84					CHEYENNE LAKE, INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	140						CHEYENNE LAKE, INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	3						CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	140						CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION		389					CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	3						LAKE JODIE PROPERTY OWNERS ASSOCIATION
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION		203					LAKE JODIE PROPERTY OWNERS ASSOCIATION
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	140						LAKE JODIE PROPERTY OWNERS ASSOCIATION
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	140						LAKE WAINANI OWNERS ASSOCIATION
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION		136					O. F. D. L., INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	3						O. F. D. L., INC.

APPENDIX E
TRANSFERS OF BASE ANNUAL PRODUCTION,
FREE PRODUCTION ALLOWANCE
AND PRIOR YEAR CARRYOVER
(ALL AMOUNTS IN ACRE-FOOT)
BAJA SUBAREA

TRANSFEROR	TRANSFER AMOUNT						TRANSFeree
	BASE ANNUAL PRODUCTION ¹	2018-19 CARRYOVER ²	2019-20 FPA ³	2018-19 CARRYOVER IN LIEU OF REPLACEMENT ⁴	2018-19 CARRYOVER IN LIEU OF MAKEUP ⁵	2019-20 FPA IN LIEU OF MAKEUP ⁶	
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	140						O. F. D. L., INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	100						SUNDOWN LAKES, INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	3						SUNDOWN LAKES, INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION		132					SUNDOWN LAKES, INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	140						WET SET, INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION		56					WET SET, INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	3						WET SET, INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	140						WLSR, INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION		106					WLSR, INC.
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	3						WLSR, INC.
PEARCE, CRAIG L.			45				ARCHIBEK, ERIC
PEARCE, CRAIG L.		50					ARCHIBEK, ERIC
PRECISION INVESTMENTS SERVICES, LLC		35					DE JONG FAMILY TRUST
VAN DAM FAMILY TRUST, GLEN AND JENNIFER				51			DAGGETT COMMUNITY SERVICES DISTRICT
TOTAL	11,071	6,367	1,204	1,272	0	0	
TOTAL - ALL SUBAREAS	12,393	14,698	1,972	15,485	2,663	1,437	

NOTES FOR APPENDIX E

- 1 TRANSFERS OF BASE ANNUAL PRODUCTION RIGHT DURING 2019-20.
- 2 TRANSFERS OF 2018-19 CARRYOVER (UNUSED FPA) FOR USE DURING 2019-20.
- 3 TRANSFERS OF 2019-20 FREE PRODUCTION ALLOWANCE FOR USE DURING 2019-20.
- 4 2018-19 CARRYOVER IN LIEU OF REPLACEMENT TRANSFERS ARE MADE ONLY FOR SATISFACTION OF REPLACEMENT WATER OBLIGATIONS INCURRED DURING 2018-19.
- 5 2018-19 CARRYOVER IN LIEU MAKEUP TRANSFERS ARE MADE ONLY FOR SATISFACTION OF MAKEUP WATER OBLIGATIONS INCURRED DURING 2018-19.
- 6 2019-20 FPA IN LIEU MAKEUP TRANSFERS ARE MADE ONLY FOR SATISFACTION OF MAKEUP WATER OBLIGATIONS INCURRED DURING 2018-19.

APPENDIX F

BALANCES IN STORAGE AGREEMENTS

APPENDIX F
STORAGE AGREEMENT ACCOUNTING AND BALANCES
2019-20 WATER YEAR
(ALL AMOUNTS IN ACRE-FEET)

STORER	STORAGE AGREEMENT				ACTIVITY				BALANCE AS OF 9/30/20
	INITIATION DATE	EXPIRATION DATE	MAXIMUM AMOUNT ¹	AMOUNT STORED AS OF 10/1/19	ADDITIONS	LOSSES ²	DISSIPATION ³	EXTRACTIONS	
VICTORVILLE WATER DISTRICT, ID#1 - INJECTION	05/23/2012	06/30/2022	13,000	1,000	0	0	0	0	1,000
VICTORVILLE WATER DISTRICT, ID#1 - PERCOLATION	07/27/2016	09/30/2028	0	7,786	0	0	0	-1,670	6,116
VICTORVILLE WATER DISTRICT, ID#1 TOTAL			13,000	8,786	0	0	0	-1,670	7,116
MOJAVE WATER AGENCY - ALTO	09/28/2016	09/28/2036	242,000	133,537	8,234	-247	0	-305	141,219
MOJAVE WATER AGENCY - BAJA	09/28/2016	09/28/2036	50,000	24,184	611	-18	0	-23	24,754
MOJAVE WATER AGENCY - CENTRO	09/28/2016	09/28/2036	35,000	24,147	501	-15	0	-11	24,622
MOJAVE WATER AGENCY - ESTE	09/28/2016	09/28/2036	7,000	1,320	0	0	0	0	1,320
MOJAVE WATER AGENCY - OESTE	09/28/2016	09/28/2036	7,000	0	0	0	0	0	0
MOJAVE WATER AGENCY TOTAL			341,000	183,188	9,346	-280	0	-339	191,915

NOTES:

- 1 VICTORVILLE WATER DISTRICT, ID#1 HAS A MAXIMUM STORAGE AMOUNT OF 13,000 ACRE-FEET COMBINED BETWEEN THE TWO STORAGE AGREEMENTS.
- 2 LOSSES INCLUDE SHRINKAGE, RECHARGE LOSSES AND MIGRATION LOSSES OR SPILLAGE AMOUNTS LOST TO BASIN DISCHARGE. LOSSES HAVE BEEN DETERMINED TO BE 3 PERCENT.
- 3 DISSIPATION INCLUDES GROUNDWATER DISSIPATED TO MOJAVE RIVER AS CALCULATED BY THE CALIFORNIA ENERGY COMMISSION AND REPORTED TO HIGH DESERT POWER PROJECT.

APPENDIX G

AUDITOR'S REPORT

AS OF JUNE 30, 2020



**Mojave Basin Area Watermaster
A Component Unit of the Mojave Water Agency**

Annual Financial Report

For the Fiscal Years Ended June 30, 2020 and 2019



**Mojave Basin Area Watermaster
Annual Financial Report
For the Fiscal Year Ended June 30, 2020 (with comparative data for 2019)**

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Financial Section



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Independent Auditor's Report

To the Board of Directors
Mojave Basin Area Watermaster
Apple Valley, California

PARTNERS

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Leena Shanbhag, CPA, MST, CGMA
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Certified Public Accountants



Report on the Financial Statements

We have audited the accompanying financial statements of the Mojave Basin Area Watermaster (the Watermaster), a component unit of the Mojave Water Agency, which comprises the statement of net position as of June 30, 2020, and the related statement of revenues, expenses and changes in net position, and cash flows for the year then ended, and the related notes to the financial statements, which collectively comprise the Watermaster's basic financial statements.

Management's Responsibility for the Financial Statements

The Watermaster's management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States and the State Controller's *Minimum Audit Requirements for California Special Districts*. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Watermaster's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Watermaster's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Watermaster as of June 30, 2020, and the changes in financial position and cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America, as well as the accounting systems prescribed by the State Controller's Office and State Regulations governing Special Districts.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Prior Year Comparative Information

We have previously audited the Agency's 2019 financial statements, and we expressed an unmodified opinion in our report dated October 22, 2019. In our opinion, the summarized comparative information presented herein as of and for the year ended June 30, 2019, is consistent, in all material respects, with the audited financial statements from which it has been derived. Such information does not include all of the information required to constitute a presentation in conformity with accounting principles generally accepted in the United States of America. Accordingly, such information should be read in conjunction with the Agency's financial statements for the year ended June 30, 2019, from which such partial information was derived.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated November 12, 2020 on our consideration of the Watermaster's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Watermaster's internal control over financial reporting and compliance.

Rogers, Anderson, Malody & Scott, LLP.

San Bernardino, California
November 12, 2020

**Mojave Basin Area Watermaster
Management's Discussion and Analysis
For the Fiscal Year Ended June 30, 2020**

The following Management's Discussion and Analysis (MD&A) of activities and financial performance of the Mojave Basin Area Watermaster (Watermaster) provides an introduction to the financial statements of the Watermaster for the fiscal years ended June 30, 2020 and 2019. The two-year presentation is provided for comparative purposes. We encourage readers to consider the information presented here in conjunction with the basic financial statements and related notes, which follow this section.

Financial Highlights

- In fiscal year 2020, the Watermaster's net position decreased 5%, or \$50,707, to \$992,442 as a result of ongoing operations. In fiscal year 2019, the Watermaster's net position decreased 24%, or \$330,410, to \$1,043,149 as a result of an increase from ongoing operations.
- In fiscal year 2020, the Watermaster's operating revenues decreased 56%, or \$773,370, to \$618,648 primarily due to a decrease in replacement assessments. In fiscal year 2019, the Watermaster's operating revenues increased 122%, or \$763,690, to \$1,392,018 primarily due to an increase in replacement assessments.
- In fiscal year 2020, the Watermaster's operating expenses decreased 59%, or \$859,079, to \$607,091 primarily due to a decrease in State Water Project importation charges. In fiscal year 2019, the Watermaster's operating expenses increased 195%, or \$968,960, to \$1,466,170 primarily due to an increase of \$808,380 in state water project importation charges and an increase of \$128,576 in administrative expenses primarily due to court proceedings in relation to ramp down.

Required Financial Statements

This annual report consists of a series of comparative financial statements. The Statement of Net Position, Statement of Revenues, Expenses, and Changes in Net Position, and Statement of Cash Flows provide information about the activities and performance of the Watermaster using accounting methods similar to those used by private sector companies for the fiscal years 2020 and 2019.

Due to the comparative nature of this report, the following financial statements include information that reflects the current year and prior year. The Statement of Net Position includes all of the Watermaster's investments in resources (assets) and obligations to creditors (liabilities). It also provides the basis for computing a rate of return, evaluating the capital structure of the Watermaster and assessing the liquidity and financial flexibility of the Watermaster. All of the current year's revenues and expenses are accounted for in the Statement of Revenues, Expenses, and Changes in Net Position. These statements measure the success of the Watermaster's operations over the past years and can be used to determine if the Watermaster has successfully recovered all of its costs through its rates and other charges. These statements can also be used to evaluate profitability and credit worthiness. The final required financial statement is the Statement of Cash Flows, which provides information about the Watermaster's cash receipts and cash payments during the reporting periods. The Statement of Cash Flows reports cash receipts, cash payments, and net changes in cash resulting from operations, investing, non-capital financing, and capital and related financing activities and provides answers to questions such as, "Where did cash come from, what was cash used for, and what was the change in cash balance during the reporting period?"

**Mojave Basin Area Watermaster
Management's Discussion and Analysis
For the Fiscal Year Ended June 30, 2020**

Financial Analysis of the Watermaster

One of the most important questions asked about the Watermaster's finances is, "Is the Watermaster better off or worse off as a result of this year's activities?" The Statement of Net Position and the Statement of Revenues, Expenses, and Changes in Net Position report information about the Watermaster in a way that helps answer this question.

These statements include all assets, deferred outflows of resources, liabilities, and deferred inflows of resources using the *accrual basis of accounting*, which is similar to the accounting method used by most private sector companies. All of the current year's revenues and expenses are taken into account regardless of when the cash is received or paid.

These two statements report the Watermaster's *net position* and changes in net position. You can think of the Watermaster's net position – the difference between assets and liabilities – as one way to measure the Watermaster's financial health, or *financial position*. Over time, *increases or decreases* in the Watermaster's net position are one indicator of whether its *financial health* is improving or deteriorating. However, one will need to consider other non-financial factors such as changes in economic conditions, population growth, zoning and new or changed government legislation, such as changes in Federal and State water quality standards.

Notes to the Basic Financial Statements

The notes provide additional information that is essential to a full understanding of the data provided in the basic financial statements.

Statements of Net Position

	Condensed Statements of Net Position			2018	Change
	2020	2019	Change		
Assets					
Current assets	\$ 1,292,559	\$ 2,199,549	\$ (906,990)	\$ 1,601,022	\$ 598,527
Non-current assets	3,015	2,397	618	-	2,397
Total assets	1,295,574	2,201,946	(906,372)	1,601,022	600,924
Liabilities					
Current liabilities	303,132	1,158,797	(855,665)	227,463	931,334
Total liabilities	303,132	1,158,797	(855,665)	227,463	931,334
Net position					
Restricted	992,442	1,043,149	(50,707)	1,373,559	(330,410)
Total net position	\$ 992,442	\$ 1,043,149	\$ (50,707)	\$ 1,373,559	\$ (330,410)

As noted earlier, net position may serve over time as a useful indicator of a government's financial position. In the case of the Watermaster, assets of the Watermaster exceeded liabilities by \$992,442 and \$1,043,149 as of June 30, 2020 and 2019, respectively, which are restricted for the Biological Resources Trust Fund, Watermaster administrative costs, replacement water, and make-up water. The sources that feed each of these funds are dictated by the Judgment. Uses of these funds can only be used for the purpose stated in the Judgment.

**Mojave Basin Area Watermaster
Management's Discussion and Analysis
For the Fiscal Year Ended June 30, 2020**

Statements of Revenues, Expenses and Changes in Net Position

Condensed Statements of Revenues, Expenses and Changes in Net Position					
	2020	2019	Change	2018	Change
Revenue:					
Operating revenues	\$ 618,648	\$ 1,392,018	\$ (773,370)	\$ 628,328	\$ 763,690
Non-operating revenues	29,164	31,125	(1,961)	17,397	13,728
Total revenues	<u>647,812</u>	<u>1,423,143</u>	<u>(775,331)</u>	<u>645,725</u>	<u>777,418</u>
Expense:					
Operating expense	607,091	1,466,170	(859,079)	497,210	968,960
Non-operating expenses	91,428	287,383	(195,955)	52,815	234,568
Total expenses	<u>698,519</u>	<u>1,753,553</u>	<u>(1,055,034)</u>	<u>550,025</u>	<u>1,203,528</u>
Change in net position	(50,707)	(330,410)	279,703	95,700	(426,110)
Net position, beginning of year	<u>1,043,149</u>	<u>1,373,559</u>	<u>(330,410)</u>	<u>1,277,859</u>	<u>95,700</u>
Net position, end of year	<u>\$ 992,442</u>	<u>\$ 1,043,149</u>	<u>\$ (50,707)</u>	<u>\$ 1,373,559</u>	<u>\$ (330,410)</u>

The statement of revenues, expenses and changes in net position show how the Watermaster's net position changed during the fiscal years. In the case of the Watermaster, net position decreased by \$50,707 for the fiscal year ended June 30, 2020, as result of ongoing operations. For the fiscal year ended June 30, 2019, net position decreased by \$330,410 as a result of ongoing operations.

A closer examination of the sources of changes in net position reveals that:

In fiscal year 2020, the Watermaster's total revenues decreased 54%, or \$775,331, to \$647,812 due to a decrease of \$810,673 in Replacement assessments which was offset by an increase of \$40,740 in Administrative and Biological assessments. In fiscal year 2019, the Watermaster's total revenues increased 120%, or \$777,418, to \$1,423,143 due to a decrease of \$45,277 in Administrative and Biological assessments which was offset by an increase of \$806,148 in Replacement assessments and \$16,167 increase in investment earnings.

In fiscal year 2020, the Watermaster's total expenses decreased 60%, or \$1,055,034, to \$698,519 due to a decrease of \$810,673 in State Water Project importation charges along with a decrease of \$195,954 in biological expenses. In fiscal year 2019, the Watermaster's total expenses increased 219%, or \$1,203,528, to \$1,753,553 due to an increase of \$808,380 in State Water Project importation charges, an increase of \$128,576 in administrative expenses primarily due to court proceedings in relation to ramp down, as well as, an increase in non-operating expenses of \$234,568 due to a withdrawal from the Biological trust fund.

Conditions Affecting Current Financial Position

Management is unaware of any conditions which could have a significant impact on the Watermaster's current financial position, net position or operating results based on past, present, and future events.

Requests for Information

This financial report is designed to provide the Watermaster's funding sources, customers, stakeholders and other interested parties with an overview of the Watermaster's financial operations and financial condition. Should the reader have questions regarding the information included in this report or wish to request additional financial information, please contact the Mojave Water Agency at 13846 Conference Center Drive, Apple Valley, CA, 92307.

Basic Financial Statements

Mojave Basin Area Watermaster
Statements of Net Position
June 30, 2020 (with comparative data for 2019)

	<u>2020</u>	<u>2019</u>
ASSETS		
Current assets:		
Restricted - cash and cash equivalents (Note 2)	\$ 1,251,717	\$ 1,319,372
Accrued interest receivable	3,014	7,865
Accounts receivable - Administrative assessments	2,777	6,593
Accounts receivable - Biological assessments	491	1,688
Accounts receivable - Replacement assessments	34,135	862,376
Accounts receivable - Make-up assessments	425	1,655
	<u>1,292,559</u>	<u>2,199,549</u>
Total current assets		
Non-current assets:		
Accounts receivable - Administrative assessments	902	1,406
Accounts receivable - Biological assessments	180	213
Accounts receivable - Replacement assessments	1,155	-
Accounts receivable - Make-up assessments	778	778
	<u>3,015</u>	<u>2,397</u>
Total non-current assets	<u>3,015</u>	<u>2,397</u>
Total assets	<u>1,295,574</u>	<u>2,201,946</u>
LIABILITIES		
Current liabilities:		
Accounts payable - Administrative	123,040	133,526
Accounts payable - Biological	91,429	138,834
Accounts payable - Replacement	82,337	876,760
Accounts payable - Make-up	6,326	9,677
	<u>303,132</u>	<u>1,158,797</u>
Total current liabilities	<u>303,132</u>	<u>1,158,797</u>
Total liabilities	<u>303,132</u>	<u>1,158,797</u>
NET POSITION		
Restricted for watermaster (Note 3)	<u>992,442</u>	<u>1,043,149</u>
Total net position	<u>\$ 992,442</u>	<u>\$ 1,043,149</u>

See accompanying notes to the basic financial statements.

Mojave Basin Area Watermaster
Statements of Revenues, Expenses, and Changes in Net Position
For the Fiscal Year Ended June 30, 2020 (with comparative data for 2019)

	<u>2020</u>	<u>2019</u>
OPERATING REVENUES		
Administrative assessments	\$ 420,611	\$ 401,915
Biological assessments	128,264	106,220
Replacement assessments	64,419	875,092
Make-up assessments	5,354	8,791
	<u>618,648</u>	<u>1,392,018</u>
Total operating revenues	<u>618,648</u>	<u>1,392,018</u>
OPERATING EXPENSES		
State Water Project importation charges:		
Replacement charges	64,419	875,092
Make-up charges	5,319	9,003
Operating costs	537,353	582,075
	<u>607,091</u>	<u>1,466,170</u>
Total operating expenses	<u>607,091</u>	<u>1,466,170</u>
Operating income (loss)	<u>11,557</u>	<u>(74,152)</u>
NONOPERATING REVENUES (EXPENSES)		
Investment earnings	25,661	28,670
Administrative revenue	3,503	2,455
Biological expense	(91,428)	(287,383)
	<u>(62,264)</u>	<u>(256,258)</u>
Total nonoperating revenues (expenses)	<u>(62,264)</u>	<u>(256,258)</u>
Change in net position	(50,707)	(330,410)
Net position, beginning of year	<u>1,043,149</u>	<u>1,373,559</u>
Net position, end of year	<u>\$ 992,442</u>	<u>\$ 1,043,149</u>

See accompanying notes to the basic financial statements.

Mojave Basin Area Watermaster
Statements of Cash Flows
For the Fiscal Year Ended June 30, 2020 (with comparative data for 2019)

	<u>2020</u>	<u>2019</u>
Cash flows from operating activities:		
Cash receipts from customers and others	\$ 1,452,514	\$ 595,374
Cash paid to vendors and suppliers	(1,195,821)	(499,215)
Cash paid to employees for salaries and wages	<u>(354,860)</u>	<u>(320,549)</u>
Net cash provided (used) by operating activities	<u>(98,167)</u>	<u>(224,390)</u>
Cash flows from investing activities:		
Investment earnings	<u>30,512</u>	<u>25,258</u>
Net cash provided by investing activities	<u>30,512</u>	<u>25,258</u>
Net increase (decrease) in cash and cash equivalents	(67,655)	(199,132)
Cash and investments, beginning of year	<u>1,319,372</u>	<u>1,518,504</u>
Cash and investments, end of year	<u>\$ 1,251,717</u>	<u>\$ 1,319,372</u>
Reconciliation to the Statement of Net Position:		
Restricted - cash and cash equivalents	<u>\$ 1,251,717</u>	<u>\$ 1,319,372</u>
Total cash and investments	<u>\$ 1,251,717</u>	<u>\$ 1,319,372</u>

(Continued on next page)

Mojave Basin Area Watermaster
Statements of Cash Flows, continued
For the Fiscal Year Ended June 30, 2020 (with comparative data for 2019)

	<u>2020</u>	<u>2019</u>
Reconciliation of operating income (loss) to net cash provided (used) by operating activities		
Operating income (loss)	\$ 11,557	\$ (74,152)
Adjustments to reconcile operating income (loss) to net cash provided (used) by operating activities:		
Nonoperating revenues	3,503	2,455
Nonoperating expenses	(91,428)	(287,383)
Changes in assets and liabilities:		
(Increase) Decrease in assets:		
Accounts receivable - Administrative assessments	4,320	(2,085)
Accounts receivable - Biological assessments	1,230	(587)
Accounts receivable - Replacement assessments	827,086	(794,585)
Accounts receivable - Make-up assessments	1,230	613
Increase (Decrease) in liabilities:		
Accounts payable - Administrative	(10,486)	34,463
Accounts payable - Biological	(47,405)	86,045
Accounts payable - Replacement	(794,423)	806,786
Accounts payable - Make-up	(3,351)	4,040
Total adjustments	<u>(109,724)</u>	<u>(150,238)</u>
Net cash provided (used) by operating activities	<u>\$ (98,167)</u>	<u>\$ (224,390)</u>
Noncash activities		
None		

See accompanying notes to the basic financial statements.

Note 1: Reporting Entity and Summary of Significant Accounting Policies

A. Organization and Operations of the Reporting Entity

The Mojave Water Agency (Agency) was organized July 21, 1960, by an act of the legislature of the State of California known as the Mojave Water Agency Act. Within the limits of its power and authority set forth in this act, the purpose of the Agency is to do any and every act necessary so that sufficient water may be available for any present or future beneficial use of lands and inhabitants of the Agency, including, but not limited to, construction, maintenance, alteration, purchase, and operation of any and all works or improvements within the Agency necessary or proper to carry out any object or purpose of this act; and the gathering of data for, and the development and implementation of, after consultation and coordination with all public and private water entities who are in any way affected, management and master plans to mitigate the cumulative overdraft of groundwater basins, to monitor the condition of the groundwater basins, to pursue all necessary water conservation measures, and to negotiate for additional water supplies from all state, federal, and local sources. The Agency is governed by a seven-member Board of Directors who serves overlapping four-year terms.

In 1994, to administer the provisions of the groundwater adjudication judgment, the Superior Court of Riverside appointed the Agency as the Mojave Basin Area Watermaster (Watermaster) and ordered the Watermaster to formulate a plan and program for management of the Basin's resources. Although the Watermaster is legally separate, it is included as a blended component unit of the Agency, as it is in substance part of the Agency's operations as it is governed by the same Board of Directors. Complete financial statements for the Agency are available at the Agency's office or upon request of the Agency at 13846 Conference Center Drive, Apple Valley, CA, 92307.

B. Basis of Accounting and Measurement Focus

The Watermaster reports its activities as an enterprise fund, which is used to account for operations that are financed and operated in a manner similar to a private business enterprise, where the intent of the Watermaster is that the costs of delivering wholesale water to its service area on a continuing basis be financed or recovered primarily through user charges (assessments). Revenues and expenses are recognized on the full accrual basis of accounting. Revenues are recognized in the accounting period in which they are earned and expenses are recognized in the period incurred, regardless of when the related cash flows take place.

Operating revenues and expenses, such as Watermaster assessments, result from exchange transactions associated with the principal activity of the Agency. Exchange transactions are those in which each party receives and gives up essentially equal values. The principal operating revenues of the Watermaster are water sales (assessments) to member water right holders. Management, administration and depreciation expenses are also considered operating expenses. Other revenues and expenses not included in the above categories are reported as non-operating revenues and expenses.

C. Financial Reporting

The Watermaster's basic financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (GAAP), as applied to enterprise funds. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and financial reporting principles. The Watermaster solely operates as a special-purpose government which means it is only engaged in business-type activities; accordingly, activities are reported in the Watermaster's proprietary fund.

Note 1: Reporting Entity and Summary of Significant Accounting Policies, continued

D. Assets, Liabilities, and Net Position

Use of Estimates

The preparation of the basic financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported changes in net position during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents

Substantially all of the Watermaster's cash is invested in interest bearing accounts. The Watermaster considers all highly liquid investments with a maturity of three months or less to be cash equivalents.

Investments

Changes in fair value that occur during a fiscal year are recognized as investment income reported for that fiscal year. Investment income includes interest earnings, changes in fair value, and any gains or losses realized upon the liquidation or sale of investments.

Fair Value Measurements

The Watermaster categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on valuation inputs used to measure the fair value of the asset, as follows:

- Level 1 – Valuation is based on quoted prices in active markets for identical assets.
- Level 2 – Valuation is based on directly observable and indirectly observable inputs. These inputs are derived principally from or corroborated by observable market data through correlation or market-corroborated inputs. The concept of market-corroborated inputs incorporates observable market data such as interest rates and yield curves that are observable at commonly quoted intervals.
- Level 3 – Valuation is based on unobservable inputs where assumptions are made based on factors such as prepayment rates, probability of defaults, loss severity and other assumptions that are internally generated and cannot be observed in the market.

Accounts Receivable and Allowance for Uncollectible Accounts

The Watermaster extends credit to customers in the normal course of operations. When management deems customer accounts uncollectible, the Watermaster uses the allowance method for the reservation and write-off of those accounts.

Note 1: Reporting Entity and Summary of Significant Accounting Policies, continued

Net Position

The financial statements utilize a net position presentation. Net position is categorized as follows:

- Net Investment in Capital Assets – This component of net position consists of capital assets, net of accumulated depreciation and reduced by any debt outstanding against the acquisition, construction or improvement of those assets.
- Restricted – This component of net position consists of constraints placed on net position use through external constraints imposed by creditors (such as through debt covenants), grantors, contributors, or laws or regulations of other governments or constraints imposed by law through constitutional provisions or enabling legislation.
- Unrestricted – This component of net position consists of net position that does not meet the definition of *restricted* net position or *net investment in capital assets*.

Note 2: Cash and Cash Equivalents

Investment in State Investment Pool

The Watermaster is a voluntary participant in the Local Agency Investment Fund (LAIF) that is regulated by the California Government Code under the oversight of the Treasurer of the State of California. The fair value of the Watermaster's investment in this pool is reported in the accompanying financial statements at amounts based upon the Agency's pro-rata share of the fair value provided by LAIF for the entire LAIF portfolio (in relation to the amortized cost of that portfolio). The balance available for withdrawal is based on the accounting records maintained by LAIF, which are recorded on an amortized cost basis.

The Watermaster's deposit and withdrawal restrictions and limitations are as follows:

- Same day transaction processing occurs for orders received before 10:00 a.m.
- Next day transactions processing occurs for orders received after 10:00 a.m.
- Maximum limit of 15 transactions (combination of deposits and withdrawals) per month.
- Minimum transaction amount requirement of \$5,000, in increments of a \$1,000 dollars.
- Withdrawals of \$10,000,000 or more require 24 hours advance notice.
- Prior to funds transfer, an authorized person must call LAIF to do a verbal transaction.

Mojave Basin Area Watermaster
Notes to the Financial Statements
For the Fiscal Year Ended June 30, 2020 (with comparative data for 2019)

Note 2: Cash and Cash Equivalents, continued

Custodial Credit Risk

Custodial credit risk for *deposits* is the risk that, in the event of the failure of a depository financial institution, a government will not be able to recover its deposits or will not be able to recover collateral securities that are in the possession of an outside party. The California Government Code and the Watermaster's investment policy does not contain legal or policy requirements that would limit the exposure to custodial credit risk for deposits, other than the following provision for deposits:

The California Government Code requires that a financial institution secure deposits made by state or local governmental units by pledging securities in an undivided collateral pool held by a depository regulated under state law (unless so waived by the governmental unit). The market value of the pledged securities in the collateral pool must equal at least 110% of the total amount deposited by the public agencies. Of the bank balances, up to \$250,000 is federally insured and the remaining balance is collateralized in accordance with the Code; however, the collateralized securities are not held in the Watermaster's name.

Cash and cash equivalents as of June 30, are classified in the accompanying financial statements as follows:

	<u>2020</u>	<u>2019</u>
Restricted - cash and cash equivalents:		
Administrative	\$ 127,923	\$ 235,918
Biological resources trust	681,841	679,930
Replacement water	432,247	391,835
Make-up water	9,706	11,689
	<u>\$ 1,251,717</u>	<u>\$ 1,319,372</u>

Cash and cash equivalents as of June 30, consist of the following:

	<u>2020</u>	<u>2019</u>
Demand deposits with financial institutions	\$ 354,189	\$ 192,357
Local Agency Investment Fund (LAIF)	897,528	1,127,015
	<u>\$ 1,251,717</u>	<u>\$ 1,319,372</u>

At June 30, the Watermaster's authorized deposits had the following maturities:

	<u>2020</u>	<u>2019</u>
Deposits held with California Local Agency Investment Fund (LAIF)	191 days	173 days

The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty (e.g., broker-dealer) to a transaction, a government will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The Code and the Watermaster's investment policy contain legal and policy requirements that would limit the exposure to custodial credit risk for investments. With respect to investments, custodial credit risk generally applies only to direct investments in marketable securities. Custodial credit risk does not apply to a local government's indirect investment in securities through the use of mutual funds or government investment pools (such as LAIF).

Mojave Basin Area Watermaster
Notes to the Financial Statements
For the Fiscal Year Ended June 30, 2020 (with comparative data for 2019)

Note 2: Cash and Investments, continued

Interest Rate Risk

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment the greater the sensitivity of its fair value to changes in market interest rates. One of the ways that the Watermaster manages its exposure to interest rate risk is by purchasing a combination of shorter term and longer term investments and by timing cash flows from maturities so that a portion of the portfolio matures or comes close to maturity evenly over time as necessary to provide for cash flow requirements and liquidity needed for operations.

Credit Risk

Credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. This is measured by the assignment of a rating by a nationally recognized statistical rating organization. LAIF is not rated.

Concentration of Credit Risk

The investment policy of the Watermaster contains no limitations on the amount that can be invested in any one issuer beyond that stipulated by the California Government Code. At June 30, 2020 and 2019, the Watermaster did not hold any investments in any one issuer (other than external pools) that represent 5% or more of total Watermaster investments.

Note 3: Net Position

Calculation of net position as of June 30, was as follows:

	<u>2020</u>	<u>2019</u>
Restricted net position:		
Administrative	\$ 11,576	\$ 118,257
Biological resources trust	591,083	542,998
Replacement water	385,200	377,451
Make-up water	4,583	4,443
	<u>992,442</u>	<u>1,043,149</u>
Total restricted net position	<u>\$ 992,442</u>	<u>\$ 1,043,149</u>

Mojave Basin Area Watermaster
Notes to the Financial Statements
For the Fiscal Year Ended June 30, 2020 (with comparative data for 2019)

Note 4: Risk Management

The Watermaster is exposed to various risks of loss related to torts, theft of, damage to and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The Watermaster is a member of the Association of California Water Agencies/Joint Powers Insurance Authority (ACWA/JPIA), an intergovernmental risk sharing joint powers authority created to provide self-insurance programs for California water agencies. The purpose of the ACWA/JPIA is to arrange and administer programs of self-insured losses and to purchase excess insurance coverage.

At June 30, 2020, the Watermaster participates in the ACWA/JPIA pooled programs for liability, and property programs as follows:

- General and auto liability, public officials and employees' errors and omissions: Total risk financing self-insurance limits of \$5,000,000 per occurrence. The ACWA/JPIA purchased additional excess coverage layers: \$55 million for general, auto and public officials liability, which increases the limits on the insurance coverage noted above.

In addition, the Watermaster also has the following insurance coverage:

- Crime coverage up to \$100,000 per loss includes public employee dishonesty, depositor's forgery or alteration, theft, computer and funds transfer fraud coverage's, subject to \$1,000 deductible per loss.
- Property loss is paid at the replacement cost for property on file, if replaced within two years after the loss, otherwise paid on an actual cash value basis, to a combined total of \$150 million per loss, subject to a \$1,000 deductible per loss. Mobile equipment and vehicles, on file, are paid on actual cost value basis at time of loss and subject to \$1,000 deductible per loss.
- Boiler and machinery coverage for the replacement cost up to \$150 million per occurrence, subject to various deductibles depending on the type of equipment, on file.

The Watermaster has purchased workers' compensation insurance coverage for injuries to employees through the Special District Risk Management Association (SDRMA), an intergovernmental risk sharing joint powers authority created to provide self-insurance programs for California special districts. The purpose of the SDRMA is to arrange and administer programs of self-insured losses and to purchase excess insurance coverage. At June 30, 2020, the Watermaster participated in the workers' compensation programs of the SDRMA as follows:

- Workers' compensation coverage up to California statutory limits for all work related injuries/illnesses covered by California law and employers liability limit of \$5,000,000 per occurrence.

Settled claims have not exceeded any of the coverage amounts in any of the last three fiscal years and there were no reductions in the Watermaster's insurance coverage during the years ending June 30, 2020, 2019 and 2018. Liabilities are recorded when it is probable that a loss has been incurred and the amount of the loss can be reasonably estimated net of the respective insurance coverage. Liabilities include an amount for claims that have been incurred but not reported (IBNR). There were no IBNR claims payable as of June 30, 2020, 2019, and 2018, respectively.

Mojave Basin Area Watermaster
Notes to the Financial Statements
For the Fiscal Year Ended June 30, 2020 (with comparative data for 2019)

Note 5: Litigation

In the ordinary course of operations, the Watermaster is subject to claims and litigation from outside parties. After consultation with legal counsel, the Watermaster believes the ultimate outcome of such matters, if any, will not materially affect its financial condition.

Note 6: Contingencies

COVID-19 Considerations

On March 11, 2020, the World Health Organization declared the novel strain of coronavirus (COVID-19) a global pandemic and recommended containment and mitigation measures worldwide. The COVID-19 outbreak in the United States has caused business disruption through mandated and voluntary closings of businesses and shelter in place orders for all but those deemed essential services. While the business disruption is currently expected to be temporary, there is considerable uncertainty around the duration of the closings and shelter in place orders. As a result, the outbreak has caused uncertainty in the financial markets. The Watermaster is carefully monitoring the situation and evaluating its options during this time. It is possible that this matter may negatively impact the Watermaster, however, the ultimate financial impact and duration cannot be estimated at this time, and no adjustments have been made to these financial statements as a result of this uncertainty.

Report on Internal Controls and Compliance



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**REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING
AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN
AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE
WITH GOVERNMENT AUDITING STANDARDS**

Independent Auditor's Report

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Evelyn Morentin-Barcena, CPA
Veronica Hernandez, CPA
Tara R. Thorp, CPA, MSA
Laura Arvizu, CPA
Louis Fernandez, CPA
Abigail Hernandez Conde, CPA, MSA
Zoe Xinlu Zhang, CPA, MSA

MEMBERS

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Certified Public Accountants

Board of Directors
Mojave Basin Area Watermaster
Apple Valley, California

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Mojave Basin Area Watermaster (the Watermaster) as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the Watermaster's basic financial statements, and have issued our report thereon dated November 12, 2020.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Watermaster's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Watermaster's internal control. Accordingly, we do not express an opinion on the effectiveness of the Watermaster's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. *A material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. *A significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control over financial reporting that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.



Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Watermaster's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Rogers, Anderson, Malody & Scott, LLP.

San Bernardino, California
November 12, 2020

APPENDIX H

FREE PRODUCTION ALLOWANCE FOR WATER YEAR 2020-21

AND PROPOSED FREE PRODUCTION ALLOWANCE

FOR WATER YEAR 2021-22

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FREE PRODUCTION ALLOWANCE FOR WATER YEAR 2020-21
AND
PROPOSED FREE PRODUCTION ALLOWANCE FOR WATER YEAR 2021-22
(ALL AMOUNTS IN ACRE-FEET)

ESTE SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	CARRYOVER FROM PREVIOUS YEAR	2020-21 FREE PRODUCTION ALLOWANCE ¹			2021-22 FREE PRODUCTION ALLOWANCE ²	
			ACRE-FEET	PERCENTAGE OF BAP	TOTAL	ACRE-FEET	PERCENTAGE OF BAP
ABDUL, HARRY AND ANITA	194	146	136	70%	282	127	65%
ABSHIRE, DAVID V.	24	2	17	70%	19	16	65%
AHN REVOCABLE LIVING TRUST	0	0	0	70%	0	0	65%
AHN REVOCABLE TRUST	28	21	20	70%	41	19	65%
AHN, CHUN SOO AND DAVID	400	300	280	70%	580	260	65%
AMERICA UNITED DEVELOPMENT, LLC (FORMERLY: PETTIGREW, JAMES AND CHERLYN)	500	375	350	70%	725	325	65%
ANDERSON, ROSS C. AND BETTY J.	34	26	24	70%	50	23	65%
AVILA, ANGEL AND EVALIA	573	430	402	70%	832	373	65%
BAR H MUTUAL WATER COMPANY	53	40	38	70%	78	35	65%
BELL, CHARLES H. TRUST DATED MARCH 7, 2014	494	371	346	70%	717	322	65%
BRACHT, WILLIAM F. AND ALEXANDER, ALICIA M.	50	24	35	70%	59	33	65%
CASA COLINA FOUNDATION	90	68	63	70%	131	59	65%
CENTER WATER COMPANY	40	30	28	70%	58	26	65%
CHUNG, ET AL.	0	0	0	70%	0	0	65%
CLUB VIEW PARTNERS	1,276	957	894	70%	1,851	830	65%
CROSS, SHARON I.	23	18	17	70%	35	15	65%
CROWN CAMBRIA, LLC (FORMERLY: WEISER, ET AL.)	90	64	63	70%	127	59	65%
DACOSTA, DEAN EDWARD	56	42	40	70%	82	37	65%
DAHLQUIST, GEORGE R.	524	393	367	70%	760	341	65%
DESERT DAWN MUTUAL WATER COMPANY	15	0	11	70%	11	10	65%
DESERT SPRINGS MUTUAL WATER COMPANY	78	59	55	70%	114	51	65%
GABRYCH, EUGENE	2,201	1,651	1,541	70%	3,192	1,431	65%
GAETA, MIGUEL AND MARIA	1,500	1,125	1,050	70%	2,175	975	65%
GAETA, TRINIDAD	512	384	359	70%	743	333	65%
GARDENA MISSION CHURCH, INC.	0	0	0	70%	0	0	65%
GAYJIKIAN, SAMUEL AND HAZEL	102	77	72	70%	149	67	65%
GOLDEN STATE WATER COMPANY	178	126	125	70%	251	116	65%

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AND
PROPOSED FREE PRODUCTION ALLOWANCE FOR WATER YEAR 2021-22
(ALL AMOUNTS IN ACRE-FEET)

ESTE SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	2020-21 FREE PRODUCTION ALLOWANCE ¹				2021-22 FREE PRODUCTION ALLOWANCE ²	
		CARRYOVER FROM PREVIOUS YEAR	FREE PRODUCTION ALLOWANCE		TOTAL	ACRE-FEET	PERCENTAGE OF BAP
			ACRE-FEET	PERCENTAGE OF BAP			
GORDON ACRES WATER COMPANY	54	41	38	70%	79	36	65%
GUBLER, HANS	30	23	21	70%	44	20	65%
HARVEY, LISA M.	300	225	210	70%	435	195	65%
HERT, SCOTT	276	207	194	70%	401	180	65%
HI-GRADE MATERIALS COMPANY	442	332	310	70%	642	288	65%
HITCHIN LUCERNE, INC.	16	12	12	70%	24	11	65%
JONES TRUST DATED MARCH 16, 2002	89	67	63	70%	130	58	65%
JUBILEE MUTUAL WATER COMPANY	142	40	100	70%	140	93	65%
JUNIPER RIVIERA COUNTY WATER DISTRICT	37	0	26	70%	26	25	65%
KIM, JU SANG	30	23	21	70%	44	20	65%
LEE, ANNA K. AND ESHBAN K.	33	25	24	70%	49	22	65%
LEE, DOO HWAN	78	59	55	70%	114	51	65%
LOPEZ, BALTAZAR	385	289	270	70%	559	251	65%
LUA, MICHAEL T. AND DONNA S.	348	261	244	70%	505	227	65%
LUCERNE VALLEY MUTUAL WATER COMPANY	54	41	38	70%	79	36	65%
LUCERNE VALLEY PARTNERS	1,213	910	850	70%	1,760	789	65%
LUCERNE VISTA MUTUAL WATER COMPANY	21	15	15	70%	30	14	65%
M.B. LANDSCAPING AND NURSERY, INC.	1,773	1,330	1,242	70%	2,572	1,153	65%
MITSUBISHI CEMENT CORPORATION	1,395	1,047	977	70%	2,024	907	65%
MONACO INVESTMENT COMPANY	70	53	49	70%	102	46	65%
MOSS, LAWRENCE W. AND HELEN J.	43	33	31	70%	64	28	65%
NORRIS TRUST, MARY ANN	73	55	52	70%	107	48	65%
OASIS WORLD MISSION	0	0	0	70%	0	0	65%
OMYA CALIFORNIA, INC.	23	0	17	70%	17	15	65%
PAK, KAE SOO AND MYONG HUI KANG	247	186	173	70%	359	161	65%
PETTIGREW, DAN	22	17	16	70%	33	15	65%
REED, MIKE	58	44	41	70%	85	38	65%
RHEE, ANDREW N.	70	53	49	70%	102	46	65%

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 (ALL AMOUNTS IN ACRE-FEET)

ESTE SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	CARRYOVER FROM PREVIOUS YEAR	2020-21 FREE PRODUCTION ALLOWANCE ¹			2021-22 FREE PRODUCTION ALLOWANCE ²	
			ACRE-FEET	PERCENTAGE OF BAP	TOTAL	ACRE-FEET	PERCENTAGE OF BAP
ROBERTSON'S READY MIX	0	0	0	70%	0	0	65%
ROYAL WAY	200	150	140	70%	290	130	65%
S AND E 786 ENTERPRISES, LLC	597	448	418	70%	866	389	65%
SABA FAMILY TRUST DATED JULY 24, 2018	1,120	840	784	70%	1,624	728	65%
SAN BERNARDINO COUNTY SERVICE AREA 29	40	0	28	70%	28	26	65%
SON'S RANCH	140	105	98	70%	203	91	65%
SPECIALTY MINERALS, INC.	42	0	30	70%	30	28	65%
SPILLMAN, JAMES R. AND NANCY J.	23	18	17	70%	35	15	65%
THE CUSHENBURY TRUST, C/O SPECIALTY MINERALS, INC.	10	8	7	70%	15	7	65%
WEST END MUTUAL WATER COMPANY	30	22	21	70%	43	20	65%
WILSHIRE ROAD PARTNERS	692	519	485	70%	1,004	450	65%
TOTAL	19,251	14,227	13,499		27,726	12,540	

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OESTE SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	CARRYOVER FROM PREVIOUS YEAR	2020-21 FREE PRODUCTION ALLOWANCE ¹			2021-22 FREE PRODUCTION ALLOWANCE ²	
			ACRE-FEET	PERCENTAGE OF BAP	TOTAL	ACRE-FEET	PERCENTAGE OF BAP
AEROCHEM, INC.	660	495	429	65%	924	396	60%
CHAMISAL MUTUAL WATER COMPANY	96	72	63	65%	135	58	60%
HANDRINOS, NICOLE A.	7	6	5	65%	11	5	60%
HETTINGA REVOCABLE TRUST	1,302	583	847	65%	1,430	782	60%
PHELAN PIÑON HILLS COMMUNITY SERVICES DISTRICT (SEE NOTE 3)	4,680	3,510	3,042	65%	6,552	2,808	60%
TROEGER FAMILY TRUST, RICHARD H.	112	84	73	65%	157	68	60%
TOTAL	6,857	4,750	4,459		9,209	4,117	

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ALTO SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	CARRYOVER FROM PREVIOUS YEAR	2020-21 FREE PRODUCTION ALLOWANCE ¹			2021-22 FREE PRODUCTION ALLOWANCE ²	
			FREE PRODUCTION ALLOWANCE		TOTAL	ACRE-FEET	PERCENTAGE OF BAP
			ACRE-FEET	PERCENTAGE OF BAP			
ADELANTO, CITY OF	5,182	0	2,851	55%	2,851	2,851	55%
ADES, JOHN AND DEVON	37	24	25	65%	49	23	60%
AGCON, INC.	384	0	212	55%	212	212	55%
AMERICAN STATES WATER COMPANY	1,000	550	550	55%	1,100	550	55%
APPLE VALLEY FOOTHILL COUNTY WATER DISTRICT	167	37	92	55%	129	92	55%
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT	125	0	69	55%	69	69	55%
APPLE VALLEY UNIFIED SCHOOL DISTRICT	0	0	0	55%	0	0	55%
APPLE VALLEY VIEW MUTUAL WATER COMPANY	36	0	20	55%	20	20	55%
APPLE VALLEY, TOWN OF	1,082	596	596	55%	1,192	596	55%
BASS TRUST, NEWTON T.	514	382	335	65%	717	309	60%
BASTIANON REVOCABLE TRUST	77	57	51	65%	108	47	60%
BEINSCHROTH FAMILY TRUST	275	204	179	65%	383	165	60%
BEINSCHROTH, ANDY ERIC	250	187	163	65%	350	150	60%
BOX, GEARY S. AND LAURA	22	11	15	65%	26	14	60%
BROWN, BOBBY G. AND VALERIA R.	42	31	28	65%	59	26	60%
BROWN, JENNIFER	41	26	27	65%	53	25	60%
BRUNEAU, KAREN	10	8	7	65%	15	6	60%
BRYANT, IAN	29	22	19	65%	41	18	60%
BUNNELL, DICK	24	16	16	65%	32	15	60%
CALMAT COMPANY	25	10	14	55%	24	14	55%
CALPORTLAND COMPANY - AGRICULTURE	643	483	418	65%	901	386	60%
CALPORTLAND COMPANY - ORO GRANDE PLANT	2,809	584	1,545	55%	2,129	1,545	55%
CDFW - MOJAVE NARROWS REGIONAL PARK	2,107	0	1,159	55%	1,159	1,159	55%
CDFW - MOJAVE RIVER FISH HATCHERY	20	0	13	65%	13	12	60%
CEMEX, INC.	1,499	0	825	55%	825	825	55%
DLW REVOCABLE TRUST	70	53	46	65%	99	42	60%
DOLCH LIVING TRUST ROBERT AND JUDITH	90	67	59	65%	126	54	60%
DORA LAND, INC.	15	12	10	65%	22	9	60%

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ALTO SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	CARRYOVER FROM PREVIOUS YEAR	2020-21 FREE PRODUCTION ALLOWANCE ¹			2021-22 FREE PRODUCTION ALLOWANCE ²	
			ACRE-FEET	PERCENTAGE OF BAP	TOTAL	ACRE-FEET	PERCENTAGE OF BAP
EAST DESERT LAND COMPANY, LLC (SEE NOTE 4)	0						
EVENSON, EDWIN H. AND JOYCELAINE C.	70	53	46	65%	99	42	60%
FEDERAL BUREAU OF PRISONS, VICTORVILLE	686	0	378	55%	378	378	55%
FINCH, JENIFER	30	23	20	65%	43	18	60%
FISCHER REVOCABLE LIVING TRUST	36	26	24	65%	50	22	60%
FISHER TRUST, JEROME R.	633	475	412	65%	887	380	60%
FITZWATER, R. E. (SEE NOTE 4)	291						
FRAZIER, ET AL.	50	38	33	65%	71	30	60%
GOLDEN STATE WATER COMPANY	940	0	517	55%	517	517	55%
GREEN ACRES ESTATES	25	14	14	55%	28	14	55%
GULBRANSON, MERLIN	5	4	4	65%	8	3	60%
HAAS, BRYAN C. AND HINKLE, MARY H.	9	7	6	65%	13	6	60%
HALANNA EQUITIES III	19	6	13	65%	19	12	60%
HAMILTON FAMILY TRUST	108	65	71	65%	136	65	60%
HELENDALE COMMUNITY SERVICES DISTRICT	4,009	650	2,205	55%	2,855	2,205	55%
HELENDALE SCHOOL DISTRICT	18	10	10	55%	20	10	55%
HESPERIA - GOLF COURSE, CITY OF	678	0	373	55%	373	373	55%
HESPERIA VENTURE I, LLC	0	0	0	65%	0	0	60%
HESPERIA WATER DISTRICT	14,171	0	7,795	55%	7,795	7,795	55%
HESPERIA, CITY OF	6,736	3,705	3,705	55%	7,410	3,705	55%
HI-GRADE MATERIALS COMPANY	149	60	82	55%	142	82	55%
HOLWAY JEFFREY R AND PATRICIA GAGE	8	6	6	65%	12	5	60%
HOLWAY, JEFFREY R	11	9	8	65%	17	7	60%
HOLY HEAVENLY LAKE, LLC (FORMERLY: BEEBE, DOROTHEY K.)	6	5	4	65%	9	4	60%
HUNT, CONNIE	66	50	43	65%	93	40	60%
JAMBOREE HOUSING CORPORATION	0	0	0	55%	0	0	55%

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ALTO SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	2020-21 FREE PRODUCTION ALLOWANCE ¹				2021-22 FREE PRODUCTION ALLOWANCE ²	
		CARRYOVER FROM PREVIOUS YEAR	FREE PRODUCTION ALLOWANCE		TOTAL	ACRE-FEET	PERCENTAGE OF BAP
			ACRE-FEET	PERCENTAGE OF BAP			
JESS RANCH WATER COMPANY	7,230	2,593	3,977	55%	6,570	3,977	55%
JOHNSON, CARLEAN	23	0	15	65%	15	14	60%
JOHNSON, RONALD	31	24	21	65%	45	19	60%
JOHNSTON, HARRIET AND JOHNSTON, LAWRENCE W.	127	82	83	65%	165	77	60%
KANESAKA, KENJI AND YUKARI	0	0	0	65%	0	0	60%
KEMPER CAMPBELL RANCH	473	296	308	65%	604	284	60%
LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT	658	494	428	65%	922	395	60%
LANGLEY, JAMES	5	4	4	65%	8	3	60%
LANGLEY, JAMES - INDUSTRIAL	0	0	0	55%	0	0	55%
LAWSON, ERNEST AND BARBARA	15	11	10	65%	21	9	60%
LENHERT, RONALD AND TONI	37	28	25	65%	53	23	60%
LHC ALLIGATOR, LLC	498	0	324	65%	324	299	60%
LIBERTY UTILITIES (APPLE VALLEY RANCHOS WATER) CORP.	13,610	1,874	7,486	55%	9,360	7,486	55%
LOW, DEAN	199	150	130	65%	280	120	60%
LUCKEY 2010 REVOCABLE TRUST	300	224	195	65%	419	180	60%
MARIANA RANCHOS COUNTY WATER DISTRICT	270	0	149	55%	149	149	55%
MCKINNEY, PAULA	33	25	22	65%	47	20	60%
MLH, LLC	13	6	9	65%	15	8	60%
MOJAVE DESERT LAND TRUST	40	30	26	65%	56	24	60%
MOJAVE WATER AGENCY	0	0	0	55%	0	0	55%
NAVAJO MUTUAL WATER COMPANY	88	49	49	55%	98	49	55%
NUÑEZ, LUIS SEGUNDO	0	0	0	65%	0	0	60%
NUNN FAMILY TRUST	36	26	24	65%	50	22	60%
ORO GRANDE SCHOOL DISTRICT	107	24	59	55%	83	59	55%
PAUSTELL, JOAN BEINSCHROTH	170	128	111	65%	239	102	60%
PERRY REVOCABLE LIVING TRUST, THOMAS AND PATRICIA	0	0	0	65%	0	0	60%
PHELAN PIÑON HILLS COMMUNITY SERVICES DISTRICT	355	196	196	55%	392	196	55%
PITTMAN REVOCABLE TRUST, DIANA J.	148	111	97	65%	208	89	60%

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ALTO SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	CARRYOVER FROM PREVIOUS YEAR	2020-21 FREE PRODUCTION ALLOWANCE ¹			2021-22 FREE PRODUCTION ALLOWANCE ²	
			FREE PRODUCTION ALLOWANCE		TOTAL	ACRE-FEET	PERCENTAGE OF BAP
			ACRE-FEET	PERCENTAGE OF BAP			
POLICH, DONNA	65	49	43	65%	92	39	60%
RANCHERITOS MUTUAL WATER COMPANY	169	0	93	55%	93	93	55%
RIM PROPERTIES, A GENERAL PARTNERSHIP	9	7	6	65%	13	6	60%
RUE RANCH, INC.	30	16	20	65%	36	18	60%
SAN BERNARDINO COUNTY - HIGH DESERT DETENTION CENTER	0	0	0	55%	0	0	55%
SAN BERNARDINO COUNTY SERVICE AREA 42	465	198	256	55%	454	256	55%
SAN BERNARDINO COUNTY SERVICE AREA 64	3,822	0	2,103	55%	2,103	2,103	55%
SAN BERNARDINO COUNTY SERVICE AREA 70J	1,015	0	559	55%	559	559	55%
SCRAY, MICHELLE A. TRUST	15	11	10	65%	21	9	60%
SERVICE ROCK PRODUCTS CORPORATION	20	11	11	55%	22	11	55%
SHEEP CREEK WATER COMPANY	0	0	0	55%	0	0	55%
SILVER LAKES ASSOCIATION	4,987	242	2,743	55%	2,985	2,743	55%
SNOWBALL DEVELOPMENT, INC.	0	0	0	65%	0	0	60%
SPRING VALLEY LAKE ASSOCIATION	3,768	0	2,073	55%	2,073	2,073	55%
SPRING VALLEY LAKE COUNTRY CLUB	977	46	538	55%	584	538	55%
STORM, RANDALL	62	47	41	65%	88	38	60%
SUDMEIER, GLENN W.	20	14	13	65%	27	12	60%
SUMMIT VALLEY RANCH, LLC	57	35	38	65%	73	35	60%
THOMPSON LIVING TRUST, JAMES A. AND SULA B.	418	311	272	65%	583	251	60%
THOMPSON LIVING TRUST, R.L. AND R.A.	2	2	2	65%	4	2	60%
THRASHER, GARY	373	275	243	65%	518	224	60%
THUNDERBIRD COUNTY WATER DISTRICT	118	0	65	55%	65	65	55%
TRANSAMERICA FIN'L SVC - SPEARS, LARRY B. AND ERLINDA	26	20	17	65%	37	16	60%
VANHOOPS HOLDINGS, LP	360	269	234	65%	503	216	60%
VICTOR VALLEY COMMUNITY COLLEGE DISTRICT	240	0	132	55%	132	132	55%
VICTOR VALLEY MEMORIAL PARK	0	0	0	55%	0	0	55%
VICTORVILLE WATER DISTRICT, ID#1	23,020	0	12,661	55%	12,661	12,661	55%
VICTORVILLE WATER DISTRICT, ID#2	2,932	0	1,613	55%	1,613	1,613	55%

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PRODUCER	BASE ANNUAL PRODUCTION	2020-21 FREE PRODUCTION ALLOWANCE ¹				2021-22 FREE PRODUCTION ALLOWANCE ²	
		CARRYOVER FROM PREVIOUS YEAR	FREE PRODUCTION ALLOWANCE		TOTAL	ACRE-FEET	PERCENTAGE OF BAP
			ACRE-FEET	PERCENTAGE OF BAP			
VOGLER, ALBERT H.	62	46	41	65%	87	38	60%
WAGNER LIVING TRUST	1,224	918	796	65%	1,714	735	60%
WAKULA FAMILY TRUST	11	8	8	65%	16	7	60%
WARD, KEN AND BARBARA	65	35	43	65%	78	39	60%
WEST, HOWARD AND SUZY	72	54	47	65%	101	44	60%
WEST, JIMMIE E.	10	7	7	65%	14	6	60%
WESTERN WATER COMPANY	15	12	10	65%	22	9	60%
WESTLAND INDUSTRIES, INC.	54	30	30	55%	60	30	55%
WIENER, MELVIN AND MARIAM S.	30	17	17	55%	34	17	55%
WOOD, MICHAEL AND DENISE	0	0	0	65%	0	0	60%
TOTAL	114,308	17,621	63,646		81,267	63,189	

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(ALL AMOUNTS IN ACRE-FEET)

CENTRO SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	CARRYOVER FROM PREVIOUS YEAR	2020-21 FREE PRODUCTION ALLOWANCE ¹			2021-22 FREE PRODUCTION ALLOWANCE ²	
			FREE PRODUCTION ALLOWANCE		TOTAL	ACRE-FEET	PERCENTAGE OF BAP
			ACRE-FEET	PERCENTAGE OF BAP			
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT	29	22	21	70%	43	19	65%
AQUA CAPITAL MANAGEMENT LP	2,106	977	1,475	70%	2,452	1,369	65%
ATCHISON, TOPEKA, SANTA FE RAILWAY COMPANY	120	90	84	70%	174	78	65%
BAR-LEN MUTUAL WATER COMPANY	48	36	34	70%	70	32	65%
BARSTOW COMMUNITY DEVELOPERS, LLC	0	0	0	70%	0	0	65%
BEST, BYRON L.	21	16	15	70%	31	14	65%
BROMMER HOUSE TRUST	361	271	253	70%	524	235	65%
CALMAT COMPANY	0	0	0	70%	0	0	65%
CHAFSA, LARRY R. AND DELINDA C.	46	35	33	70%	68	30	65%
CHOI, YONG IL AND JOUNG AE	38	29	27	70%	56	25	65%
CHONG, JOAN	10	16	7	70%	23	7	65%
CHRISTISON, JOEL	75	57	53	70%	110	49	65%
CONTRATTO, ERSULA	151	113	106	70%	219	99	65%
DARR, JAMES S.	408	306	286	70%	592	266	65%
DE VRIES, NEIL AND MARY FAMILY TRUST	3,800	2,850	2,660	70%	5,510	2,470	65%
DORRANCE, DAVID W. AND TAMELA L.	19	0	14	70%	14	13	65%
EYGNOR, ROBERT E.	50	38	35	70%	73	33	65%
FEDERAL NATIONAL MORTGAGE ASSOCIATION - FANNIE MAE	30	23	21	70%	44	20	65%
FOURFREE USA, INC.	42	24	30	70%	54	28	65%
FRATES, D. COLE	13	0	10	70%	10	9	65%
FRIEND, JOSEPH AND DEBORAH	60	45	42	70%	87	39	65%
GABRYCH, EUGENE	132	99	93	70%	192	86	65%
GAINES FAMILY TRUST, JACK AND MARY	92	69	65	70%	134	60	65%
GOLDEN STATE WATER COMPANY	14,407	10,806	10,085	70%	20,891	9,365	65%
GRILL, NICHOLAS P. AND MILLIE D.	0	0	0	70%	0	0	65%
GUTIERREZ, JOSE AND GLORIA	130	98	91	70%	189	85	65%
HANIFY, MICHAEL D., DBA - WHITE BEAR RANCH	152	54	107	70%	161	99	65%
HARMSSEN FAMILY TRUST	722	542	506	70%	1,048	470	65%

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FREE PRODUCTION ALLOWANCE FOR WATER YEAR 2020-21
 AND
 PROPOSED FREE PRODUCTION ALLOWANCE FOR WATER YEAR 2021-22
 (ALL AMOUNTS IN ACRE-FEET)

CENTRO SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	2020-21 FREE PRODUCTION ALLOWANCE ¹				2021-22 FREE PRODUCTION ALLOWANCE ²	
		CARRYOVER FROM PREVIOUS YEAR	FREE PRODUCTION ALLOWANCE		TOTAL	ACRE-FEET	PERCENTAGE OF BAP
			ACRE-FEET	PERCENTAGE OF BAP			
HARPER LAKE COMPANY VIII	1,433	1,075	1,004	70%	2,079	932	65%
HASKINS, JAMES J.	30	3	21	70%	24	20	65%
HELENDALE COMMUNITY SERVICES DISTRICT	219	52	154	70%	206	143	65%
HENSLEY, MARK P.	27	21	19	70%	40	18	65%
HI DESERT MUTUAL WATER COMPANY	34	26	24	70%	50	23	65%
HIGH DESERT ASSOCIATES, INC.	513	385	360	70%	745	334	65%
HI-GRADE MATERIALS COMPANY	0	0	0	70%	0	0	65%
HILL FAMILY TRUST AND HILL'S RANCH, INC.	2,335	1,752	1,635	70%	3,387	1,518	65%
HOWARD, ET AL.	43	33	31	70%	64	28	65%
HUERTA, HECTOR	656	492	460	70%	952	427	65%
JONES, JOETTE	22	17	16	70%	33	15	65%
JORDAN FAMILY TRUST	460	341	322	70%	663	299	65%
KASNER FAMILY LIMITED PARTNERSHIP	421	316	295	70%	611	274	65%
KIM, JIN S. AND HYUN H.	190	143	133	70%	276	124	65%
LEE, ET AL., SEPOONG AND WOO POONG	77	58	54	70%	112	51	65%
LEYERLY, GENEVA (SEE NOTE 4)	65						
MCCOLLUM, CHARLES L.	115	87	81	70%	168	75	65%
MEAD FAMILY TRUST	115	87	81	70%	168	75	65%
MOJAVE SOLAR, LLC	5,239	3,930	3,668	70%	7,598	3,406	65%
MOST FAMILY TRUST	56	42	40	70%	82	37	65%
ODESSA WATER DISTRICT	299	225	210	70%	435	195	65%
OHAI, REYNOLDS AND DOROTHY	137	103	96	70%	199	90	65%
OSTERKAMP, GEROLD (SEE NOTE 4)	260						
PACIFIC GAS AND ELECTRIC COMPANY	4,474	3,356	3,132	70%	6,488	2,909	65%
RIOS, MARIANO V.	8	6	6	70%	12	6	65%
RIVERO, FIDEL V.	20	15	14	70%	29	13	65%
RUISCH TRUST, DALE W. AND NELLIE H.	650	284	455	70%	739	423	65%

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CENTRO SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	CARRYOVER FROM PREVIOUS YEAR	2020-21 FREE PRODUCTION ALLOWANCE ¹			2021-22 FREE PRODUCTION ALLOWANCE ²	
			ACRE-FEET	PERCENTAGE OF BAP	TOTAL	ACRE-FEET	PERCENTAGE OF BAP
RUISCH, ET AL. (SEE NOTE 4)	862						
SERVICE ROCK PRODUCTS CORPORATION	766	575	537	70%	1,112	498	65%
SEXTON, RODNEY A. AND SEXTON, DEREK R.	232	174	163	70%	337	151	65%
SOPPELAND REVOCABLE TRUST	478	357	335	70%	692	311	65%
SYNAGRO-WWT, INC. (DBA NURSURY PRODUCTS, LLC)	0	0	0	70%	0	0	65%
TALLAKSON FAMILY REVOCABLE TRUST	17	13	12	70%	25	12	65%
VALENTI, VITO	17	13	12	70%	25	12	65%
VAN DAM REVOCABLE TRUST, E AND S	722	542	506	70%	1,048	470	65%
VAN LEEUWEN, JOHN	1,465	1,099	1,026	70%	2,125	953	65%
VERNOLA TRUST, PAT AND MARY ANN	3,116	2,337	2,182	70%	4,519	2,026	65%
VICTORVILLE WATER DISTRICT, ID#1	796	0	558	70%	558	518	65%
WERNER, ANDREW J.	18	0	13	70%	13	12	65%
WESTERN DEVELOPMENT AND STORAGE, LLC	6	0	5	70%	5	4	65%
WITHEY, CONNIE	22	17	16	70%	33	15	65%
TOTAL	49,477	34,592	33,829		68,421	31,417	

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AND
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BAJA SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	2020-21 FREE PRODUCTION ALLOWANCE ¹				2021-22 FREE PRODUCTION ALLOWANCE ²	
		CARRYOVER FROM PREVIOUS YEAR	FREE PRODUCTION ALLOWANCE		TOTAL	ACRE-FEET	PERCENTAGE OF BAP
			ACRE-FEET	PERCENTAGE OF BAP			
35250 YERMO, LLC	24	8	6	25%	14	5	20%
AHN, CHUN SOO AND WHA JA	50	15	13	25%	28	10	20%
AKE, CHARLES J. AND MARJORIE M.	23	7	6	25%	13	5	20%
ARCHIBEK, ERIC	0	0	0	25%	0	0	20%
ATCHISON, TOPEKA, SANTA FE RAILWAY COMPANY	80	10	20	25%	30	16	20%
BAILEY 2007 LIVING REVOCABLE TRUST, SHERÉ R.	27	9	7	25%	16	6	20%
BARBER, JAMES B.	167	51	42	25%	93	34	20%
BARON, SUSAN AND PALMER, CURTIS	26	8	7	25%	15	6	20%
BENDER TRUST, DOLORES M.	0	0	0	25%	0	0	20%
BORJA, LEONIL T. AND TITAL L.	20	6	5	25%	11	4	20%
BREDELIS, RONALD C. AND JEAN	64	11	16	25%	27	13	20%
BUBIER, DIANE GAIL	54	17	14	25%	31	11	20%
BUDGET FINANCE COMPANY	32	10	8	25%	18	7	20%
BUSH, KEVIN	0	0	0	25%	0	0	20%
CALICO LAKES HOMEOWNERS ASSOCIATION	1,296	389	324	25%	713	260	20%
CALIFORNIA DEPARTMENT OF TRANSPORTATION	71	22	18	25%	40	15	20%
CALMAT COMPANY	0	0	0	25%	0	0	20%
CAMANGA, TONY AND MARIETTA	47	15	12	25%	27	10	20%
CAMPBELL, M. A. AND DIANNE	22	7	6	25%	13	5	20%
CARLTON, SUSAN	155	47	39	25%	86	31	20%
CDFW - CAMP CADY	921	277	231	25%	508	185	20%
CHEYENNE LAKE, INC.	665	200	167	25%	367	133	20%
CLARK, ARTHUR	50	15	13	25%	28	10	20%
CLARK, GARY AND BETH A. (FORMERLY: NEWBERRY SPRINGS RECREATIONAL ASSOCIATION)	0	45	0	25%	45	0	20%
CONNER, WILLIAM H.	25	8	7	25%	15	5	20%
CORBRIDGE, LINDA S.	32	10	8	25%	18	7	20%
CROSS, FRANCIS AND BEVERLY	40	12	10	25%	22	8	20%

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BAJA SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	CARRYOVER FROM PREVIOUS YEAR	2020-21 FREE PRODUCTION ALLOWANCE ¹			2021-22 FREE PRODUCTION ALLOWANCE ²	
			FREE PRODUCTION ALLOWANCE		TOTAL	ACRE-FEET	PERCENTAGE OF BAP
			ACRE-FEET	PERCENTAGE OF BAP			
CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	844	254	211	25%	465	169	20%
DAGGETT COMMUNITY SERVICES DISTRICT	304	0	76	25%	76	61	20%
DAGGETT RANCH, LLC	76	7	19	25%	26	16	20%
DE JONG FAMILY TRUST	3,131	534	783	25%	1,317	627	20%
DENNISON, QUENTIN D. - CLEGG, FRIZELL AND JOKE	29	9	8	25%	17	6	20%
DONALDSON, JERRY AND BEVERLY	90	27	23	25%	50	18	20%
DOWELL, LEONARD	23	7	6	25%	13	5	20%
EVERT FAMILY TRUST	173	48	44	25%	92	35	20%
FEJFAR, MONICA KAY	20	6	5	25%	11	4	20%
FERNANDEZ, ARTURO	76	23	19	25%	42	16	20%
FERRO, DENNIS AND NORMA	32	10	8	25%	18	7	20%
FIRST CPA LLC	57	16	15	25%	31	12	20%
FOOTHILL ESTATES MHP, LLC	54	0	14	25%	14	11	20%
FUNDAMENTAL CHRISTIAN ENDEAVORS, INC.	425	128	107	25%	235	85	20%
GABRYCH, EUGENE	1,637	270	410	25%	680	328	20%
GARCIA, DANIEL	23	7	6	25%	13	5	20%
GARG, OM P.	483	145	121	25%	266	97	20%
GENON CALIFORNIA SOUTH, LP (SEE NOTE 5)	0	139	0	25%	139	0	20%
GRAY, GEORGE F. AND BETTY E.	94	29	24	25%	53	19	20%
HACKBARTH, EDWARD E.	1,517	171	380	25%	551	304	20%
HANSON AGGREGATES WRP, INC.	31	10	8	25%	18	7	20%
HARESON, NICHOLAS AND MARY	8	3	2	25%	5	2	20%
HARTER, JOE AND SUE	5,234	498	1,309	25%	1,807	1,047	20%
HASS, PAULINE L.	35	10	9	25%	19	7	20%
HAWKINS, JAMES B.	854	0	214	25%	214	171	20%
HENDLEY, RICK AND BARBARA	48	15	12	25%	27	10	20%
HIETT, HARRY L.	29	8	8	25%	16	6	20%

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BAJA SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	2020-21 FREE PRODUCTION ALLOWANCE ¹				2021-22 FREE PRODUCTION ALLOWANCE ²	
		CARRYOVER FROM PREVIOUS YEAR	FREE PRODUCTION ALLOWANCE		TOTAL	ACRE-FEET	PERCENTAGE OF BAP
			ACRE-FEET	PERCENTAGE OF BAP			
HILARIDES 1998 REVOCABLE FAMILY TRUST	303	89	76	25%	165	61	20%
HO, TING-SENG AND AH-GIT	300	90	75	25%	165	60	20%
HOLLISTER, ROBERT H. AND RUTH M.	44	14	11	25%	25	9	20%
HONG, PAUL B. AND MAY	85	26	22	25%	48	17	20%
HOOD FAMILY TRUST	41	13	11	25%	24	9	20%
HORTON, JOHN	242	73	61	25%	134	49	20%
HORTON'S CHILDREN'S TRUST	199	0	50	25%	50	40	20%
HUBBARD, ESTER AND MIZUNO, ARLEAN	28	9	7	25%	16	6	20%
HUNT, RALPH M. AND LILLIAN F.	51	16	13	25%	29	11	20%
HYATT, JAMES AND BRENDA	210	57	53	25%	110	42	20%
IM, NICHOLAS NAK-KYUN	397	120	100	25%	220	80	20%
IRVIN, BERTRAND W.	29	9	8	25%	17	6	20%
ITALMOOD INC., ET. AL.	190	57	48	25%	105	38	20%
JACKS, JAMES F.	10	3	3	25%	6	2	20%
JACKSON, JAMES N. JR REVOCABLE LIVING TRUST	54	17	14	25%	31	11	20%
JACKSON, RAY REVOCABLE TRUST NO. 45801	1	1	1	25%	2	1	20%
KARIMI, HOOSHANG	70	21	18	25%	39	14	20%
KASNER FAMILY LIMITED PARTNERSHIP	843	0	211	25%	211	169	20%
KASNER, ROBERT	5,713	0	1,429	25%	1,429	1,143	20%
KATCHER, AUGUST M. AND MARCELINE	23	7	6	25%	13	5	20%
KEMP, ROBERT AND ROSE	32	10	8	25%	18	7	20%
KIM, JOON HO AND MAL BOON REVOCABLE TRUST	764	230	191	25%	421	153	20%
KIM, SEON JA	50	15	13	25%	28	10	20%
KOEGLER, RONALD R. AND CAROLYN V.	26	7	7	25%	14	6	20%
KOERING, RICHARD AND KOERING, DONNA	20	6	5	25%	11	4	20%
KOSHAREK, JOHN AND JOANN	54	17	14	25%	31	11	20%
LAKE JODIE PROPERTY OWNERS ASSOCIATION	454	44	114	25%	158	91	20%
LAKE WAIKIKI	98	30	25	25%	55	20	20%

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BAJA SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	CARRYOVER FROM PREVIOUS YEAR	2020-21 FREE PRODUCTION ALLOWANCE ¹			2021-22 FREE PRODUCTION ALLOWANCE ²	
			ACRE-FEET	PERCENTAGE OF BAP	TOTAL	ACRE-FEET	PERCENTAGE OF BAP
LAKE WAINANI OWNERS ASSOCIATION	1,725	469	432	25%	901	345	20%
LAM, PHILLIP	105	32	27	25%	59	21	20%
LANGLEY, MICHAEL R. AND SHARON	20	2	5	25%	7	4	20%
LAVANH, ET AL.	24	8	6	25%	14	5	20%
LAWRENCE, WILLIAM W.	45	14	12	25%	26	9	20%
LEE, VIN JANG T.	630	189	158	25%	347	126	20%
LEM, HOY	32	10	8	25%	18	7	20%
LIANG, YUAN - I AND TZU - MEI CHEN	200	60	50	25%	110	40	20%
LIBERTY UTILITIES (APPLE VALLEY RANCHOS WATER) CORP.	453	136	114	25%	250	91	20%
LIN, KUAN JUNG AND CHUNG, DER-BING	451	136	113	25%	249	91	20%
LO, ET AL.	59	0	15	25%	15	12	20%
M BIRD CONSTRUCTION	41	13	11	25%	24	9	20%
MAHJOUBI, AFSAR S.	63	19	16	25%	35	13	20%
MALONEY, JANICE	36	11	9	25%	20	8	20%
MANNING, SHARON S.	63	11	16	25%	27	13	20%
MARCROFT, JAMES A. AND JOAN	38	0	10	25%	10	8	20%
MARSHALL, CHARLES	20	6	5	25%	11	4	20%
MARTIN, MICHAEL D. AND ARLENE D.	63	5	16	25%	21	13	20%
MILBRAT, IRVING H.	73	14	19	25%	33	15	20%
MILLER LIVING TRUST	18	6	5	25%	11	4	20%
MIZRAHIE, ET AL.	145	44	37	25%	81	29	20%
MOJAVE WATER AGENCY (FORMERLY: GENON CALIFORNIA SOUTH, LP)	7,194	1,559	1,799	25%	3,358	1,439	20%
MORRIS TRUST, JULIA V.	304	91	76	25%	167	61	20%
MULLIGAN, ROBERT AND INEZ	35	11	9	25%	20	7	20%
MURPHY, JEAN	24	7	6	25%	13	5	20%
MUSIC, ZAJO (FORMERLY: KOROGHLIAN, TED AND NAJWA)	15	5	4	25%	9	3	20%
NEW SPRINGS LIMITED PARTNERSHIP	2,329	699	583	25%	1,282	466	20%

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BAJA SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	2020-21 FREE PRODUCTION ALLOWANCE ¹				2021-22 FREE PRODUCTION ALLOWANCE ²	
		CARRYOVER FROM PREVIOUS YEAR	FREE PRODUCTION ALLOWANCE		TOTAL	ACRE-FEET	PERCENTAGE OF BAP
			ACRE-FEET	PERCENTAGE OF BAP			
NEWBERRY COMMUNITY SERVICES DISTRICT	23	0	6	25%	6	5	20%
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	1	1	1	25%	2	1	20%
NSSLC, INC.	109	33	28	25%	61	22	20%
O. F. D. L., INC.	443	133	111	25%	244	89	20%
P AND H ENGINEERING AND DEVELOPMENT CORPORATION	667	201	167	25%	368	134	20%
PATINO, JOSÉ	22	7	6	25%	13	5	20%
PEARCE, CRAIG L.	150	0	38	25%	38	30	20%
PERKO, BERT K.	132	40	33	25%	73	27	20%
POLAND, JOHN R. AND KATHLEEN A.	92	28	23	25%	51	19	20%
PORTER, TIMOTHY M.	30	9	8	25%	17	6	20%
PRECISION INVESTMENTS SERVICES, LLC	845	222	212	25%	434	169	20%
PRICE, DONALD AND RUTH	42	13	11	25%	24	9	20%
PRUETT, ANDREA	36	11	9	25%	20	8	20%
QUAKENBUSH, SAMUEL R.	19	6	5	25%	11	4	20%
QUIROS, FRANCISCO J. AND HERRMANN, RONALD	38	11	10	25%	21	8	20%
RICE, HENRY C. AND DIANA	24	8	6	25%	14	5	20%
RIZVI, S.R ALI	27	9	7	25%	16	6	20%
ROSSI, JAMES L. AND NAOMI I.	614	0	154	25%	154	123	20%
S AND B BROTHERS, LLC	221	32	56	25%	88	45	20%
SAGABEAN-BARKER, KANOELOKELANI L.	34	7	9	25%	16	7	20%
SAMPLES, BERNARD D. AND JANICE E.	43	13	11	25%	24	9	20%
SAMRA, JAGTAR S.	30	9	8	25%	17	6	20%
SAN BERNARDINO CO BARSTOW - DAGGETT AIRPORT	168	51	42	25%	93	34	20%
SERVICE ROCK PRODUCTS CORPORATION	0	0	0	25%	0	0	20%
SHENG, JEN	33	10	9	25%	19	7	20%
SHEPPARD, THOMAS AND GLORIA	217	66	55	25%	121	44	20%
SHORT, JEROME E.	30	0	8	25%	8	6	20%
SINGH, ET AL.	31	10	8	25%	18	7	20%

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BAJA SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	2020-21 FREE PRODUCTION ALLOWANCE ¹				2021-22 FREE PRODUCTION ALLOWANCE ²	
		CARRYOVER FROM PREVIOUS YEAR	FREE PRODUCTION ALLOWANCE		TOTAL	ACRE-FEET	PERCENTAGE OF BAP
			ACRE-FEET	PERCENTAGE OF BAP			
SMITH, DENISE DBA AMEREQUINE BEAUTY, INC	0	0	0	25%	0	0	20%
SMITH, PORTER AND ANITA	25	8	7	25%	15	5	20%
SOUTHERN CALIFORNIA EDISON COMPANY	600	180	150	25%	330	120	20%
SOUTHERN CALIFORNIA GAS COMPANY	98	30	25	25%	55	20	20%
SPERRY, WESLEY	4	2	1	25%	3	1	20%
ST. ANTONY COPTIC ORTHODOX MONASTERY	130	39	33	25%	72	26	20%
STARKE, GEORGE A. AND JAYNE E.	23	7	6	25%	13	5	20%
SUNDOWN LAKES, INC.	523	157	131	25%	288	105	20%
SUNRAY LAND COMPANY, LLC	63	19	16	25%	35	13	20%
SZYNKOWSKI, RUTH J.	29	9	8	25%	17	6	20%
TAPIE, RAYMOND L.	18	6	5	25%	11	4	20%
TEISAN, JERRY	96	29	24	25%	53	20	20%
THAYER, SHARON	97	24	25	25%	49	20	20%
THOMAS, STEPHEN AND LORI	49	15	13	25%	28	10	20%
TRIPLE H PARTNERSHIP	218	66	55	25%	121	44	20%
TURNER, TERRY	30	9	8	25%	17	6	20%
UNION PACIFIC RAILROAD COMPANY	249	75	63	25%	138	50	20%
VACA, ANDY AND TERESITA S.	20	6	5	25%	11	4	20%
VAN BASTELAAR, ALPHONSE	78	0	20	25%	20	16	20%
VAN DAM FAMILY TRUST, GLEN AND JENNIFER	7,274	559	1,819	25%	2,378	1,455	20%
VAN LEEUWEN, JOHN	2,018	606	505	25%	1,111	404	20%
VANDER DUSSEN TRUST, AGNES AND EDWARD	1,792	460	448	25%	908	359	20%
WANG, STEVEN	10	3	3	25%	6	2	20%
WARD, RAYMOND	105	0	27	25%	27	21	20%
WEEMS, LIZZIE	53	16	14	25%	30	11	20%
WEERAISSINGHE, MAITHRI N.	15	5	4	25%	9	3	20%
WESTERN HORIZON ASSOCIATES, INC.	1,363	0	341	25%	341	273	20%
WET SET, INC.	547	165	137	25%	302	110	20%

APPENDIX H

MARCH 24, 2021

FREE PRODUCTION ALLOWANCE FOR WATER YEAR 2020-21
 AND
 PROPOSED FREE PRODUCTION ALLOWANCE FOR WATER YEAR 2021-22
 (ALL AMOUNTS IN ACRE-FEET)

BAJA SUBAREA

PRODUCER	BASE ANNUAL PRODUCTION	CARRYOVER FROM PREVIOUS YEAR	2020-21 FREE PRODUCTION ALLOWANCE ¹			2021-22 FREE PRODUCTION ALLOWANCE ²	
			ACRE-FEET	PERCENTAGE OF BAP	TOTAL	ACRE-FEET	PERCENTAGE OF BAP
WITTE, E. DANIEL AND MARCIA	27	9	7	25%	16	6	20%
WLSR, INC.	471	142	118	25%	260	95	20%
WORSEY, JOSEPH A. AND REVAE	29	9	8	25%	17	6	20%
TOTAL	63,929	11,696	16,042		27,738	12,839	

NOTES FOR APPENDIX H

- 1 FREE PRODUCTION ALLOWANCE IS EQUAL TO 70% OF BASE ANNUAL PRODUCTION FOR THE ESTE AND CENTRO SUBAREAS, 65% OF BASE ANNUAL PRODUCTION FOR THE OESTE SUBAREA, 25% OF BASE ANNUAL PRODUCTION FOR THE BAJA SUBAREA AND 65% OF BASE ANNUAL PRODUCTION FOR AGRICULTURAL PRODUCERS AND 55% OF BASE ANNUAL PRODUCTION FOR ALL OTHER PRODUCERS IN THE ALTO SUBAREA FOR 2020-21 BASED ON THE COURT ORDERS DATED JUNE 12, 2020 AND AUGUST 13, 2020. AGRICULTURAL PRODUCERS INCLUDE THOSE PRODUCING WATER FOR THE IRRIGATION OF CROPS SUCH AS ALFALFA, GRAINS, NUT TREES OR ORCHARD, DAIRIES AND LIVESTOCK AND GENERALLY ALL OTHER INCIDENTAL USES INCLUDING SMALL DOMESTIC OR AS OTHERWISE DETERMINED BY WATERMASTER.
- 2 FREE PRODUCTION ALLOWANCE FOR 2021-22 (SUBJECT TO COURT APPROVAL).

ESTE SUBAREA: FREE PRODUCTION ALLOWANCE IS EQUAL 65% OF BASE ANNUAL PRODUCTION FOR THE 2021-22 WATER YEAR.

OESTE SUBAREA: FREE PRODUCTION ALLOWANCE IS EQUAL 60% OF BASE ANNUAL PRODUCTION FOR THE 2021-22 WATER YEAR.

ALTO SUBAREA: FREE PRODUCTION ALLOWANCE IS EQUAL 60% OF BASE ANNUAL PRODUCTION FOR AGRICULTURAL PRODUCERS AND 55% OF BASE ANNUAL PRODUCTION FOR ALL OTHER PRODUCERS IN THE ALTO SUBAREA FOR THE 2021-22 WATER YEAR. AGRICULTURAL PRODUCERS INCLUDE THOSE PRODUCING WATER FOR THE IRRIGATION OF CROPS SUCH AS ALFALFA, GRAINS, NUT TREES OR ORCHARD, DAIRIES AND LIVESTOCK AND GENERALLY ALL OTHER INCIDENTAL USES INCLUDING SMALL DOMESTIC OR AS OTHERWISE DETERMINED BY WATERMASTER.

CENTRO SUBAREA: FREE PRODUCTION ALLOWANCE IS EQUAL 65% OF BASE ANNUAL PRODUCTION FOR THE 2021-22 WATER YEAR.

BAJA SUBAREA: FREE PRODUCTION ALLOWANCE IS EQUAL 20% OF BASE ANNUAL PRODUCTION FOR THE 2021-22 WATER YEAR.
- 3 PHELAN PIÑON HILLS CSD'S WELL #14 IS NOT INCLUDED IN THE TOTAL VERIFIED PRODUCTION. THE MATTER OF PUMPING FROM WELL #14, LOCATED IN LA COUNTY, IS STILL UNRESOLVED AND MAY AFFECT FUTURE OBLIGATIONS UNDER THE JUDGMENT.
- 4 APPELLANTS NOT SUBJECT TO THE JUDGMENT AFTER TRIAL PURSUANT TO SUPREME COURT DECISION DATED AUGUST 21, 2000. THE AGGREGATE BASE ANNUAL PRODUCTION OF THESE PARTIES WAS DETERMINED PRIOR TO TRIAL AND CONSISTS OF 291 ACRE FEET IN THE ALTO SUBAREA AND 1,187 ACRE FEET IN THE CENTRO SUBAREA.
- 5 CARRYOVER SHOWN FOR GENON CALIFORNIA SOUTH, LP IS NOT TRANSFERRABLE PURSUANT TO THE PURCHASE AND SALE AGREEMENT WITH MOJAVE WATER AGENCY DATED SEPTEMBER 12, 2019.

APPENDIX I

AMENDED APPENDIX B FOR WATER YEAR 2018-19

RECONCILED FOR CARRYOVER TRANSFERS IN LIEU OF

PAYMENT OF REPLACEMENT AND MAKEUP WATER ASSESSMENTS

AND ALL OTHER ERRATA

APPENDIX I

MARCH 24, 2021

AMENDED APPENDIX B FOR WATER YEAR 2018-19
 RECONCILED FOR CARRYOVER TRANSFERS IN LIEU OF PAYMENT OF REPLACEMENT AND MAKEUP WATER ASSESSMENTS
 AND ALL OTHER ERRATA

(UNLESS OTHERWISE NOTED ALL AMOUNTS SHOWN ARE IN ACRE-FEET)

ESTE SUBAREA

PRODUCER	2018-19 FREE PRODUCTION ALLOWANCE						PRODUCTION						ASSESSMENTS DUE BY JULY 1, 2020 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2018-19 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL	
				2017-18 CARRYOVER ³	2018-19 FPA ⁴							WATER \$591.00/AF	WATER N/A		
ABDUL, HARRY AND ANITA	194	156	156	0	0	312	87	156	0	87	0.00	0.00	0.00	0.00	
ABSHIRE, DAVID V.	24	20	20	0	0	40	38	2	0	38	0.00	0.00	0.00	0.00	
AHN REVOCABLE LIVING TRUST	0	0	0	0	63	63	63	0	0	0	0.00	0.00	0.00	0.00	
AHN REVOCABLE TRUST	28	23	23	0	0	46	20	23	0	20	0.00	0.00	0.00	0.00	
AHN, CHUN SOO AND DAVID	400	320	320	(115)	(138)	387	0	182	0	0	0.00	0.00	0.00	0.00	
ANDERSON, ROSS C. AND BETTY J.	34	28	28	0	0	56	0	28	0	0	0.00	0.00	0.00	0.00	
AVILA, ANGEL AND EVALIA	573	459	459	(11)	0	907	286	459	0	286	0.00	0.00	0.00	0.00	
BAR H MUTUAL WATER COMPANY	53	43	43	0	0	86	25	43	0	25	0.00	0.00	0.00	0.00	
BELL, CHARLES H. TRUST DATED MARCH 7, 2014	494	396	396	0	0	792	243	396	0	243	0.00	0.00	0.00	0.00	
BRACHT, WILLIAM F. AND ALEXANDER, ALICIA M.	50	40	21	0	0	61	48	13	0	48	0.00	0.00	0.00	0.00	
CASA COLINA FOUNDATION	90	72	72	0	0	144	47	72	0	47	0.00	0.00	0.00	0.00	
CENTER WATER COMPANY	40	32	32	0	0	64	19	32	0	19	0.00	0.00	0.00	0.00	
CHUNG, ET AL.	0	0	0	0	34	34	34	0	0	0	0.00	0.00	0.00	0.00	
CLUB VIEW PARTNERS	1,276	1,021	1,021	(21)	(9)	2,012	0	1,012	0	0	0.00	0.00	0.00	0.00	
CROSS, SHARON I.	23	19	19	0	0	38	1	19	0	1	0.00	0.00	0.00	0.00	
DACOSTA, DEAN EDWARD	56	45	45	0	0	90	1	45	0	1	0.00	0.00	0.00	0.00	
DAHLQUIST, GEORGE R.	524	420	476	0	0	896	0	420	0	0	0.00	0.00	0.00	0.00	
DESERT DAWN MUTUAL WATER COMPANY	15	12	0	0	8	20	20	0	0	12	0.00	0.00	0.00	0.00	
DESERT SPRINGS MUTUAL WATER COMPANY	78	63	63	0	0	126	40	63	0	40	0.00	0.00	0.00	0.00	
DJC CORPORATION	0	0	53	(53)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
GABRYCH, EUGENE	2,201	1,761	1,761	(91)	0	3,431	0	1,761	0	0	0.00	0.00	0.00	0.00	
GAETA, MIGUEL AND MARIA	1,500	1,200	1,200	0	(15)	2,385	97	1,185	0	97	0.00	0.00	0.00	0.00	
GAETA, TRINIDAD	512	410	410	0	0	820	144	410	0	144	0.00	0.00	0.00	0.00	
GARDENA MISSION CHURCH, INC.	0	0	0	0	9	9	9	0	0	0	0.00	0.00	0.00	0.00	
GAYJIKIAN, SAMUEL AND HAZEL	102	82	82	0	0	164	1	82	0	1	0.00	0.00	0.00	0.00	
GOLDEN STATE WATER COMPANY	178	143	143	0	0	286	112	143	0	112	0.00	0.00	0.00	0.00	
GORDON ACRES WATER COMPANY	54	44	44	0	0	88	20	44	0	20	0.00	0.00	0.00	0.00	
GUBLER, HANS	30	24	24	0	0	48	9	24	0	9	0.00	0.00	0.00	0.00	
HAL-DOR LTD.	0	0	19	(19)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
HARVEY, LISA M.	300	240	240	0	0	480	4	240	0	4	0.00	0.00	0.00	0.00	
HERT, SCOTT	276	221	221	0	0	442	224	218	0	224	0.00	0.00	0.00	0.00	
HI-GRADE MATERIALS COMPANY	442	354	354	0	0	708	165	354	0	165	0.00	0.00	0.00	0.00	
HITCHIN LUCERNE, INC.	16	13	13	0	0	26	10	13	0	10	0.00	0.00	0.00	0.00	
JONES TRUST DATED MARCH 16, 2002 (FORMERLY: DJC CORPORATION)	89	72	0	72	0	144	17	72	0	17	0.00	0.00	0.00	0.00	
JUBILEE MUTUAL WATER COMPANY	142	114	45	0	0	159	109	50	0	109	0.00	0.00	0.00	0.00	
JUNIPER RIVIERA COUNTY WATER DISTRICT	37	30	6	0	34	70	70	0	0	36	0.00	0.00	0.00	0.00	

APPENDIX I

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 RECONCILED FOR CARRYOVER TRANSFERS IN LIEU OF PAYMENT OF REPLACEMENT AND MAKEUP WATER ASSESSMENTS
 AND ALL OTHER ERRATA

(UNLESS OTHERWISE NOTED ALL AMOUNTS SHOWN ARE IN ACRE-FEET)

ESTE SUBAREA

PRODUCER	2018-19 FREE PRODUCTION ALLOWANCE						PRODUCTION					ASSESSMENTS DUE BY JULY 1, 2020 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2018-19 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL
				2017-18 CARRYOVER ³	2018-19 FPA ⁴							WATER \$591.00/AF	WATER N/A	
KIM, JU SANG	30	24	24	0	0	48	1	24	0	1	0.00	0.00	0.00	0.00
LEE, ANNA K. AND ESHBAN K.	33	27	27	0	0	54	0	27	0	0	0.00	0.00	0.00	0.00
LEE, DOO HWAN	78	63	63	0	0	126	0	63	0	0	0.00	0.00	0.00	0.00
LOPEZ, BALTAZAR	385	308	308	0	0	616	0	308	0	0	0.00	0.00	0.00	0.00
LUA, MICHAEL T. AND DONNA S.	348	279	279	0	0	558	0	279	0	0	0.00	0.00	0.00	0.00
LUCERNE VALLEY MUTUAL WATER COMPANY	54	44	44	0	0	88	35	44	0	35	0.00	0.00	0.00	0.00
LUCERNE VALLEY PARTNERS	1,213	971	971	0	0	1,942	0	971	0	0	0.00	0.00	0.00	0.00
LUCERNE VISTA MUTUAL WATER COMPANY	21	17	15	0	0	32	16	16	0	16	0.00	0.00	0.00	0.00
M.B. LANDSCAPING AND NURSERY, INC.	1,773	1,419	1,419	0	0	2,838	1,047	1,419	0	1,047	0.00	0.00	0.00	0.00
MITSUBISHI CEMENT CORPORATION	1,395	1,116	1,116	(121)	(172)	1,939	322	944	0	322	0.00	0.00	0.00	0.00
MONACO INVESTMENT COMPANY	70	56	56	0	0	112	0	56	0	0	0.00	0.00	0.00	0.00
MOSS, LAWRENCE W. AND HELEN J.	43	35	35	0	0	70	36	34	0	36	0.00	0.00	0.00	0.00
NORRIS TRUST, MARY ANN	73	59	59	0	0	118	1	59	0	1	0.00	0.00	0.00	0.00
OASIS WORLD MISSION	0	0	0	0	66	66	66	0	0	0	0.00	0.00	0.00	0.00
OMYA CALIFORNIA, INC.	23	19	0	0	5	24	24	0	0	19	0.00	0.00	0.00	0.00
PAK, KAE SOO AND MYONG HUI KANG	247	198	198	(27)	(34)	335	67	164	0	67	0.00	0.00	0.00	0.00
PETTIGREW, DAN	22	18	18	0	0	36	0	18	0	0	0.00	0.00	0.00	0.00
PETTIGREW, JAMES AND CHERLYN	500	400	400	0	0	800	5	400	0	5	0.00	0.00	0.00	0.00
REED, MIKE	58	47	47	0	0	94	1	47	0	1	0.00	0.00	0.00	0.00
RHEE, ANDREW N. (FORMERLY: DAHLQUIST, GEORGE R.)	70	56	0	0	0	56	23	33	0	23	0.00	0.00	0.00	0.00
ROBERTSON'S READY MIX	0	0	0	0	124	124	124	0	0	0	0.00	0.00	0.00	0.00
ROYAL WAY	200	160	160	0	0	320	53	160	0	53	0.00	0.00	0.00	0.00
S AND E 786 ENTERPRISES, LLC	597	478	478	0	0	956	0	478	0	0	0.00	0.00	0.00	0.00
SABA, SABA A. AND SHIRLEY L.	1,120	896	896	0	0	1,792	0	896	0	0	0.00	0.00	0.00	0.00
SAN BERNARDINO COUNTY SERVICE AREA 29	40	32	0	0	9	41	41	0	0	32	0.00	0.00	0.00	0.00
SON'S RANCH	140	112	112	0	0	224	56	112	0	56	0.00	0.00	0.00	0.00
SPECIALTY MINERALS, INC.	42	34	0	0	9	43	43	0	0	34	0.00	0.00	0.00	0.00
SPILLMAN, JAMES R. AND NANCY J.	23	19	19	0	0	38	5	19	0	5	0.00	0.00	0.00	0.00
THE CUSHENBURY TRUST, C/O SPECIALTY MINERALS, INC.	10	8	8	0	0	16	0	8	0	0	0.00	0.00	0.00	0.00
WEISER, ET AL.	90	72	0	0	15	87	87	0	0	72	0.00	0.00	0.00	0.00
WEST END MUTUAL WATER COMPANY	30	24	23	(12)	(8)	27	13	14	0	13	0.00	0.00	0.00	0.00
WILSHIRE ROAD PARTNERS	692	554	554	0	0	1,108	0	554	0	0	0.00	0.00	0.00	0.00
TOTAL	19,251	15,422	15,138	(398)	0	30,162	4,029	14,708	0	3,653	0.00	0.00	0.00	0.00

AMENDED APPENDIX B FOR WATER YEAR 2018-19
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OESTE SUBAREA

PRODUCER	2018-19 FREE PRODUCTION ALLOWANCE						2018-19 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	PRODUCTION SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	ASSESSMENTS DUE BY JULY 1, 2020 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵						REPLACEMENT WATER \$591.00/AF	MAKEUP WATER N/A	TOTAL
				2017-18 CARRYOVER ³	2018-19 FPA ⁴									
AEROCHEM, INC.	660	528	328	0	0	856	7	528	0	7	0.00	0.00	0.00	0.00
BROWN, SUE	46	37	37	0	0	74	0	37	0	0	0.00	0.00	0.00	0.00
CHAMISAL MUTUAL WATER COMPANY	96	77	5	0	0	82	30	52	0	30	0.00	0.00	0.00	0.00
HANDRINOS, NICOLE A.	7	6	6	0	0	12	1	6	0	1	0.00	0.00	0.00	0.00
HETTINGA REVOCABLE TRUST	1,256	1,005	301	0	0	1,306	866	440	0	866	0.00	0.00	0.00	0.00
PHELAN PIÑON HILLS COMMUNITY SERVICES DISTRICT (SEE NOTE 10)	4,680	3,744	3,744	0	0	7,488	2,472	3,744	0	2,472	0.00	0.00	0.00	0.00
TROEGER FAMILY TRUST, RICHARD H.	112	90	90	0	0	180	4	90	0	4	0.00	0.00	0.00	0.00
TOTAL	6,857	5,487	4,511	0	0	9,998	3,380	4,897	0	3,380	0.00	0.00	0.00	0.00

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 RECONCILED FOR CARRYOVER TRANSFERS IN LIEU OF PAYMENT OF REPLACEMENT AND MAKEUP WATER ASSESSMENTS
 AND ALL OTHER ERRATA

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ALTO SUBAREA

PRODUCER	2018-19 FREE PRODUCTION ALLOWANCE						PRODUCTION									ASSESSMENTS DUE BY JULY 1, 2020 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2018-19 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL				
				2017-18 CARRYOVER ³	2018-19 FPA ⁴							WATER	WATER					
ADELANTO, CITY OF	5,182	3,110	0	94	660	3,864	3,864	0	0	3,204	0.00	0.00	0.00	0.00				
ADES, JOHN AND DEVON	37	30	24	(24)	(25)	5	5	0	0	5	0.00	0.00	0.00	0.00				
AGCON, INC.	384	231	0	0	83	314	314	0	0	231	0.00	0.00	0.00	0.00				
AMERICAN STATES WATER COMPANY	1,000	600	600	(600)	(600)	0	0	0	0	0	0.00	0.00	0.00	0.00				
APPLE VALLEY FOOTHILL COUNTY WATER DISTRICT	167	101	11	0	0	112	82	30	0	82	0.00	0.00	0.00	0.00				
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT	125	75	0	29	0	104	101	3	0	101	0.00	0.00	0.00	0.00				
APPLE VALLEY UNIFIED SCHOOL DISTRICT	0	0	0	0	27	27	27	0	0	0	0.00	0.00	0.00	0.00				
APPLE VALLEY VIEW MUTUAL WATER COMPANY	36	22	0	0	0	22	22	0	0	22	0.00	0.00	0.00	0.00				
APPLE VALLEY, TOWN OF	1,082	650	563	0	0	1,213	468	650	0	468	0.00	0.00	0.00	0.00				
BASS TRUST, NEWTON T.	514	412	410	(410)	(409)	3	3	0	0	3	0.00	0.00	0.00	0.00				
BASTIANON REVOCABLE TRUST	77	62	61	(61)	(61)	1	1	0	0	1	0.04	0.00	23.64	23.64				
BEEBE, ROBERT W. AND DOROTHY K.	6	5	5	(5)	(5)	0	0	0	0	0	0.00	0.00	0.00	0.00				
BEINSCHROTH FAMILY TRUST	25	20	0	0	(20)	0	0	0	0	0	0.00	0.00	0.00	0.00				
BEINSCHROTH FAMILY TRUST	670	536	593	(593)	0	536	8	528	0	8	0.00	0.00	0.00	0.00				
BOX, GEARY S. AND LAURA	22	18	18	(18)	0	18	5	13	0	5	0.00	0.00	0.00	0.00				
BROWN, BOBBY G. AND VALERIA R.	42	34	33	(33)	(33)	1	1	0	0	1	0.04	0.00	23.64	23.64				
BROWN, JENNIFER	41	33	29	(29)	0	33	6	27	0	6	0.00	0.00	0.00	0.00				
BRUNEAU, KAREN	10	8	8	0	0	16	1	8	0	1	0.04	0.00	23.64	23.64				
BRYANT, IAN	29	24	24	(24)	(24)	0	0	0	0	0	0.00	0.00	0.00	0.00				
BUNNELL, DICK	24	20	18	(18)	(18)	2	2	0	0	2	0.08	0.00	47.28	47.28				
CALMAT COMPANY	25	15	11	(11)	0	15	4	11	0	4	0.00	0.00	0.00	0.00				
CALPORTLAND COMPANY - AGRICULTURE	643	515	515	(515)	0	515	0	515	0	0	0.00	0.00	0.00	0.00				
CALPORTLAND COMPANY - ORO GRANDE PLANT	2,809	1,686	1,127	(1,127)	0	1,686	598	1,088	0	598	0.00	0.00	0.00	0.00				
CDFW - MOJAVE NARROWS REGIONAL PARK	2,107	1,265	0	0	325	1,590	1,590	0	0	1,265	0.14	0.00	82.74	82.74				
CDFW - MOJAVE RIVER FISH HATCHERY (SEE NOTE 11)	20	16	0	0	0	16	21	0	0	0	0.00	0.00	0.00	0.00				
CEMEX, INC.	1,499	900	0	0	220	1,120	1,120	0	0	900	0.00	0.00	0.00	0.00				
CUNNINGHAM, JERRY	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00				
DLW REVOCABLE TRUST	70	56	56	(56)	(56)	0	0	0	0	0	0.00	0.00	0.00	0.00				
DOLCH, ROBERT AND JUDY	100	80	76	(76)	0	80	4	76	0	4	0.15	0.00	88.65	88.65				
DORA LAND, INC.	15	12	12	(12)	(12)	0	0	0	0	0	0.00	0.00	0.00	0.00				
EAST DESERT LAND COMPANY, LLC	0						1,144											
EVENSON, EDWIN H. AND JOYCELAINE C.	70	56	56	0	0	112	1	56	0	1	0.04	0.00	23.64	23.64				
FEDERAL BUREAU OF PRISONS, VICTORVILLE	686	412	0	0	(412)	0	0	0	0	0	0.00	0.00	0.00	0.00				
FINCH, JENIFER (FORMERLY: MCINNIS, WILLIAM S.)	30	24	0	0	0	24	0	24	0	0	0.00	0.00	0.00	0.00				
FISCHER REVOCABLE LIVING TRUST	36	29	28	(28)	0	29	1	28	0	1	0.04	0.00	23.64	23.64				

APPENDIX I

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ALTO SUBAREA

PRODUCER	2018-19 FREE PRODUCTION ALLOWANCE						PRODUCTION					ASSESSMENTS DUE BY JULY 1, 2020 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2018-19 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL
				2017-18 CARRYOVER ³	2018-19 FPA ⁴							WATER	WATER	
FISHER TRUST, JEROME R.	633	507	507	(507)	(188)	319	0	319	0	0	0.00	0.00	0.00	0.00
FITZWATER, R. E. (SEE NOTE 12)	291						1							
FRAZIER, ET AL.	50	40	40	(40)	(40)	0	0	0	0	0	0.00	0.00	0.00	0.00
GOLDEN STATE WATER COMPANY	940	564	0	0	275	839	839	0	0	564	0.00	0.00	0.00	0.00
GREEN ACRES ESTATES	25	15	15	0	0	30	6	15	0	6	0.23	0.00	135.93	135.93
GULBRANSON, MERLIN	5	4	4	0	0	8	0	4	0	0	0.00	0.00	0.00	0.00
HAAS, BRYAN C. AND HINKLE, MARY H.	9	8	8	(8)	(8)	0	0	0	0	0	0.00	0.00	0.00	0.00
HALANNA EQUITIES III	19	16	10	(10)	(12)	4	4	0	0	4	0.15	0.00	88.65	88.65
HAMILTON FAMILY TRUST	108	87	72	(72)	0	87	15	72	0	15	0.57	0.00	336.87	336.87
HELENDALE COMMUNITY SERVICES DISTRICT	3,999	2,240	686	(686)	108	2,348	1,479	1,029	0	1,479	0.00	0.00	0.00	0.00
HELENDALE SCHOOL DISTRICT	18	11	11	0	0	22	7	11	0	7	0.27	0.00	159.57	159.57
HESPERIA - GOLF COURSE, CITY OF	678	407	0	0	140	547	547	0	0	407	0.00	0.00	0.00	0.00
HESPERIA VENTURE I, LLC	0	0	0	0	0	0	1	0	1	0	0.00	591.00	0.00	591.00
HESPERIA WATER DISTRICT	14,171	8,503	0	130	4,612	13,245	13,245	0	0	8,932	0.00	0.00	0.00	0.00
HESPERIA, CITY OF	6,736	4,042	4,042	(4,042)	(4,042)	0	0	0	0	0	0.00	0.00	0.00	0.00
HI-GRADE MATERIALS COMPANY	149	90	72	(72)	(72)	18	18	0	0	18	0.00	0.00	0.00	0.00
HOLWAY JEFFREY R AND PATRICIA GAGE	8	7	7	(7)	0	7	0	7	0	0	0.00	0.00	0.00	0.00
HOLWAY, JEFFREY R	11	9	9	(9)	0	9	0	9	0	0	0.00	0.00	0.00	0.00
HUNT, CONNIE	66	53	53	(53)	0	53	0	53	0	0	0.00	0.00	0.00	0.00
JAMBOREE HOUSING CORPORATION	0	0	0	54	0	54	45	0	0	45	1.71	0.00	1,010.61	1,010.61
JESS RANCH WATER COMPANY	7,230	4,338	3,679	(3,171)	(3,354)	1,492	1,492	0	0	1,492	0.00	0.00	0.00	0.00
JOHNSON, CARLEAN	23	19	3	0	3	25	25	0	0	22	0.00	0.00	0.00	0.00
JOHNSON, RONALD	31	25	25	(25)	0	25	0	25	0	0	0.00	0.00	0.00	0.00
JOHNSTON, HARRIET AND JOHNSTON, LAWRENCE W.	127	102	98	(98)	0	102	3	99	0	3	0.11	0.00	65.01	65.01
KANESAKA, KENJI AND YUKARI	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00
KEMPER CAMPBELL RANCH	473	379	236	(236)	0	379	65	314	0	65	0.00	0.00	0.00	0.00
LAGUNA WATER II, LTD.	0	160	0	0	(160)	0	0	0	0	0	0.00	0.00	0.00	0.00
LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT	658	527	527	(527)	(527)	0	0	0	0	0	0.00	0.00	0.00	0.00
LANGLEY, JAMES	5	4	4	(4)	(4)	0	0	0	0	0	0.00	0.00	0.00	0.00
LANGLEY, JAMES - INDUSTRIAL	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00
LAWSON, ERNEST AND BARBARA	15	12	11	(11)	(11)	1	1	0	0	1	0.04	0.00	23.64	23.64
LENHERT, RONALD AND TONI	37	30	30	0	0	60	8	30	0	8	0.30	0.00	177.30	177.30
LHC ALLIGATOR, LLC	498	399	399	(399)	(399)	0	0	0	0	0	0.00	0.00	0.00	0.00
LIBERTY UTILITIES (APPLE VALLEY RANCHOS WATER) CORP. (SEE NOTE 13)	13,610	8,166	2,549	0	0	10,715	7,907	2,808	0	7,907	0.00	0.00	0.00	0.00
LOW, DEAN	199	160	160	(160)	0	160	0	160	0	0	0.00	0.00	0.00	0.00

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	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2018-19 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT WATER \$591.00/AF	MAKEUP WATER \$591.00/AF	TOTAL	
				2017-18 CARRYOVER ³	2018-19 FPA ⁴										
LUCKEY 2010 REVOCABLE TRUST	300	240	239	(239)	0	240	1	239	0	1	0.04	0.00	23.64	23.64	
MARIANA RANCHOS COUNTY WATER DISTRICT	270	162	0	0	45	207	207	0	0	162	0.00	0.00	0.00	0.00	
MCINNIS, WILLIAM S.	0	0	17	(17)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
MCKINNEY, PAULA	33	27	27	(27)	0	27	0	27	0	0	0.00	0.00	0.00	0.00	
MLH, LLC	13	11	6	(6)	0	11	7	4	0	7	0.27	0.00	159.57	159.57	
MOJAVE DESERT LAND TRUST (FORMERLY: WESTERN RIVERS CONSERVENCY)	40	32	0	0	0	32	1	31	0	1	0.04	0.00	23.64	23.64	
MOJAVE WATER AGENCY (SEE NOTE 14)	0	0	0	0	0	0	22	0	22	0	0.00	13,002.00	0.00	13,002.00	
NAVAJO MUTUAL WATER COMPANY	88	53	53	0	0	106	25	53	0	25	0.00	0.00	0.00	0.00	
NUÑEZ, LUIS SEGUNDO	0	0	0	0	0	0	1	0	1	0	0.00	591.00	0.00	591.00	
NUNN FAMILY TRUST	36	29	28	(28)	(28)	1	1	0	0	1	0.04	0.00	23.64	23.64	
ORO GRANDE SCHOOL DISTRICT	107	65	65	0	0	130	75	55	0	75	2.85	0.00	1,684.35	1,684.35	
PERRY REVOCABLE LIVING TRUST, THOMAS AND PATRICIA	0	0	0	0	1	1	1	0	0	0	0.00	0.00	0.00	0.00	
PHELAN PIÑON HILLS COMMUNITY SERVICES DISTRICT	355	213	123	0	0	336	129	207	0	129	0.00	0.00	0.00	0.00	
PITTMAN, LEROY W.	148	119	119	0	0	238	1	119	0	1	0.04	0.00	23.64	23.64	
POLICH, DONNA	65	52	52	(52)	0	52	0	52	0	0	0.00	0.00	0.00	0.00	
RANCHERITOS MUTUAL WATER COMPANY	169	102	0	0	0	102	105	0	3	102	0.00	1,773.00	0.00	1,773.00	
RIM PROPERTIES, A GENERAL PARTNERSHIP	9	8	8	(8)	(8)	0	0	0	0	0	0.00	0.00	0.00	0.00	
RUE RANCH, INC.	30	24	24	(24)	(15)	9	9	0	0	9	0.34	0.00	200.94	200.94	
SAN BERNARDINO COUNTY - HIGH DESERT DETENTION CENTE	0	0	0	0	188	188	188	0	0	0	0.00	0.00	0.00	0.00	
SAN BERNARDINO COUNTY SERVICE AREA 42	465	279	213	(213)	(225)	54	54	0	0	54	0.00	0.00	0.00	0.00	
SAN BERNARDINO COUNTY SERVICE AREA 64	3,822	2,294	0	462	(139)	2,617	2,617	0	0	2,617	0.00	0.00	0.00	0.00	
SAN BERNARDINO COUNTY SERVICE AREA 70J	1,015	609	0	213	703	1,525	1,524	0	0	822	0.00	0.00	0.00	0.00	
SAPP, ROBERT D. AND LEE, TERESA J.	0	0	27	(27)	0	0	8	0	8	0	0.00	4,728.00	0.00	4,728.00	
SCRAY, MICHELLE A. TRUST	15	12	11	(11)	0	12	1	11	0	1	0.04	0.00	23.64	23.64	
SERVICE ROCK PRODUCTS CORPORATION	20	12	7	0	0	19	5	12	0	5	0.19	0.00	112.29	112.29	
SHEEP CREEK WATER COMPANY	0	0	0	0	0	0	38	0	38	0	0.00	22,458.00	0.00	22,458.00	
SILVER LAKES ASSOCIATION	4,987	2,993	0	0	0	2,993	3,234	0	241	2,993	0.00	142,431.00	0.00	142,431.00	
SNOWBALL DEVELOPMENT, INC.	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
SPRING VALLEY LAKE ASSOCIATION	3,768	2,261	0	0	0	2,261	2,140	121	0	2,140	0.00	0.00	0.00	0.00	
SPRING VALLEY LAKE COUNTRY CLUB	977	587	35	188	0	810	560	250	0	560	0.00	0.00	0.00	0.00	
STORM, RANDALL	62	50	50	(50)	(50)	0	0	0	0	0	0.00	0.00	0.00	0.00	
SUDMEIER, GLENN W.	20	16	15	(15)	(15)	1	1	0	0	1	0.04	0.00	23.64	23.64	
SUMMIT VALLEY RANCH, LLC	57	46	27	(27)	(43)	3	3	0	0	3	0.11	0.00	65.01	65.01	
THOMPSON LIVING TRUST, JAMES A. AND SULA B.	418	335	334	(334)	(256)	79	4	75	0	4	0.00	0.00	0.00	0.00	
THOMPSON LIVING TRUST, R.L. AND R.A.	2	2	0	0	0	2	1	1	0	1	0.04	0.00	23.64	23.64	

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	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵						REPLACEMENT WATER \$591.00/AF	MAKEUP WATER \$591.00/AF	TOTAL
				2017-18 CARRYOVER ³	2018-19 FPA ⁴									
THRASHER, GARY	373	299	284	(284)	(291)	8	8	0	0	8	0.00	0.00	0.00	0.00
THUNDERBIRD COUNTY WATER DISTRICT	118	71	0	0	38	109	109	0	0	71	0.00	0.00	0.00	0.00
TRANSAMERICA FIN'L SVC - SPEARS, LARRY B. AND ERLINDA	26	21	21	0	0	42	0	21	0	0	0.00	0.00	0.00	0.00
VANHOOPS HOLDINGS, LP	360	288	288	(288)	(288)	0	0	0	0	0	0.00	0.00	0.00	0.00
VICTOR VALLEY COMMUNITY COLLEGE DISTRICT	240	144	0	0	192	336	336	0	0	144	0.00	0.00	0.00	0.00
VICTOR VALLEY MEMORIAL PARK	0	0	0	0	41	41	41	0	0	0	0.00	0.00	0.00	0.00
VICTORVILLE WATER DISTRICT, ID#1 (SEE NOTE 13)	23,020	13,812	0	42	2,726	16,580	18,368	0	1,788	14,266	0.00	1,056,708.00	0.00	1,056,708.00
VICTORVILLE WATER DISTRICT, ID#2 (SEE NOTE 13)	2,932	1,760	0	0	3,040	4,800	4,800	0	0	1,760	0.00	0.00	0.00	0.00
VOGLER, ALBERT H.	62	50	49	(49)	0	50	1	49	0	1	0.04	0.00	23.64	23.64
WAGNER LIVING TRUST	1,224	980	980	(980)	(980)	0	0	0	0	0	0.00	0.00	0.00	0.00
WAKULA FAMILY TRUST	11	9	9	(9)	(8)	1	1	0	0	1	0.04	0.00	23.64	23.64
WARD, KEN AND BARBARA	65	52	36	(36)	(36)	16	16	0	0	16	0.00	0.00	0.00	0.00
WEST, HOWARD AND SUZY	72	58	58	(58)	0	58	0	58	0	0	0.00	0.00	0.00	0.00
WEST, JIMMIE E.	10	8	7	(7)	(7)	1	1	0	0	1	0.04	0.00	23.64	23.64
WESTERN RIVERS CONSERVANCY	0	0	7	(7)	0	0	0	0	0	0	0.00	0.00	0.00	0.00
WESTERN WATER COMPANY	15	12	12	0	0	24	0	12	0	0	0.00	0.00	0.00	0.00
WESTLAND INDUSTRIES, INC.	54	33	29	0	0	62	25	33	0	25	0.95	0.00	561.45	561.45
WIENER, MELVIN AND MARIAM S.	30	18	18	0	0	36	0	18	0	0	0.00	0.00	0.00	0.00
WOOD, MICHAEL AND DENISE	0	0	0	0	12	12	12	0	0	0	0.00	0.00	0.00	0.00
TOTAL	114,308	70,229	20,813	(15,361)	558	76,239	69,782	9,460	2,102	53,895	9.06	1,242,282.00	5,354.46	1,247,636.46

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				2017-18 CARRYOVER ³	2018-19 FPA ⁴							WATER \$591.00/AF	WATER N/A		
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT	29	24	24	(24)	(15)	9	0	9	0	0	0.00	0.00	0.00	0.00	
AQUA CAPITAL MANAGEMENT, LP	2,106	1,709	1,869	(1,869)	(1,685)	24	0	0	0	0	0.00	0.00	0.00	0.00	
ATCHISON, TOPEKA, SANTA FE RAILWAY COMPANY	120	96	50	(50)	(96)	0	0	0	0	0	0.00	0.00	0.00	0.00	
BAR-LEN MUTUAL WATER COMPANY	48	39	33	0	0	72	25	39	0	25	0.00	0.00	0.00	0.00	
BARSTOW COMMUNITY DEVELOPERS, LLC	0	0	0	0	6	6	6	0	0	0	0.00	0.00	0.00	0.00	
BEST, BYRON L.	21	17	17	0	0	34	0	17	0	0	0.00	0.00	0.00	0.00	
BROMMER FAMILY TRUST	361	289	259	(259)	(23)	266	0	266	0	0	0.00	0.00	0.00	0.00	
CALMAT COMPANY	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
CHAFA, LARRY R. AND DELINDA C.	46	37	37	0	0	74	1	37	0	1	0.00	0.00	0.00	0.00	
CHOI, YONG IL AND JOUNG AE	38	31	31	0	0	62	0	31	0	0	0.00	0.00	0.00	0.00	
CHONG, JOAN	10	8	42	0	0	50	28	8	0	28	0.00	0.00	0.00	0.00	
CHRISTISON, JOEL	75	60	60	0	0	120	1	60	0	1	0.00	0.00	0.00	0.00	
CONTRATTO, ERSULA	151	121	120	(120)	(120)	1	1	0	0	1	0.00	0.00	0.00	0.00	
DARR, JAMES S.	408	327	327	0	0	654	321	327	0	321	0.00	0.00	0.00	0.00	
DE VRIES, NEIL AND MARY FAMILY TRUST	3,800	3,040	3,040	0	0	6,080	1	3,040	0	1	0.00	0.00	0.00	0.00	
DORRANCE, DAVID W. AND TAMELA L.	19	16	0	0	(16)	0	0	0	0	0	0.00	0.00	0.00	0.00	
EYGNOR, ROBERT E.	50	40	40	0	0	80	0	40	0	0	0.00	0.00	0.00	0.00	
FEDERAL NATIONAL MORTGAGE ASSOCIATION - FANNIE MAE	30	24	24	0	0	48	0	24	0	0	0.00	0.00	0.00	0.00	
FOURFREE USA, INC. (FORMERLY: CHONG, JOAN)	42	34	0	0	0	34	0	34	0	0	0.00	0.00	0.00	0.00	
FRATES, D. COLE	13	11	0	0	(11)	0	0	0	0	0	0.00	0.00	0.00	0.00	
FRIEND, JOSEPH AND DEBORAH	60	48	48	0	0	96	8	48	0	8	0.00	0.00	0.00	0.00	
GABRYCH, EUGENE	132	106	106	0	0	212	0	106	0	0	0.00	0.00	0.00	0.00	
GAINES FAMILY TRUST, JACK AND MARY	92	74	74	0	0	148	0	74	0	0	0.00	0.00	0.00	0.00	
GOLDEN STATE WATER COMPANY	14,407	11,526	11,526	(3,506)	(313)	19,233	5,494	11,213	0	5,494	0.00	0.00	0.00	0.00	
GRILL, NICHOLAS P. AND MILLIE D. (SEE NOTE 15)	0	0	0	0	124	124	99	0	0	0	0.00	0.00	0.00	0.00	
GUTIERREZ, JOSE AND GLORIA	130	104	98	0	0	202	85	104	0	85	0.00	0.00	0.00	0.00	
HANIFY, MICHAEL D., DBA - WHITE BEAR RANCH	152	122	10	(10)	(122)	0	0	0	0	0	0.00	0.00	0.00	0.00	
HARMSEN FAMILY TRUST	722	578	578	0	0	1,156	391	578	0	391	0.00	0.00	0.00	0.00	
HARPER LAKE COMPANY VIII	1,433	1,147	1,030	0	0	2,177	934	1,147	0	934	0.00	0.00	0.00	0.00	
HASKINS, JAMES J. (FORMERLY: AQUA CAPITAL MANAGEMENT, LP)	30	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
HELENDALE COMMUNITY SERVICES DISTRICT	219	176	0	0	(176)	0	0	0	0	0	0.00	0.00	0.00	0.00	
HENSLEY, MARK P.	27	22	22	0	0	44	22	22	0	22	0.00	0.00	0.00	0.00	
HI DESERT MUTUAL WATER COMPANY	34	28	27	0	0	55	20	28	0	20	0.00	0.00	0.00	0.00	
HIGH DESERT ASSOCIATES, INC.	513	411	411	0	0	822	0	411	0	0	0.00	0.00	0.00	0.00	

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				2017-18 CARRYOVER ³	2018-19 FPA ⁴							WATER	WATER		
HI-GRADE MATERIALS COMPANY	0	0	0	0	4	4	2	0	0	0	0.00	0.00	0.00	0.00	
HILL FAMILY TRUST AND HILL'S RANCH, INC.	2,335	1,868	1,868	(1,239)	(375)	2,122	30	1,493	0	30	0.00	0.00	0.00	0.00	
HOWARD, ET AL.	43	35	35	0	0	70	0	35	0	0	0.00	0.00	0.00	0.00	
HUERTA, HECTOR	656	525	525	800	0	1,850	883	525	0	883	0.00	0.00	0.00	0.00	
JONES, JOETTE	22	18	18	0	0	36	0	18	0	0	0.00	0.00	0.00	0.00	
JORDAN FAMILY TRUST	460	368	364	(364)	(364)	4	4	0	0	4	0.00	0.00	0.00	0.00	
KASNER FAMILY LIMITED PARTNERSHIP	421	337	337	(213)	(116)	345	0	221	0	0	0.00	0.00	0.00	0.00	
KIM, JIN S. AND HYUN H.	190	152	152	(152)	(152)	0	0	0	0	0	0.00	0.00	0.00	0.00	
LEE, ET AL., SEPOONG AND WOO POONG	77	62	62	0	0	124	1	62	0	1	0.00	0.00	0.00	0.00	
LEYERLY, GENEVA (SEE NOTE 12)	65						3								
MCCOLLUM, CHARLES L.	115	92	92	0	0	184	0	92	0	0	0.00	0.00	0.00	0.00	
MEAD FAMILY TRUST	115	92	92	0	0	184	1	92	0	1	0.00	0.00	0.00	0.00	
MOJAVE SOLAR, LLC	5,239	4,192	4,192	0	0	8,384	1,306	4,192	0	1,306	0.00	0.00	0.00	0.00	
MOST FAMILY TRUST	56	45	45	0	0	90	0	45	0	0	0.00	0.00	0.00	0.00	
ODESSA WATER DISTRICT	299	240	240	0	0	480	0	240	0	0	0.00	0.00	0.00	0.00	
OHAI, REYNOLDS AND DOROTHY	137	110	110	0	0	220	1	110	0	1	0.00	0.00	0.00	0.00	
OSTERKAMP, GEROLD (SEE NOTE 12)	260						125								
PACIFIC GAS AND ELECTRIC COMPANY	4,474	3,580	3,580	(200)	0	6,960	2,898	3,580	0	2,898	0.00	0.00	0.00	0.00	
RIOS, MARIANO V.	8	7	6	0	0	13	6	7	0	6	0.00	0.00	0.00	0.00	
RIVERO, FIDEL V.	20	16	16	0	0	32	1	16	0	1	0.00	0.00	0.00	0.00	
RUISCH TRUST, DALE W. AND NELLIE H.	650	520	281	200	0	1,001	611	390	0	611	0.00	0.00	0.00	0.00	
RUISCH, ET AL. (SEE NOTE 12)	862						415								
SERVICE ROCK PRODUCTS CORPORATION	766	613	613	0	0	1,226	15	613	0	15	0.00	0.00	0.00	0.00	
SEXTON, RODNEY A. AND SEXTON, DEREK R.	232	186	186	0	0	372	0	186	0	0	0.00	0.00	0.00	0.00	
SOPPELAND REVOCABLE TRUST	478	383	382	(25)	(383)	357	1	0	0	1	0.00	0.00	0.00	0.00	
SYNAGRO-WWT, INC. (DBA NURSURY PRODUCTS, LLC)	0	0	0	0	10	10	5	0	0	0	0.00	0.00	0.00	0.00	
TALLAKSON FAMILY REVOCABLE TRUST	17	14	14	0	0	28	6	14	0	6	0.00	0.00	0.00	0.00	
VALENTI, VITO	17	14	14	0	0	28	0	14	0	0	0.00	0.00	0.00	0.00	
VAN DAM REVOCABLE TRUST, E AND S	722	578	578	(116)	(124)	916	158	454	0	158	0.00	0.00	0.00	0.00	
VAN LEEUWEN, JOHN	1,465	1,172	1,052	0	0	2,224	1,087	1,137	0	1,087	0.00	0.00	0.00	0.00	
VERNOLA TRUST, PAT AND MARY ANN	3,116	2,493	2,493	1,600	0	6,586	3,234	2,493	0	3,234	0.00	0.00	0.00	0.00	
VICTORVILLE WATER DISTRICT, ID#1	796	637	0	0	(637)	0	0	0	0	0	0.00	0.00	0.00	0.00	
WERNER, ANDREW J.	18	15	0	0	(15)	0	0	0	0	0	0.00	0.00	0.00	0.00	
WESTERN DEVELOPMENT AND STORAGE, LLC	6	5	0	0	(5)	0	0	0	0	0	0.00	0.00	0.00	0.00	

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CENTRO SUBAREA

PRODUCER	2018-19 FREE PRODUCTION ALLOWANCE					PRODUCTION					ASSESSMENTS DUE BY JULY 1, 2020 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		2018-19 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT WATER \$591.00/AF	MAKEUP WATER N/A	TOTAL
				2017-18 CARRYOVER ³	2018-19 FPA ⁴								
WITHEY, CONNIE	22	18	18	0	0	36	1	18	0	1	0.00	0.00	0.00
TOTAL	49,477	38,652	37,268	(5,547)	(4,604)	65,769	18,231	33,710	0	17,576	0.00	0.00	0.00

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	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2018-19 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL
				2017-18 CARRYOVER ³	2018-19 FPA ⁴							WATER \$591.00/AF	WATER N/A	
35250 YERMO, LLC	24	9	5	0	0	14	4	9	0	4	0.00	0.00	0.00	0.00
AHN, CHUN SOO AND WHA JA	50	18	20	0	0	38	1	18	0	1	0.00	0.00	0.00	0.00
AKE, CHARLES J. AND MARJORIE M.	23	9	10	0	0	19	0	9	0	0	0.00	0.00	0.00	0.00
ARCHIBEK, ERIC	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00
ARGUELLES, ALFREDO	647	227	259	0	0	486	248	227	0	248	0.00	0.00	0.00	0.00
ATCHISON, TOPEKA, SANTA FE RAILWAY COMPANY	80	28	0	33	0	61	56	5	0	56	0.00	0.00	0.00	0.00
BAILEY 2007 LIVING REVOCABLE TRUST, SHERÉ R.	27	10	11	0	0	21	0	10	0	0	0.00	0.00	0.00	0.00
BARBER, JAMES B.	167	59	32	0	0	91	32	59	0	32	0.00	0.00	0.00	0.00
BARON, SUSAN AND PALMER, CURTIS	26	10	11	0	0	21	0	10	0	0	0.00	0.00	0.00	0.00
BENDER TRUST, DOLORES M.	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00
BORGOGNO REVOCABLE LIVING TRUST	1,844	646	736	0	0	1,382	685	646	0	685	0.00	0.00	0.00	0.00
BORJA, LEONIL T. AND TITAL L.	20	7	8	0	0	15	0	7	0	0	0.00	0.00	0.00	0.00
BREDELIS, RONALD C. AND JEAN	64	23	26	0	0	49	31	18	0	31	0.00	0.00	0.00	0.00
BROWN, RONALD A.	0	0	420	0	0	420	0	0	0	0	0.00	0.00	0.00	0.00
BUBIER, DIANE GAIL	54	19	22	0	0	41	9	19	0	9	0.00	0.00	0.00	0.00
BUDGET FINANCE COMPANY	32	12	13	0	0	25	0	12	0	0	0.00	0.00	0.00	0.00
BUSH, KEVIN	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00
CALICO JUNCTION	20	7	8	0	0	15	0	7	0	0	0.00	0.00	0.00	0.00
CALICO LAKES HOMEOWNERS ASSOCIATION	1,293	453	518	(155)	0	816	255	453	0	255	0.00	0.00	0.00	0.00
CALIFORNIA DEPARTMENT OF TRANSPORTATION	71	25	29	0	0	54	10	25	0	10	0.00	0.00	0.00	0.00
CALMAT COMPANY	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00
CAMANGA, TONY AND MARIETTA	47	17	19	0	0	36	1	17	0	1	0.00	0.00	0.00	0.00
CAMPBELL, M. A. AND DIANNE	22	8	9	0	0	17	0	8	0	0	0.00	0.00	0.00	0.00
CARLTON, SUSAN	155	55	62	0	0	117	1	55	0	1	0.00	0.00	0.00	0.00
CDFW - CAMP CADY	921	323	369	0	0	692	70	323	0	70	0.00	0.00	0.00	0.00
CF PROPERTIES, LLC	0	0	338	(338)	0	0	0	0	0	0	0.00	0.00	0.00	0.00
CHEYENNE LAKE, INC.	522	183	209	27	0	419	195	183	0	195	0.00	0.00	0.00	0.00
CLARK, ARTHUR	50	18	20	0	0	38	0	18	0	0	0.00	0.00	0.00	0.00
CONNER, WILLIAM H.	25	9	10	0	0	19	0	9	0	0	0.00	0.00	0.00	0.00
CORBRIDGE, LINDA S.	32	12	13	0	0	25	8	12	0	8	0.00	0.00	0.00	0.00
CROSS, FRANCIS AND BEVERLY	40	14	16	0	0	30	0	14	0	0	0.00	0.00	0.00	0.00
CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	701	246	281	160	0	687	429	246	0	429	0.00	0.00	0.00	0.00
DAGGETT COMMUNITY SERVICES DISTRICT	304	107	0	0	112	219	219	0	0	107	0.00	0.00	0.00	0.00
DAGGETT RANCH, LLC	76	27	29	0	0	56	40	16	0	40	0.00	0.00	0.00	0.00
DE JONG FAMILY TRUST	3,131	1,096	1,253	630	0	2,979	1,645	1,096	0	1,645	0.00	0.00	0.00	0.00
DENNISON, QUENTIN D. - CLEGG, FRIZELL AND JOKE	29	11	12	0	0	23	0	11	0	0	0.00	0.00	0.00	0.00
DOCIMO LIVING TRUST, ALLEN LEE	0	0	28	(28)	0	0	0	0	0	0	0.00	0.00	0.00	0.00

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				2017-18 CARRYOVER ³	2018-19 FPA ⁴							WATER \$591.00/AF	WATER N/A	
DONALDSON, JERRY AND BEVERLY	90	32	36	0	0	68	1	32	0	1	0.00	0.00	0.00	0.00
DOWELL, LEONARD	23	9	10	0	0	19	0	9	0	0	0.00	0.00	0.00	0.00
EVERT FAMILY TRUST	173	61	41	0	0	102	26	61	0	26	0.00	0.00	0.00	0.00
FEJFAR, MONICA KAY	20	7	8	0	0	15	0	7	0	0	0.00	0.00	0.00	0.00
FERNANDEZ, ARTURO	76	27	31	0	0	58	0	27	0	0	0.00	0.00	0.00	0.00
FERRO, DENNIS AND NORMA	32	12	13	0	0	25	0	12	0	0	0.00	0.00	0.00	0.00
FIRST CPA LLC	57	20	14	0	0	34	21	13	0	21	0.00	0.00	0.00	0.00
FOOTHILL ESTATES MHP, LLC (FORMERLY: POZZATO PARTNERS, LIMITED)	54	19	0	0	14	33	33	0	0	19	0.00	0.00	0.00	0.00
FUNDAMENTAL CHRISTIAN ENDEAVORS, INC.	425	149	170	0	0	319	117	149	0	117	0.00	0.00	0.00	0.00
GABRYCH, EUGENE	1,637	573	511	0	(53)	1,031	865	166	0	865	0.00	0.00	0.00	0.00
GARCIA, DANIEL	23	9	10	0	0	19	2	9	0	2	0.00	0.00	0.00	0.00
GARG, OM P.	483	170	194	0	0	364	4	170	0	4	0.00	0.00	0.00	0.00
GENON CALIFORNIA SOUTH, LP (SEE NOTE 16)	7,194	2,518	2,124	(2,100)	0	2,542	559	1,983	0	559	0.00	0.00	0.00	0.00
GRAY, GEORGE F. AND BETTY E.	94	33	38	(38)	0	33	0	33	0	0	0.00	0.00	0.00	0.00
HACKBARTH, EDWARD E.	1,517	531	441	46	0	1,018	676	342	0	676	0.00	0.00	0.00	0.00
HANSON AGGREGATES WRP, INC.	31	11	13	0	0	24	0	11	0	0	0.00	0.00	0.00	0.00
HARESON, NICHOLAS AND MARY	8	3	4	0	0	7	0	3	0	0	0.00	0.00	0.00	0.00
HARTER, JOE AND SUE	5,234	1,832	1,868	0	(50)	3,650	2,408	1,242	0	2,408	0.00	0.00	0.00	0.00
HASS, PAULINE L.	35	13	14	(14)	0	13	1	12	0	1	0.00	0.00	0.00	0.00
HAWKINS, JAMES B.	854	299	342	0	0	641	0	299	0	0	0.00	0.00	0.00	0.00
HENDLEY, RICK AND BARBARA	48	17	20	0	0	37	10	17	0	10	0.00	0.00	0.00	0.00
HIETT, HARRY L.	29	11	12	(10)	(11)	2	1	0	0	1	0.00	0.00	0.00	0.00
HILARIDES 1998 REVOCABLE FAMILY TRUST	303	107	121	(121)	0	107	2	105	0	2	0.00	0.00	0.00	0.00
HO, TING-SENG AND AH-GIT	300	105	120	0	0	225	0	105	0	0	0.00	0.00	0.00	0.00
HOLLISTER, ROBERT H. AND RUTH M.	44	16	18	0	0	34	1	16	0	1	0.00	0.00	0.00	0.00
HONG, PAUL B. AND MAY	85	30	34	0	0	64	0	30	0	0	0.00	0.00	0.00	0.00
HOOD FAMILY TRUST	41	15	17	0	0	32	14	15	0	14	0.00	0.00	0.00	0.00
HORTON, JOHN	242	85	97	(97)	(62)	23	0	23	0	0	0.00	0.00	0.00	0.00
HORTON'S CHILDREN'S TRUST	199	70	0	3	31	104	96	0	0	73	0.00	0.00	0.00	0.00
HUBBARD, ESTER AND MIZUNO, ARLEAN	28	10	12	0	0	22	3	10	0	3	0.00	0.00	0.00	0.00
HUNT, RALPH M. AND LILLIAN F.	51	18	21	0	0	39	3	18	0	3	0.00	0.00	0.00	0.00
HYATT, JAMES AND BRENDA	210	74	84	(84)	0	74	17	57	0	17	0.00	0.00	0.00	0.00
IM, NICHOLAS NAK-KYUN	150	53	60	0	0	113	54	53	0	54	0.00	0.00	0.00	0.00
IRVIN, BERTRAND W.	29	11	12	5	0	28	13	11	0	13	0.00	0.00	0.00	0.00
ITALMOOD INC., ET. AL.	190	67	76	0	0	143	46	67	0	46	0.00	0.00	0.00	0.00

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				2017-18 CARRYOVER ³	2018-19 FPA ⁴							WATER \$591.00/AF	WATER N/A	
JACKS, JAMES F.	10	4	4	0	0	8	1	4	0	1	0.00	0.00	0.00	0.00
JACKSON, JAMES N. JR REVOCABLE LIVING TRUST	54	19	22	(5)	(14)	22	0	5	0	0	0.00	0.00	0.00	0.00
JACKSON, RAY REVOCABLE TRUST NO. 45801	1	1	1	0	0	2	0	1	0	0	0.00	0.00	0.00	0.00
JOHNSON, JAMES R. AND ELLEN	247	87	73	(73)	0	87	22	65	0	22	0.00	0.00	0.00	0.00
KARIMI, HOOSHANG	70	25	28	0	0	53	1	25	0	1	0.00	0.00	0.00	0.00
KASNER FAMILY LIMITED PARTNERSHIP	843	296	0	0	767	1,063	1,063	0	0	296	0.00	0.00	0.00	0.00
KASNER, ROBERT (SEE NOTE 15)	5,713	2,000	1,682	984	(767)	3,899	3,381	518	0	3,381	0.00	0.00	0.00	0.00
KATCHER, AUGUST M. AND MARCELINE	23	9	10	0	0	19	1	9	0	1	0.00	0.00	0.00	0.00
KEMP, ROBERT AND ROSE	32	12	13	0	0	25	0	12	0	0	0.00	0.00	0.00	0.00
KIM, JOON HO AND MAL BOON REVOCABLE TRUST	764	268	306	(46)	0	528	259	268	0	259	0.00	0.00	0.00	0.00
KIM, SEON JA	50	18	20	0	0	38	1	18	0	1	0.00	0.00	0.00	0.00
KOEGLER, RONALD R. AND CAROLYN V.	26	10	9	0	0	19	10	9	0	10	0.00	0.00	0.00	0.00
KOERING, RICHARD AND KOERING, DONNA	20	7	8	0	0	15	1	7	0	1	0.00	0.00	0.00	0.00
KOROGHLIAN, TED AND NAJWA	15	6	1	0	0	7	6	1	0	6	0.00	0.00	0.00	0.00
KOSHAREK, JOHN AND JOANN	54	19	22	0	0	41	11	19	0	11	0.00	0.00	0.00	0.00
LAKE JODIE PROPERTY OWNERS ASSOCIATION	311	109	125	205	(3)	436	292	106	0	292	0.00	0.00	0.00	0.00
LAKE WAIKIKI	98	35	40	0	0	75	0	35	0	0	0.00	0.00	0.00	0.00
LAKE WAINANI OWNERS ASSOCIATION	938	329	298	0	0	627	203	289	0	203	0.00	0.00	0.00	0.00
LAM, PHILLIP	105	37	42	0	0	79	6	37	0	6	0.00	0.00	0.00	0.00
LANGLEY, MICHAEL R. AND SHARON	20	7	3	0	2	12	12	0	0	10	0.00	0.00	0.00	0.00
LAVANH, ET AL.	24	9	10	0	0	19	1	9	0	1	0.00	0.00	0.00	0.00
LAWRENCE, WILLIAM W.	45	16	18	0	0	34	1	16	0	1	0.00	0.00	0.00	0.00
LEE, VIN JANG T.	630	221	252	0	0	473	0	221	0	0	0.00	0.00	0.00	0.00
LEM, HOY	32	12	13	0	0	25	0	12	0	0	0.00	0.00	0.00	0.00
LIANG, YUAN - I AND TZU - MEI CHEN	200	70	80	0	(70)	80	0	0	0	0	0.00	0.00	0.00	0.00
LIBERTY UTILITIES (APPLE VALLEY RANCHOS WATER) CORP.	453	159	182	0	0	341	124	159	0	124	0.00	0.00	0.00	0.00
LIN, KUAN JUNG AND CHUNG, DER-BING	451	158	181	0	0	339	0	158	0	0	0.00	0.00	0.00	0.00
LO, ET AL.	59	21	0	0	0	21	33	0	12	21	0.00	7,092.00	0.00	7,092.00
M BIRD CONSTRUCTION	41	15	17	0	0	32	0	15	0	0	0.00	0.00	0.00	0.00
MAHJOUBI, AFSAR S.	63	23	26	0	0	49	0	23	0	0	0.00	0.00	0.00	0.00
MALONEY, JANICE	36	13	15	0	0	28	2	13	0	2	0.00	0.00	0.00	0.00
MANNING, SHARON S.	63	23	0	19	0	42	16	23	0	16	0.00	0.00	0.00	0.00
MARCROFT, JAMES A. AND JOAN	38	14	2	0	0	16	14	2	0	14	0.00	0.00	0.00	0.00
MARSHALL, CHARLES	20	7	8	0	0	15	0	7	0	0	0.00	0.00	0.00	0.00
MARTIN, MICHAEL D. AND ARLENE D.	63	23	0	0	19	42	42	0	0	23	0.00	0.00	0.00	0.00
MILBRAT, IRVING H.	73	26	30	0	0	56	31	25	0	31	0.00	0.00	0.00	0.00

APPENDIX I

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 RECONCILED FOR CARRYOVER TRANSFERS IN LIEU OF PAYMENT OF REPLACEMENT AND MAKEUP WATER ASSESSMENTS
 AND ALL OTHER ERRATA

(UNLESS OTHERWISE NOTED ALL AMOUNTS SHOWN ARE IN ACRE-FEET)

BAJA SUBAREA

PRODUCER	2018-19 FREE PRODUCTION ALLOWANCE						PRODUCTION						ASSESSMENTS DUE BY JULY 1, 2020 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2018-19 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL	
				2017-18 CARRYOVER ³	2018-19 FPA ⁴							WATER	WATER		
MILLER LIVING TRUST	18	7	8	0	0	15	0	7	0	0	0.00	0.00	0.00	0.00	
MIZRAHIE, ET AL.	145	51	58	0	0	109	0	51	0	0	0.00	0.00	0.00	0.00	
MORRIS TRUST, JULIA V.	304	107	122	(121)	0	108	1	107	0	1	0.00	0.00	0.00	0.00	
MULLIGAN, ROBERT AND INEZ	35	13	14	0	0	27	0	13	0	0	0.00	0.00	0.00	0.00	
MURPHY, JEAN	24	9	10	(10)	0	9	5	4	0	5	0.00	0.00	0.00	0.00	
NEW SPRINGS LIMITED PARTNERSHIP	2,329	816	732	(521)	(112)	915	0	704	0	0	0.00	0.00	0.00	0.00	
NEWBERRY COMMUNITY SERVICES DISTRICT	23	9	3	0	3	15	15	0	0	12	0.00	0.00	0.00	0.00	
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	1,085	380	2	2	0	384	0	380	0	0	0.00	0.00	0.00	0.00	
NSSLIC, INC. (FORMERLY: DOCIMO LIVING TRUST, ALLEN LEE)	109	39	0	28	0	67	65	2	0	65	0.00	0.00	0.00	0.00	
O. F. D. L., INC.	300	105	120	58	0	283	165	105	0	165	0.00	0.00	0.00	0.00	
P AND H ENGINEERING AND DEVELOPMENT CORPORATION	667	234	267	0	0	501	0	234	0	0	0.00	0.00	0.00	0.00	
PATINO, JOSÉ	22	8	9	0	0	17	5	8	0	5	0.00	0.00	0.00	0.00	
PEARCE, CRAIG L.	150	53	60	0	0	113	13	53	0	13	0.00	0.00	0.00	0.00	
PERKO, BERT K.	132	47	53	0	0	100	26	47	0	26	0.00	0.00	0.00	0.00	
POLAND, JOHN R. AND KATHLEEN A.	92	33	37	0	0	70	8	33	0	8	0.00	0.00	0.00	0.00	
PORTER, TIMOTHY M.	30	11	12	0	0	23	0	11	0	0	0.00	0.00	0.00	0.00	
PRECISION INVESTMENTS SERVICES, LLC (FORMERLY: CF PROPERTIES, LLC)	845	296	0	193	0	489	189	296	0	189	0.00	0.00	0.00	0.00	
PRICE, DONALD AND RUTH	42	15	17	0	0	32	1	15	0	1	0.00	0.00	0.00	0.00	
PRUETT, ANDREA	36	13	15	0	0	28	0	13	0	0	0.00	0.00	0.00	0.00	
QUAKENBUSH, SAMUEL R.	19	7	8	0	0	15	5	7	0	5	0.00	0.00	0.00	0.00	
QUIROS, FRANCISCO J. AND HERRMANN, RONALD	38	14	0	20	1	35	35	0	0	34	0.00	0.00	0.00	0.00	
RICE, HENRY C. AND DIANA	24	9	10	0	0	19	0	9	0	0	0.00	0.00	0.00	0.00	
RIZVI, S.R ALI	27	10	11	0	0	21	0	10	0	0	0.00	0.00	0.00	0.00	
ROSSI, JAMES L. AND NAOMI I.	614	215	108	0	53	376	376	0	0	323	0.00	0.00	0.00	0.00	
S AND B BROTHERS, LLC	221	78	89	0	0	167	0	78	0	0	0.00	0.00	0.00	0.00	
SAGABEAN-BARKER, KANOELOKELANI L.	34	12	14	0	0	26	14	11	0	14	0.00	0.00	0.00	0.00	
SAMPLES, BERNARD D. AND JANICE E. (FORMERLY: SHAW, ROBERT M. AND LORI A. SLATER-SHAW)	43	16	0	18	0	34	7	16	0	7	0.00	0.00	0.00	0.00	
SAMRA, JAGTAR S.	30	11	12	0	0	23	2	11	0	2	0.00	0.00	0.00	0.00	
SAN BERNARDINO CO BARSTOW - DAGGETT AIRPORT	168	59	68	0	0	127	14	59	0	14	0.00	0.00	0.00	0.00	
SERVICE ROCK PRODUCTS CORPORATION	0	0	0	0	0	0	1	0	1	0	0.00	591.00	0.00	591.00	
SHAW, ROBERT M. AND LORI A. SLATER-SHAW	0	0	18	(18)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
SHENG, JEN	33	12	14	0	0	26	1	12	0	1	0.00	0.00	0.00	0.00	
SHEPPARD, THOMAS AND GLORIA	217	76	87	0	0	163	11	76	0	11	0.00	0.00	0.00	0.00	
SHORT, JEROME E.	30	11	7	0	0	18	17	1	0	17	0.00	0.00	0.00	0.00	

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BAJA SUBAREA

PRODUCER	2018-19 FREE PRODUCTION ALLOWANCE						PRODUCTION						ASSESSMENTS DUE BY JULY 1, 2020 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵	2018-19 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	REPLACEMENT	MAKEUP	TOTAL	
				2017-18 CARRYOVER ³	2018-19 FPA ⁴							WATER	WATER		
SINGH, ET AL.	31	11	13	0	0	24	0	11	0	0	0.00	0.00	0.00	0.00	
SMITH, DENISE DBA AMEREQUINE BEAUTY, INC	0	0	0	0	82	82	82	0	0	0	0.00	0.00	0.00	0.00	
SMITH, PORTER AND ANITA	25	9	10	0	0	19	0	9	0	0	0.00	0.00	0.00	0.00	
SOUTHERN CALIFORNIA EDISON COMPANY	600	210	240	0	0	450	0	210	0	0	0.00	0.00	0.00	0.00	
SOUTHERN CALIFORNIA GAS COMPANY	98	35	40	0	0	75	6	35	0	6	0.00	0.00	0.00	0.00	
SPERRY, WESLEY	4	2	2	0	0	4	0	2	0	0	0.00	0.00	0.00	0.00	
ST. ANTONY COPTIC ORTHODOX MONASTERY	130	46	249	0	0	295	287	8	0	287	0.00	0.00	0.00	0.00	
STARKE, GEORGE A. AND JAYNE E.	23	9	10	0	0	19	0	9	0	0	0.00	0.00	0.00	0.00	
SUNDOWN LAKES, INC.	420	147	168	52	0	367	168	147	0	168	0.00	0.00	0.00	0.00	
SUNRAY LAND COMPANY, LLC	63	23	26	0	0	49	1	23	0	1	0.00	0.00	0.00	0.00	
SZYNKOWSKI, RUTH J.	29	11	12	0	0	23	2	11	0	2	0.00	0.00	0.00	0.00	
TAPIE, RAYMOND L.	18	7	8	0	0	15	1	7	0	1	0.00	0.00	0.00	0.00	
TEISAN, JERRY	96	34	39	0	0	73	0	34	0	0	0.00	0.00	0.00	0.00	
THAYER, SHARON	97	34	39	0	0	73	31	33	0	31	0.00	0.00	0.00	0.00	
THOMAS, STEPHEN AND LORI	49	18	20	0	0	38	3	18	0	3	0.00	0.00	0.00	0.00	
TRIPLE H PARTNERSHIP	218	77	88	0	0	165	78	77	0	78	0.00	0.00	0.00	0.00	
TURNER, TERRY	30	11	12	0	0	23	1	11	0	1	0.00	0.00	0.00	0.00	
UNION PACIFIC RAILROAD COMPANY	249	88	100	0	0	188	52	88	0	52	0.00	0.00	0.00	0.00	
VACA, ANDY AND TERESITA S.	20	7	6	0	0	13	5	7	0	5	0.00	0.00	0.00	0.00	
VAN BASTELAAR, ALPHONSE	78	28	0	0	78	106	106	0	0	28	0.00	0.00	0.00	0.00	
VAN DAM FAMILY TRUST, GLEN AND JENNIFER	5,430	1,901	1,482	0	(51)	3,332	2,367	965	0	2,367	0.00	0.00	0.00	0.00	
VAN LEEUWEN, JOHN	2,018	707	649	100	0	1,456	757	699	0	757	0.00	0.00	0.00	0.00	
VANDER DUSSEN TRUST, AGNES AND EDWARD	1,792	628	443	0	0	1,071	741	330	0	741	0.00	0.00	0.00	0.00	
WANG, STEVEN	10	4	4	0	0	8	0	4	0	0	0.00	0.00	0.00	0.00	
WARD, RAYMOND (SEE NOTE 15)	105	37	0	41	0	78	50	4	0	50	0.00	0.00	0.00	0.00	
WEEMS, LIZZIE	53	19	22	0	0	41	0	19	0	0	0.00	0.00	0.00	0.00	
WEERASINGHE, MAITHRI N.	15	6	6	0	0	12	1	6	0	1	0.00	0.00	0.00	0.00	
WESTERN HORIZON ASSOCIATES, INC.	1,363	478	180	0	79	737	737	0	0	658	0.00	0.00	0.00	0.00	
WET SET, INC.	404	142	89	54	0	285	130	142	0	130	0.00	0.00	0.00	0.00	
WITTE, E. DANIEL AND MARCIA	27	10	11	0	0	21	1	10	0	1	0.00	0.00	0.00	0.00	
WLSR, INC.	328	115	132	42	0	289	133	115	0	133	0.00	0.00	0.00	0.00	
WORSEY, JOSEPH A. AND REVAE	29	11	12	0	0	23	0	11	0	0	0.00	0.00	0.00	0.00	
TOTAL	63,929	22,454	21,020	(1,059)	48	42,463	21,162	16,178	13	19,916	0.00	7,683.00	0.00	7,683.00	

APPENDIX I - SUMMARY

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SUBAREA	2018-19 FREE PRODUCTION ALLOWANCE						2018-19 VERIFIED PRODUCTION ⁶	UNUSED FPA ⁷	REPLACEMENT WATER OBLIGATION ⁸	PRODUCTION SUBJECT TO MAKEUP OBLIGATION ⁹	MAKEUP WATER OBLIGATION	ASSESSMENTS DUE BY JULY 1, 2020 (AMOUNTS IN DOLLARS)		
	BASE ANNUAL PRODUCTION	BASE FREE PRODUCTION ALLOWANCE ¹	CARRYOVER FROM PREVIOUS YEAR ²	TRANSFERS + OR (-)		TOTAL ⁵						REPLACEMENT WATER	MAKEUP WATER	TOTAL
				2017-18 CARRYOVER ³	2018-19 FPA ⁴									
ESTE	19,251	15,422	15,138	(398)	0	30,162	4,029	14,708	0	3,653	0.00	0.00	0.00	0.00
OESTE	6,857	5,487	4,511	0	0	9,998	3,380	4,897	0	3,380	0.00	0.00	0.00	0.00
ALTO	114,308	70,229	20,813	(15,361)	558	76,239	69,782	9,460	2,102	53,895	9.06	1,242,282.00	5,354.46	1,247,636.46
CENTRO	49,477	38,652	37,268	(5,547)	(4,604)	65,769	18,231	33,710	0	17,576	0.00	0.00	0.00	0.00
BAJA	63,929	22,454	21,020	(1,059)	48	42,463	21,162	16,178	13	19,916	0.00	7,683.00	0.00	7,683.00
GRAND TOTAL	253,822	152,244	98,750	(22,365)	(3,998)	224,631	116,584	78,953	2,115	98,420	9.06	1,249,965.00	5,354.46	1,255,319.46

NOTES FOR APPENDIX I

- 1 EQUAL TO 80% OF BASE ANNUAL PRODUCTION IN THE ESTE, OESTE AND CENTRO SUBAREAS AND FOR THE AGRICULTURAL PRODUCERS IN THE ALTO SUBAREA. EQUAL TO 60% OF BASE ANNUAL PRODUCTION FOR THE MUNICIPAL AND INDUSTRIAL PRODUCERS IN THE ALTO SUBAREA. EQUAL TO 35% OF BASE ANNUAL PRODUCTION IN THE BAJA SUBAREA.
- 2 UNUSED FPA FROM 2017-18 NET OF ANY TRANSFERS DURING 2017-18.
- 3 TRANSFERS OF 2017-18 UNUSED FPA FOR USE DURING 2018-19. AMOUNTS SOLD OR OTHERWISE RELINQUISHED ARE SHOWN IN PARENTHESIS. SEE APPENDIX E.
- 4 TRANSFERS OF 2018-19 BASE FREE PRODUCTION ALLOWANCE. AMOUNTS SOLD OR OTHERWISE RELINQUISHED ARE SHOWN IN PARENTHESIS. SEE APPENDIX E.
- 5 TOTAL FREE PRODUCTION ALLOWANCE FOR 2018-19 IS EQUAL TO THE SUM OF BASE FREE PRODUCTION ALLOWANCE, CARRYOVER AND TRANSFERS.
- 6 2018-19 VERIFIED PRODUCTION.
- 7 UNUSED FPA IS EQUAL TO THE TOTAL FPA MINUS TOTAL VERIFIED PRODUCTION, BUT NOT GREATER THAN THE SUM OF BASE FREE PRODUCTION ALLOWANCE AND 2018-19 FPA TRANSFERS.
- 8 WATER PRODUCTION IN EXCESS OF TOTAL FREE PRODUCTION ALLOWANCE.
- 9 PRODUCTION SUBJECT TO MAKEUP OBLIGATION IS EQUAL TO THE TOTAL VERIFIED PRODUCTION NOT TO EXCEED THE TOTAL FREE PRODUCTION ALLOWANCE.
- 10 PHELAN PIÑON HILLS CSD'S WELL #14 IS NOT INCLUDED IN THE TOTAL VERIFIED PRODUCTION. THE MATTER OF PUMPING FROM WELL #14, LOCATED IN LA COUNTY, IS STILL UNRESOLVED AND MAY AFFECT FUTURE OBLIGATIONS UNDER THE JUDGMENT.
- 11 CDFW - MOJAVE RIVER FISH HATCHERY IS EXEMPT FROM ASSESSMENTS PURSUANT TO THE PROVISIONS OF EXHIBIT F OF THE JUDGMENT AFTER TRIAL, DATED JANUARY 10, 1996.
- 12 APPELLANTS NOT SUBJECT TO THE JUDGMENT AFTER TRIAL PURSUANT TO SUPREME COURT DECISION DATED AUGUST 21, 2000. THE AGGREGATE BASE ANNUAL PRODUCTION OF THESE PARTIES WAS DETERMINED PRIOR TO TRIAL AND CONSISTS OF 291 ACRE-FEET IN THE ALTO SUBAREA AND 1,187 ACRE-FEET IN THE CENTRO SUBAREA. THE VERIFIED PRODUCTION WAS ESTIMATED BY WATERMASTER FOR 2018-19 AND CONSISTS OF 1,145 ACRE-FEET IN THE ALTO SUBAREA AND 543 ACRE-FEET IN THE CENTRO SUBAREA.
- 13 THE VERIFIED PRODUCTION SHOWN INCLUDES MWA DELIVERIES THROUGH THE REGIONAL, RECHARGE AND RECOVERY PROJECT. DELIVERIES FOR 2018-19 WATER YEAR INCLUDE 0 ACRE-FEET FOR LIBERTY UTILITIES (APPLE VALLEY RANCHOS WATER) CORP., 2,273 ACRE-FEET FOR VICTORVILLE WATER DISTRICT, ID#1 AND 2,509 ACRE-FEET FOR VICTORVILLE WATER DISTRICT ID#2.
- 14 THE VERIFIED PRODUCTION SHOWN INCLUDES THE OPERATIONAL WATER USED FOR THE REGIONAL, RECHARGE AND RECOVERY PROJECT.
- 15 THE FPA HAS BEEN ADJUSTED 2 FOR 1 FOR THE CHANGE IN CONSUMPTIVE USE PURSUANT TO EXHIBIT F OF THE JUDGMENT.
- 16 THE 7,194 ACRE-FEET OF BAP AND THE ASSOCIATED UNUSED FPA OF 1,983 ACRE-FEET WAS TRANSFERRED TO THE MOJAVE WATER AGENCY EFFECTIVE OCTOBER 1, 2019.

APPENDIX J

MOJAVE BASIN AREA WATERMASTER

NOTICE LIST

APPENDIX J

MARCH 24, 2021

MOJAVE BASIN AREA WATERMASTER
NOTICE LIST

OWNER	DESIGNEE	OWNER	DESIGNEE
35250 YERMO, LLC	ROBERTO MUNOZ	BREDELIS, RONALD C. AND JEAN	RONALD C. AND JEAN BREDELIS
ABDUL, HARRY AND ANITA	JACKIE MCEVOY	BROMMER HOUSE TRUST	MARVIN BROMMER
ABSHIRE, DAVID V.	JOHN MCCALLUM	BROWN, BOBBY G. AND VALERIA R.	PAUL JOHNSON
ADELANTO, CITY OF	DANIEL BEST	BROWN, JENNIFER	JENNIFER BROWN
ADES, JOHN AND DEVON	JOHN AND DEVON ADES	BRUNEAU, KAREN	KAREN BRUNEAU
AEROCHEM, INC.	PEDRO DUMAUA	BRYANT, IAN	IAN BRYANT
AGCON, INC.	LORI CLIFTON	BUBIER, DIANE GAIL	DIANE GAIL BUBIER
AHN REVOCABLE LIVING TRUST	CHUN SOO AND WHA JA AHN	BUDGET FINANCE COMPANY	NOAH FURIE
AHN REVOCABLE TRUST	SIMON AHN	BUNNELL, DICK	DICK BUNNELL
AHN, CHUN SOO AND DAVID	DAVID AHN	BUSH, KEVIN	KEVIN BUSH
AHN, CHUN SOO AND WHA JA	CHUN SOO AHN	CALICO LAKES HOMEOWNERS ASSOCIATION	SHANNA GHALE
AKE, CHARLES J. AND MARJORIE M.	CHARLES J. AND MARJORIE M. AKE	CALIFORNIA DEPARTMENT OF TRANSPORTATION	MICHAEL P. NAZE
AMERICA UNITED DEVELOPMENT, LLC	PAUL TSAI	CALMAT COMPANY	ROBERT W. BOWCOCK
AMERICAN STATES WATER COMPANY	ANA CHAVEZ	CALMAT COMPANY	ROBERT W. BOWCOCK
ANDERSON, ROSS C. AND BETTY J.	ROSS C. AND BETTY J. ANDERSON	CALMAT COMPANY	ROBERT W. BOWCOCK
APPLE VALLEY FOOTHILL COUNTY WATER DISTRICT	DANIEL B. SMITH	CALPORTLAND COMPANY - AGRICULTURE	CATALINA FERNANDEZ-MOORES
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT	MATTHEW PATTERSON	CALPORTLAND COMPANY - ORO GRANDE PLANT	CATALINA FERNANDEZ-MOORES
APPLE VALLEY UNIFIED SCHOOL DISTRICT	MATHEW SCHULENBERG	CAMANGA, TONY AND MARIETTA	TONY CAMANGA
APPLE VALLEY VIEW MUTUAL WATER COMPANY	EMELY AND JOE SALTMERIS	CAMPBELL, M. A. AND DIANNE	MYRON CAMPBELL II
APPLE VALLEY, TOWN OF	TINA KUHNS	CARLTON, SUSAN	SUSAN CARLTON
AQUA CAPITAL MANAGEMENT LP	DAVID L. PENRICE	CASA COLINA FOUNDATION	KEVIN MANGOLD
ARCHIBEK, ERIC	ERIC ARCHIBEK	CDFW - CAMP CADY	DANIELLE STEWART
ATCHISON, TOPEKA, SANTA FE RAILWAY COMPANY	BLAINE BILDERBACK	CDFW - MOJAVE NARROWS REGIONAL PARK	JARED BEYELER
AVILA, ANGEL AND EVALIA	ANGEL AND EVALIA AVILA	CDFW - MOJAVE RIVER FISH HATCHERY	PACO CABRAL
BAILEY 2007 LIVING REVOCABLE TRUST, SHERÉ R.	SHERÉ R. BAILEY	CEMEX, INC.	ALEJANDRA SILVA
BAR H MUTUAL WATER COMPANY	DANIEL SHAW	CENTER WATER COMPANY	MARY TARRAB
BARBER, JAMES B.	JAMES B. BARBER	CHAFA, LARRY R. AND DELINDA C.	ALLENE ROZELL CHERIE KRACK
BAR-LEN MUTUAL WATER COMPANY	CASEY SLUSSER	CHAMISAL MUTUAL WATER COMPANY	MARY M ROSS
BARON, SUSAN AND PALMER, CURTIS	CURTIS PALMER	CHEYENNE LAKE, INC.	CARL PUGH
BARSTOW COMMUNITY DEVELOPERS, LLC	TEDDI MORAD	CHOI, YONG IL AND JOUNG AE	YONG IL AND JOUNG AE CHOI
BASS TRUST, NEWTON T.	BARBARA DAVISON	CHONG, JOAN	JOAN CHONG
BASTIANON REVOCABLE TRUST	REMO E. BASTIANON	CHRISTISON, JOEL	JOEL CHRISTISON
BEINSCHROTH FAMILY TRUST	MIKE BEINSCHROTH	CHUNG, ET AL.	HWA-YONG CHUNG
BEINSCHROTH, ANDY ERIC	ANDY ERIC BEINSCHROTH	CLARK, ARTHUR	ARTHUR CLARK
BELL, CHARLES H. TRUST DATED MARCH 7, 2014	CHUCK BELL	CLARK, GARY AND BETH A.	ERIK ARCHIBEK
BENDER TRUST, DOLORES M.	DOLORES M. BENDER	CLUB VIEW PARTNERS	MANOUCHER SARBAZ
BEST, BYRON L.	BYRON L. BEST	CONNER, WILLIAM H.	WILLIAM H. CONNER
BORJA, LEONIL T. AND TITAL L.	LEONIL T. AND TITAL L. BORJA	CONTRATTO, ERSULA	ERSULA CONTRATTO
BOX, GEARY S. AND LAURA	GEARY S. AND LAURA BOX	CORBRIDGE, LINDA S.	GEORGE STARKE
BRACHT, WILLIAM F. AND ALEXANDER, ALICIA M.	ALICIA ALEXANDER	CROSS, FRANCIS AND BEVERLY	FRANCIS AND BEVERLY CROSS

APPENDIX J

MARCH 24, 2021

**MOJAVE BASIN AREA WATERMASTER
NOTICE LIST**

OWNER	DESIGNEE	OWNER	DESIGNEE
CROSS, SHARON I.	SHARON I. CROSS	GAETA, TRINIDAD	JAY STORER
CROWN CAMBRIA, LLC	JAY HOOPER	GAINES FAMILY TRUST, JACK AND MARY	BRUCE GAINES
CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	ALESSIA MORRIS	GARCIA, DANIEL	DANIEL GARCIA
DACOSTA, DEAN EDWARD	DEAN EDWARD DACOSTA	GARDENA MISSION CHURCH, INC.	SANG HWAL KIM
DAGGETT COMMUNITY SERVICES DISTRICT	CRYSTAL ROMERO	GARG, OM P.	OM P. GARG
DAGGETT RANCH, LLC	STEVE AND DANA RIVETT	GAYJIKIAN, SAMUEL AND HAZEL	BRENT PETERSON
DAHLQUIST, GEORGE R.	GEORGE R. DAHLQUIST	GENON CALIFORNIA SOUTH, LP	JEFFREY EDWARDS
DARR, JAMES S.	JAMES S. DARR	GOLDEN STATE WATER COMPANY	NEREIDA GONZALEZ
DE JONG FAMILY TRUST	ALAN L. DE JONG	GORDON ACRES WATER COMPANY	GINA PELLEGRINI
DE VRIES, NEIL AND MARY FAMILY TRUST	MARY DE VRIES	GRAY, GEORGE F. AND BETTY E.	GEORGE F. AND BETTY E. GRAY
DENNISON, QUENTIN D. - CLEGG, FRIZELL AND JOKE	RANDY WAGNER	GREEN ACRES ESTATES	BRIAN E. BOLIN
DESERT DAWN MUTUAL WATER COMPANY	MARIE MCDANIEL	GRILL, NICHOLAS P. AND MILLIE D.	NICK GRILL
DESERT SPRINGS MUTUAL WATER COMPANY	DENISE COURTNEY	GUBLER, HANS	HANS GUBLER
DLW REVOCABLE TRUST	DEBBY WYATT	GULBRANSON, MERLIN	TAMARA J SKOGLUND
DOLCH LIVING TRUST ROBERT AND JUDITH	LARRY WARREN	GUTIERREZ, JOSE AND GLORIA	JOSE AND GLORIA GUTIERREZ
DONALDSON, JERRY AND BEVERLY	JERRY AND BEVERLY DONALDSON	HAAS, BRYAN C. AND HINKLE, MARY H.	BRYAN C. HAAS AND MARY H. HINKLE
DORA LAND, INC.	JEFFERY LIDMAN	HACKBARTH, EDWARD E.	EDWARD E. HACKBARTH
DORRANCE, DAVID W. AND TAMELA L.	DAVID DORRANCE	HALANNA EQUITIES III	ALEXANDRA LIOANAG
DOWELL, LEONARD	LEONARD DOWELL	HAMILTON FAMILY TRUST	DOUG AND CHERYL HAMILTON
EVENSON, EDWIN H. AND JOYCELAINE C.	EDWIN H. AND JOYCELAINE C. EVENSON	HANDRINOS, NICOLE A.	WILLIAM HANDRINOS
EVERT FAMILY TRUST	STEPHANIE L. EVERT	HANIFY, MICHAEL D., DBA - WHITE BEAR RANCH	DONALD F. HANIFY
EYGNOR, ROBERT E.	ROBERT E. EYGNOR	HANSON AGGREGATES WRP, INC.	MATT WOOD
FEDERAL BUREAU OF PRISONS, VICTORVILLE	DAVID DITTENMORE	HARESON, NICHOLAS AND MARY	MARY JANE HARESON
FEDERAL NATIONAL MORTGAGE ASSOCIATION - FANNIE MAE	TERESA W. MARIANOS	HARMSEN FAMILY TRUST	KENNY HARMSEN
FEJFAR, MONICA KAY	MONICA KAY FEJFAR	HARPER LAKE COMPANY VIII	NEAL DAVIES
FERNANDEZ, ARTURO	ARTURO FERNANDEZ	HARTER, JOE AND SUE	JOE AND SUE HARTER
FERRO, DENNIS AND NORMA	DENNIS AND NORMA FERRO	HARVEY, LISA M.	LISA M. HARVEY
FINCH, JENIFER	JENIFER FINCH	HASKINS, JAMES J.	JAMES J. HASKINS
FIRST CPA LLC	ALEX AND JERRICA LIU	HASS, PAULINE L.	PAULINE L. HASS
FISCHER REVOCABLE LIVING TRUST	CARL FISCHER	HAWKINS, JAMES B.	JAMES B. HAWKINS
FISHER TRUST, JEROME R.	PAUL JOHNSON	HELENDALE COMMUNITY SERVICES DISTRICT	CRAIG CARLSON
FOOTHILL ESTATES MHP, LLC	CAMILLE YUSUFOV	HELENDALE COMMUNITY SERVICES DISTRICT	KIMBERLY COX
FOURFREE USA, INC.	JIN HYUNG KIM	HELENDALE SCHOOL DISTRICT	DEANNA DIBBLE
FRATES, D. COLE	D. COLE FRATES	HENDLEY, RICK AND BARBARA	JEFF GALLISTEL
FRAZIER, ET AL.	MARTIN FRAZIER	HENSLEY, MARK P.	MARK P. HENSLEY
FRIEND, JOSEPH AND DEBORAH	DEBORAH A. FRIEND	HERT, SCOTT	SCOTT HERT
FUNDAMENTAL CHRISTIAN ENDEAVORS, INC.	MARK ASAY	HESPERIA - GOLF COURSE, CITY OF	JEREMY MCDONALD
GABRYCH, EUGENE	EUGENE GABRYCH	HESPERIA VENTURE I, LLC	JANIE MARTINES
GABRYCH, EUGENE	MITCH HAMMACK	HESPERIA WATER DISTRICT	JEREMY MCDONALD
GAETA, MIGUEL AND MARIA	MIGUEL AND MARIA GAETA	HESPERIA, CITY OF	JEREMY MCDONALD

APPENDIX J

MARCH 24, 2021

MOJAVE BASIN AREA WATERMASTER
NOTICE LIST

OWNER	DESIGNEE	OWNER	DESIGNEE
HETTINGA REVOCABLE TRUST	PATRICIA MOHR	JUNIPER RIVIERA COUNTY WATER DISTRICT	LEE LOGSDON
HI DESERT MUTUAL WATER COMPANY	LISSET SARDESON	KANESAKA, KENJI AND YUKARI	KENJI AND YUKARI KANESAKA
HIETT, HARRY L.	HARRY L. HIETT	KARIMI, HOOSHANG	ASH KARIMI
HIGH DESERT ASSOCIATES, INC.	ROBERT W. BOWCOCK	KASNER FAMILY LIMITED PARTNERSHIP	ROBERT R. KASNER
HI-GRADE MATERIALS COMPANY	LORI CLIFTON	KASNER FAMILY LIMITED PARTNERSHIP	ROBERT R. KASNER
HI-GRADE MATERIALS COMPANY	LORI CLIFTON	KASNER, ROBERT	ROBERT KASNER
HI-GRADE MATERIALS COMPANY	LORI CLIFTON	KATCHER, AUGUST M. AND MARCELINE	AUGUST M. AND MARCELINE KATCHER
HILARIDES 1998 REVOCABLE FAMILY TRUST	FRANK HILARIDES	KEMP, ROBERT AND ROSE	ROBERT AND ROSE KEMP
HILL FAMILY TRUST AND HILL'S RANCH, INC.	KATHERINE HILL	KEMPER CAMPBELL RANCH	PEGGY SHAUGHNESSY
HITCHIN LUCERNE, INC.	MARY THOMAS	KIM, JIN S. AND HYUN H.	JIN S. AND HYUN H. KIM
HO, TING-SENG AND AH-GIT	TING-SENG AND AH-GIT HO	KIM, JOON HO AND MAL BOON REVOCABLE TRUST	ALAN AND ANNETTE DE JONG
HOLLISTER, ROBERT H. AND RUTH M.	JOAN ROHRER	KIM, JU SANG	JU SANG KIM
HOLWAY JEFFREY R AND PATRICIA GAGE	JEFFREY R HOLWAY AND PATRICIA GAGE	KIM, SEON JA	SEON JA KIM
HOLWAY, JEFFREY R	JEFFREY R HOLWAY	KOEGLER, RONALD R. AND CAROLYN V.	RONALD R. AND CAROLYN V. KOEGLER
HOLY HEAVENLY LAKE, LLC	KATHERINE K HSU	KOERING, RICHARD AND KOERING, DONNA	RICHARD KOERING AND DONNA
HONG, PAUL B. AND MAY	PAUL HONG	KOSHAREK, JOHN AND JOANN	JOHN AND JOANN KOSHAREK
HOOD FAMILY TRUST	SANDRA D. HOOD	LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT	CATHERINE CERRI
HORTON, JOHN	GRETCHEN HORTON	LAKE JODIE PROPERTY OWNERS ASSOCIATION	DANIEL LINDENMAN
HORTON'S CHILDREN'S TRUST	GRETCHEN HORTON	LAKE WAIKIKI	NANCY LAN
HOWARD, ET AL.	NORMAN A. HOWARD	LAKE WAINANI OWNERS ASSOCIATION	TIMOTHY M. ROHM
HUBBARD, ESTER AND MIZUNO, ARLEAN	ESTER HUBBARD	LAM, PHILLIP	PHILLIP LAM
HUERTA, HECTOR	JOHN DRISCOLL	LANGLEY, JAMES	JAMES LANGLEY
HUNT, CONNIE	CONNIE HUNT	LANGLEY, JAMES - INDUSTRIAL	JAMES LANGLEY
HUNT, RALPH M. AND LILLIAN F.	RALPH HUNT	LANGLEY, MICHAEL R. AND SHARON	MICHAEL R. AND SHARON LANGLEY
HYATT, JAMES AND BRENDA	DANIEL AND KAREN GRAY	LAVANH, ET AL.	VANESSA LAOSY
IM, NICHOLAS NAK-KYUN	STEVE KIM	LAWRENCE, WILLIAM W.	ROBERT LAWRENCE JR.
IRVIN, BERTRAND W.	BERTRAND W. IRVIN	LAWSON, ERNEST AND BARBARA	ERNEST AND BARBARA LAWSON
ITALMOOD INC., ET. AL.	SEBASTIAN MARZARO	LEE, ANNA K. AND ESHBAN K.	ANNA K. LEE
JACKS, JAMES F.	JAMES F. JACKS	LEE, DOO HWAN	DOO HWAN LEE
JACKSON, JAMES N. JR REVOCABLE LIVING TRUST	JAMES JACKSON JR.	LEE, ET AL., SEPOONG AND WOO POONG	SEPOONG & WOO POONG LEE
JACKSON, RAY REVOCABLE TRUST NO. 45801	LAWRENCE DEAN	LEE, VIN JANG T.	ERIC ARCHIBEK
JAMBOREE HOUSING CORPORATION	AUDREY GOLLER	LEM, HOY	VIRGINIA JANOVSKY
JESS RANCH WATER COMPANY	GARY A. LEDFORD	LENHERT, RONALD AND TONI	RONALD AND TONI LENHERT
JOHNSON, CARLEAN	CARLEAN JOHNSON	LHC ALLIGATOR, LLC	BRAD FRANCKE
JOHNSON, RONALD	RONALD JOHNSON	LIANG, YUAN - I AND TZU - MEI CHEN	BILLY LIANG
JOHNSTON, HARRIET AND JOHNSTON, LAWRENCE W.	LAWRENCE W. JOHNSTON	LIBERTY UTILITIES (APPLE VALLEY RANCHOS WATER) CORP.	ERIC LARSEN
JONES TRUST DATED MARCH 16, 2002	MAGDALENA JONES	LIBERTY UTILITIES (APPLE VALLEY RANCHOS WATER) CORP.	ERIC LARSEN
JONES, JOETTE	JOETTE JONES	LIN, KUANG JUNG AND CHUNG, DER-BING	JAMES LIN
JORDAN FAMILY TRUST	PAUL JORDAN	LO, ET AL.	MEI LI
JUBILEE MUTUAL WATER COMPANY	RAY GAGNÉ	LOPEZ, BALTAZAR	PATRICIA MIRANDA

APPENDIX J

MARCH 24, 2021

**MOJAVE BASIN AREA WATERMASTER
NOTICE LIST**

OWNER	DESIGNEE	OWNER	DESIGNEE
LOW, DEAN	DEAN LOW	NUÑEZ, LUIS SEGUNDO	LUIS SEGUNDO NUÑEZ
LUA, MICHAEL T. AND DONNA S.	MICHAEL T. AND DONNA S. LUA	NUNN FAMILY TRUST	PEARL OR GAIL NUNN
LUCERNE VALLEY MUTUAL WATER COMPANY	GWEN L. BEDICS	O. F. D. L., INC.	JEFF GAASTRA
LUCERNE VALLEY PARTNERS	MANOUCHER SARBAZ	OASIS WORLD MISSION	CHUN SOO AHN
LUCERNE VISTA MUTUAL WATER COMPANY	MARIAN WALENT	ODESSA WATER DISTRICT	KODY TOMPKINS
LUCKEY 2010 REVOCABLE TRUST	CAROLYN J. LUCKEY	OHAI, REYNOLDS AND DOROTHY	DOROTHY OHAI
M BIRD CONSTRUCTION	EUGENE R. & VICKIE R. BIRD	OMYA CALIFORNIA, INC.	RALPH MCCULLERS
M.B. LANDSCAPING AND NURSERY, INC.	MARIA MARTINEZ	ORO GRANDE SCHOOL DISTRICT	NICK HIGGS
MAHJOUBI, AFSAR S.	ROBERT SAIDI	P AND H ENGINEERING AND DEVELOPMENT CORPORATION	M. T. SHORAKA
MALONEY, JANICE	JANICE MALONEY	PACIFIC GAS AND ELECTRIC COMPANY	JESSICA BAILS
MANNING, SHARON S.	JIMMY BERRY	PAK, KAE SOO AND MYONG HUI KANG	KAE SOO AND MYONG HUI KANG PAK
MARCROFT, JAMES A. AND JOAN	ALLEN MARCROFT	PATINO, JOSÉ	JOSÉ PATINO
MARIANA RANCHOS COUNTY WATER DISTRICT	JAMES M. HANSEN, JR.	PAUSTELL, JOAN BEINSCHROTH	JOAN BEINSCHROTH PAUSTELL
MARSHALL, CHARLES	CHARLES MARSHALL	PEARCE, CRAIG L.	CRAIG L. PEARCE
MARTIN, MICHAEL D. AND ARLENE D.	MICHAEL D. AND ARLENE D. MARTIN	PERKO, BERT K.	BERT K. PERKO
MCCOLLUM, CHARLES L.	ROD SEXTON	PERRY REVOCABLE LIVING TRUST, THOMAS AND PATRICIA	THOMAS PERRY
MCKINNEY, PAULA	PAULA MCKINNEY	PETTIGREW, DAN	DAN PETTIGREW
MEAD FAMILY TRUST	OLIVIA L. MEAD	PHELAN PIÑON HILLS COMMUNITY SERVICES DISTRICT	SEAN WRIGHT
MILBRAT, IRVING H.	DAVID I. MILBRAT	PITTMAN REVOCABLE TRUST, DIANA J.	DIANA W. PITTMAN
MILLER LIVING TRUST	DONNA MILLER	POLAND, JOHN R. AND KATHLEEN A.	JOHN POLAND
MITSUBISHI CEMENT CORPORATION	DAVID RIB	POLICH, DONNA	DONNA POLICH
MIZRAHIE, ET AL.	PHILIP MIZRAHIE	PORTER, TIMOTHY M.	TIMOTHY M. PORTER
MLH, LLC	THOMAS A. HRUBIK	PRECISION INVESTMENTS SERVICES, LLC	CARIN MCKAY
MOJAVE DESERT LAND TRUST	ALLYSON LAVENDER	PRICE, DONALD AND RUTH	DONALD AND RUTH PRICE
MOJAVE SOLAR, LLC	MARIA ELENA LOPEZ	PRUETT, ANDREA	ANDREA PRUETT
MOJAVE WATER AGENCY	DOUG KERNS	QUAKENBUSH, SAMUEL R.	SAMUEL R. QUAKENBUSH
MOJAVE WATER AGENCY	DOUG KERNS	QUIROS, FRANCISCO J. AND HERRMANN, RONALD	RON HERRMANN
MONACO INVESTMENT COMPANY	MANOUCHER SARBAZ	RANCHERITOS MUTUAL WATER COMPANY	ELIZABETH MURENA
MORRIS TRUST, JULIA V.	KEN ELLIOT	REED, MIKE	MIKE REED
MOSS, LAWRENCE W. AND HELEN J.	LAWRENCE W. AND HELEN J. MOSS	RHEE, ANDREW N.	ANDREW N. RHEE
MOST FAMILY TRUST	JENNIE MOST	RICE, HENRY C. AND DIANA	KELLY RICE
MULLIGAN, ROBERT AND INEZ	DENNIS HILLS	RIM PROPERTIES, A GENERAL PARTNERSHIP	IAN BRYANT
MURPHY, JEAN	JEAN MURPHY	RIOS, MARIANO V.	JOSIE RIOS
MUSIC, ZAJO	ZAJO MUSIC	RIVERO, FIDEL V.	FIDEL V. RIVERO
NAVAJO MUTUAL WATER COMPANY	JAMES HANSEN	RIZVI, S.R ALI	S.R ALI RIZVI
NEW SPRINGS LIMITED PARTNERSHIP	BILLY LIANG	ROBERTSON'S READY MIX	JACKIE MCEVOY
NEWBERRY COMMUNITY SERVICES DISTRICT	JODI HOWARD	ROSSI, JAMES L. AND NAOMI I.	MITCH HAMMACK
NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	JEFF GAASTRA	ROYAL WAY	JOHN D. ZEMANEK
NORRIS TRUST, MARY ANN	MARY ANN NORRIS	RUE RANCH, INC.	SAM MARICH
NSSLIC, INC.	KENTON EATHERTON	RUISCH TRUST, DALE W. AND NELLIE H.	DALE W. RUISCH

APPENDIX J

MARCH 24, 2021

**MOJAVE BASIN AREA WATERMASTER
NOTICE LIST**

OWNER	DESIGNEE	OWNER	DESIGNEE
S AND B BROTHERS, LLC	SHERWIN SHORAKA	SYNAGRO-WWT, INC. (DBA NURSURY PRODUCTS, LLC)	VENNY VASQUEZ
S AND E 786 ENTERPRISES, LLC	JAFAR RASHID	SZYNKOWSKI, RUTH J.	RUSSELL SZYNKOWSKI
SABA FAMILY TRUST DATED JULY 24, 2018	SARA FORTUNA	TALLAKSON FAMILY REVOCABLE TRUST	BILL AND ELIZABETH TALLAKSON
SAGABEAN-BARKER, KANOELOKELANI L.	KANOE BARKER	TAPIE, RAYMOND L.	RAYMOND L. TAPIE
SAMPLES, BERNARD D. AND JANICE E.	BERNARD D. AND JANICE E. SAMPLES	TEISAN, JERRY	JERRY TEISAN
SAMRA, JAGTAR S.	JAGTAR S. SAMRA	THAYER, SHARON	SHARON THAYER
SAN BERNARDINO CO BARSTOW - DAGGETT AIRPORT	REBECCA MANCHA	THE CUSHENBURY TRUST, C/O SPECIALTY MINERALS, INC.	DEL CURTIS
SAN BERNARDINO COUNTY - HIGH DESERT DETENTION CENTER	JARED BEYELER	THOMAS, STEPHEN AND LORI	STEPHEN THOMAS
SAN BERNARDINO COUNTY SERVICE AREA 29	TREVOR LEJA	THOMPSON LIVING TRUST, JAMES A. AND SULA B.	LYNNETTE L. THOMPSON
SAN BERNARDINO COUNTY SERVICE AREA 42	JARED BEYELER	THOMPSON LIVING TRUST, R.L. AND R.A.	RODGER THOMPSON
SAN BERNARDINO COUNTY SERVICE AREA 64	JARED BEYELER	THRASHER, GARY	GARY THRASHER
SAN BERNARDINO COUNTY SERVICE AREA 70J	JARED BEYELER	THUNDERBIRD COUNTY WATER DISTRICT	CHRISTINE BISPO
SCRAY, MICHELLE A. TRUST	MICHELLE SCRAY	TRANSAMERICA FIN'L SVC - SPEARS, LARRY B. AND ERLINDA	
SERVICE ROCK PRODUCTS CORPORATION	JACKIE MCEVOY	TRIPLE H PARTNERSHIP	JIM HOOVER
SEXTON, RODNEY A. AND SEXTON, DEREK R.	ROD SEXTON	TROEGER FAMILY TRUST, RICHARD H.	MIKE TROEGER
SHEEP CREEK WATER COMPANY	CHRIS CUMMINGS	TURNER, TERRY	TERRY TURNER
SHENG, JEN	JEN SHENG	UNION PACIFIC RAILROAD COMPANY	AURELIO IBARRA
SHEPPARD, THOMAS AND GLORIA	THOMAS AND GLORIA SHEPPARD	VACA, ANDY AND TERESITA S.	ANDY AND TERESITA S. VACA
SHORT, JEROME E.	JEROME E. SHORT	VALENTI, VITO	VITO VALENTI
SILVER LAKES ASSOCIATION	WESTLY CAMPBELL	VAN BASTELAAR, ALPHONSE	DEAN VAN BASTELAAR
SINGH, ET AL.	NEPAL SINGH	VAN DAM FAMILY TRUST, GLEN AND JENNIFER	GLEN AND JENNIFER VAN DAM
SMITH, DENISE DBA AMEREQUINE BEAUTY, INC	DENISE SMITH	VAN DAM REVOCABLE TRUST, E AND S	ELDERT AND SUSAN VAN DAM
SMITH, PORTER AND ANITA	PORTER AND ANITA SMITH	VAN LEEUWEN, JOHN	JACOB BOOTSMAN
SNOWBALL DEVELOPMENT, INC.	STEVE KIM	VANDER DUSSEN TRUST, AGNES AND EDWARD	AGNES VANDER DUSSEN
SON'S RANCH	CHAN KYUN SON	VANHOOPS HOLDINGS, LP	TRACI HOOPS
SOPPELAND REVOCABLE TRUST	JASON LAMOREAUX	VERNOLA TRUST, PAT AND MARY ANN	JOHN DRISCOLL
SOUTHERN CALIFORNIA EDISON COMPANY	ERIKA CLEMENT	VICTOR VALLEY COMMUNITY COLLEGE DISTRICT	STEPHEN GARCIA
SOUTHERN CALIFORNIA GAS COMPANY	SCOTT BREWER	VICTOR VALLEY MEMORIAL PARK	DEIDRA HITT
SPECIALTY MINERALS, INC.	DEL CURTIS	VICTORVILLE WATER DISTRICT, ID#1	STEVE ASHTON
SPERRY, WESLEY	WESLEY SPERRY	VICTORVILLE WATER DISTRICT, ID#2	STEVE ASHTON
SPILLMAN, JAMES R. AND NANCY J.	JAMES R. AND NANCY J. SPILLMAN	VOGLER, ALBERT H.	ALBERT H. VOGLER
SPRING VALLEY LAKE ASSOCIATION	ERIC MILLER	WAGNER LIVING TRUST	JOAN WAGNER
SPRING VALLEY LAKE COUNTRY CLUB	MITCHELL BROWN	WAKULA FAMILY TRUST	CHRISTIAN JOSEPH WAKULA
ST. ANTONY COPTIC ORTHODOX MONASTERY	FATHER JOSEPH	WANG, STEVEN	STEVEN WANG
STARKE, GEORGE A. AND JAYNE E.	GEORGE A. AND JAYNE E. STARKE	WARD, KEN AND BARBARA	BARBARA ALLARD-WARD
STORM, RANDALL	RANDALL STORM	WARD, RAYMOND	RAYMOND WARD
SUDMEIER, GLENN W.	GLENN W. SUDMEIER	WEEMS, LIZZIE	LIZZIE WEEMS
SUMMIT VALLEY RANCH, LLC	ALEXANDRA LIOANAG	WEERAIHINGHE, MAITHRI N.	MAITHRI N. WEERAIHINGHE
SUNDOWN LAKES, INC.	MARK RICHARDSON	WERNER, ANDREW J.	ANDREW J. WERNER
SUNRAY LAND COMPANY, LLC	TOM TREINEN	WEST END MUTUAL WATER COMPANY	JAMES WOODY

APPENDIX J

MARCH 24, 2021

MOJAVE BASIN AREA WATERMASTER
NOTICE LIST

<u>OWNER</u>	<u>DESIGNEE</u>	<u>OWNER</u>	<u>DESIGNEE</u>
WEST, HOWARD AND SUZY	HOWARD AND SUZY WEST		
WEST, JIMMIE E.	JIMMIE E. WEST		
WESTERN DEVELOPMENT AND STORAGE, LLC	ANDREW WERNER		
WESTERN HORIZON ASSOCIATES, INC.	CHUNG CHO GONG		
WESTERN WATER COMPANY	WILMA SILVERIA		
WESTLAND INDUSTRIES, INC.	GENARO ZAPATA		
WET SET, INC.	THOMAS G. FERRUZZO		
WIENER, MELVIN AND MARIAM S.	MELVIN AND MARIAM S. WIENER		
WILSHIRE ROAD PARTNERS	MANOUCHER SARBAZ		
WITHEY, CONNIE	CONNIE TAPIE		
WITTE, E. DANIEL AND MARCIA	E. DANIEL AND MARCIA WITTE		
WLSR, INC.	MARK J. CLUFF		
WOOD, MICHAEL AND DENISE	MICHAEL AND DENISE WOOD		
WORSEY, JOSEPH A. AND REVAE	DAVID A. WORSEY		

APPENDIX K

PERMANENT TRANSFERS OF BASE ANNUAL PRODUCTION RIGHT

2019-20 WATER YEAR

APPENDIX K

MARCH 24, 2021

PERMANENT TRANSFERS OF BASE ANNUAL PRODUCTION RIGHT
WATER YEAR 2019-20
(ALL AMOUNTS IN ACRE-FEET)

SUBAREA	TRANSFEROR	TRANSACTION					STATUS OF RIGHTS AFTER PERMANENT TRANSFER				
		VERIFIED BASE ANNUAL PRODUCTION	CURRENT BASE ANNUAL PRODUCTION RIGHT (PERCENT)	DATE PROCESSED BY WATERMASTER	TYPE OF TRANSACTION	TRANSFER AMOUNT	TRANSFEEE		TRANSFEROR		
							VERIFIED BASE ANNUAL PRODUCTION	BASE ANNUAL PRODUCTION RIGHT (PERCENT)	VERIFIED BASE ANNUAL PRODUCTION	BASE ANNUAL PRODUCTION RIGHT (PERCENT)	
BAJA	GENON CALIFORNIA SOUTH, LP	7,194	10.8741	09/25/2019	SALE	7,194	MOJAVE WATER AGENCY	7,194	10.8741	0	0.0000
OESTE	BROWN, SUE	46	0.6483	10/23/2019	SALE	46	HETTINGA REVOCABLE TRUST	1,302	18.3510	0	0.0000
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	1,085	1.6400	10/23/2019	SALE	140	CHEYENNE LAKE, INC.	662	1.0006	945	1.4284
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	945	1.4284	10/23/2019	SALE	140	CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	841	1.2712	805	1.2168
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	805	1.2168	10/23/2019	SALE	140	LAKE JODIE PROPERTY OWNERS ASSOCIATION	451	0.6817	665	1.0052
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	665	1.0052	10/23/2019	SALE	140	LAKE WAINANI OWNERS ASSOCIATION	1,078	1.6295	525	0.7936
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	525	0.7936	10/23/2019	SALE	140	O. F. D. L., INC.	440	0.6651	385	0.5819
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	385	0.5819	10/23/2019	SALE	100	SUNDOWN LAKES, INC.	520	0.7860	285	0.4308
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	285	0.4308	10/23/2019	SALE	140	WET SET, INC.	544	0.8223	145	0.2192
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	145	0.2192	10/23/2019	SALE	140	WLSR, INC.	468	0.7074	5	0.0076
BAJA	BORGOGNO REVOCABLE LIVING TRUST	1,844	2.7873	12/12/2019	SALE	1,844	VAN DAM FAMILY TRUST, GLEN AND JENNIFER	7,274	10.9951	0	0.0000
BAJA	JOHNSON, JAMES R. AND ELLEN	247	0.3734	12/12/2019	SALE	247	IM, NICHOLAS NAK-KYUN	397	0.6001	0	0.0000
ESTE	WEISER, ET AL.	90	0.4454	01/22/2020	SALE	90	CROWN CAMBRIA, LLC	90	0.4454	0	0.0000
BAJA	CALICO JUNCTION	20	0.0302	02/26/2020	SALE	20	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	25	0.0378	0	0.0000
BAJA	KOROGHLIAN, TED AND NAJWA	15	0.0227	02/26/2020	SALE	15	MUSIC, ZAJO	15	0.0227	0	0.0000
ALTO	BEEBE, DOROTHEY K.	6	0.0052	04/22/2020	SALE	6	HOLY HEAVENLY LAKE, LLC	6	0.0052	0	0.0000
ALTO	BEINSCHROTH FAMILY TRUST	670	0.5755	04/22/2020	SALE	250	BEINSCHROTH FAMILY TRUST	275	0.2362	420	0.3608
ALTO	BEINSCHROTH FAMILY TRUST	420	0.3608	04/22/2020	SALE	250	BEINSCHROTH, ANDY ERIC	250	0.2148	170	0.1460
ALTO	BEINSCHROTH FAMILY TRUST	170	0.1460	04/22/2020	SALE	170	PAUSTELL, JOAN BEINSCHROTH	170	0.1460	0	0.0000
BAJA	ARGUELLES REVOCABLE TRUST, ALFREDO A. AND ANA. M.	647	0.9780	05/27/2020	SALE	647	LAKE WAINANI OWNERS ASSOCIATION	1,725	2.6074	0	0.0000
ESTE	PETTIGREW, JAMES AND CHERLYN	500	2.4746	05/27/2020	SALE	500	AMERICA UNITED DEVELOPMENT, LLC	500	2.4746	0	0.0000
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	25	0.0348	07/22/2020	SALE	3	CALICO LAKES HOMEOWNERS ASSOCIATION	1,296	1.9590	22	0.0333
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	22	0.0333	07/22/2020	SALE	3	CHEYENNE LAKE, INC.	665	1.0052	19	0.0287
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	19	0.0287	07/22/2020	SALE	3	CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	844	1.2758	16	0.0242
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	16	0.0242	07/22/2020	SALE	3	LAKE JODIE PROPERTY OWNERS ASSOCIATION	454	0.6862	13	0.0197
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	13	0.0197	07/22/2020	SALE	3	O. F. D. L., INC.	443	0.6696	10	0.0151

APPENDIX K

MARCH 24, 2021

PERMANENT TRANSFERS OF BASE ANNUAL PRODUCTION RIGHT
 WATER YEAR 2019-20
 (ALL AMOUNTS IN ACRE-FEET)

SUBAREA	TRANSFEROR	VERIFIED BASE ANNUAL PRODUCTION	CURRENT BASE ANNUAL PRODUCTION RIGHT (PERCENT)	TRANSACTION			STATUS OF RIGHTS AFTER PERMANENT TRANSFER				
				DATE PROCESSED BY WATERMASTER	TYPE OF TRANSACTION	TRANSFER AMOUNT	TRANSFEREE	VERIFIED BASE ANNUAL PRODUCTION	BASE ANNUAL PRODUCTION RIGHT (PERCENT)	VERIFIED BASE ANNUAL PRODUCTION	BASE ANNUAL PRODUCTION RIGHT (PERCENT)
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	10	0.0151	07/22/2020	SALE	3	SUNDOWN LAKES, INC.	523	0.7905	7	0.0106
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	7	0.0106	07/22/2020	SALE	3	WET SET, INC.	547	0.8268	4	0.0060
BAJA	NEWBERRY SPRINGS RECREATIONAL LAKES ASSOCIATION	4	0.0060	07/22/2020	SALE	3	WLSR, INC.	471	0.7119	1	0.0015
ALTO	DOLCH LIVING TRUST ROBERT AND JUDITH	100	0.0859	09/23/2020	SALE	10	HELENDALE COMMUNITY SERVICES DISTRICT	4,009	3.4438	90	0.0773

Appendix H- AVAA Watermaster Annual Report Water Year 2019 to 2020



Final Antelope Valley Watermaster 2019 Annual Report

July 29, 2020

TODD 
GROUNDWATER
Watermaster Engineer



FINAL

Antelope Valley Watermaster

2019 Annual Report

July 29, 2020

TODD 
G R O U N D W A T E R

2490 Mariner Square Loop, Suite 215
Alameda, CA 94501
510.747.6920

www.toddgroundwater.com

Fourth Annual Report, Calendar Year 2019

Antelope Valley Groundwater Cases, Judicial Council Coordination Proceeding No. 4408, Santa Clara Case No.: 1-05-CV-049053, Superior Court of the State of California, County of Los Angeles - Central District

Antelope Valley Watermaster Board of Directors

The Antelope Valley Watermaster is charged with administering adjudicated water rights and managing groundwater resources within the Adjudication Area of the Antelope Valley. For 2019, the five-member Board consists of:

Board

Robert Parris, Chairperson
Dennis Atkinson, Vice Chairperson
Adam Ariki
John Calandri
Leo Thibault

Alternates

Dwayne Chisam
Richard Gomez
Kathy MacLaren
Derek Yurosek
Adrienne Reca.

Antelope Valley Watermaster Engineer



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www.toddgroundwater.com

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List of Acronyms

AFY	acre-feet per year
APN	Assessor Parcel Number
AVEK	Antelope Valley-East Kern Water Agency
AVSWC/JPA	Antelope Valley State Water Contractors Joint Powers Authority
Cal Water	California Water Service Company
CIMIS	California Irrigation Management Information System
CSD	Community Services District
DDW	State Water Resources Control Board California Division of Drinking Water
District 40	Los Angeles County Waterworks District No. 40, Antelope Valley
DLCSD	Desert Lake Community Services District
DWR	California Department of Water Resources
DPW	Los Angeles County Department of Public Works
DRI	Desert Research Institute
EAFB	Edwards Air Force Base
ET	Evapotranspiration
FY	Fiscal year
GAMA	SWRCB Groundwater Ambient Monitoring and Assessment
InSAR	Interferometric Synthetic Aperture Radar
IRWMP	Antelope Valley Integrated Regional Water Management Plan
Kc	Crop coefficient
LACSD	County Sanitation Districts of Los Angeles County
LCID	Littlerock Creek Irrigation District
MCL	Maximum Contaminant Level
mg/L	milligram per liter
mgd	million gallons per day
msl	mean sea level
MWC	Mutual Water Company
NEWD	North Edwards Water District
NWIS	National Water Information System of the USGS
NWS	National Weather Service
PRID	Palm Ranch Irrigation District
PWD	Palmdale Water District
QHWD	Quartz Hill Water District
RCSA	Rosamond Community Services District
RWA	Replacement Water Assessment
SWRCB	State Water Resources Control Board
SWRU	Semitropic Water Storage District Stored Water Recover Unit
SGMA	Sustainable Groundwater Management Act
SNMP	Salt and Nutrient Management Plan
SWP	State Water Project

Sy	specific yield
TDS	Total Dissolved Solids
USGS	U.S. Geological Survey
WY	Water Year, October 1 through September 30
WRP	Water Reclamation Plant
WSSP-2	AVEK's Water Supply Stabilization Project No. 2 (also called Westside Water Bank)
WTP	Water Treatment Plant
WWTP	Wastewater Treatment
WSWB	Willow Springs Water Bank (formerly known as the Antelope Valley Water Bank)

MESSAGE FROM THE WATERMASTER BOARD

In this fourth year of administering the Judgment, the Antelope Valley Watermaster benefited from its strong working relationships to accomplish key tasks in 2019. A draft version of a complete set of Rules and Regulations was compiled and provided to a legal Ad Hoc Committee and the Advisory Committee for review and comment – that document was approved in 2020. Templates for a Storage and Recovery Agreement were approved, and the two first applications for a storage agreement for banking and recovery were received. These first two Storage Agreements were approved in 2020, thereby increasing groundwater availability in the Basin. An online Transfer Bulletin Board was established on the Watermaster website that allows Parties to post their interest in transferring or obtaining a transfer of rights to produce groundwater. Administrative Staff, Watermaster Counsel, and the Watermaster Engineer worked with multiple Parties to bring them into compliance with the Judgment.

2019 was also the second year of Rampdown production; groundwater extraction appears to be reduced from previous years bringing the Basin closer to its target safe yield.

The 2019 Annual Report presents improved analyses in monitoring of safe yield components including the distribution of 2019 production, an assessment of water level trends, incorporation of recent satellite imagery data on land subsidence, and a preliminary review of general Basin-wide groundwater quality.

The Watermaster Board is looking forward to working with all Parties in the coming years on the implementation of the Judgment and the associated sustainability of the Basin groundwater resources.



Watermaster Board of Directors, July 24, 2019

From left to right: John Calandri, Dennis Atkinson, Kathy MacLaren (alternate), Dwayne Chisam (alternate), and Adam Arika

1 INTRODUCTION

The Judgment and Physical Solution for the Antelope Valley Groundwater Adjudication represents more than 15 years of complex proceedings among more than 4,000 parties including public water suppliers, landowners, small pumpers and non-pumping property owners, and the federal and state governments. Through four phases, the adjudication defined the boundaries of the Basin¹, considered hydraulic connection throughout the basin, established the safe yield, and quantified groundwater production. The Judgment documented overdraft conditions, established respective water rights among groundwater producers, and ordered a rampdown of production to the native safe yield.

The adjudication provides a framework to sustainably manage the basin and reduce groundwater level declines and subsidence. The Final Judgment was entered on December 23, 2015 and is posted on the Watermaster website for reference (www.avwatermaster.net). To administer the Judgment, the Court directed appointment of the Watermaster – a five-member board of directors representing the Parties. In 2016, the Watermaster Board and an Advisory Committee (both entities required under the Judgment) were formed. In 2017, the Board awarded Todd Groundwater a three-year contract as Watermaster Engineer to fulfill certain requirements of the Judgment.

Under the Judgment, the Watermaster Engineer has the responsibility of preparing annual reports for the Court; this document is the fourth such report. In 2018, the Watermaster Board requested and was granted a permanent filing date of August 1st for submittal of the Annual Report to the Court covering the previous calendar year. This 2019 Annual Report is being provided to the Court in compliance with the August 1, 2020 deadline.

1.1 BACKGROUND

The Antelope Valley Groundwater Basin is located in the western Mojave Desert, covering 1,580 square miles in portions of Los Angeles, Kern, and San Bernardino counties (**Figure 1**). The groundwater basin boundaries have been defined by the California Department of Water Resources (DWR Basin Number 6-44) and extend beyond the Adjudication Area.

The Antelope Valley Area of Adjudication covers approximately 1,390 square miles of the groundwater basin (**Figure 1**). The Adjudication Area does not include the adjacent alluvial portions of the groundwater basin to the northeast and south and is truncated at the Los Angeles-San Bernardino County Line in the southeast. Subsurface flows between these adjacent alluvial areas and the Adjudication Area are generally considered nominal and the portion of the Antelope Valley Groundwater Basin that extends southeast into San Bernardino County is within the Mojave Basin Area adjudication.

¹ The Final Judgment defines Basin as the Area of Adjudication determined by the Court. Basin is capitalized in this report when referring to the Area of Adjudication. To avoid confusion, the terms *Antelope Valley Groundwater Basin* or *groundwater basin* refer to the DWR-defined groundwater basin.

The Adjudication Area was divided into five subareas for management purposes (**Figure 1**):

- Central Antelope Valley Subarea
- West Antelope Valley Subarea
- South East Subarea
- Willow Springs Subarea
- Rogers Lake Subarea.

A native safe yield of 82,300 acre-feet per year (AFY) was established by the Court for the Antelope Valley Area of Adjudication and the adjudication Parties were divided into various classes to establish respective water rights among groundwater producers. To achieve sustainable groundwater elevations, groundwater production would be reduced (ramped down) over a seven-year period (2016-2022) to a final Production Right. The diagram on the right side of **Figure 2**² shows the Judgment's apportionment of native safe yield to the various Judgment classes.

The Physical Solution quantifies the reduction of groundwater production within the Adjudication Area over time to reach the native safe yield. During this Rampdown Period, certain Parties to the Judgment are allowed to produce groundwater in excess of their Production Right (beginning with a Pre-Rampdown Production amount) without incurring a Replacement Obligation. Certain Parties are also allowed credit for Imported Water Return Flows, Carry Over water, and Stored Water under the distinct circumstances defined in the Judgment. Certain Parties without a Production Right can also produce groundwater under certain conditions as provided by the Judgment. Finally, additional production in excess of a Production Right is allowed to certain Parties provided they pay a Replacement Water Assessment. These seven potential production categories are listed on the left side of **Figure 2** and summarized briefly below.

- The Production Right is the portion of the Native Safe Yield assigned to each Party (see diagram on the right of **Figure 2**). Production Rights for specific Parties are defined in the Judgment in Exhibit 3 (Non-Overlying Production Rights), Exhibit 4 (Overlying Production Rights), and in Paragraphs (¶) 5.1.3, 5.1.4, and 5.1.5 of the Judgment for the Small Pumper Class, Federal Reserved Water Rights, and State of California, respectively.
- Rampdown Production is defined in the Judgment as the reasonable and beneficial use of groundwater, excluding Imported Water Return Flows, at a time prior to the Judgment, or the Production Right, whichever is greater. During the seven-year Rampdown Period, production is reduced – or ramped down – from the Pre-Rampdown Production Right to the Production Right for certain Parties with Pre-Rampdown Production rights.
- Imported Water Return Flows represent water brought into the basin from outside of the watershed that provides a net increase in groundwater supply (i.e., does not include consumed or evaporated imported water). Return flows were established in

² The sum of the individual production rights is 82,280.63 AFY; this sum was rounded in the Judgment to 82,300 AFY.

the Judgment at 34 percent of imported water used for agriculture and at 39 percent for municipal and industrial uses.

- Carry Over Water is the right to an unused portion of an annual Production Right or a right to Imported Water Return Flows in a year after the year in which the right was originally available.
- Stored Water is water held in storage in the basin as a result of direct spreading or other methods for subsequent withdrawal and use pursuant to an agreement with the Watermaster. It does not include Imported Water Return Flows.
- Other Rights to Produce Groundwater are outlined in Paragraphs 5.1.7 through 5.1.10 and other portions of the Judgment. Such rights include entities that are required to switch to recycled water when available and production rights granted to Non-Stipulating Parties³. This category also includes the right of Phelan Piñon Hills Community Services District to produce groundwater from the basin for export to its service area under specific conditions in the Judgment (§6.4.1.2).
- Additional Production is pumping that does not fall into the other categories and would include Production based on Watermaster approvals for new production, and Production by Parties to the Judgment in excess of other rights. This production would be subject to a Replacement Obligation; for such pumping, the producer would need to pay a Replacement Water Assessment. Replacement Water will be purchased by the Watermaster or otherwise provided to satisfy the Replacement Obligation.

The Judgment limits the amount of groundwater production that can be produced without incurring a Replacement Obligation (i.e., purchase of imported water to offset the production). Types of production that do not incur a Replacement Obligation include Production Rights (up to the Native Safe Yield), recovery of Imported Water Return Flows, or recovery of Stored Water. While this report indicates that reductions in Production will occur as Parties are ramping down production rights to the Native Safe Yield, such reductions may not be required to the extent that the over-production is offset with Replacement Water.

1.2 PURPOSE AND SCOPE

The Watermaster Engineer is responsible for preparation of annual reports for submittal to the Court. The purpose of the annual report is to document the progress and details regarding implementation of the Judgment including a review of Watermaster activities. Information is provided regarding the operation and management of the groundwater basin and water supplies during the preceding year. A list of the minimum required elements to be compiled in the annual reports is provided in ¶18.5.18 of the Judgment; these elements are reproduced in **Table 1**, with reference to the associated locations in this report. If there are any conflicts or ambiguities related to legal provisions or interpretations between the Judgment and the Annual Report, the Judgment is the controlling document.

³ Non Stipulating Parties includes the Supporting Landowners identified in the Statement of Decision.

Table 1. Minimum Required Elements for the 2019 Annual Report

Judgment Paragraph	Element	Report Location
18.5.18.1	Replacement Obligations	Section 4.6, Appendix E
18.5.18.2	Hydrologic Data Collection	Section 3
18.5.18.3	Purchase and Recharge of Imported Water	Section 4.4, Section 4.8, Appendices C and E
18.5.18.4	Notice List	Appendix L
18.5.18.5	New Production Applications	Section 4.11, Appendix H
18.5.18.6	Rules and Regulations	Section 1.5.7
18.5.18.7	Measuring Devices	Section 3.9
18.5.18.8	Storage Agreements	Section 4.8, Appendix G
18.5.18.9	Annual Administrative Budget	Section 1.6, Appendix K
18.5.18.10	Transfers	Section 4.7, Appendix F
18.5.18.11	Production Reports	Section 4.3, Appendix B
18.5.18.12	Prior Year Report	Section 2
18.5.18.13	Amount of Stored Water owned by each Party	Section 4.8
18.5.18.14	Amount of Stored Imported Water owned by each Party	Sections 4.3, 4.4 and 4.8, Appendices B, C and D
18.5.18.15	Amount of Unused Imported Water Return Flows owned by each Party	Section 4.4, Appendices B and D
18.5.18.16	Amount of Carry Over Water owned by each Party	Section 4.3 and 4.5, Appendix B
18.5.18.17	All Changes in Use	Section 4.10

1.3 REPORT ORGANIZATION

The report provides background and supporting information about Watermaster activities and safe yield monitoring for 2019, and detailed water accounting for 2019 groundwater use by the Parties to the Judgment. These topics are organized into five primary sections and accompanying appendices as described below.

Section 1 of this report provides an introduction and context for the 2019 Annual Report, including purpose and scope. **Section 1.4** summarizes the stakeholder review process including posting and notice of the report including a public hearing. Information on the Watermaster management structure including an organization chart is provided in **Section 1.5**. That section also summarizes the current roles and responsibilities of the Watermaster Board, administrative staff, the Advisory Committee, Watermaster legal counsel, and the Watermaster Engineer. **Section 1.6** provides a summary of Watermaster finances.

Section 2 summarizes activities and actions by the Watermaster in 2019 associated with implementation of the Judgment.

Section 3 presents relevant monitoring data of Safe Yield components in the basin. To provide context for these data, a summary of the safe yield calculation in the Judgment is provided in **Section 3.1**. This summary includes a brief review of the components of natural groundwater recharge relating to the hydrologic system (see Schematic Diagram on **Figure 3**). Components of both the Native Safe Yield and the Total Safe Yield are also discussed, including natural recharge, return flows from urban and agricultural water use, and imported water (including return flows from imported water use). Components of the Total Safe Yield are represented conceptually on **Figure 4**. **Section 3.2** documents the monitoring of safe yield components and provides preliminary analyses on historical and current groundwater levels and change in groundwater volume from 2018 to 2019.

Section 4 provides details on the water accounting for the Parties to the Judgment. Rights to produce groundwater under the Judgment are summarized in **Section 4.1**. Water accounting includes documentation of the Rampdown schedule (**Section 4.2**), 2019 Production and water accounting (**Section 4.3**), imported water use and Imported Water Return Flows (**Sections 4.4**), Carry Over water (**Sections 4.5**), and information on Replacement Obligations (**Section 4.6**), Transfers (**Section 4.7**), Stored water and Storage Agreements (**Section 4.8**). The Drought Program is discussed in **Section 4.9**. Changes in use and well applications for new or replacement production wells are discussed in **Sections 4.10** and **4.11**. **Section 4.12** provides details on the wastewater and recycled water practices that occurred within the Adjudication Area in 2019. As illustrated in **Table 1** above, much of the water accounting – including reported groundwater production – is provided in appendices to this report. Relevant appendices for each water accounting topic are referenced in each water accounting topic of **Section 4**.

Section 5 lists the technical documents reviewed and referenced in this 2019 Annual Report.

The appendices contain supporting material and details of the water accounting process. The attached appendices are printouts of active water accounting files; on occasion, a cell will contain a notation “#VALUE!” This signifies an incomplete formula in the electronic file; these notations have been retained in water accounting tables in this report to maintain the operational integrity of the electronic file. **Table 2** provides a detailed description of each of the appendices and sub-appendices for reference.

Table 2. Description of Appendices

Appendix		Description
A	<p><u>Rampdown Schedules</u> A-1. Exhibit 3 Non-Overlying and Non-Stipulating Parties Rampdown Schedule A-2. Exhibit 4 Overlying Producers Rampdown Schedule</p>	Appendix A contains the Rampdown schedule for 2016-2022 for each Party. Beginning in 2018, Pre-Rampdown Production is reduced in equal increments each year to reach the Production Right by the end of the Rampdown Period.
B	<p><u>Water Accounting Tables</u> B-1. Exhibit 3 Non-Overlying Producers Water Accounting B-2. Exhibit 4 Overlying Producers Water Accounting B-3. Other Parties (Non-Exhibit 3 or Exhibit 4) Water Accounting B-4. New Production Accounting</p>	Appendix B presents detailed accounting by water source (Production Right, Rampdown, unused Federal Reserved Water Rights, Imported Water Return Flows and Carry Over water) for 2019 for each Party. Note that all Parties may not have rights to all source types. Table B-4 presents water accounting for entities granted New Production.
C	Imported Water, 2019	<p>Appendix C-1 provides details on the amounts of water imported into the Antelope Valley watershed, amounts recharged (banked), and amounts sold to customers by AVEK, PWD, and LCID in 2019.</p> <p>Appendices C-2 and C-3 summarize the amount of imported water stored at the beginning of 2019, amounts recharged and recovered in 2019, and the amount of recoverable imported water stored at the end of 2019 at AVEK storage and recovery locations (C-2) and at other storage and recovery locations (C-3).</p>
D	Imported Water Return Flows	Appendix D presents annual imported water use for 2011-2019 and Imported Water Return Flows for 2016-2020 by the 37 Parties on Exhibit 8. Return flows from imported water use are set by the Judgment at 34 percent for agricultural use and 39 percent for municipal and industrial imported water use.
E	Replacement Obligations	Replacement Obligations and Replacement Assessments for 2016-2019 are listed in Appendix E.
F	Transfers	Appendix F-1 provides details on all permanent transfers that have occurred since implementation of the Judgment.

Appendix		Description
		Appendix F-2 lists the one-time transfers. Appendix F-3 lists transfers associated with a split of Production Rights.
G	Storage Agreements	Approved Storage Agreements are listed in Appendix G.
H	Approved Well Applications and Small Pumper Qualifying Documentation	Appendix H contains a table of the well applications and Small Pumper Qualifying Documentation that have been approved through 2019.
I	AVEK Facilities Map and Water Use Flowcharts	Appendix I contains the following information provided by AVEK: <ul style="list-style-type: none"> • AVEK storage and recovery facilities location map • Flowchart depicting the distribution of AVEK's imported water, groundwater, and recovered water supply in 2019 • Flowchart depicting water AVEK distributed for other agencies in 2019
J	Wastewater and Recycled Water, 2019	Antelope Valley area wastewater is treated at LACSD's Palmdale and Lancaster WRPs, EAFB Air Force Research Laboratory Treatment Plant and the Main Base WWTP, and the RCSD WWTP. Quantities of effluent and reuse for 2019 are tabulated in Appendix J.
K	Watermaster Financial Budgets K-1. Approved Financial Budget, 2020 K-2. Financial Audit, 2019	Appendix K contains an approved budget for 2020 and an audit of all revenue and expenditures for 2019.
L	Notice List	Appendix L contains a list of parties to receive notices from the Watermaster.
M	Delinquent Administrative Assessments and Delinquent Production Reports	Appendix M contains current lists of delinquent assessments and delinquent production reporting.
N	List of Forms	Appendix N contains a list of forms available on the Watermaster website.
O	Financial Analysis Study for Replacement Water Assessment	Appendix O contains a financial analysis of the imported water costs associated with Antelope Valley State Water Contractors Association's groundwater basin recharge and Replacement Water Assessment fees to be assessed on property owners or agencies outside of the AVSWCA service area.

1.4 STAKEHOLDER AND PUBLIC REVIEW AND COMMENT

This fourth annual report will be submitted to the Court on or by August 1 in compliance with the filing deadline approved by the Court⁴. A Draft Annual Report was posted on the Watermaster website on June 3, 2020 and reviewed by the Watermaster at its regular board meeting on June 24, 2020. After incorporating comments from various Parties and the Advisory Committee, the Watermaster Engineer produced a Revised Draft version on July 1, 2020.

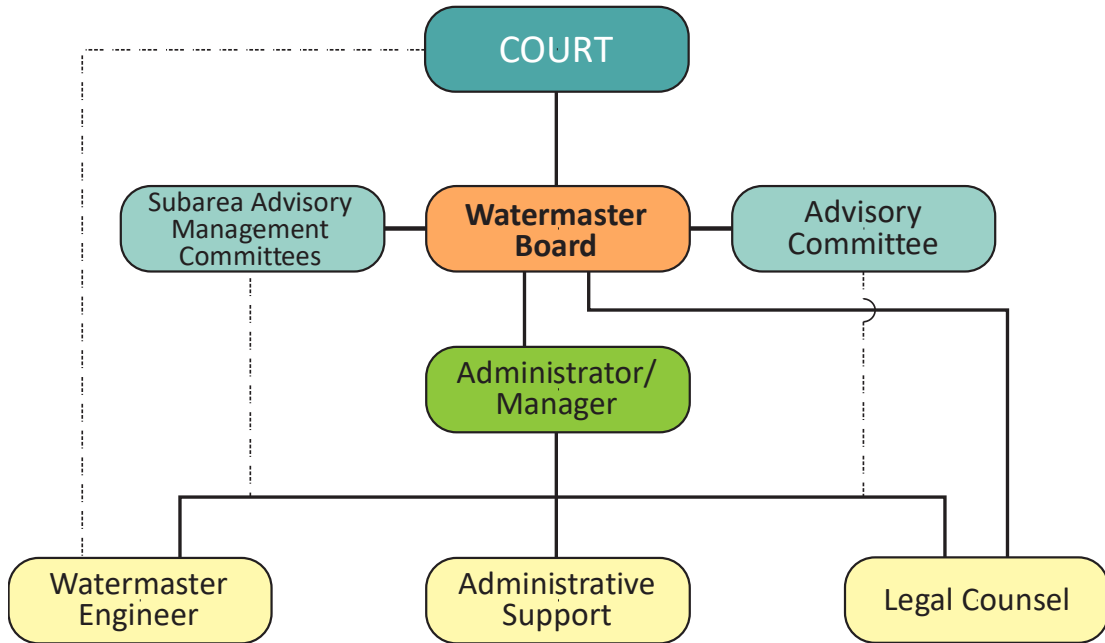
The Watermaster Board held a noticed public hearing on July 22, 2020 to consider public comments on the Revised Draft 2019 Annual Report. On July 22, 2020, the Watermaster unanimously voted to consider and incorporate additional comments received prior to and at the July 22 public hearing. The Watermaster also unanimously approved the filing of the Final 2019 Annual Report, which incorporates the Board-recommended comments, to the Court by August 1, 2020 (Resolution No. R-20-20).

1.5 ANTELOPE VALLEY ADJUDICATION MANAGEMENT

The Judgment identified the powers and duties of specific entities charged with carrying out the Physical Solution. The Watermaster Board functions as the arm of the Court and is assisted by the Watermaster Engineer, the Watermaster Legal Counsel, and Watermaster Administrative Staff to implement the Physical Solution. The Advisory Committee acts in an advisory role and makes recommendations on discretionary determinations by the Watermaster Board. The Subarea Advisory Management Committees, while not yet formed, will also act in an advisory capacity regarding recommendations on discretionary determinations made by the Watermaster Engineer that may affect that subarea. A general organization chart that illustrates current working relationships is provided as follows. Roles and responsibilities of these entities are summarized in the following sections.

⁴ Paragraph 18.5.17 of the Final Judgment requires that the Annual Report be filed no later than April 1 of each year. Recognizing the time needed for data reporting and compilation, along with the required public review process, the Watermaster Board requested and received approval from the Court to permanently move the filing deadline to August 1 of each year.

Antelope Valley Watermaster Organization Chart



1.5.1 Watermaster Board

The Court-appointed Watermaster Board is made up of five members including:

- One representative from the Antelope Valley-East Kern Water Agency (AVEK)
- One representative from the Los Angeles County Waterworks District No. 40 (District 40)
- One public water supplier selected by District 40, Palmdale Water District (PWD), Quartz Hill Water District (QHWD), Littlerock Creek Irrigation District (LCID), California Water Service Company (Cal Water), Desert Lake Community Services District (DLCSD), North Edwards Water District (NEWD), City of Palmdale, City of Lancaster, Palm Ranch Irrigation District (PRID), and Rosamond Community Services District (RCSD), and
Two landowner representatives (exclusive of public agencies and members of the Non-Pumper and Small Pumper Classes) who are selected by majority vote of the landowners identified on Exhibit 4 of the Physical Solution (or their successors in interest) based on their proportionate share of the total Production Rights identified on Exhibit 4.

The current Board members and their alternates are:

- AVEK: *Robert Parris*, alternate: *Dwayne Chisam*
- District 40: *Adam Ariki*, alternate: *Richard Gomez*
- Public Water Suppliers: *Kathy MacLaren*, alternate: *Barbara Hogan*
- Landowners: *John Calandri and Dennis Atkinson*, alternates: *Derek Yurosek and Adrienne Recca*.

The Watermaster Board has certain responsibilities and powers including:

- A responsibility to implement and enforce the Judgment through actions, motions, and service of notices, determinations, requests, demands, reports and other methods pursuant to the Judgment and the Rules and Regulations
- An obligation to carry out its duties in an impartial manner and to rely on best available information to support Judgment implementation
- Selection of Watermaster Engineer
- Preparation of Annual Administrative budgets and associated accounting and billing
- Documentation of groundwater use and transfers and other pertinent information
- Review of new production applications
- Maintenance of a notice list
- Conduct of regular meetings at least quarterly and in accordance with the Ralph M. Brown Act
- Oversight of the preparation of annual reports and a Rules and Regulations document
- Powers and duties as provided in Paragraph 18.4 of the Judgment.

The Board typically meets on the fourth Wednesday of each month, with all meetings conducted in compliance with the Ralph M. Brown Act. The Watermaster Board has conducted its affairs transparently, including holding interviews and deliberations in open session. All Watermaster decisions to date have been achieved through unanimous vote of the Board, although the Watermaster provided for meeting minutes to be approved using a simple majority vote.

1.5.2 Watermaster Engineer

Todd Groundwater was selected unanimously by the Watermaster Board as the Watermaster Engineer for the April 2017 to December 2019 period and its contract was extended two years to December 2021. The Watermaster Engineer is to “perform engineering and technical analysis and water administration functions as provided for in this Judgment” (¶13.5.53 of the Judgment). Duties include:

- Monitor safe yield components and collect hydrologic data
- Require Producers (other than unmetered Small Pumper Class members) to submit Production Reports
- Ensure reduction in groundwater production to the Native Safe Yield during the 2016 to 2022 Rampdown Period
- Propose measuring devices to monitor Production

- Determine if Material Injury to the Basin is occurring, including but not limited to conditions specified in the Judgment
- Determine Replacement Obligations
- Purchase and recharge Replacement Water
- Establish a new production application procedure, review applications and recommend approval or denial of such applications
- Maintain accounting of water stored under Storage Agreements
- Ensure that no person reduces the amount of storm flows that would otherwise enter the Basin
- Encourage appropriate regulatory agencies to enforce reasonable water quality regulations affecting the basin
- Establish memoranda of understanding with Kern and Los Angeles counties regarding well drilling ordinances and reporting
- Beginning in 2034, consider and potentially recommend change to Native Safe Yield
- Beginning in 2034, consider and potentially recommend changes to the calculation of Imported Water Return Flow percentages
- Rely on best available information to support Judgment implementation.
- Prepare an Annual Report for filing with the Court by August 1. The Watermaster requested and was granted a permanent extension to August 1 from the April 1 date in the Judgment
- Prepare Rules and Regulations for Watermaster proposal to the Court (§18.4.2 of the Judgment).

Although not specified in the Judgment, the Watermaster also has reporting requirements under the Sustainable Groundwater Management Act (SGMA) for adjudicated basins (Cal. Water Code §10720.8). Required data on water use, groundwater monitoring, and other information are due to the California Department of Water Resources (DWR) by April 1 of each year (California Water Code Section 10720.8). Adjudicated basins that have Court filing dates for their Annual Reports after April 1 (such as the Antelope Valley Adjudication) are allowed to complete reporting later than April 1.

DWR requires an initial filing on the SGMA website by April 1 of each year to notify DWR that requested data are not yet available; SGMA reporting can be completed when data become available. Todd Groundwater completed the initial notification to DWR on January 27, 2020, prior to the April 1 deadline. For the Antelope Valley Watermaster, the completion of the SGMA reporting will occur concurrently with the Court filing of the Annual Report on August 1. Todd Groundwater will fulfill 2019 SGMA compliance reporting for the Watermaster following Watermaster approval of the Final 2019 Annual Report.

1.5.3 Watermaster Legal Counsel

Watermaster Legal Counsel advises the Board on legal matters and takes direction directly from the Board. In November 2017, the Watermaster unanimously selected Craig Parton of Price Postel & Parma LLP to provide legal services to the Board, including provision of legal opinions on implementation of the Judgment.

1.5.4 Administrative Staff and Functions

Since 2016, administrative functions of the Watermaster are shared between selected staff members of AVEK and Palmdale Water District (PWD). The Watermaster has agreed to reimburse AVEK and PWD for the costs of providing administrative services to the Watermaster. The Advisory Committee and Watermaster will continue to review the roles and responsibilities of the administrative staff to improve the level of service provided to the Watermaster. Currently, administrative staff perform the followings tasks for the Watermaster:

- Provide general oversight of all Watermaster activities and provide direction to consultants
- Work with the Watermaster Board to establish priorities and policy
- Provide accounting services (accounts receivables and bill payables)
- Administer assessment billings and collection process
- Serve as primary point of contact for producers and the public
- Prepare and manage Watermaster budgets
- Administer Watermaster contracts (Engineer, Legal, Audit, etc.)
- Prepare Watermaster staff reports
- Prepare, distribute, and post Watermaster meeting agendas and public notices
- Maintain contact lists and notice list
- Maintain Watermaster website
- Coordinate attorney input
- Coordinate Advisory Committee input
- Coordinate Subarea Advisory Management Committees input
- Assist Watermaster Landowner Board member elections
- Staff Watermaster meetings
- Prepare meeting minutes
- Administer meeting services and equipment (Audio/Visual, Teleconference, and Video-Conference)
- Maintain liability insurance
- Manage work tasks as directed by Board
- Recommend timelines for tasks
- Process applications for Replacement Wells, Monitoring Wells, and unknown Small Pumper qualifications.

1.5.5 Advisory Committee

The Judgment directed Producers to form an Advisory Committee to act in an advisory capacity and make recommendations on discretionary determinations by the Watermaster Board. The Watermaster Board facilitated the formation of the Advisory Committee, which is formed and functioning, and has provided input into various Watermaster Board decisions. The Advisory Committee consists of 16 members representing a broad range of interests:

- Four from agricultural interests
- One industrial landowner
- One public landowner (County Sanitation Districts Nos. 14 and 20 of Los Angeles County or the City of Los Angeles)
- Two Los Angeles County public water purveyors (PWD, QHWD)
- One Kern County public agency (RCSD)
- Two mutual water companies (ideally one each in Los Angeles and Kern counties)
- Two small pumpers
- Two ex-officio members per Judgment (Federal and State), and
- One ex-officio member to provide technical advice.

Advisory Committee meetings are open to the public, noticed on the same webpage as the Watermaster meetings, and held on a regular basis (typically monthly in the week before the Board meeting).

1.5.6 Subarea Advisory Management Committees

The Judgment requires the creation of Subarea Management Advisory Committees. Since the Advisory Committee is actively providing all Parties with a platform for direct participation in Watermaster decision-making, formation of the Subarea Management Advisory Committees has been deferred until a specified interest is identified. All subarea concerns and requests may still be raised before the Watermaster Advisory Committee or to the Watermaster Board in accordance with the Judgment and Rules and Regulations. Any Party may request formation of the Subarea Management Advisory Committees at any time in the future and without Watermaster approval.

1.5.7 Rules and Regulations Development

The Watermaster Engineer is required by the Judgment to prepare Rules and Regulations for Watermaster approval and proposal to the Court (§18.4.2). The Rules and Regulations provide procedures and processes for implementation of the Judgment. Development of the Antelope Valley Watermaster Rules and Regulations document was initiated in 2017 and approved at a public hearing on June 24, 2020 pending modifications to one section (Resolution No. R-20-12). Modifications to Section 9 of the Rules and Regulations were approved at a public hearing on July 22, 2020 (Resolution No. R-20-25). The complete Rules and Regulations document will be submitted to the Court for approval. A copy of the Rules and Regulations is posted on the Watermaster website.

1.6 WATERMASTER FINANCES

1.6.1 Watermaster Administrative Budgets

The Watermaster Board approved an administrative budget for 2019, which resulted in a \$5.00 per acre-foot administrative assessment. The Watermaster 2019 Budget information is summarized as follows.

2019 Administrative Budget Summary

Operating Revenues	\$2,603,806
Non-Operating Revenues	\$ 575
<u>Operating Expenses</u>	<u>(\$ 556,481)</u>
Change	\$2,047,900
Beginning of year	\$ 23,252
<u>End of year</u>	<u>\$2,071,152*</u>

*Includes 1,927,253 of Replacement Water Assessments

The 2019 Operating Revenue Budget listed above includes 2019 Fixed Assessments and 2018 Variable Assessments. The complete audit is in **Appendix K-2**.

- **Fixed Administrative Assessments** are based on each acre foot of a Party's Production Right and are levied at the beginning of the year in which the Production Right occurs.
- **Variable Administrative Assessments** are based on either (1) production by a Party in excess of the Production Right or (2) the right to produce Imported Water Return Flows. Administrative assessments on production under (1) above are levied each Spring after total Production is reported for the preceding year; administrative assessments on the right to produce Imported Water Return Flows under (2) above are determined for the current year based on an average of the amounts of imported water used in the five preceding years (¶15.2.2). Variable Administrative Assessments are collected on:
 - each acre foot (AF) of a Party's right to produce Imported Water Return Flows (¶15.2)
 - each acre foot of a Party's production for which a Replacement Water Assessment has been imposed (¶19.2)
 - each acre foot used of a Non-Overlying Production Right holders' allocation of the unused Federal Reserved Water Right (¶19.1)
 - each acre foot during Rampdown of a Party's production in excess of the sum of its Production Right, Imported Water Return Flows, and Production subject to a Replacement Water Assessment.

Appendix K contains detailed Watermaster financial budgets as follows:

- **Appendix K-1** contains an approved budget for 2020.
The 2020 Administrative Assessment was set at \$5.00 per acre-foot, the same as the Administrative Assessment for 2019.
- **Appendix K-2** contains an audit of all revenue and expenditures for 2019.

1.6.2 Replacement Water Assessments

Replacement Water Assessments are charged by the Watermaster to pay for costs incurred to buy and recharge Replacement Water. The purpose of Replacement Water is to ensure that each Party may fully exercise its Production Right by keeping the Basin in hydrologic balance. The Watermaster shall impose a Replacement Water Assessment on any Producer whose production of groundwater is more than the sum of such Producer's rights to pump groundwater including Production Rights, Carry Over water, Imported Water Return Flows, in-lieu production, and Stored water. **Appendix E** lists the Replacement Obligations for 2019.

During the first two years of the Rampdown Period (2016 and 2017), Producers were generally not subject to Replacement Water Assessment fees. An exception to this was Phelan Pinon Hills Community Services District (PPHCSD). It does not have Production Rights, but according to the Judgment is allowed to pump up to 1,200 AFY from its Well #14 provided such use does not cause Material Injury and PPHCSD pays a Replacement Water Assessment and any other costs deemed necessary to protect Production Rights defined in the Judgment, on all water produced and exported.

The amount of the Replacement Water Assessment due is the sum of excess Production multiplied by the cost to the Watermaster of replacement water, including any Watermaster spreading costs. All Replacement Water Assessments collected by the Watermaster are used to acquire imported water from AVEK, LCID, PWD, or other entities. If the Watermaster encounters issues in acquiring imported water, as much water as possible will be purchased. The Watermaster will allocate the imported water for delivery to areas on an equitable and practicable basis pursuant to the Watermaster Rules and Regulations, including when the available amount of imported water is insufficient to fully meet the Replacement Obligations.

The State Water contractors in the Antelope Valley area (AVEK, PWD, and LCID) hired an independent contractor to determine the Replacement Water Assessment fee in areas inside and outside of the State Water Contractor service areas (copy included in **Appendix O**). The Replacement Water Assessment fee for 2019 was set at \$451 per acre-foot for Producers within the State Water Contractor service areas and at \$948 per acre-foot for Producers outside the State Water Contractor service areas, with the differences reflecting capital costs paid through property taxes by Parties inside the State Water Contractor service areas. Imported water can be purchased from AVEK, PWD, LCID, or other entities and recharged to make up any Replacement Obligations.

2 WATERMASTER ACTIVITIES IN 2019

In this fourth year of implementation, the Watermaster Board continues to actively administer the Judgment and Physical Solution. The Board held ten regular Board meetings and one special Board meeting (combined November and December meeting) in 2019. Board meetings were generally preceded by an Advisory Committee meeting the previous week; the Advisory Committee typically produced a memorandum to the Board advising it on items identified for each upcoming Board meeting. In 2019, the Board considered and unanimously approved 33 resolutions (available on Watermaster website) as listed below:

- R-19-01 Adopting Watermaster Fee Schedule for Year 2019
- R-19-02 Approving Small Pumper or New and Replacement Well Applications
- R-19-03 Small Pumper Qualifying and Monitoring Well Applications
- R-19-04 Approving Small Pumper Qualifying Applications
- R-19-05 Approving New Production and New Point of Extraction Applications
- R-19-06 Approving Applications for Water Transfer
- R-19-07 Approving Applications for Small Pumpers Documentation
- R-19-08 Approving Applications for New Production
- R-19-09 Approving Water Transfer Application
- R-19-10 Adopting Replacement Water Assessments for Year 2018-PWD and LCID
- R-19-11 Adopting Replacement Water Assessments for Year 2019
- R-19-12 Adopting Forms – Storage and Recovery Agreement and Annual Water Storage and Recovery Report
- R-19-13 Adopting March 15, 2019 Memorandum from General Counsel Concerning Small Pumper Class Water Rights
- R-19-14 Adopting May 13, 2019 Memorandum from General Counsel Concerning Limits on Number of Unknown Small Pumper Class Members
- R-19-15 Approving Small Pumper or Replacement Well Applications
- R-19-16 Approving Applications for New Production / New Point of Extractions
- R-19-17 Approving Water Transfer Applications
- R-19-18 Adopting April 12, 2019 Memorandum from General Counsel Concerning Authority to Waive Assessments
- R-19-19 Approving New Production Applications
- R-19-20 Adopting May 16, 2019 Memorandum from General Counsel Concerning Collecting Delinquent Assessment
- R-19-21 Approving Request for Stipulation to Allow Intervention and Replacement Well Application
- R-19-22 Approving AV Watermaster 2018 Annual Report
- R-19-23 Approving Small Pumper and Replacement Well Applications
- R-19-24 Approving New Point of Extraction
- R-19-25 Approving Small Pumper Qualifying Documentation
- R-19-26 Approving Application for Water Transfer
- R-19-27 Adopting Replacement Water Assessments 2016, 2017, 2018 for AVSWCA

- R-19-28 Approving Small Pumper Qualifying, Replacement Wells and Non-Production Well Applications
- R-19-29 Approving Applications for New Production and New Point of Extractions
- R-19-30 Approving Applications for Small Pumpers, Replacement and Monitoring Wells
- R-19-31 Approving Applications for Water Transfers
- R-19-32 Approving Applications for Small Pumpers, Replacement and Monitoring Wells
- R-19-33 Approving AV Watermaster Budget and Administrative Assessments for FY 2020.

Notable actions taken by the Board in 2019 are highlighted below:

- Held a Public Hearing to approve a proposed calendar year 2019 Administrative budget with an Administrative Assessment of \$5 per acre foot.
- Accepted and filed the 2018 Financial Audit.
- Approved and submitted the 2018 Annual Report to the Court.
- Complied with the Sustainable Groundwater Management Act (SGMA) reporting requirements for adjudicated basins.
- Adopted a Replacement Water Assessment of \$451 per acre-foot for Parties within the State Water Contractor service areas and \$948 per acre-foot for Parties outside the State Water Contractor service areas to 2019.
- Established a Transfer Bulletin Board that allows Parties to have their interest in purchasing or selling Transfer water posted on the Watermaster website. Request forms are available for posting information and for removing the information from the Bulletin Board. Administrative staff is only involved with the updating of the website
- Approved the 2020-2021 extension of Todd Groundwater's contract.

The Judgment requires the Watermaster to annually certify a list of unpaid delinquent assessments. Administrative staff regularly provide the Watermaster with a list of outstanding assessments as part of their financial report in each Board packet. Current lists of delinquent assessments (Administrative, Variable, and Replacement) and delinquent annual production reporting are included in **Appendix M**.

Notice List. The Judgment requires the Watermaster to maintain a current list of Parties to receive notices on Watermaster activities. The Parties have an obligation to provide the Watermaster with their current contact information. The Watermaster recently identified and mailed invoices to over 4,000 potential Small Pumpers. Responses to those invoices will be used to update the Notice List with these Small Pumpers. The current Notice List is in **Appendix L**. This list will be updated and refined as appropriate. The Watermaster's website (www.avwatermaster.net) will also be used to notify interested parties of Watermaster activities.

Measuring Devices. In 2017, the Watermaster developed requirements for meter installing, testing, and reporting. These requirements were approved by the Court by order dated November 28, 2017 and are in the Rules and Regulations document. By March 1, 2018, all

Parties other than the Small Pumper Class were required to install meters on their wells for monitoring production and submit proof thereof to the Watermaster. The Watermaster requested and was granted an extension to the meter installation date from January 1, 2018 to March 1, 2018 to allow time for all producing Parties to comply with the requirements. Additional information is provided in **Section 3.9.1** of this report.

Meter installations are also required for any member of the Non-Pumper Class who has complied with the New Production Application Procedure specified in ¶18.5.13 of the Judgment. As provided in the Judgment, Producing Non-Pumper Class members shall report production to the Watermaster, and prior to the commencement of production, shall install a meter consistent with the requirement of the Rules and Regulations (¶19.2.2).

Rules and Regulations. The Rules and Regulations were developed in stages in order to obtain early court approval of those sections requiring early deadlines in the Judgment such as metering requirements. These sections were compiled with additional sections by the Watermaster Engineer in 2019 to develop a complete draft Rules and Regulations document. The draft document was provided to Watermaster Counsel who oversaw additional review and edits by an Ad Hoc Rules and Regulations committee. Several versions of the draft document were circulated by Watermaster Counsel among committee members and the Advisory Committee in late 2019 and early 2020. As previously mentioned, the Rules and Regulations document was approved on June 24, 2020 and July 22, 2020 and is available on the Watermaster website (www.avwatermaster.net).

Forms. Forms have been developed for reporting annual production and monthly meter readings; requests for information; Small Pumper qualifying documentation; requests for replacement wells, new point of extraction wells, use of a Production Right at a new location (no new well), non-production wells, and new production; request for transfers; requests to be added or removed from the Transfer Bulletin Board; and annual water storage and recovery reporting. These forms are updated from time to time when new issues arise or a need for additional information is identified. Original and updated forms are reviewed and approved by the Watermaster Board. Forms are listed in **Appendix N** and available on the Watermaster website.

Prior Year's Report. As provided in the Judgment, Annual Reports should also include the Annual Report from the prior year. To streamline this 2019 Annual Report, the 2018 Annual Report has been posted on the Watermaster website for easy downloading and reference (www.avwatermaster.net).

3 MONITORING OF SAFE YIELD COMPONENTS

As required by the Judgment, monitoring data have been compiled for the safe yield components in the Adjudication Area. The monitoring program established for the basin includes the compilation of data on climate and streamflow, groundwater levels, groundwater quality, land subsidence, managed aquifer recharge (i.e., groundwater banking), amounts and use of imported water, groundwater production, and return flows. Groundwater levels are used to analyze annual changes in groundwater volume. Some data sets represent components of the Safe Yield calculation that can be monitored directly while other data sets support analyses to estimate components or check the reasonableness of components.

In addition to the data compiled for this 2019 Annual Report, the Watermaster Engineer has continued compiling historical hydrologic and hydrogeologic information regarding the safe yield components for the Watermaster based on available data. This hydrologic and hydrogeologic database supplements the water accounting spreadsheets developed by the Watermaster Engineer for the purposes of tracking production categories and other requirements of the Judgment. More detailed analyses of safe yield components will occur in future annual reports as funding is available.

3.1 GROUNDWATER BASIN AND ADJUDICATION AREA

The Antelope Valley Groundwater Basin underlies an alluvial valley with ground surface elevations ranging from 2,300 to 3,500 feet above mean sea level (msl). The basin is surrounded on the southwest and northwest by the San Gabriel Mountains and the Tehachapi Mountains, respectively, and on the southeast by a series of low ridges, buttes, and hills.

The southwest and northwest boundaries are controlled by two major geologic fault systems – the San Andreas fault at the base of the San Gabriel Mountains and the Garlock fault at the base of the Tehachapi Mountains. The northern boundary is defined by the contact of alluvial deposits with bedrock. An approximate five-mile section of the northern boundary abuts with the alluvial deposits of the Fremont Valley and is separated by a groundwater divide (**Figure 1**). To the east, a groundwater divide – generally located along the San Bernardino county line – has been used to separate the Antelope Valley from the El Mirage Valley and the Mojave adjudicated area. The Antelope Valley Adjudication Area as defined by the Court is slightly smaller than the groundwater basin (compare the shaded blue groundwater basin with the Adjudication Area on **Figure 1**).

Prior to development, groundwater flowed from the surrounding uplands toward natural surface depressions at ephemeral lake beds in the north (Rosamond Lake) and northeast (Rogers Lake). These natural flow directions have been re-directed locally toward pumping wells.

The basin has a long tradition of agricultural use dating back to the late 1800s. As both agriculture and urban land uses increased during the post-World War II era, groundwater provided about 90 percent of the overall supply. Reliance on groundwater decreased somewhat in the 1970s and 1980s after imported water was available in the basin. However, urban growth, an increase in irrigated acreage, and limitations on availability of imported water resulted in increases in pumping during the 1990s. In 2011, the Court ruled that the basin was in overdraft and required a physical solution to bring the basin into balance.

The physical solution in the Judgment establishes a safe yield for groundwater production and an allocation of that safe yield among basin producers. Two estimates of safe yield are provided in the Judgment:

- Native Safe Yield: 82,300 AFY
Includes estimates of natural recharge plus return flows from groundwater use
- Total Safe Yield: 110,000 AFY
Is the sum of Native Safe Yield plus the Imported Water Return Flows.

Native Safe Yield, set by the Court at 82,300 AFY, is based on estimates of natural groundwater recharge from the hydrologic system including subsurface inflows from the surrounding bedrock (referred to as mountain front recharge) and infiltration from precipitation and streamflow. Native Safe Yield also accounts for return flows from basin pumping (described below). As shown on **Figure 2**, the Native Safe Yield is the amount allocated among most of the basin producers. Recognizing that the importation of supplemental surface water adds to the safe yield, a Total Safe Yield of 110,000 AFY was set by the Court, based on average estimates of available imported water and the associated return flows. Allocations of return flows from imported water are assigned to certain Parties listed in the Judgment.

To provide context for data needed to monitor safe yield components, a summary of the Judgment's safe yield calculation is provided in the following sections. The details of the safe yield determination are documented in the Phase 3 Summary Expert Report (Beeby, et al., 2010)⁵.

3.2 SAFE YIELD DETERMINATION IN THE JUDGMENT

The process to develop a safe yield for the Adjudication Area of the groundwater basin involved years of detailed hydrogeologic analyses by numerous technical experts representing various parties in the litigation. The analyses included delineation of basin boundaries, descriptions of the geologic and hydrogeologic setting, evaluation of aquifers and aquitards, examination of water levels, assessment of groundwater occurrence and flow, and detailed accounting of the water budget, including inflows and outflows from the

⁵ This report was prepared in association with Phase 3 of the trial. It is recognized that there were multiple phases that are not discussed herein; the Phase 3 Expert Report contains the most relevant information for summarizing the Safe Yield determination in the Judgment.

groundwater system and change in groundwater volume. These analyses culminated in a Summary Expert Report, published in July 2010 (Beeby, et al., 2010).

3.2.1 Natural Groundwater Recharge

Estimates of natural recharge to the groundwater basin developed by technical experts during litigation were used as the foundation of the safe yield determination. For the purposes of this discussion, the use of *natural recharge* refers to recharge associated with the natural hydrologic environment such as precipitation and streamflow. It specifically excludes the concept of return flows associated with groundwater pumping or use of imported water.

It is recognized that the amount of natural recharge does not always equate to the amount of groundwater that can be pumped sustainably from a basin because it is difficult to capture all of the replenished water without losing a significant amount to natural groundwater discharge (e.g., subsurface outflow from a basin). For the Antelope Valley, groundwater discharge to the dry lakes appears to be minimal and to occur only during wet periods. Subsurface outflow is uncertain, but likely occurs along limited segments of the basin boundary. Therefore, estimates of natural recharge were determined to be sufficient as a first approximation of the average annual amount of groundwater that could be used sustainably.

The natural groundwater recharge components were estimated by the technical experts during litigation using two separate methods: 1. a tabular mass balance (referred to as a water balance) approach, which accounted for each inflow and outflow associated with the groundwater system independently, while conserving the mass from the hydrologic cycle, and 2. estimates for changes of groundwater volume over time – developed through a comparison of groundwater elevation contour maps – and then using pumping estimates to solve for inflow (natural recharge). These two methods and results are described below.

3.2.1.1 Natural Groundwater Recharge using a Mass Balance Method

A mass balance approach to the water budget for the basin involves tracking of water into (inflows) and out of (outflows) the groundwater basin. This water tracking is illustrated by a schematic diagram on **Figure 3** (modified from Beeby, et al., 2010). The diagram represents the physical system of the groundwater basin and surrounding watershed. The mountains or uplands that surround the groundwater basin are shown on the left side of **Figure 3**; the playas (dry lakes) that represent a natural discharge area of the groundwater basin are shown on the right. Annual average flows estimated in the 2010 analyses are shown on the diagram in AFY for illustration purposes. In general, groundwater flows northeasterly from the upland areas to the dry lakes.

Precipitation provides the primary water source for the basin, including rainfall (or snowmelt) in the surrounding uplands and rainfall on the valley floor. In the uplands, rainfall either leaves the system through evapotranspiration (ET), runs off the surface into stream channels, or infiltrates into the fractured bedrock (upper left area of **Figure 3**). Some of the infiltrated water discharges back to the stream channels as baseflow; the remaining amount

is available for groundwater recharge, also referred to as mountain front recharge. The 2010 analysis by the technical experts during litigation estimated this amount at about 19,800 AFY, as shown on **Figure 3**.

As mountain streams reach the valley floor, most of the water infiltrates into the permeable alluvium and serves as groundwater recharge (see the mass balance of streamflow on **Figure 3**). This component is considered the largest source of groundwater recharge with estimates of about 30,000 to 40,000 AFY (shown as 36,600 AFY from the mass balance on **Figure 3**). The water budget also recognizes that a small amount of streamflow is diverted for use prior to infiltration. During wet years, flood flows reach the playas, where water pools and evaporates. Some of the flood water may infiltrate the surficial deposits, but the low permeability of the lakebed sediments restricts deep percolation and groundwater recharge. When groundwater levels are high, small amounts of groundwater can also discharge to the playas.

Given the desert climate of the area, rainfall rates on the groundwater basin floor are small, with most of the area receiving less than eight inches per year on average. Given the corresponding high rates of ET in the basin, most of this rainfall evaporates quickly, limiting the available water for infiltration into the basin sediments. The 2010 analyses concluded that groundwater recharge from soil infiltration does not likely occur in basin areas with an average annual rainfall of less than eight inches (Beeby, et al., 2010); that conclusion is supported by numerous technical studies on groundwater recharge in desert basins. While minor recharge occurs from direct precipitation in localized alluvial fan deposits along the northwestern rim of the basin (western edge of the West Antelope Subarea, see **Figure 1**), the overall mass balance indicates that groundwater recharge from direct precipitation is small; as such, it is not quantified on **Figure 3**.

In summary, the two primary sources of natural recharge were determined by the technical experts during litigation to be mountain-front recharge (about 19,800 AFY on **Figure 3**) and infiltration from streamflow (about 36,600 AFY on **Figure 3**), resulting in a total estimated natural recharge of 56,400 AFY.

3.2.1.2 Natural Groundwater Recharge using a Change in Groundwater Volume Method

The estimates for groundwater recharge above were checked for reasonableness by the technical experts during litigation through a separate groundwater level analysis involving the change in groundwater volume over time. This method involved preparation of nine groundwater elevation contour maps for nine years spanning a 59-year period from 1951 through 2009 (study period). These maps were used to assess water level changes (rise or declines) during eight specific time intervals and over the entire study period. Water level surfaces at the beginning and end of each period were electronically subtracted to estimate changes over the entire basin for each period (Beeby, et al., 2010).

In order to relate the water level changes to a volume of groundwater gain or loss, aquifer storage properties were developed based on a texture analysis (e.g., percentages of sand, gravel, silt, and clay) from geologic logs. Texture categories were assigned a storage property, referred to as specific yield (Sy). Sy is defined as the ratio of the volume of water

that will drain under gravity compared to a unit volume of the aquifer (expressed as a percentage) and is used to estimate the volume of water released from storage for a unit change in head. Because S_y varies throughout the aquifer system, the method assigned a S_y that corresponded to the horizontal location and the vertical interval of the aquifer where water levels had changed. This analysis provided the Basin-wide change of groundwater volume for various time intervals.

The change in groundwater volume was applied to the water balance equation as shown below:

$$\text{Change in Groundwater volume} = \text{Inflows (recharge)} - \text{Outflows}$$

Because outflows consisted primarily of groundwater pumping, investigators estimated pumping (less return flows) for the same time intervals as the contour map analysis. With estimates for both Outflows and Change in Groundwater Volume, the equation above could be re-arranged to solve for inflows (natural recharge). The change in volume method indicated average annual natural recharge between 55,000 to 58,000 AFY, results very similar to the results of the mass balance analysis described above (56,400 AFY). Recognizing uncertainty in the analysis, a natural groundwater recharge of 60,000 AFY was selected by the technical experts during litigation for the purposes of the safe yield analysis (Beeby, et al., 2010).

3.2.2 Native Safe Yield

Safe yield is defined in the Judgment as “the amount of annual extractions...over time equal to the amount of water needed to recharge...groundwater...and maintain it in equilibrium...” Because safe yield is defined in terms of groundwater extraction, the efficiency of groundwater use requires consideration.

All groundwater pumped from a well may not be consumed; if unused water is allowed to percolate back into the groundwater basin, that amount is referred to as *return flows*. Because it is difficult for irrigation systems to be 100 percent efficient, return flows result from almost all irrigation applications including agricultural, municipal (e.g., landscaping, parks), and domestic (e.g., lawns). In addition to irrigation, other water use practices can result in return flows including conveyance system losses, percolation of wastewater, or septic systems. A conceptual diagram of various groundwater uses and associated return flows is provided on **Figure 4**⁶. The amount of return flows varies with irrigation method, type of losses, soil properties, evapotranspiration, and other factors.

Because these return flows offset the amount of groundwater production in the basin, the amount of sustainable production from the Antelope Valley Groundwater Basin can be higher than the 60,000 AFY estimate for natural recharge. For example, if 25 percent of pumping actually returns to the groundwater system as return flows (indicating that 75

⁶ As noted on Figure 4, the diagram was developed to illustrate the concepts of safe yield and does not depict the complexity of the multi-aquifer system of the Antelope Valley Groundwater Basin.

percent of groundwater production is consumed through evaporation, crop transpiration, or human consumption), then a safe yield of 80,000 AFY would allow for consumption of the 60,000 AFY of recharge and 20,000 AFY of return flows ($60,000/0.75 = 80,000$).

Using a mix of historical and recent land use practices, the Summary Expert Report evaluated various return flow estimates for the purposes of developing a sustainable yield (Native Safe Yield) for the Basin. Given the mix of land use practices observed over a recent 15-year period, an overall return flow of about 27.1 percent⁷ was estimated to be reasonable. Applying this to the 60,000 AFY estimate for natural recharge, a Native Safe Yield of 82,300 AFY was derived. As shown on **Figure 2**, this value was used for the total Production Right in the Basin.

3.2.3 Total Safe Yield

Total Safe Yield is defined in the Judgment as the amount of groundwater that may be safely pumped from the Basin on a long-term basis and is specified as the sum of the Native Safe Yield plus return flows from imported water (¶3.5.51 of the Judgment). Beginning in the 1970s, supplemental surface water supplies were imported into the Basin from the State Water Project (SWP). This supplemental water decreased the reliance on groundwater supply and provided water to meet the growing demand of the valley. Depending on use, the SWP water also provides an additional component of groundwater recharge through return flows, increasing the overall safe yield for the Basin. This amount varies substantially with the availability and use of imported water.

In order to consider this supplemental supply in the adjudication, the team of technical experts during litigation evaluated amounts of imported water and its use over time. This analysis led the team to conclude that return flows from imported water resulted in about 27,700 AFY of additional groundwater supply to the Basin. Adding to the Native Safe Yield of 82,300 AFY, this amount provided a Total Safe Yield of 110,000 AFY.

Credits for imported water return flows are assigned in the Judgment according to use (see **Section 4.4** for a description of these credits). Some imported water may be delivered to a recharge facility (e.g., a spreading basin) and recharged directly into the groundwater basin for subsequent recovery and use; such a recharge facility is illustrated conceptually on **Figure 4**. When imported water is recharged directly, there are not “return flows” as defined by the Judgment; return flows occur only after imported water is used directly in the Basin.

The technical analysis in 2010 recognized that safe yield is not necessarily a constant value and can change over time with varying land use and water management practices. As described above, the Native Safe Yield has embedded assumptions of land use and return

⁷ This groundwater return flow *percentage* is different from the Imported Water Return Flow percentages specified in the Judgment. Imported Water Return Flows represent a new water source in the basin and increase groundwater availability. Imported water return flows are also associated with a different land use mix (i.e., more imported water is used for municipal purposes, a use associated with a larger *percentage* of return flows compared to agricultural use).

flows. The Total Safe Yield will change based on average amounts of imported water available to the Basin over time. The Judgment allows the Watermaster Engineer to initiate a recommendation to change the Native Safe Yield ten years after the seven-year Rampdown Period (Year 17 of the Judgment).

3.3 CLIMATE DATA

Precipitation in the Antelope Valley watershed is the primary source of natural groundwater recharge and controls the location and pathways of natural recharge in the Basin. Average annual precipitation across the Antelope Valley watershed ranges from 4 inches to 47 inches with an area-weighted average of 8.3 inches per year (Beeby et al., 2010). Upland areas within the watershed but outside of the Adjudication Area account for most of the precipitation available for recharge. Area-weighted average precipitation amounts in the upland watershed are listed below:

- San Gabriel Mountains – 15.4 inches per year
- Tehachapi Mountains – 13.1 inches per year
- Eastern buttes – 8.7 inches per year
- Northern buttes – 9.2 inches per year

Average annual precipitation on the valley floor is typically less than 8 inches per year. Most subareas have an average annual precipitation rate less than about 5 inches per year.

For the 2010 analyses, precipitation data for 23 stations covering a 57-year period (1949-2005) were compiled and analyzed. A portion of these data sets has been compiled for Watermaster files, with an emphasis on active state- or federal-operated weather stations. Data were also obtained from additional stations with recent data to support analyses in this Annual Report (Calendar Year 2019). Many of these stations also provide other climate information such as reference ET (ET_o) and temperature.

Precipitation (and other climate) data for the Antelope Valley Adjudication Area and surrounding watershed are available from the following primary sources: Los Angeles County, California Irrigation Management Information System (CIMIS), and National Weather Service cooperative stations (data available through the Desert Research Institute - DRI). Data have been downloaded from these sources for 46 stations (as of April 2, 2020 or the most recent data available). **Table 3** provides station summary information; station locations are shown on **Figure 5**.

Precipitation data for 2019 are used to determine whether the year was wet, dry or average compared to long-term data. A graph of cumulative monthly 2019 precipitation was compared to similar curves for representative wet, average and dry conditions, using data from the Palmdale station (CIMIS and DRI). These data are shown graphically in the top chart on **Figure 6**; the general location of the Palmdale Station is highlighted on **Figure 5**.

Table 3. Precipitation and Evapotranspiration Stations

ID	Station Name	Elevation (feet msl)	Latitude	Longitude	Source	Period of Record		Frequency
						Min	Max	
1	Mojave		35.04917	-118.16194	DRI	Jan-1904	Feb-2019	Monthly
1005B	County Fire Station #81	2,767	34.51917	-118.28694	LA County	Oct-2016	Current	Daily
1017B	Little Rock Crk Above Dam Percip	3,267	34.47778	-118.02472	LA County	Oct-2016	Current	Daily
1058B	Palmdale W.D.	2,627	34.58806	-118.09194	LA County	Oct-1999	Current	Daily
1060B	Little Rock-Sycamore Camp Pcp	4,012	34.41722	-117.97028	LA County	Oct-2016	Current	Daily
1166B	Mile High Ranch	5,280	34.41111	-117.77083	LA County	Jan-2003	Dec-2017	Daily
117	Victorville	2,890	34.47591	-117.26351	CIMIS	Feb-1994	Current	Daily
120	County Fire Station #80	3,120	34.48833	-118.14194	LA County	Oct-2016	Current	Daily
1212	Lancaster Fss/Faa	2,320	34.73333	-118.21667	LA County	Oct-1999	Sep-2017	Daily
1240	Pearblossom-CALI.DW.R. Booster	3,050	34.50889	-117.92083	LA County	Oct-1999	May-2018	Daily
1242	Rocky Buttes Precip	2,540	34.64611	-117.84528	LA County	Oct-2016	Current	Daily
1243	Redman Precip	2,387	34.76500	-117.92611	LA County	Oct-2016	Current	Daily
1244	Roper Ranch Precip	2,438	34.67306	-118.01083	LA County	Oct-2016	Current	Daily
1245	Quartz Hill Precip	2,427	34.64944	-118.21722	LA County	Oct-2016	Current	Daily
1246	Scott Ranch Precip	2,718	34.79056	-118.45972	LA County	Oct-2016	Current	Daily
1247	North Lancaster Precip	2,340	34.76111	-118.10722	LA County	Oct-2016	Current	Daily
1248	Mescal Smith Precip	3,810	34.46667	-117.71111	LA County	Oct-2016	Current	Daily
1249	G-168 Pump Station	2,941	34.73444	-117.82833	LA County	Oct-2016	Current	Daily
1250	Avek Precip	2,825	34.52333	-117.92389	LA County	Oct-2016	Current	Daily
125B	San Francisquito Canyon Power House No.	2,105	34.59028	-118.45417	LA County	Oct-1999	Current	Daily
1267	Lancaster Reclamation Plant	2,302	34.77722	-118.15306	LA County	Oct-1999	Sep-2017	Daily
1268	Palmdale Reclamation Plant	2,565	34.59167	-118.08611	LA County	Oct-2016	May-2019	Daily
128B	Elizabeth Lake-Warm Springs Cmp Pcp	2,075	34.60833	-118.55944	LA County	Apr-2005	Current	Daily
1291	Rollin Ranch - Valyemo	5,040	34.41722	-117.75722	LA County	Mar-2011	May-2019	Daily
197	Palmdale	2,550	34.61498	-118.03249	CIMIS	Apr-2005	Current	Daily
2	Lancaster FF		34.74111	-118.21167	DRI	Jan-1974	Current	Monthly
220	Palmdale Central	2,630	34.59222	-118.1275	CIMIS	Mar-2011	Current	Daily
299F	Little Rock - Schwab	2,800	34.53667	-117.97861	LA County	Oct-2016	Jun-2017	Daily
3	Pear Blossom		34.50278	-117.89444	DRI	Jan-2015	Current	Monthly
321	Pine Canyon Patrol Station # 78	3,304	34.67417	-118.43083	LA County	Oct-1999	Current	Daily
322	Munz Valley Ranch	2,600	34.71389	-118.35417	LA County	Oct-1999	Apr-2018	Daily
4	Palmdale DRI		34.61498	-118.03249	DRI	Jan-1903	Current	Monthly
409B	Pyramid Reservoir	2,505	34.67611	-118.77972	LA County	Oct-2016	May-2018	Daily
455B	Lancaster - State Hwy. Maintenance Sta.	2,395	34.68250	-118.13389	LA County	Oct-1999	Jan-2018	Daily
517B	Lewis Ranch Precip	4,615	34.41972	-117.88611	LA County	Oct-2016	Current	Daily
542	Fairmont	3,050	34.70417	-118.42778	LA County	Oct-2016	Apr-2018	Daily
564C	Ulano	3,394	34.48556	-117.83444	LA County	Oct-2016	Current	Daily
598D	Neenach - Check 43	2,973	34.79472	-118.62222	LA County	Oct-1999	Current	Daily
747	Sanberg - Airways Station	4,510	34.74333	-118.72500	LA County	Oct-1999	Current	Daily
82F	Table Mountain	7,420	34.38222	-117.6775	LA County	Oct-2016	May-2018	Daily
83B	Big Pines Recreation Park Pcp	6,860	34.37889	-117.68889	LA County	Oct-2016	Current	Daily
AL388	Fire Station 114 (Lake Los Angles)	2,710	34.60667	-117.82556	LA County	Oct-2016	Current	Daily
AL468	Fire Station 77	3,459	34.75972	-118.79778	LA County	Oct-2016	Current	Daily
AL480	Fire Station #112 (Antelope Acres)	2,428	34.75444	-118.28833	LA County	Oct-2016	Current	Daily
AL481	Fire Station # 140 (Leona Valley)	3,172	34.61778	-118.28500	LA County	Oct-2016	Current	Daily
AL485	Lancaster Waterworks	2,460	34.66694	-118.12528	LA County	Oct-2016	Current	Daily

Current - Operational as of April 2, 2020

As indicated on **Figure 6**, average annual precipitation in the south-central area of the Basin is about 7.1 inches per year (e.g., 2001, a representative average year); annual precipitation ranges from about 15.4 inches per year in a wet year (1983) to below 2 inches per year with 2.9 inches per year (2012) used as a representative dry year (**Figure 6**). The 2019 annual precipitation was 8.93 inches, slightly above the average. As indicated by the cumulative

precipitation curve and the bar graph on **Figure 6**, the highest rainfall months were January (1.51 inches), February (2.27 inches), and December (2.62 inches).

The 2019 monthly precipitation, along with average monthly precipitation, is shown on the bar graph on **Figure 6**. This chart has been extended through March 2020 for purposes of the discussion of groundwater levels, presented in **Section 3.5**. As shown on the bottom of **Figure 6**, 2019 rainfall was above average for January, February, May, November, and December 2019, but less than or equal to average in the other months of 2019. In early 2020, rainfall was below average for January and February; however, March 2020 precipitation of 2.79 inches was more than double the monthly average of 0.98 inches (**Figure 6**).

3.4 STREAMFLOW DATA

As described above, runoff from the surrounding watershed provides significant groundwater recharge to the Basin (see **Figure 3**). Streams originate in the uplands and flow out onto the valley floor, where most of the water infiltrates into the basin sediments (as illustrated conceptually on **Figure 4**). The most hydrologically significant streams include drainages in the San Gabriel and the Tehachapi mountains, as listed below (Antelope Valley IRWMP, 2013):

- San Gabriel Mountains
 - Big Rock Creek
 - Little Rock Creek
 - Amargosa Creek
- Tehachapi Mountains
 - Oak Creek
 - Cottonwood Creek

The 2010 analyses compiled streamflow data from 18 stations spanning a 61-year period (1949-2009). These data were supplemented with characteristics of channel geometry at gaged and ungaged sites to allow for a more comprehensive assessment of runoff. Almost all historical data from these stations have been downloaded to supplement the Watermaster Engineer data files, but only five of these stations remain active. **Table 4** provides summary information for 24 streamflow stations, including most of the 18 stations used in the litigation, additional stations with available data, and three one-time measuring stations; the active stations provide data through April 2020 (indicated as 'current' in the last column of **Table 4**). Locations of these streamflow stations are shown on **Figure 5** (a few closely-positioned stations appear as one location on the map).

As shown in **Table 4**, discharge volumes are available for 19 streams (including tributaries to primary streams) at 24 gaging stations in the Adjudication Area and surrounding watershed. Also included in **Table 4** are three one-time measurement sites on Amargosa Creek, where the U.S. Geological Survey (USGS) documented infiltration rates for a potential enhanced recharge project for the City of Palmdale (see first three sites in **Table 4**).

Little Rock Creek contains an upstream reservoir, Littlerock Reservoir, jointly owned by PWD and LCID. As shown in **Table 4**, natural inflows are monitored by gage station ID 10264000. PWD maintains records of the discharge and diverts water from the reservoir. In 2019, PWD diverted 2,404.9 AF.

Table 4. Streamflow Gaging Stations

ID	Station Description	Source	Current Agency	Period of Record	
				Min	Max
	Amargosa C Nr Leona Siphon Nr Palmdale, CA (infiltration data only)	USGS			11/29/2013
	Amargosa C A 25 th Street W Nr Palmdale, CA (infiltration data only)	USGS			11/29/2013
	Amargosa C Nr Palmdale, CA (infiltration data only)	USGS			11/29/2013
10264503	Barrel Springs Trib A Ca Aq Xing Nr Palmdale Ca	USGS		10/21/1988	2/13/1992
10263630	Big Rock C Ab Pallett C Nr Valyermo Ca	USGS/LA County	LA County F394-R	11/2/1988	Current
10263500	Big Rock C Nr Valyermo Ca	USGS	USGS	1/25/1969	Current
10263675	Big Rock C Wash A Hwy 138 Nr Llano Ca	USGS		12/12/1988	3/17/1993
10264640	Buckhorn C A E 120th Ave Nr Rogers Lake Ca	USGS		12/10/1996	3/7/2001
10263900	Buckhorn C Nr Valyermo Ca	USGS		5/8/1991	5/8/1991
10264550	City Ranch C Nr Palmdale Ca	USGS		1/13/1993	1/13/1993
10264555	Estates C Nr Quartz Hill Ca	USGS		5/1/1989	2/18/1993
10264510	Inn C A Palmdale Ca	USGS		12/16/1988	1/13/1993
10264605	Joshua C Nr Mojave Ca	USGS		4/1/1992	3/16/1993
10264501	Little Rock C A Hwy 138 Nr Littlerock Ca	USGS		4/10/1989	2/24/1992
10264000	Little Rock C At Little Rock Res Nr Littlerock Ca	USGS/LA County	LA County L1-R	1/1/2000	Current
10264682	Mescal C Nr Pinon Hills Ca	USGS/LA County		1/1/2000	5/21/2018
10264658	Mojave C A Forbes Ave A Edwards AFB Ca	USGS		12/6/1997	9/27/2000
10264660	Mojave C A Rosamond Blvd A Edwards Ca	USGS		12/6/1997	3/7/2001
10264600	Oak C Nr Mojave Ca	USGS		12/21/1988	3/16/1993
10263665	Pallett C A Big Rock C Nr Valyermo Ca	USGS/LA County	LA County F122-R	11/3/1988	Current
10264502	Peach Tree C Nr Littlerock Ca	USGS		12/16/1988	3/31/1992
10264530	Pine C Nr Palmdale Ca	USGS		1/13/1990	3/18/1993
10264675	Rogers Lk Trib A Edwards Afb Ca	USGS		2/3/1998	2/3/1998
10264100	Santiago Cyn C Ab Little Rock C Nr Littlerock Ca	USGS/LA County	LA County F1252-R	1/1/2000	Current
10264636	Sled Track Cyn A Lancaster Blvd Nr Rogers Lake Ca	USGS		12/10/1996	3/7/2001
10264508	Somerset C A Palmdale Ca	USGS		1/24/1989	2/17/1994
10264560	Spencer Cyn C Nr Fairmont Ca	USGS		2/14/1992	2/14/1992

Current - Operational as of April 2, 2020

Previously, USGS monitored stream gage stations listed in **Table 4** and published data on the USGS National Water Information System (NWIS). Currently, USGS monitors only one station (Big Rock C Near Valyermo Ca). Los Angeles County now monitors four of the former USGS stations including Big Rock Creek, Little Rock Creek, Pallett Creek, and Santiago Canyon Creek (**Table 4**).

Although data are limited with respect to the number of streams being actively monitored, data from Big Rock Creek and Little Rock Creek provide consistent, long-term data for analysis. In addition, previous work by USGS for the City of Palmdale provides some measured infiltration rates along Amargosa Creek to assist with future estimates of groundwater recharge.

3.5 GROUNDWATER LEVELS

USGS currently monitors water levels in approximately 146 wells within and adjacent to the Antelope Valley Adjudication Area. Wells in recent USGS monitoring programs are shown on **Figure 7**. The number of wells in this regional monitoring program varies from year to year based, in part, on access and well status/operation. Water level monitoring occurs in Spring and Fall of each year, with most wells typically measured in March and a smaller subset measured in October. The network contains relatively good coverage for each of the Management Subareas (**Figure 7**). The network also contains wells in alluvial areas adjacent to the Adjudication Area including Fremont Valley and north of the Rogers Lake Subarea, if needed.

The USGS monitoring program was developed, in part, to comply with the California Statewide Groundwater Elevation Monitoring (CASGEM) program for the groundwater basin. This program was developed by the Antelope Valley State Water Contractors Association (District 40, 2014⁸); program costs were previously shared by AVEK, LCID, and PWD, with additional funding from USGS. Recognizing its benefits for the safe yield component monitoring, the Antelope Valley Watermaster has agreed to share in the program costs and has provided about \$15,000 to \$16,000 per year to the program since 2017.

Most of the wells in the monitoring program are production wells rather than dedicated monitoring wells. USGS has implemented monitoring protocols to avoid inaccurate water levels measurements that may be affected by recent pumping. To supplement these data, the Watermaster Engineer has been identifying and requesting data from monitoring wells owned by others in the Basin to incorporate into the program. This process includes any new monitoring well applications approved by Watermaster Staff in the Basin, which requires well owners to provide monitoring data to the Antelope Valley Watermaster. In addition, water level data from monitoring and/or production wells have been provided to

⁸ District 40 prepared the CASGEM Monitoring Plan for the Antelope Valley State Water Contractors Association on file with DWR.

the Watermaster Engineer by many of the public water suppliers, imported water suppliers, and mutual water companies in support of the Annual Report analyses.

3.5.1 Water Level Trends and Fluctuations

To examine water level changes over time in representative wells, hydrographs have been prepared for wells with relatively long records in the Watermaster Engineer database. Working hydrographs were initially developed for more than 5,000 wells with elevation data and reviewed to identify representative wells. A quantitative approach was developed in 2019 for hydrograph selection based on the number and duration of water level measurements, local trends and fluctuations, and the spatial distribution of hydrographs throughout the Basin. Specifically, each hydrograph in the program was rated using a simplified point system (low-5 points, medium-10 points, or high-15 points) for the following criteria:

- **Ongoing/Recent monitoring** – Wells that are part of the current USGS monitoring network or have recent data were prioritized. If a well had recent data from 2018 or 2019, it was scored high; wells with the most recent data occurring in 2010 to 2017 were scored medium; all other wells were scored low for this criterion.
- **Historical monitoring** – Wells were evaluated for the length of the monitoring record by prioritizing wells that provide sufficient data to compare water level trends over the last few decades. Wells with data extending back to 1973 were given a high rating; wells with data only in the last five years were rated low with records in between scored medium.
- **Number of measurements** – Each hydrograph was assessed for continuity of monitoring to better evaluate local fluctuations in the Basin. Wells with greater than 50 measurements were scored high, greater than 25 and 15 records were medium and low respectively. Wells with less than 15 measurements were not scored.
- **Location** – Wells were prioritized for broad distribution across the Basin, distribution in each subarea, and availability of other wells nearby. Wells were scored based on a high score for unique locations and a low score for numerous wells in clusters.
- **Trends** – Finally, each hydrograph was assessed on a qualitative basis for continuity of monitoring, representation of local or regional trends, and presence of outliers or unrealistic/questionable data. Wells demonstrating representative trends with consistent data were scored high, wells with representative trends but without consistent monitoring were scored medium, and remaining wells were scored low.

The 17 top scoring wells (60 points and higher) are shown on **Figure 7**. For wells with similar trends and data, one from each trend group was selected for display. Accordingly, the selected wells are judged to adequately represent the range of local groundwater conditions across the Basin. Backup hydrographs can be used for local specific analyses as needed. Hydrograph data are displayed from 1997 to 2020 representing the last 23 years of groundwater elevations. Although groundwater elevations vary across the Basin, all vertical

scales on the hydrographs cover 100 feet to facilitate comparison of water level trends and fluctuations.

As shown on **Figure 7**, most wells indicate an overall declining trend of varying magnitudes over the 23-year period including at least one well in each Basin Subarea (e.g., hydrographs shown clockwise by USGS_501, USGS_4301, USGS_3501, USGS_5001, USGS_2001, USGS_2901, USGS_31001, USGS_45101, USGS_4801, USGS_5201, USGS_44001, and USGS_101). For some wells with overall declining trends, water levels have stabilized in recent years. In general, declines are less significant in the northern Basin (e.g., USGS_4301, USGS_75101, USGS_3501, USGS_5001, and USGS_2001) and other areas with lower amounts of pumping. The largest decline is indicated in the east-central portion of the Central Antelope Valley Subarea where one hydrograph indicates an overall decline of about 60 feet (USGS_5201). In addition, two representative hydrographs indicate areas where water levels are rising (USGS_1101, USGS_4401), including one well near a groundwater banking project. Wells with semi-annual data indicate seasonable fluctuations (Spring to Fall) of a few feet to more than 10 feet.

Given that this is only the second year of Rampdown, it is too early to draw conclusions regarding impacts from the Judgment on water levels; in addition, the imprint of climate and the availability of imported water also affect Basin water levels. Although a detailed local analysis of water level trends and fluctuations is beyond the scope of this Annual Report, hydrographs are presented to allow for improved monitoring and understanding of Basin-wide trends and fluctuations going forward.

It is recognized that the Antelope Valley groundwater basin consists of multiple aquifers, which also require consideration in any water level analysis. Well construction information is limited and needs to be matched to water level data to the extent available. Additional construction data are being compiled for future analyses on an aquifer-specific basis.

3.5.2 Groundwater Elevation Contour Maps

To further examine groundwater conditions for the 2019 Annual Report, two Basin-wide groundwater elevation contour maps have been prepared for Spring 2019 and Spring 2020, with most data measured in March representing seasonal high water levels. These time periods were selected based on the large amount of available data and the ability to analyze changes in groundwater levels over a one-year period. In addition, Spring measurements are less likely than Fall measurements to be affected by recent heavy pumping, which is typically associated with the summer irrigation season⁹. By developing these two maps one year

⁹ It is recognized that March irrigation occurs for some crops in the Antelope Valley, such as alfalfa and carrots, among others. According to a land use study by California State University, Los Angeles (Qiu, 2013), October appears to be the month when most crops in the Antelope Valley are not irrigated (i.e., end of the growing season for carrots and onions and prior to irrigation for winter grains). However, late fall measurements may be complicated by recovering water levels. In addition, other water supply wells may be pumping more in October than in spring. Spring data are also

apart, a change in groundwater volume can be approximated for calendar year 2019, the period covered in this Annual Report.

Wells with water level measurements in either Spring 2019 or Spring 2020 are shown on **Figure 8**. Wells are color-coded by the agency (source) that provided the data. The number of wells for each of these data sets is summarized in **Table 5**. Water level data for the DWR wells was not available for 2019 or 2020 so those wells do not appear in **Table 5** and are not shown on **Figure 8**.

Table 5. Water Level Data by Source

Source of Water Level Data	Wells with 2019 Data	Wells with 2020 Data
U.S. Geological Survey (USGS)	170	146
Sanitation Districts of Los Angeles County (LACSD)	73	62
Antelope Valley-East Kern Water Agency (AVEK)	23	23
Los Angeles County Department of Public Works (LADPW)	52	57
Palmdale Water District (PWD)	20	23
Rosamond Community Services District (RCSD)	3	2

Contours were generated from these data using an electronic contouring program and adjusted locally, as needed. Wells outside the Adjudication Area were used to slightly adjust the orientation of the contours along the northern edge of the Adjudication Area, but those wells are not used in the change in storage analysis and are not shown on the contour maps to avoid confusion. Wells with measurements in only one of the two-time periods were reviewed to determine if the incomplete data created artificial differences in the two contour maps. Where this occurred, wells were removed for the purposes of the change in storage analysis.

Management Subareas defined in the Judgment are considered in the analysis (**Figure 8**). Because some of these boundaries were developed along known or inferred geologic faults, data were examined to determine if groundwater elevations indicated a discontinuity across a Subarea boundary. In the southeast, the subarea boundary between the South East Subarea and the Central Antelope Valley Subarea was observed to create a discontinuity,

preferred by DWR for adjudication basin reporting. For these and other reasons, spring measurements are retained for the purposes of monitoring water levels and groundwater storage in the Basin.

but the line of discordance was slightly different from the Judgment-defined subarea boundary. For purposes of the groundwater elevation analysis, an additional line was added in that area for purposes of contouring the data.

The contour maps for March 2019 and March 2020 are presented on **Figures 9** and **10**, respectively and discussed below.

Spring 2019 Water Levels: As shown on **Figure 9**, groundwater elevation contours in the southeast and west-northwest portions of the map indicate relatively large hydraulic gradients (contours closely spaced) and groundwater flow toward the central portion of the Basin. Water levels are lowest in the Palmdale area and adjacent areas to the northeast – areas where much of the groundwater production occurs in the Basin. The lowest water levels during March 2019 are below 2,100 feet msl in Palmdale (**Figure 9**). Relatively low groundwater elevations (below 2,200 feet msl) are also observed in the Rogers Lake Subarea beneath Edwards Air Force Base in the north. This dry lake area represents one of the natural discharge areas of the Basin.

In past Annual Reports, groundwater contours were not shown for a portion of the South East Subarea because of lack of reliable groundwater level data in that area. Since then, records for a well within this previously-excluded area became available and are used to generate groundwater contours throughout the South East Subarea (**Figure 9**). However, the inclusion of this well indicates groundwater elevations in and around the previously-excluded area approximately 300 feet lower than previously mapped. Consequently, the Spring 2019 contour map has been revised from the Spring 2019 contour map presented in the 2018 Annual Report.

As indicated by the contours on **Figure 9**, there are two subarea boundaries that appear to impede water levels and create discontinuities in water levels. In the northwest, the boundary between the Willow Springs Subarea and the West Antelope Subarea creates such a discontinuity as indicated by a break in the contours (**Figure 9**; see **Figure 8** for Subarea names). This boundary is located generally along the fault zone of the Willow Springs, Cottonwood, and Rosamond faults, indicating that the faults impede water levels in the subsurface. The change in water levels across the fault zone ranges from about 300 feet on the eastern part of the boundary to more than 400 feet in the west.

In the southeast, the boundary between the Central Antelope Valley Subarea and the South East Subarea also indicates an area of disruption in water levels. The presence of the buttes and bedrock outcrops near and along the boundary suggests geologic faulting (inferred) and the subarea boundary has been based on both geologic (faults) and hydrogeologic (water levels) data. Although recent data confirm a discontinuity in groundwater elevations along the northern portion of the subarea boundary, the line of discontinuous groundwater elevations diverges from the subarea boundary along its southern portion (on **Figure 9**, compare the Management Subarea boundary shown in black with the line of discontinuous groundwater elevations shown in orange). For contouring purposes, an additional boundary line (shown in orange on **Figure 9**) has been interpreted. The water level declines around pumping wells northwest of the boundary do not appear to be affecting water levels

southeast of the boundary. Water level differences of about 100 feet (northeast part of the boundary) to more than 300 feet (along the contouring zone boundary) are indicated on **Figure 9**. The remaining Management Subarea boundaries of the Central Antelope Valley Subarea (with the Rogers Lake Subarea to the northeast and the West Antelope Subarea to the northwest) do not appear to impede groundwater flow.

Spring 2020 Water Levels: Groundwater elevation contours for Spring 2020 are shown on **Figure 10**. Given the scale and contour interval of the maps, water levels on **Figure 10** appear almost identical to water levels on **Figure 9**. Previous analyses indicate that, except in areas of localized recharge or near certain pumping centers, water levels only change a few feet in most Basin areas from year to year; this observation is consistent with the 2019 and 2020 data and the hydrographs displayed on **Figure 7**. Patterns of groundwater flow and hydraulic gradients are also similar on both contour maps. The two Management Subarea boundaries that disrupted the contours for 2019 on **Figure 9** are also interpreted similarly on **Figure 10**.

Water Level Change from Spring 2019 to Spring 2020: Notwithstanding the similarities in **Figures 9** and **10**, several local areas have experienced significant water level changes from Spring 2019 to Spring 2020. For illustration purposes, the two contour maps have been electronically subtracted to develop a contour map of water level change, as presented on **Figure 11**. The changes are highlighted with color – areas of water level rise are shown in blue, and water level declines are shown in orange. Light yellow represents areas where water levels are generally unchanged. Contours have also been added to the map to more clearly differentiate among the areas of water level changes.

As shown on **Figure 11**, there are numerous areas of localized changes, the largest of which appear to be associated with local pumping centers (lower water levels) or groundwater banking areas (higher water levels). For example, water levels at the AVEK Westside Water Bank in the West Antelope Subarea increased more than 40 feet from 2019 to Spring 2020 (**Figure 11**). These changes are consistent with the timing of recent recharge at the groundwater bank; AVEK recharged 46,654 AF in 2019 and an additional 5,902 AF in January through March 2020 at the Westside Water Bank. Increases are also noticed in the Upper Amargosa Creek Recharge Project area in the southern portion of the Central Antelope Valley Subarea and in the vicinity of the AVEK Eastside Water Bank. In 2019, AVEK spread¹⁰ 1,160 AF in the Eastside Water Bank and 9 AF in the Upper Amargosa Creek Recharge Project area. In addition, AVEK spread 409 AF at the Upper Amargosa Creek Recharge Project area and 96 AF at the Eastside Water Bank between January and March 2020. Although these volumes are smaller than at the Westside Bank, recharge at upper Amargosa Creek occurred over a smaller area where basin sediments are thinner and, as such, recharge has a larger impact on local water level changes.

¹⁰ The word “spread” is generally used in this report to mean the amount of water delivered to a recharge basin and spread in its ponds. The word “recharge” is generally used in this report to mean the amount of spread water that is presumed to percolate into the basin.

Other areas of smaller localized water levels changes are observed across the Central Antelope Valley Subarea. As indicated by the blue shading on **Figure 11**, water levels have risen between 0 and 10 feet over a broad area in the west and in smaller areas in the northeast and southeast portions of the Central Antelope Valley Subarea. As indicated on **Figure 6**, above average rainfall occurred in November and December of 2019, and in March of 2020, which is associated with increases in recharge and surface water supply coupled with decreases in pumping.

The South East Subarea had the largest area of overall decline in 2019. Although most wells indicated a decline of less than 10 feet, the changes occurred over a relatively broad area of the subarea.

The Willow Springs Subarea and the Rogers Lake Subarea did not indicate significant water level changes from 2019 to 2020, although most wells indicated a slight decline in water levels. These two subareas have few wells and water levels and changes are less certain due to sparse data.

3.5.3 Change in Groundwater Volume

The surface of water level change on **Figure 11** was used to estimate the volume of groundwater change for each subarea and the total Adjudication Area. The methodology involves the application of the aquifer specific yield (S_y , a unitless hydraulic parameter) to the change in water levels to estimate the change in groundwater volume between Spring 2019 and Spring 2020. For this analysis, a methodology was employed similar to the one used in the 2010 Summary Expert Report (Beeby, et al., 2010), whereby a locally-estimated S_y value was correlated to the depth intervals where water level changes occurred at each of the monitoring locations (as discussed previously – see **Section 3.2.1.2** above).

To conduct this analysis, the Watermaster Engineer exported the water level elevations associated with changes from the Spring 2019 to the Spring 2020 map and compared the depth intervals to the S_y data. A S_y value was selected from the 2010 data set for each interval where water levels had either risen or declined. In this manner, the 2019-2020 water level changes occur within the same intervals and textures¹¹ used to derive the associated S_y value. The storage changes are combined for each subarea as summarized on **Table 6**.

¹¹ In this context, *texture* refers to the physical nature of the aquifer according to the relative proportions of sand, silt, and clay. These proportions affect aquifer storage parameters including specific yield.

Table 6. Change in Groundwater Volume for Management Subareas

Management Subarea	Area (acres)	Average Specific Yield¹	Ave. Change Groundwater Elevation (ft)	2019 Change in Groundwater Volume (AF)
Central Antelope Valley Subarea	310,193	0.13	1.72	69,352
Rogers Lake Subarea	177,708	0.15	-0.28	-7,175
South East Subarea	183,666	0.14	-0.60	-15,665
West Antelope Subarea	166,150	0.13	0.55	11,695
Willow Springs Subarea	52,740	0.11	-0.03	-200
TOTAL	890,457	-	-	58,007

¹Area-weighted averages are provided for the specific yield and change in groundwater elevation; calculations of change in groundwater volume were performed continuously over the entire water level change surface and do not match a simple multiplication of the averages and the acres.

This analysis indicated an increase of approximately 58,007 AF of groundwater volume from March 2019 to March 2020 in the Basin. As shown on **Figure 11** and in **Table 6**, these changes varied from subarea to subarea across the Basin. Overall increases in groundwater volume occurred in the Central and West Antelope subareas while decreases of groundwater volume occurred in the South East, Rogers Lake, and Willow Springs subareas.

To provide context for these changes, **Table 7** summarizes the historical change in groundwater volume calculations for 2016 through 2019 and indicates a total cumulative change in groundwater volume of 123,790 AF since 2016. In brief, data suggest a net increase in groundwater volume for the West Antelope and Central Antelope Valley subareas and a net decline in the remaining subareas.

The most significant decline in groundwater volume is indicated in the South East Subarea (**Table 7**). It is noted that the groundwater conditions in the South East Subarea are complex due to a series of buttes and hills indicating shallow bedrock (and potential geologic faulting) and aquifers in this area are not well-defined. In addition, a portion of this subarea had been previously excluded from the analysis due to insufficient data in areas of shallow groundwater. Additional data collection and analysis may be warranted for an improved understanding of local groundwater conditions in this subarea.

Table 7. Historical Change in Groundwater Volume

Management Subarea	2016 Change in Groundwater Volume (AF)	2017 Change in Groundwater Volume (AF)	2018 Change in Groundwater Volume (AF)	2019 Change in Groundwater Volume (AF)	2016-2019 Change in Groundwater Volume (AF)
Central Antelope Valley Subarea	60,993	16,258	59,830	69,352	206,433
Rogers Lake Subarea	(4,032)	4,232	(12,663)	(7,175)	(19,638)
South East Subarea	(1,461)	(55,150)	(73,566)	(15,665)	(145,842)
West Antelope Subarea	(4,973)	52,514	28,259	11,695	87,495
Willow Springs Subarea	3,235	(7,144)	(549)	(200)	(4,658)
TOTAL	53,762	10,710	1,311	58,007	123,790

3.6 SUBSIDENCE MONITORING

The historical decline of groundwater levels has been linked to land subsidence in the Basin. Water level declines cause a decrease in the aquifer pore pressure, allowing for re-arrangement and compaction of fined-grained units (i.e., clay) in the subsurface. As these sediments compact, the land surface can sink.

Historical land subsidence from groundwater pumping has been documented by USGS and others in the Antelope Valley (Ikehara and Phillips, 1994). Between 1930 and 1992, up to 6.6 feet of land subsidence occurred near Lancaster. At Edwards Air Force Base, land subsidence has caused cracked (fissured) runways and accelerated erosion on Rogers lakebed. USGS reports that this subsidence has also permanently reduced groundwater storage capacity by about 50,000 AF¹².

The distribution of land subsidence in the Antelope Valley from 1930 to 1992 is shown in feet of subsidence by the red contours on the top figure of **Figure 12** (Ikehara and Phillips, 1994). Historical land subsidence has primarily affected the northern half of the Central Antelope Valley Subarea, and small portions of the West Antelope and Rogers Lake subareas (top figure of **Figure 12**). An analysis of satellite-based InSAR (interferometric synthetic aperture radar) data indicate an additional 0.2 to 0.6 feet of land subsidence occurred between 1993 to 2005 in sections of the subsidence-prone area. Land subsidence from groundwater level declines can be a relatively slow process and continue for years after the pore pressure changes have occurred.

Additional information and data on historical land subsidence are available through USGS, which has established a network of 85 elevation benchmarks for the purposes of monitoring

¹² In general, this loss of capacity is due to a one-time compaction of fine-grained layers that did not likely store significant quantities of usable groundwater.

land subsidence, as shown on the bottom figure of **Figure 12**. In addition, three extensometers have been installed at Edwards Air Force Base to measure land subsidence directly.

More recently, DWR has entered into an agreement with TRE ALTAMIRA, a satellite imagery processing firm, to provide annual maps of ground surface displacement (including land subsidence), primarily for use in development of Groundwater Sustainability Plans (GSPs). These maps of land subsidence are derived from InSAR data published on the DWR online SGMA Data Viewer (TRE ALTAMIRA, 2020). Data were available in the Antelope Valley from October 2018 through September 2019 (WY 2019), covering most of the reporting period for this Annual Report (bottom figure of **Figure 12**).

These InSAR data indicated no to relatively low detectable rates of subsidence throughout the Basin during 2019 (bottom figure of **Figure 12**). Most of the Basin did not experience any measurable land subsidence and, in general, detectable land subsidence was concentrated in the same areas where historical subsidence had been mapped by USGS (top figure of **Figure 12**). In those areas, including the north-central Central Antelope Valley Subbasin and southern Rodgers Lake Subarea, land subsidence ranged up to about 0.5 inches locally, but was generally lower than about 0.1 inches.

Currently, the Watermaster Engineer is using the ongoing water level monitoring program as a proxy for subsidence monitoring. If water levels are maintained above historic lows in key areas of historical subsidence, then decreasing pore pressures in previously un-compacted clay layers can be avoided. By monitoring water levels and maintaining levels above historic lows, when possible, further land subsidence from groundwater pumping can be mitigated.

For future Annual Reports, the Watermaster Engineer will continue to supplement water level monitoring with DWR publicly-available InSAR data, assuming the continuation of online mapping. It is recognized that local subsidence could continue as a result of historical conditions, but if water levels are maintained, exacerbation of this situation can be mitigated.

3.7 GROUNDWATER QUALITY

Groundwater provides a high-quality water supply for beneficial uses in the Antelope Valley groundwater basin (SNMP, 2014). Total dissolved solids (TDS), an indicator of overall salt and mineral content, are present in groundwater at an average concentration of 300 to 350 milligrams per liter (mg/L) (DWR, 2004; SNMP 2014). These concentrations reflect a relatively low salt content and are significantly below the California Upper Secondary maximum contaminant level (MCL)¹³ of 1,000 mg/L, which is based on aesthetic effects.

¹³ Secondary MCLs are non-mandatory water quality standards established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations such as taste, color, and odor. These standards are not health-based and do not indicate a risk to human health.

Figure 13 shows a distribution of the maximum TDS concentrations in wells sampled between January 2010 and March 2020. Data are from the State Water Resources Control Board (SWRCB or State Board) Groundwater Ambient Monitoring and Assessment (GAMA) program and supplemented by USGS monitoring. Data were downloaded from the GAMA Groundwater Information System (SWRCB, 2020) and the USGS NWIS (USGS, 2020).

As shown on **Figure 13**, groundwater contains relatively low TDS over most of the Basin. TDS concentrations increase in the northern Basin with concentrations up to about 800 mg/L near the dry lakes and higher than 1,500 mg/L in a localized area in the northeast portion of the Rogers Lake Subarea (**Figure 13**). Other local areas of elevated TDS concentrations are found in the northeastern and southern portions of the Central Antelope Valley Subarea.

Consistent with other desert basin aquifers in Southern California, natural trace elements, such as arsenic and boron can be elevated locally in the Antelope Valley (USGS and SWRCB, 2013). In general, groundwater quality meets drinking water standards and water quality management goals throughout most areas of the Basin (SNMP, 2014).

As part of the CASGEM monitoring plan, USGS samples a subset of Antelope Valley wells for groundwater quality. Sampling occurs in about 35 CASGEM wells on a rotational basis. Typically, about 10 wells are selected for chemical analyses, with the remaining wells sampled for specific conductance and temperature only. Data are archived online in the USGS NWIS.

In addition to the USGS analyses, public water suppliers are required to sample groundwater quality in public supply wells. Each entity has groundwater quality monitoring requirements associated with its permit from the Division of Drinking Water (DDW), SWRCB. Data are summarized in Consumer Confidence Reports prepared annually by the water purveyors. DDW (formerly Department of Public Health) also maintains these data in a public water quality database. Several public water suppliers have also provided recent groundwater quality data to the Watermaster Engineer.

The Salt Nutrient Management Plan for the Antelope Valley (SNMP) has developed a groundwater quality monitoring plan using wells from the SWRCB GAMA program (SNMP, 2014). The plan includes 23 wells owned and operated by established water utilities or the U.S. Air Force in central and southeast portions of the Basin. The program supplements ongoing groundwater monitoring programs by monitoring constituents associated with management goals in the Basin including TDS, nitrate, chloride, arsenic, total chromium, fluoride, and boron.

Data from these monitoring programs can be accessed by the Watermaster Engineer as needed to evaluate changes in any key constituents of concern in local areas.

3.8 SURFACE WATER QUALITY

Numerous local agencies monitor the various sources of surface water in the Adjudication Area. Collection of the quality data for imported water (SWP water), recycled water, and

stormwater is ongoing; data can be compiled into the Watermaster database in the future for analysis depending on priorities and budget.

SWP water is treated at the PWD Leslie O. Carter Water Treatment Plant (WTP) for use by PWD and LCID. SWP water is also treated at four AVEK treatment facilities (Quartz Hill WTP, Eastside WTP, Rosamond WTP, and Acton WTP). SWP water is high quality with TDS concentrations typically in the upper 200 mg/L range.

Recycled water is produced at the Los Angeles County Sanitation District's (LACSD) Palmdale and Lancaster water reclamation plants (WRPs), Edwards Air Force Base (EAFB) Air Force Research Laboratory Treatment Plant and the Main Base Wastewater Treatment Plant (WWTP), and the RCSD's WWTP. Tertiary treated effluent from LACSD is used for agriculture, purple pipe system (parks, landscaping, etc.), and environmental purposes. Treated water from the two EAFB plants is used only on the base. The RCSD WWTP has the capacity to treat 1.3 million gallons per day (mgd) of secondary-treated water and 0.5 mgd of tertiary-treated water.

The RCSD WWTP is in the process of being upgraded and currently discharges its wastewater in clay-lined ponds for evaporation. Improvements to the RCSD WWTP are in progress, including denitrification of effluent; when upgrades are complete, RCSD will use percolation ponds to recharge effluent into the local groundwater basin under a new Waste Discharge Permit and Monitoring and Reporting Plan. These data will be accessed and reviewed by the Watermaster Engineer under conditions of a Storage Agreement with the Watermaster.

Currently, recycled water in the Antelope Valley meets most drinking water standards (SNMP, 2014). EAFB recycled water quality tends to have higher salt and nutrient concentrations (e.g., TDS, nitrate, chloride); elevated TDS and chloride concentrations have been linked to the higher mineral content in the lower aquifer, which serves as the source water for recycled water in that area (SNMP, 2014).

Littlerock Reservoir, jointly owned by PWD and LCID, collects runoff from the San Gabriel Mountains. Water from Littlerock Reservoir discharges to Lake Palmdale and is subsequently treated at the PWD treatment plant. Water quality in Lake Palmdale is considered good with TDS concentrations of about 150 mg/L (SNMP, 2014).

3.9 GROUNDWATER PRODUCTION MONITORING AND METER INSTALLATION

The Physical Solution allocates groundwater production of the Native Safe Yield among numerous parties to the Judgment including the U.S. Federal Government, the State of California, Overlying Producers (Exhibit 4 of the Judgment), Non-Overlying Producers (Exhibit 3 of the Judgment), and members of the Small Pumper Class (see **Figure 2**). Although exact locations for all production wells are not known, locations of active wells were compiled (or approximated) during the adjudication litigation to support development of a groundwater model. This work was conducted by Geoscience Support Services as

technical experts in the litigation to analyze the recovery of the basin with reduced groundwater pumping.

Model input files were obtained from Geoscience Support Services by the Watermaster Engineer in February 2018 to support future analyses. These files contain locations of a partial list of wells owned by Parties in the Judgment as shown on **Figure 14**. The map shows locations of water supply wells owned by the Public Water Suppliers (yellow), Agricultural Landowners (green), the U.S. Federal Government (brown) and the State of California (blue) at the time of the trial (about 2014). The service areas of the Public Water Suppliers are also shown on **Figure 14** to better differentiate among the wells. The Watermaster is in the process of getting location information for wells within the Adjudicated Area. This map will be updated with that information in the 2020 Annual Report.

The production wells owned by Mutual Water Companies (MWCs) (included in Exhibit 4 of the Judgment) are represented in the model well files by parcels served, as shown by the striped parcels on **Figure 14**. Well locations for additional Exhibit 4 Parties and other Parties with rights to produce groundwater (e.g., the Non-Stipulating Parties) were not available in the well file.

For this annual report, a basin-wide map showing the distribution and amounts of groundwater pumping in 2019 has been developed from information provided by Parties on their 2019 Annual Production Reports (**Figure 15**). Only wells with known locations (most by APNs) are shown on the map. The large red circles indicate areas where production is over 1,000 AF in 2019 and can represent more than one well in close proximity. The slightly smaller orange circles designate areas where production ranged from 100 to 1,000 AFY, while yellow circles indicate areas where production was between 50 and 100 AFY. Green circles indicate areas with production greater than 0 but less than 50 and blue circles indicate wells that did not produce anything in 2019. As indicated on **Figure 15**, groundwater pumping occurs throughout the Basin with the most concentrated area of pumping in the eastern half of the Central Antelope Valley Subarea. Production totals for the Basin and by Party are included in the water accounting discussions in **Section 4** of this report, along with various related appendices.

The open purple circles on **Figure 15** represent wells where 2019 production has not yet been reported. A list of outstanding production reports is included in **Appendix M**. The Watermaster Staff and Watermaster Engineer are in the process of requesting/gathering missing well APNs for about 34 Exhibit 3, Exhibit 4 and Non-Stipulating Parties. Only about one-third of the Non-Stipulating Parties have reported 2019 Annual Production, which totals less than 500 AF.

The Watermaster is in the process of identifying the Small Pumpers in the Adjudicated Area. A review of Los Angeles County and Kern County parcel databases was conducted in late 2019 and early 2020 to identify potential Small Pumper parcels¹⁴. This list of potential Small

¹⁴ District 40 volunteered its staff time to conduct this review. The Watermaster is appreciative of this offer and efforts.

Pumpers is being reviewed and refined to eliminate duplicates and identify properties that receive water from a water district.

Potential Small Pumpers identified from this database search is represented by parcel locations shown on **Figure 16**. This map replaces the Small Pumper parcel map shown in the 2018 Annual Report that was based on model input files obtained from Geoscience Support Services by the Watermaster Engineer. These more-recently developed parcels will be verified over time, combined with parcels from newly-defined Small Pumpers (from unknown Small Pumpers submitting qualification applications), and presented in future Annual Reports. These locations will be incorporated into the Small Pumper monitoring program as summarized in **Section 3.9.2** below.

3.9.1 Production Monitoring and Metering

The Judgment requires the Watermaster Engineer to monitor safe yield components, including groundwater production, and to ensure that reductions in pumping take place pursuant to the terms of the Judgment (§18.5.2). Since 2018, production monitoring (i.e., reporting) has included documentation of how each Party measures the reported production. Although production in public water supply wells is measured directly with well meters, many of the agricultural and other wells in the Basin did not historically install meters. As such, reported production for those wells has historically been estimated using a variety of methods including electrical records or crop consumption data.

As stated by the Judgment, all Parties (except the Small Pumper Class) have been required to install meters on their wells by December 23, 2017 (within two years after the Judgment) to measure production directly. The Watermaster requested and was granted an extension to March 1, 2018 to complete the required meter installation. The Watermaster Engineer has developed Rules and Regulations providing guidance and requirements for selection, installation, and testing of well meters. The approved Rules and Regulations are posted on the Watermaster website.

To ensure that meters were properly installed, the Watermaster Engineer has selected numerous contractors and qualified personnel as Pre-Qualified Meter Installers. All Pre-Qualified Meter Installers were required to comply with consistent reporting and documentation of new meter installations. In addition, the rules required documentation of existing well meters to ensure that all wells were metered in compliance with the regulations. The requirements also allow for a variance in the rules if well owners can demonstrate that an alternative meter installation will result in accurate production monitoring. Materials related to the meter requirements are available on the Watermaster website, including the pertinent Rules and Regulations, and the list of pre-approved meter installers and testers.

At the end of 2019, there are still some Parties that had not completed metering in compliance with the Rules and Regulations. Watermaster Counsel developed a memorandum with options available for the Watermaster to ensure meter installation compliance and a recommended enforcement process, which was implemented in early

2019. Administrative staff, Watermaster Counsel, and the Watermaster Engineer are working together on enforcement to achieve full compliance with meter requirements. Administrative staff maintains a list of non-compliant Parties for reporting to the Board.

In addition to enforcement activities, procedures will be needed to estimate unreported Production amounts, so that a full water accounting can be performed. This accounting is needed to support other components of the Judgment, such as determining Replacement Obligations or Carry Over amounts.

3.9.2 Small Pumper Class Production Monitoring

The Judgment defined a Small Pumper Class of Producers as “all private (i.e., non-governmental) Persons and entities that own real property within the Basin, as adjudicated, and that have been pumping less than 25 acre-feet per Year on their property during any Year from 1946 to the present” (¶3.5.44). The Judgment allows any Small Pumper Class Member to produce up to 3 AFY for reasonable and beneficial use on their overlying land without being subject to a Replacement Water Assessment (¶5.1.3).

As mentioned above, a review of Los Angeles County and Kern County parcel databases was conducted in late 2019 and early 2020 to develop a reliable list of potential Small Pumper parcels (**Figure 16**). Over 4,000 potential parcels were identified. This list includes all the Small Pumpers listed in the Judgment (*Exhibit A to Judgment Approving Small Pumper Class Action Settlements: List of Known Small Pumper Class Members for Final Judgment*) and is being refined to remove duplicates, identify owners of multiple parcels, and determine which parcels may be subject to water delivery by a public water supplier.

In May 2020, Administrative Staff mailed Administrative Assessment invoices to all of these potential Small Pumper parcels. The invoices covered 2016 to 2020 Administrative Assessments based on an average production of 1.2 AFY per existing household or parcel (¶5.1.3). In addition to an invoice, each Small Pumper parcel also received a Small Pumper Information form to complete and return to the Watermaster with the invoice payment. The information form includes contact information, APN number, and parcel address; this information will be used to update the current Small Pumper list.

The Judgment states that the “primary means for monitoring the Small Pumper Class Members’ Groundwater use...will be based on physical inspection by the Watermaster, including the use of aerial photographs and satellite imagery” (¶5.1.3.2). The level of monitoring needed to document this groundwater use, along with appropriate monitoring tools, is being considered by the Watermaster Engineer. The development of a more accurate list of Small Pumpers with parcel locations and contact information is a significant step towards ongoing monitoring of Small Pumper production.

The Watermaster Engineer and Watermaster Counsel have been made aware of multiple Small Pumpers that appeared to be producing groundwater in excess of the maximum amount. As those parties have been identified, the Administrative Staff and Watermaster Counsel have contacted each, worked to obtain relevant data, eliminate any over-

production under the Judgment, and require payment of assessments and other steps to bring them into compliance with the Judgment. Should the Watermaster develop a reasonable belief that any Small Pumper Class Member is using in excess of 3 AFY, the Watermaster can require, among other actions, the well owner to install a meter at the well owner's expense.

The combined steps of refining the Small Pumper list over time and development of land use maps and other information on groundwater use will improve the ability to monitor Small Pumper production as required by the Judgment.

3.9.3 2019 Land Use Monitoring

To provide a Basin-wide perspective for groundwater use, land use in the Adjudication Area will be incorporated into the monitoring program. A color-infrared (CIR) aerial photograph taken in Fall 2018 and provided by the U.S. Department of Agriculture (USDA) is shown on **Figure 17** to illustrate the overall land use in the Basin. This is the most recent CIR aerial photograph available. The USDA typically updates its CIR aerial photograph every two years and the 2020 one will likely be available in 2021. A CIR photograph is particularly useful for interpretation of natural resources, especially vegetation. The Adjudication Area and Management Subareas are also shown on the image, although subarea names have been omitted to maximize the viewing area (see **Figure 16** and others for Subarea names). The Federal lands of Edwards Air Force Base are excluded from this satellite image for national security reasons.

CIR aerial photographs vary in overall tone, which complicates the interpretation of the color tones on the photograph. In general, red tones on the image indicate live vegetation; the red color intensifies with vegetation density and health. This occurs because healthy vegetation reflects significant near-infrared light, assigned to be red on various images. As plant vigor decreases, the vegetation will show as lighter shades of red and pink, various shades of greens, and possibly tans. Dead vegetation (wheat stubble as an example) will often be greens or tans.

The image on **Figure 17** allows for identification of irrigated crops, especially alfalfa fields, by the intense bright red areas of the Basin. As shown on the figure, most of the irrigated agriculture at the time of the photograph (Fall) is indicated in the eastern half of the Central Antelope Subarea. Additional agriculture also occurs throughout the remainder of the Basin, with some fields visible but not being irrigated as of the date of this aerial photograph. A comparison of **Figure 17** with **Figure 14** shows a correlation between the location of agricultural wells and indicated irrigated fields across the Basin.

The number of acres associated with irrigated agriculture in 2019 was obtained from the agricultural commissioners of Kern and Los Angeles counties as shown in **Table 8**. Data compiled for the 2016 through 2018 Annual Reports are also included for comparison on the table. Data for Kern County is from the Kern County Department of Agriculture and Measurement Standards annual GIS crop maps. Data for the Los Angeles County area is

estimated cultivated agricultural lands based on Pesticide and Restricted Material Permits from the Los Angeles County Agricultural Commissioner/Weights & Measures.

Table 8. 2016 to 2019 Estimated Agricultural Acreage in the Antelope Valley

Irrigated Agriculture	Kern County (acres)	LA County (acres)	Total (acres)
2019	1,240	9,218	10,458
2018	1,606	10,651	12,257
2017	3,070	15,884	18,954
2016	2,232	14,219	16,451

Source: Kern County Department of Agriculture and Measurement Standards.
Los Angeles County Agricultural Commissioner/Weights & Measures.

As indicated by the data in **Table 8**, the number of irrigated agricultural acres in the Basin increased by about 15 percent from 2016 to 2017, then decreased by about 35 percent between 2017 and 2018. An additional decrease of about 15 percent occurred between 2018 and 2019. From 2016 through 2019, the data indicate that total irrigated agricultural acres have declined by about 36 percent, commensurate with the mandatory reduction in pumping (Rampdown). As production is reduced during the Rampdown Period in compliance with the Judgment, the irrigated agricultural acreage that is economically viable for farming may continue to decline.

4 WATER ACCOUNTING

This section provides details on the water accounting for the Parties to the Judgment. The accounting process includes documentation of the Rampdown schedule, 2019 production, actual Rampdown use, allocation and use of Imported Water Return Flows (IWRFs), Carry Over water, and information on other water categories such as transfers and storage. Also included are details on the wastewater and recycled water practices that occurred within the Adjudication Area in 2019 and details on the well applications program for 2019.

Production Rights, Rampdown, Unused Federal Reserved Water Right, Imported Water Return Flows, and Carry Over water available to each Party in 2019 are tabulated in a single line entry for each Party in the tables in **Appendix B**. Other water available to Parties, such as transfers and storage, are tabulated in separate appendices and discussed in more detail in this section. Accounts remain incomplete for Parties that have not reported their 2016, 2017, 2018, and/or 2019 annual production. Parties are encouraged to contact the Watermaster Staff and Watermaster Engineer if their records differ from what is presented in this report.

4.1 PRODUCTION RIGHT AND PRODUCTION CATEGORIES

Production Right is defined in the Judgment as “the amount of Native Safe Yield that may be Produced each Year free of any Replacement Water Assessment and Replacement Obligation. The total of the Production Rights decreed in this Judgment equals the Native Safe Yield” (§3.5.32). The circle graph on **Figure 2** illustrates the allocation of Production Rights among the Antelope Valley Producers, which totals 82,300 AFY¹⁵.

Additional groundwater production categories are identified throughout the Judgment; the primary production categories are listed on the left side of **Figure 2**. These categories, including provisions and limitations in the Judgment, have been considered in developing the water accounts. To ensure that the Watermaster Engineer and each Party have the same understanding as to the amounts of water in each Party’s accounts, selected tables of these accounts will be posted on the Watermaster website.

4.2 RAMPDOWN SCHEDULE

In accordance with Paragraph 8.3 of the Judgment, Producers that were allocated a portion of the Native Safe Yield (except the Small Pumper Class, the State of California and the United States) must reduce production from a Pre-Rampdown Production amount to the Production Right. In this manner, the Basin will be brought into balance over the seven-year Rampdown Period in accordance with the Judgment-defined Native Safe Yield. The Pre-Rampdown Production amount is defined as the “reasonable and beneficial use of Groundwater, excluding Imported Water Return Flows, at a time prior to this Judgment, or the Production Right, whichever is greater” (§3.5.28). The Rampdown Period extends from

¹⁵ Figure 2 does not include Production Rights of the Non-Stipulating Parties.

2016 through 2022; the reduction in production associated with the Rampdown occur in years 2018-2022. Accordingly, 2019 is the second year of reduced production during Rampdown.

The Rampdown schedule for 2016 through 2022 for each Party with a Pre-Rampdown Production right is provided in **Appendix A. Table A-1** lists the Rampdown schedule for the Exhibit 3 Non-Overlying and Non-Stipulating Parties while **Table A-2** lists the Rampdown schedule for the Exhibit 4 Overlying Producers. Beginning in 2018, Pre-Rampdown Production is reduced linearly over a five-year period to reach the Production Right in 2023, the first year after Rampdown.

Pre-Rampdown Production amounts for the Exhibit 4 Producers were provided in the Judgment. Pre-Rampdown Production amounts (**Table A-1**) for the Exhibit 3 Producers and Non-Stipulating Parties were not provided in the Judgment and the values in **Table A-1** have been approved by the Watermaster Board (Todd Groundwater memorandum dated June 22, 2018).

4.3 2019 REPORTED PRODUCTION AND WATER ACCOUNTING

In compliance with the Judgment, Todd Groundwater has worked with Administrative Staff to develop a production reporting process including a reporting form and a deadline for submittals. Although reporting compliance has improved over the three years of implementation, not all Parties have complied with the requirements. Types of Parties and the associated reported 2019 production are summarized in **Table 9**.

Table 9. 2019 Production Reported by Party

Party	Total Number of Parties	2019 Reported Production (AF)	Number of Missing Production Reports
Exhibit 3 Parties	11	23,630.32	0
Exhibit 4 Parties	105	53,395.20	18
U.S. Federal	1	1,240.76	0
State of California	9	0	7
Non-Stipulating Parties ²	8	508.9	2
TOTALS¹	134	78,775.18	27

1. Includes 9,261.96 AF of recovery from stored imported water.

2. SCI California Funeral Services, Inc. dba Joshua Memorial Park intervened to become a Non-Stipulating Party in 2019. The Parties and Court are in the process of determining Its Production Right and Rampdown allowance. This Party will be added to the table when these values are final.

The Production Rights of the 27 missing Production Reports add up to about 1,853 AF (see **Appendix M-2**) which represents about 2.3 percent of the Native Safe Yield.

Administrative Staff has been working with Parties to improve production reporting compliance and to infill missing production reports from previous years. The current status of reporting for 2016 through 2018 production is summarized in **Table 10**. Data in **Tables 9** and **10** indicate that reported production has declined since 2016, but accurate amounts cannot be determined without production reporting by all Parties. In addition to non-reporting Parties, these two tables do not include all the production categories associated with Native Safe Yield. For example, the following production is not summarized in the tables: metered and unmetered production from the Small Pumper Class members, production that recovers stored imported water, and most of the New Production approved after the Final Judgment. The

Appendix M-2 contains a list of Exhibit 3, Exhibit 4, State of California, United States, and Non-Stipulating Parties that have not submitted a 2016, 2017, 2018, and/or 2019 Annual Production Reports. Rules and Regulations have incorporated incentives for production reporting compliance including requiring complete reporting prior to approval of new wells or transfers. Enforcement actions are being considered to achieve compliance with reporting requirements in the Judgment.

Table 10. Status of Production Reporting for 2016 through 2018

Party	Total Number of Parties	2016 Reported Production (AF)	Number of Missing Production Reports	2017 Reported Production (AF)	Number of Missing Production Reports	2018 Reported Production (AF)	Number of Missing Production Reports
Exhibit 3 Parties	11	31,889.89	0	29,240.30	0	30,849.48	0
Exhibit 4 Parties	104	75,976.84	16	58,819.41	16	50,023.47	12
U.S. Federal	1	1,094.01	0	1,174.00	0	1,321.27	0
State of California	9	0	8	0	8	527.75	6
Non-Stipulating Parties	8	478.6	2	621.55	2	0.08	2
TOTALS	133	109,439.34	26	89,855.26	26	82,722.05	20

Appendix B presents detailed accounting of water sources (Production Right, Rampdown, unused Federal Reserved Rights, Imported Water Return Flows, Transfers, Carry Over water, and use of stored water in lieu of groundwater) for 2019 for each Party to the Judgment. For the 2019 report, columns have been added to similar tables presented in previous annual reports to account for transfer water and to account for the use of stored imported water instead of groundwater for LCID and AVEK. Note that all Parties may not have rights to all these water source types. In addition to the sources of water available for production each year, the tables show the amount of groundwater produced and the sources of water assigned to that production for 2019. Production was first assumed to be derived from each Party's Production Right (as required by the Judgment). Additional production was then assumed to come from Rampdown, allocation of unused Federal Reserved Rights, IWRFs, and then Carry Over, if applicable. More details of IWRFs are in **Section 4.4**.

To facilitate review by the Parties, columns on the tables in **Appendix B** have been numbered and formulas used to develop the account details are shown. Providing the column numbers and formulas allows Parties to better understand how numbers were derived and ensure that the amounts developed by the Watermaster Engineer balance with each Party's internal records.

Tables B-1 and **B-2** present the water accounts for the Exhibit 3 Non-Overlying Producers and the Exhibit 4 Overlying Producers, respectively. **Table B-3** contains water accounts for Other Parties including:

- United States Federal Government
- State of California,
- Non-Stipulating producers
- Antelope Valley Joint Union High School District (AVJUHS), City of Lancaster, and PPHCS
- Small Pumper Class members known or suspected to have produced over 3 AFY
- Parties with rights to Imported Water Return Flows but have no other rights to produce
- Defaulted Parties that are known or suspected of producing groundwater and are in the process of requesting New Production or in discussions with the Watermaster.

Finally, **Table B-4** provides water accounts for those entities that have been granted New Production under the Antelope Valley Watermaster Rules and Regulations (see **Section 4.11** for information on the New Production well application process). Replacement Water Assessments must be paid for all New Production. The first successful New Production application was approved in March 2018.

As per the Judgment (§5.1.4.1), unused Federal Reserved Water Rights (associated with Edwards Air Force Base and Air Force Plant 42) in any given year will be allocated to the Non-Overlying Production Rights holders (except for Boron CSD and West Valley County Water District) in the following year, in proportion to Production Rights set forth in Exhibit 3 of the Judgment. This unused portion of the Federal Reserved Right is to be used by the Non-Overlying parties in the year available and is not subject to Carry Over (§15). The United States is to give the Watermaster at least a ninety-day notice if its Production is anticipated to increase more than 200 AFY in the following 12-month period (§11.1). Increased demand by the United States can be met with increasing Production or by accepting imported water deliveries. Any Party can propose a water substitution or replacement to the United States. If a Party's proposed imported water substitution is agreed upon by the United States, the United States will reduce Production by that amount and the Party can Produce that amount of Native Safe Yield free from a Replacement Water Assessment in addition to their Production Right (§11.2).

The Non-Stipulating Parties are subject to all provisions of the Judgment but are not entitled to benefits provided by Stipulation, including but not limited to Carry Over and Transfers (§5.1.10) (**Table B-3**). Other Parties, such as the City of Lancaster and the AVJUHS, were

given rights to produce groundwater up to certain amounts until recycled water becomes available (**Table B-3**). Phelan Piñon Hills Community Services District (PPHCSD) does not have Production Rights, but according to the Judgment, is allowed to pump up to 1,200 AFY from its Well #14 provided such production does not cause Material Injury and the District pays a Replacement Water Assessment and any other costs deemed necessary to protect Production Rights defined in the Judgment, on all water produced and exported (**Table B-3**). The bottom of **Table B-3** lists six Parties that have rights to Imported Water Return Flows but do not have Production Rights. These six Parties have the right to produce, carry over, transfer, or store these Imported Water Return Flows in the future if they choose.

Small Pumper Class Members can produce up to 3 AFY for reasonable and beneficial use on their overlying land without being subject to a Replacement Water Assessment, reporting production or installing a meter on their well(s). Small Pumper Class Members pumping over 3 AFY are required to install meters on their wells.

Table B-4 lists applicants that have been granted New Production. A total of 34 New Production applications were approved through April 2020 but 5 of these have either encountered dry boreholes and subsequently withdrew their applications or have decided not to drill at this time.

4.4 IMPORTED WATER USE AND RETURN FLOWS

AVEK, PWD, and LCID are State Water Project (SWP) contractors with turnouts along the east branch of the California Aqueduct to import SWP water into the Antelope Valley. AVEK imports SWP water and treats a portion of this water at its four water treatment plants for delivery to its municipal and industrial customers. AVEK also delivers untreated SWP water for agriculture use and recharge for subsequent recovery and delivery to its customers. PWD imports SWP water for treatment through its water treatment plant located at Lake Palmdale and delivers the treated water to its urban customers directly. PWD also wheels small amounts of imported water to AVEK and LCID. LCID does not have a treatment plant for its SWP allocation but has conducted exchanges with AVEK in the past. Some of LCID's SWP Table A water has been delivered to AVEK in exchange for the return of an equal amount of AVEK's approved future allocation of SWP Table A water to LCID. LCID completed an upgrade to their existing recharge facility and a Storage Agreement for banking and recovery was approved in 2020.

Between 2007 and 2018, 5,635 AF of LCID's Table A water has been delivered to AVEK for future return to LCID. This imported water has been included in AVEK imported water totals. In 2019, AVEK did not import any of LCID's Table A SWP water.

Appendix C-1 provides details on the amount of water imported by AVEK, PWD, and LCID, and the amounts recharged (banked), sold to customers, or put into Lake Palmdale in 2019. A total of 74,287.05 AF of SWP water was imported into the Adjudicated Area in 2019. AVEK imported 61,787.05 AF, PWD imported 12,066.00 AF, and LCID imported 434.00 AF.

Appendix C-2 provides a summary of the amount of water spread and recovered at each of AVEK's storage and recovery locations. Information includes the total imported water stored at the beginning and end of 2019 and the amount of water recovered for use inside and outside the Adjudicated Area. For this annual report, banking and recovery information is shown separately for each storage and recovery location, while for past annual reports only the sum of all locations was shown. AVEK provided the Watermaster this information and includes the following recharge locations:

- High Desert Water Bank
- Westside Water Bank
- Eastside Water Bank
- Other AVEK Recovery Locations (West Avenue H Wellfield Project and the WSSP-1 Well locations)

AVEK has been refining its water accounting and has provided a facilities location map and detailed flowcharts showing where its water went in 2019. These are included for reference in **Appendix I**. One flowchart depicts the distribution of AVEK's imported water, groundwater, and recovered water supply (total of 71,021.02 AF) (**Appendix I Figure 2**). The other flowchart depicts water AVEK distributed for other agencies (total of 21,027 AF) (**Appendix I Figure 3**). These flowcharts illustrate the complexity of AVEK's water distribution. Note that the Watermaster Engineer is unable to independently verify all these numbers and relies on the banking Parties to supply accurate information for the annual reports.

Appendix C-3 contains storage and recovery information for the other projects and Parties in the Adjudicated Area. These include Antelope Valley Water Storage LLC, Tejon Ranchcorp, LCID, Upper Amargosa Creek Recharge Project Parties, and the AVSWCA recharge at Big Rock Creek. In 2019, no water was stored or recovered at the Willow Springs Water Bank. In 2019, 1,523 AF was spread at the Tejon Water Bank and no water was recovered.

LCID completed an upgrade to its existing recharge facility and a Storage Agreement for banking and recovery was approved in 2020. It began recharging at the end of 2019 while the Storage Agreement terms were being worked out. In 2019, it spread 234 AF at this location and recovered 28 AF for delivery to its customers. A Storage Agreement for RCSD was also approved in 2020, but it is still in the process of constructing its new Rosamond Water Reclamation Plant. Construction began in November 2019 and is projected to continue for 18 months.

The Upper Amargosa Creek Recharge Project Parties (AVEK, City of Palmdale, PWD, and District No. 40) recharged 9 AF at this location in 2019. The AVSWCA (AVEK, PWD, and LCID) recharged 690 AF at the Big Rock Creek Recharge site in 2019.

All the banks have a storage loss factor of 10 percent except for the Tejon Water Bank which has a storage loss factor of 6 percent. The Tejon Ranchcorp Company is in the process of gathering information supporting this 6 percent storage loss factor and for development of a

Storage Agreement. Antelope Valley Water Storage LLC has recently submitted technical documents for its Willow Springs Water Bank for development of a Storage Agreement. AVEK will also be supplying the Watermaster with technical documents for its banking locations. The need and format for a Storage Agreement for pre-existing banks is currently being discussed along with the potential fees associated with this review and development of the Storage Agreements. These pre-existing banks include AVEK's Eastside Water Bank and Westside Water Bank, the Willow Springs Water Bank, and the Tejon Water Bank.

As provided in Paragraph 5.2 of the Judgment, Parties listed on Exhibit 8 of the Judgment have a right to produce – in any year – Imported Water Return Flows equal to the applicable percentage multiplied by the average amount of imported water used by that Party within the Basin in the preceding five-year period. This calculation does not include imported stored water in the Basin pursuant to a Storage Agreement (see **Section 4.8**). AVEK has rights to the Imported Water Return Flows used by Parties not on Exhibit 8 of the Judgment. **Appendix D** lists imported water use for 2011 through 2019 and Imported Water Return Flows for 2016 through 2020 by the 37 Parties on Exhibit 8. Return flows from agricultural imported water use are set in the Judgment at 34 percent and return flows from municipal and industrial imported water use are set in the Judgment at 39 percent of the amount of imported water used.

Additional information on stored water and storage agreements is provided in **Section 4.8**.

4.5 CARRY OVER WATER

Producers can carry over an unproduced portion of an annual Production Right or a right to Imported Water Return Flows to the next year under certain conditions as defined by the Judgment. Producers are also allowed to purchase imported water and forego a portion of the Production Right to the Carry Over water account (In Lieu Production Right Carry Over, ¶15.1 of Judgment). Carry Over water amounts for Producers with unused Production Rights or Imported Water Return Flows for 2019 are documented in the tables in **Appendix B**. For future Annual Reports, these Carry Over accounts may be tabulated in a separate appendix to show aging of the separate Carry Over accounts. According to the Judgment, water eligible for these accounts may be carried over for up to ten years. At the end of the Carry Over period, the Producer may enter into a Storage Agreement with the Watermaster to store unproduced portions of Carry Over water. If not converted to a Storage Agreement, Carry Over water not Produced by the end of the tenth year reverts to the benefit of the Basin and the Producer no longer has a right to the Carry Over water (¶15.1, 15.2, 15.3).

4.6 REPLACEMENT OBLIGATIONS

The purpose of Replacement Water is to ensure that each Party may fully exercise its Production Right by keeping the basin in hydrologic balance. A Producer has a Replacement Obligation if its production of groundwater is more than the sum of its rights to pump groundwater including Production Rights, Carry Over water, Imported Water Return Flows, in-lieu production, and Stored water. During the first two years of the Rampdown Period

(2016 and 2017), Producers were not subject to Replacement Water Assessment fees. An exception to this was Phelan Pinon Hills Community Services District (PPHCSD). PPHCSD does not have a Production Right, but according to the Judgment is allowed to pump up to 1,200 AFY from its Well #14 provided such use does not cause Material Injury and PPHCSD pays a Replacement Water Assessment and any other costs deemed necessary to protect Production Rights defined in the Judgment, on all water produced and exported.

Replacement Obligations are listed in **Appendix E**. **Appendix E** includes the producers that have Replacement Obligations, the Replacement Obligation amount, if a transfer or payment was used to fulfill the Replacement Obligation, and the status of recharging the Replacement water. The columns on the left are for 2016, 2017, and 2018 Replacement Obligations and the 4 columns on the right are for 2019 Replacement Obligations.

The State Water contractors in the Antelope Valley area (AVEK, PWD, and LCID) hired an independent contractor to develop a methodology to determine the RWA fee in areas inside and outside of the State Water Contractor service areas (**Appendix O**). The Replacement Water Assessment fee for 2019 was set at \$451 per acre-foot for Producers within the State Water Contractor service areas and at \$948 per acre-foot for Producers outside the State Water Contractor service areas, with the differences reflecting capital costs paid through property taxes by Parties inside the State Water Contractor service areas.

4.7 TRANSFERS

All transfers of Production Rights or other rights to produce groundwater under the Judgment that have occurred to date are tabulated in **Appendix F**. This year, the transfers have been reported on three separate tables. The **Appendix F-1** table lists permanent transfers that are not associated with a split of rights, the **Appendix F-2** table lists non-permanent transfers that are generally one-time transfers, and the **Appendix F-3** table lists transfers that are associated with a split of Production Rights. Transfers that are associated with a property sale or a successor-in-interest appear in the second column of the water accounting tables (**Appendix B**). No change in Production Rights or production locations are associated with these types of transfers.

The **Appendix F** tables include the names of the Transferor and the Transferee and the parcels associated with each Party. Also listed is the type of transfer (e.g., property sale, transfer of rights, merger, split of rights). The tables also include the transferred amount and date of transfer as well as the status of the voting rights associated with any permanent transfer of Production Rights. The transferees associated with Production Right transfers are also indicated in the second column of the water accounting tables (**Appendix B**) to show who the new owner of those Production Rights is.

Transfer amounts are also shown in the water accounting tables (**Appendix B**) in two places. Transfers that occurred before 2020 are shown in the left portion of the tables in the *Water Available for Use in 2019* section. This transfer water can be used to satisfy a 2018 RWA or becomes supply available for the Party to use in 2019. Transfers that were approved in 2020

are shown at the end (right side) of the **Appendix B** water accounting tables. This is water that the Party has available for use for a 2019 RWA and/or for use in 2020.

Transfers to Parties are represented as a positive number since it is additional water available to that Party while transfers from Parties are represented as a negative number since the Transferee has sold that water to another Party and it is no longer available to the Transferee. There have been no transfers by the Antelope Valley United Mutuals Group¹⁶. As required in the Judgment, a separate accounting for Antelope Valley United Mutuals Group transfers will occur if any of such transfers take place.

4.8 STORED WATER AND STORAGE AGREEMENTS

All Parties have the right to store water in the Basin pursuant to a Storage Agreement with the Watermaster. Storage could include Carry Over water or imported water that has been brought into the Basin and recharged. AVEK may export any of its imported Stored Water to any area outside its jurisdictional boundaries and the Basin, provided all water demands within its jurisdictional boundaries are met. Stored Water that originated as other imported water may also be exported, subject to a technical determination by the Watermaster of the percentage of the Stored Water that is unrecoverable; such unrecoverable Stored Water is dedicated to the Basin (§14 of the Judgment).

Production from Stored Water is not subject to an Administrative Assessment (§19.1 of the Judgment). Paragraph 6.3 of the Judgment prohibits unauthorized Parties to claim rights to produce any Stored Water recharged in the Basin, except pursuant to a Storage Agreement with the Watermaster.

According to the Judgment, Carry Over water can be carried over for up to ten years. At the end of the Carry Over period, the Producer may enter into a Storage Agreement with the Watermaster to store unproduced portions of Carry Over water. Since this is year four of the Judgment, no Parties have entered into Storage Agreements for Carry Over water.

Several storage and recovery (banking) projects involving Stored Water are currently in operation in the Basin including some projects that were in existence prior to the Judgment. Nothing in the Judgment limits or modifies operations of these preexisting banking projects (operators are listed in §14 of the Judgment).

¹⁶ The members of the Antelope Valley United Mutuals Group are Antelope Park Mutual Water Company, Aqua-J Mutual Water Company, Averydale Mutual Water Company, Baxter Mutual Water Company, Bleich Flat Mutual Water Company, Colorado Mutual Water Co., El Dorado Mutual Water Company, Evergreen Mutual Water Company, Land Projects Mutual Water Co., Landale Mutual Water Co., Shadow Acres Mutual Water Company, Sundale Mutual Water Company, Sunnyside Farms Mutual Water Company, Inc., Tierra Bonita Mutual Water Company, West Side Park Mutual Water Co. and White Fence Farms Mutual Water Co., together with the successor(s)-in interest to any member thereof.

In 2019, recharge occurred at the following locations:

- AVEK Westside Water Bank
- AVEK Eastside Water Bank
- Upper Amargosa Creek Recharge Facility (participating Project Parties: City of Palmdale, PWD, District No. 40, and AVEK)
- Big Rock Creek Recharge (participating Parties: AVEK, PWD, and LCID)
- Tejon Ranchcorp and Tejon Ranch Company's Tejon Water Bank
- LCID upgrade to its existing State Water Project water recharge facility.

No water was recharged in 2019 at the remaining recharge locations in the Basin:

- AVEK High Dessert Water Bank
- Antelope Valley Water Storage LLC Willow Spring Water Bank (formerly the Antelope Valley Water Bank).

Additionally, the RSCD Reclamation Water Treatment Plant and recharge ponds upgrade is anticipated to be completed in 2021.

These banking projects are described below, and operations are documented quantitatively in **Appendices C-2** and **C-3**. Storage Agreements with LCID and RCSD were approved in 2020 and listed in **Appendix G**.

AVEK's Westside Water Bank (formally referred to as Water Supply Stabilization Project No. 2 (WSSP-2)) is capable of storing up to 150,000 AF of water using low-bermed recharge basins covering about 1,000 acres of agricultural fields. AVEK's Eastside Water Bank consists of three 2-acre recharge basins and three groundwater wells that are used for recharge and recovery of raw SWP water. The recovered water is blended for delivery to the Eastside Water Treatment Plant. In 2017, AVEK also started recharging water in its new High Desert Water Bank, which is on a 1,500-acre site and will have a 280,000 AF capacity in the groundwater basin to store approximately 70,000 AFY per year of SWP surface water conveyed to the site via the California Aqueduct. **Appendices C-1** and **C-2** summarize AVEK storage and recovery in 2019 at its High Desert, Westside, and Eastside water banks and at its West Avenue H Wellfield and the WSSP-1 Well locations recovery sites.

Another groundwater bank in Antelope Valley is the Willow Springs Water Bank (WSWB) (formerly called the Antelope Valley Water Bank). The WSWB is located on 1,838 acres of agricultural land near Rosamond in Antelope Valley. It consists of percolation ponds and has a reported storage space of 500,000 AF and recharge and recovery capacities of 100,000 AFY. The Southern California Water Bank Authority (formerly called the Semitropic-Rosamond Water Bank Authority) operates the WSWB and the Semitropic Water Storage District Stored Water Recover Unit (SWRU), which is not located in Antelope Valley. Operating both the WSWB and the SWRU, which are located in different areas in Kern County, provides more flexibility to acquire, exchange and deliver water. The combined storage space capacity is reported at 800,000 AF with a 133,000 AFY recharge capacity and a

200,000 AFY recovery capacity. Banking information indicates that 200,000 shares will be issued to customers in the combined facilities. Each share will provide customers with the following capacities:

- 1 AFY recovery plus lower priority capacity when available
- 3 AF in SWRU or 5 AF in WSWB of storage plus lower priority capacity when available
- 0.33 AFY in SWRU or 1 AFY in WSWB of recharge plus lower priority capacity when available.

Water agencies can purchase shares in the water bank and pay annual fees per share plus fees for depositing water and for extracting water. Ten percent of all water deposited in the water bank is required to be left behind to keep the bank viable. The basin is also credited with evaporation losses based on actual conditions including temperature and wind conditions when the percolation occurs (Beuhler, 2017).

In 2019, no water was recharged or recovered from the WSWB (**Appendix C-3**). Pumping of native groundwater did occur in accordance with the bank's Exhibit 4 Production Right (1,772 AF) to support the agricultural property at the water bank.

The Tejon Water Bank was built in 2006 and is owned and operated by the Tejon Ranchcorp and Ranch Company on 160 acres in northeast Kern County. In 2019, 1,523 AF of AVEK water was spread at this recharge location; no water was recovered (**Appendix C-3**).

LCID has just completed an upgrade to its existing State Water Project water recharge facility and a Storage Agreement for banking and recovery was approved at the February 26, 2020 Antelope Valley Watermaster Board meeting. LCID has begun recharging at its 1.25-acre recharge basin and anticipates that annual spreading will generally exceed 400 AFY. The basin can hold approximately 7.5 AF of water at one time and spreading rates will range between 1 to 8 AF/day. In 2019, LCID spread 234 AF in its recharge facility (**Appendix C-3**).

Additional recharge in 2019 also occurred at the Upper Amargosa Creek Recharge Project (9 AF) and at the Big Rock Creek Recharge Site (690 AF) (**Appendix C-3**).

At the end of 2019, these Parties that store water in the Adjudicated Area possess a collective total of 174,445 AF of recoverable stored water (see **Appendices C-2** and **C-3**). Storage at each location is summarized below.

- AVEK High Desert Water Bank = 5,213.55 AF
- AVEK Westside Water Bank = 107,269.06 (79,459.06 AF is AVEK water and 27,810.00 AF is water that was stored for use outside the Adjudicated Area)
- AVEK Eastside Water Bank = -653.97 AF (deficit)
- West Avenue H Wellfield Project and the WSSP-1 Well locations = -4,133.30 AF (deficit)
- Tejon Water Bank = 47,328.06 AF

- Antelope Valley Water Storage LLC Willow Spring Water Bank = 18,610.10 AF
- LCID recharge facility = 182.60 AF
- Upper Amargosa Creek Recharge Project¹⁸ = 8.10 AF
- Big Rock Creek Recharge Site¹⁷ = 621.00 AF.

To date, the Watermaster has entered into two storage agreements, both approved in 2020 (**Appendix G**). One is with RCSD for recharge of treated wastewater and the other is with LCID for its re-activation of its SWP recharge site. As indicated in **Section 4.4**, the need and format for a Storage Agreement for pre-existing banks is currently being discussed along with the potential fees associated with this review and development of the Storage Agreements. These pre-existing banks include AVEK’s Eastside Water Bank and Westside Water Bank, the Willow Springs Water Bank, and the Tejon Water Bank.

4.9 DROUGHT PROGRAM

The Judgment contains provisions for a Drought Program which is defined as a water management program – in effect only during the Rampdown Period – that affects the operations and Replacement Water Assessments of the participating Public Water Suppliers (called Drought Program Participants)¹⁸ (§3.5.12).

During the Rampdown Period, District 40 agrees to purchase from AVEK each year an amount of water equal to 70 percent of District 40’s total annual demand or, if that amount is not available from AVEK, as much water as AVEK makes available at no more than the then-current AVEK treated water rate. District 40 is not required to purchase more than 50,000 AFY from AVEK (§8.4.1). **Table 11** summarizes District 40’s total annual demand and the amount of imported water purchased from AVEK between 2016 and 2019.

Table 11. District 40 Water Demand and Imported Water Supply

District 40 Imported Water Use	2016	2017	2018	2019
Total Water Use (Groundwater + Imported)	42,461.14	44,342.76	46,199.45	43,423.22
Imported Water Use	26,459.24	26,946.45	28,925.81	30,610.54
Percent of Imported Water Use	62.31%	60.77%	62.61%	70.49%

During the Rampdown Period, the Drought Program Participants agree to minimize excess groundwater production and use all water made available by AVEK at no more than the current AVEK treated water rate in any year they produce groundwater in excess of their rights under the Judgment. Drought Program Participant Production is not considered

¹⁷ Upper Amargosa Creek Recharge Facility participating Project Parties are the City of Palmdale, PWD, District No. 40, and AVEK. Big Rock Creek Recharge participating Parties are AVEK, PWD, and LCID.

¹⁸Drought Program Participants are District 40, Quartz Hill Water District, Littlerock Creek Irrigation District, California Water Service Company, Desert Lake Community Services District, North Edwards Water District, City of Palmdale, and Palm Ranch Irrigation District (§8.4).

excess Production exempt from a Replacement Water Assessment under this Drought Program unless a Drought Program Participant has utilized all water supplies available to it including its Production Right, Imported Water Return Flow rights, unused Production allocation of the Federal Reserved Water Rights, imported water, and Production rights previously transferred from another Party (§18.4.2).

The Drought Program Participants are exempt from Replacement Water Assessments for Production in excess of their respective rights up to a total of 40,000 AF over the Rampdown Period with a maximum of 20,000 AF in any single year for District 40 and a total of 5,000 AF over the Rampdown Period for all other Drought Program Participants combined. Any excess Production under this Drought Program needs to be for direct delivery to customers within their respective service areas (§18.4.3). **Table 12** shows the amount of production in excess of Drought Program Participants’ available water between 2016 and 2019.

Table 12. Drought Program Participants Production in Excess of Rights

Drought Program Participants	Production in Excess of Rights (AFY)			
	2016	2017	2018	2019
District No. 40	0.00	0.00	0.00	0.00
Quartz Hill Water District	0.00	0.00	0.00	0.00
Littlerock Creek Irrigation District	0.00	0.00	0.00	0.00
California Water Service Company	0.00	0.00	0.00	0.00
Desert Lake Community Services District	0.00	0.00	0.00	0.00
North Edwards Water District	0.00	0.00	0.00	0.00
City of Palmdale	0.00	0.00	0.00	0.00
Palm Ranch Irrigation District¹	0.00	57.48	41.65	0.00
Total	0.00	57.48	41.65	0.00

1. Palm Ranch ID received a one-time transfer of 2,850 AF in 2019 and 41.65 AF of this was used as its Replacement Obligation for 2018 overproduction.

As shown in the table, Palm Ranch Irrigation District is the only Drought Program Participant that produced in excess of its total groundwater rights. In 2019, Palm Ranch Irrigation District received a one-time transfer of 2,850 AF of which 41.65 AF was used as its Replacement Obligation for 2018 overproduction. No Replacement Obligation was needed for the 2017 because during the first two years of the Rampdown Period (2016 and 2017), Producers were not subject to Replacement Water Assessment fees.

4.10 CHANGES IN USE

Annual reports are to include a compilation of changes in use (§18.5.18.17 of the Judgment). Changes in use have been documented through Transfers (see **Section 4.6** and

Appendix F) and through New Point of Extraction applications (see **Section 4.11** and **Appendix H**).

4.11 WELL APPLICATIONS FOR NEW OR REPLACEMENT PRODUCTION WELLS

New and replacement wells drilled in the Adjudication Area of the Antelope Valley are subject to approval by the Antelope Valley Watermaster. A new well is any well that does not presently exist but is proposed to be constructed. A replacement well is a specific kind of new well that is located within 300 feet of an existing well and owned by the same Party that intends to construct the new well.

There is also an approval process for non-production wells. Non-production wells include piezometers, monitoring wells, and cathodic protection wells that will pump only minimal amounts of groundwater associated with well construction and/or groundwater sampling.

Prior to approval of a well application, the Watermaster Board must make the following findings:

- Applicant has a known right to produce groundwater under the Judgment, or qualifies as an unknown small pumper, or is a non-pumper with no pumping rights but agrees to purchase replacement water.
- Applicant with a right to produce groundwater requests a replacement well (within 300 feet of an existing well) or a new well from a new point of extraction; or applicant is a non-pumper with no pumping rights and requests a well for new production; or applicant requests a non-production well.
- Applicant's well will not cause Material Injury as defined by the Judgment and the Rules and Regulations.

The forms associated with these types of wells applications are available on the Watermaster website:

- Small Pumper Qualifying Documentation
- Replacement Well Application
- Non-Production Well Application (e.g., monitoring wells, test wells, etc.)
- New Point of Extraction Application
- New Production Application.

In 2019, the following well applications and Small Pumper Qualifying Documentations have been approved:

- 7 monitoring wells
- 5 Replacement wells
- 6 New Points of Extraction
- 14 New Production wells

- 33 Small Pumper Qualifying Documentations (3 of these Small Pumper Qualifying Documentations were submitted in association with a Replacement Well application listed above).

Information on these approved applications is listed in **Appendix H**.

4.12 WASTEWATER AND RECYCLED WATER

Antelope Valley area wastewater is treated at LACSD's Palmdale and Lancaster WRPs, EAFB Air Force Research Laboratory Treatment Plant and the Main Base WWTP, and the RCSD's WWTP. Quantities of effluent and reuse for 2019 are tabulated in **Appendix J**.

5 REFERENCES

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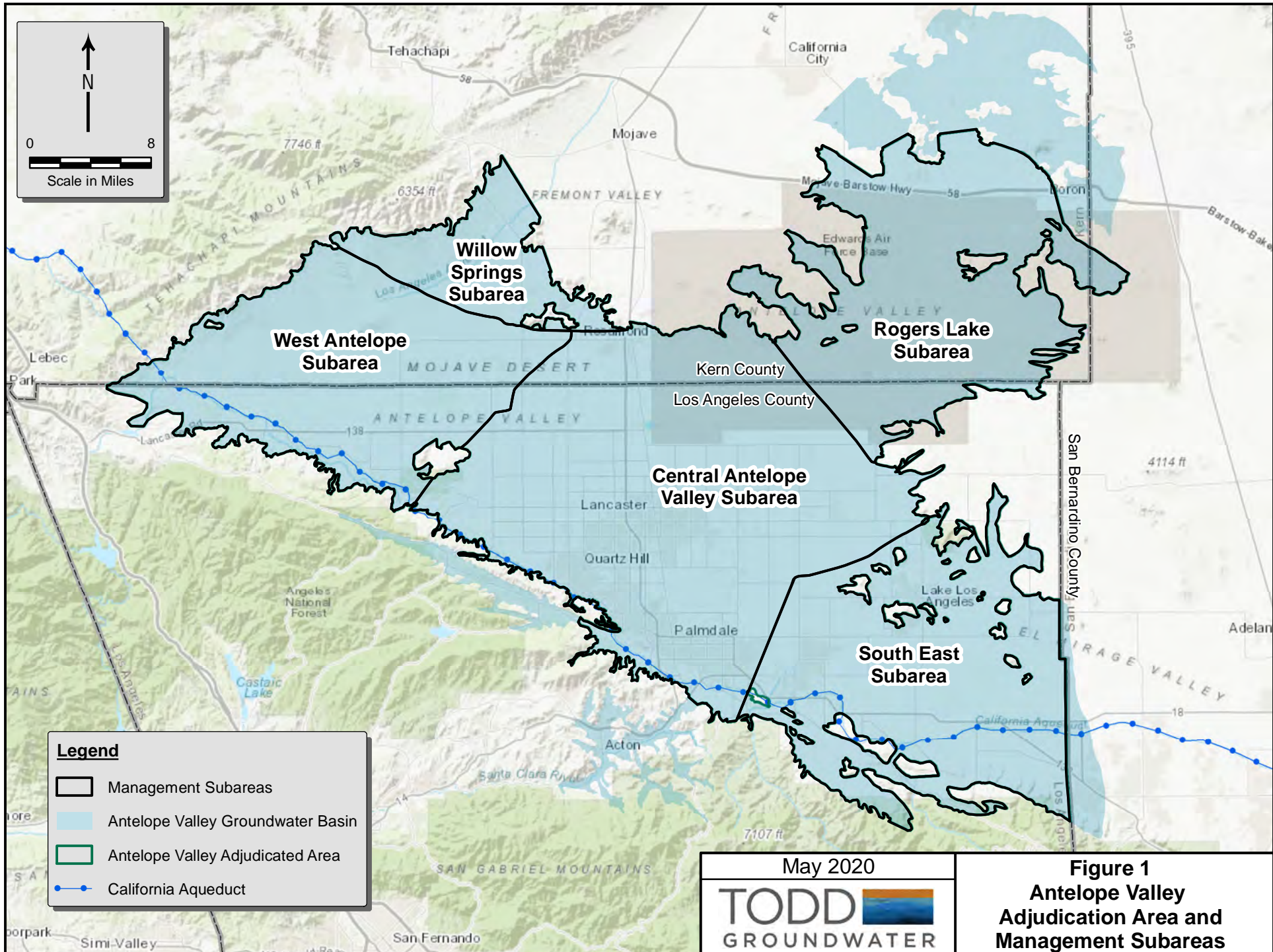
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Figures



Legend

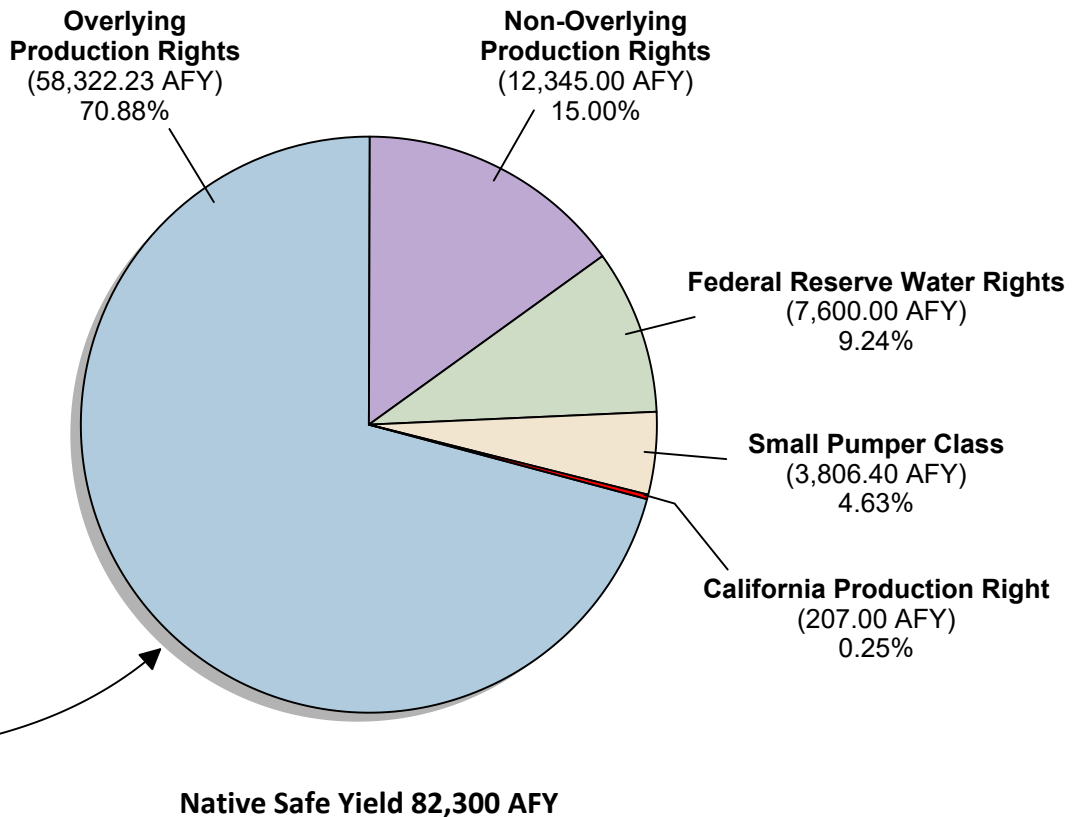
-  Management Subareas
-  Antelope Valley Groundwater Basin
-  Antelope Valley Adjudicated Area
-  California Aqueduct

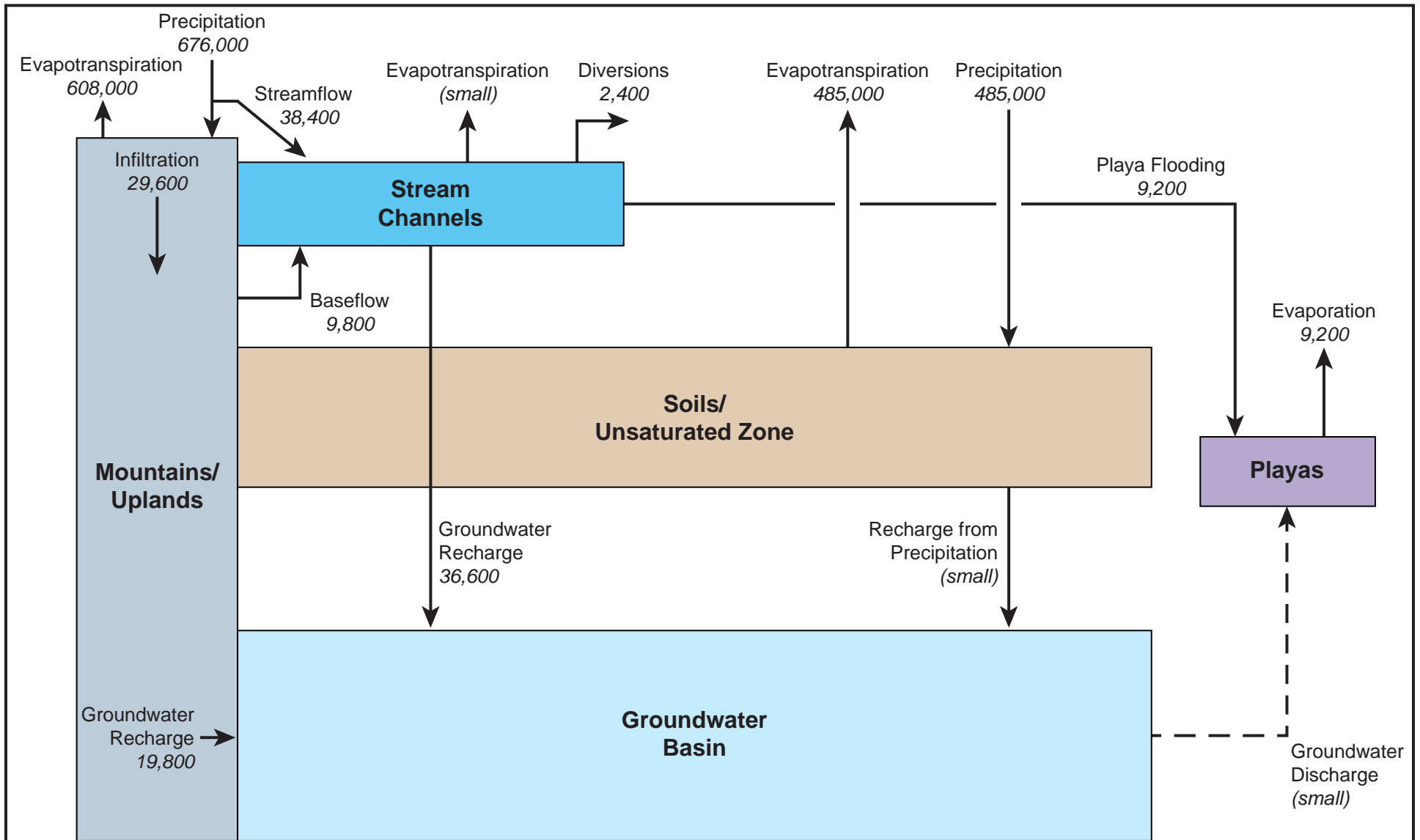
May 2020

TODD 
GROUNDWATER

Figure 1
Antelope Valley
Adjudication Area and
Management Subareas

Production Categories	Additional Production (Subject to Replacement Water Assessment)
	Other Rights to Produce Groundwater (Supporting Landowners, City of Lancaster, Phelan Pinon Hills CSD, AVJUHSD)
	Stored Water (Pursuant to Storage Agreement)
	Carry Over Water (Unused Production Rights and Imported Water Return Flows within last 10 years)
	Imported Water Return Flows (Agricultural 34% of deliveries) (Municipal and Industrial 39% of deliveries)
	Rampdown Production (Amount exceeding Production Right as allowed during the Rampdown Period)
	Production Right (As shown on diagram to right)



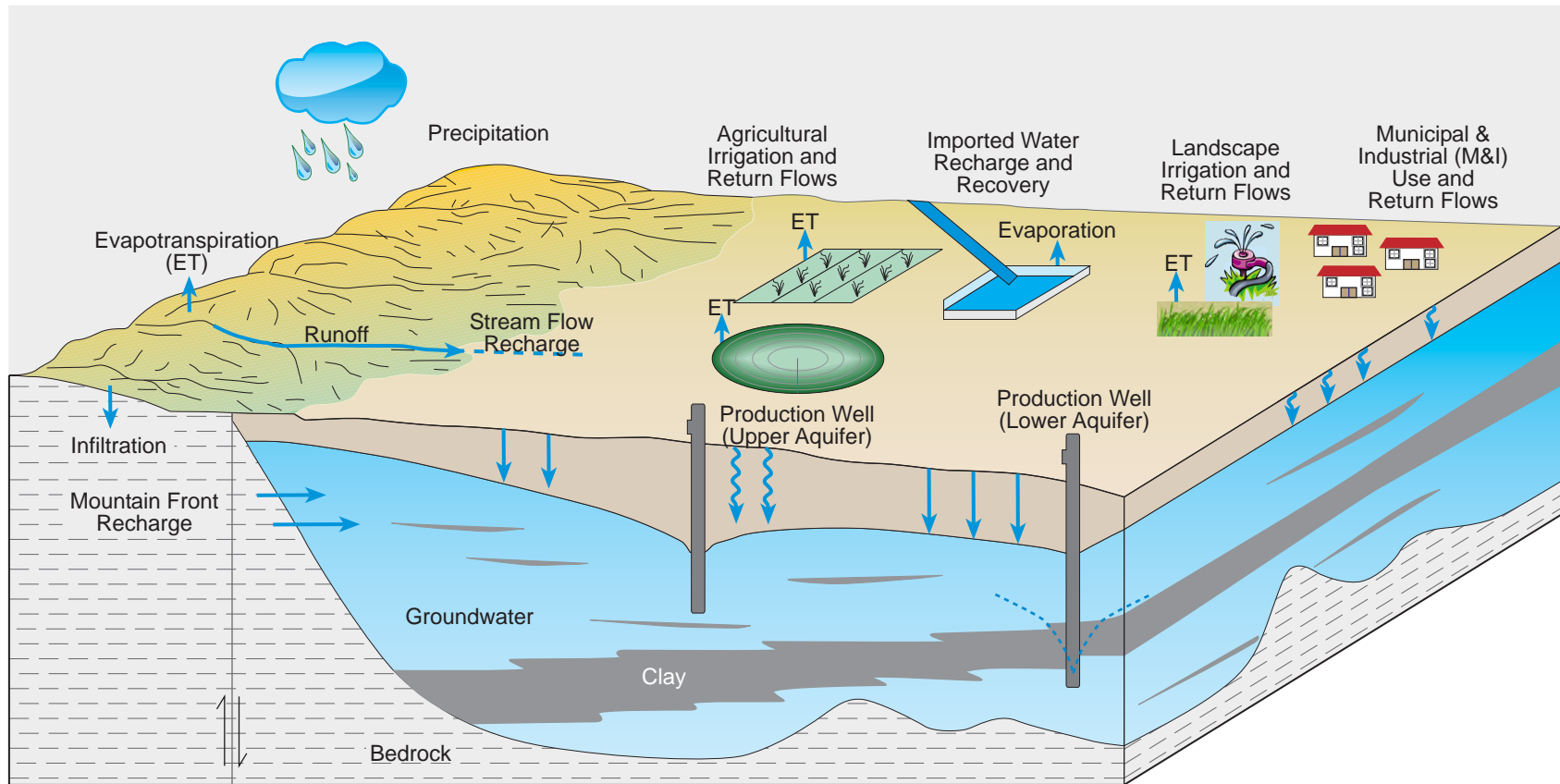


Note:
 Values represent estimates of recharge and discharge as average annual flows in AFY. Conceptual diagram illustrates sources of natural groundwater recharge that were estimated to support the Native Safe Yield determination in the Judgment. Diagram does not include return flows, which also are a component of the Native Safe Yield.

Source: Modified from Beeby et al., 2010.



Figure 3
Schematic Diagram
Natural Groundwater
Recharge Components



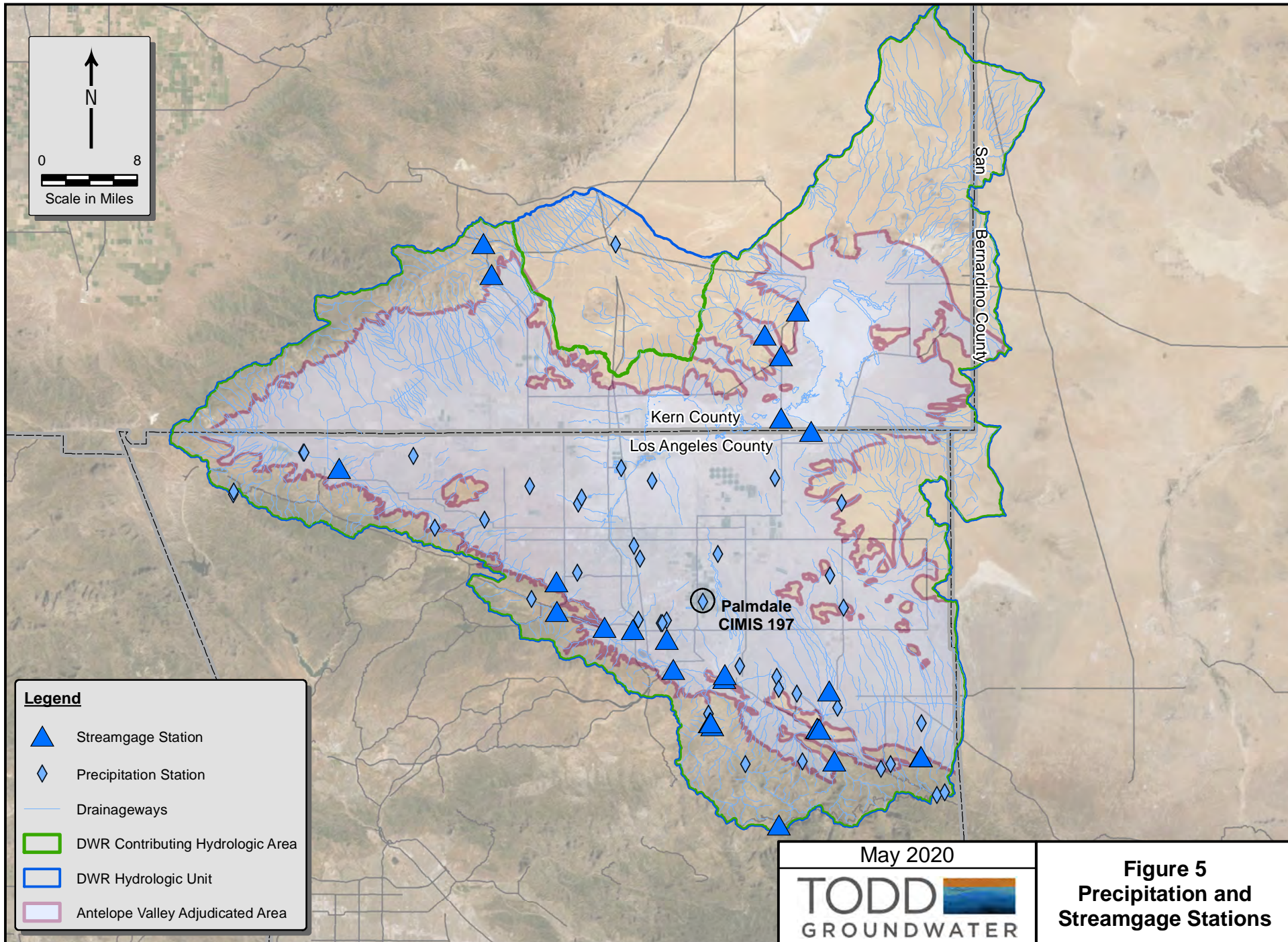
- Recharge and discharge
- Recharge from return flows

Note:
 This diagram was developed to illustrate the concepts of the Safe Yield components in the Antelope Valley Groundwater Basin; it is not meant to accurately depict the complexity of the multi-aquifer system in the basin.

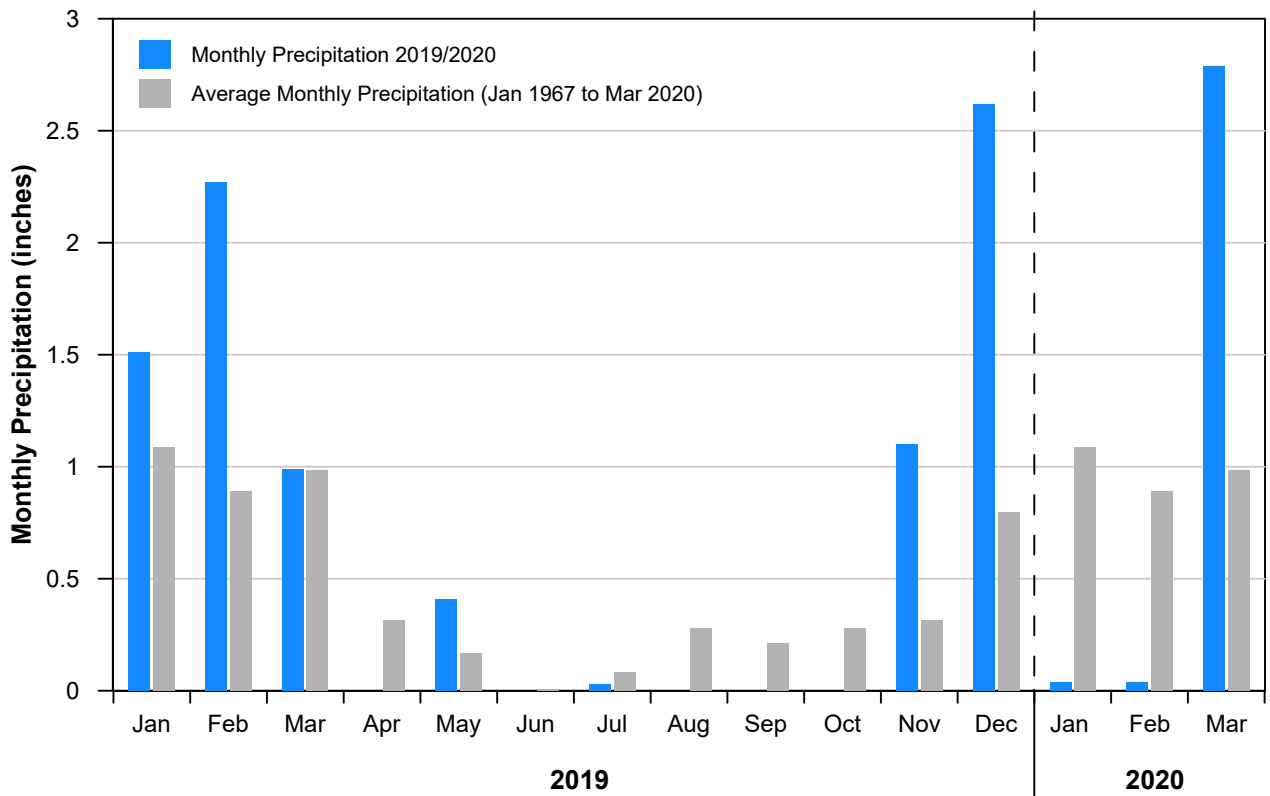
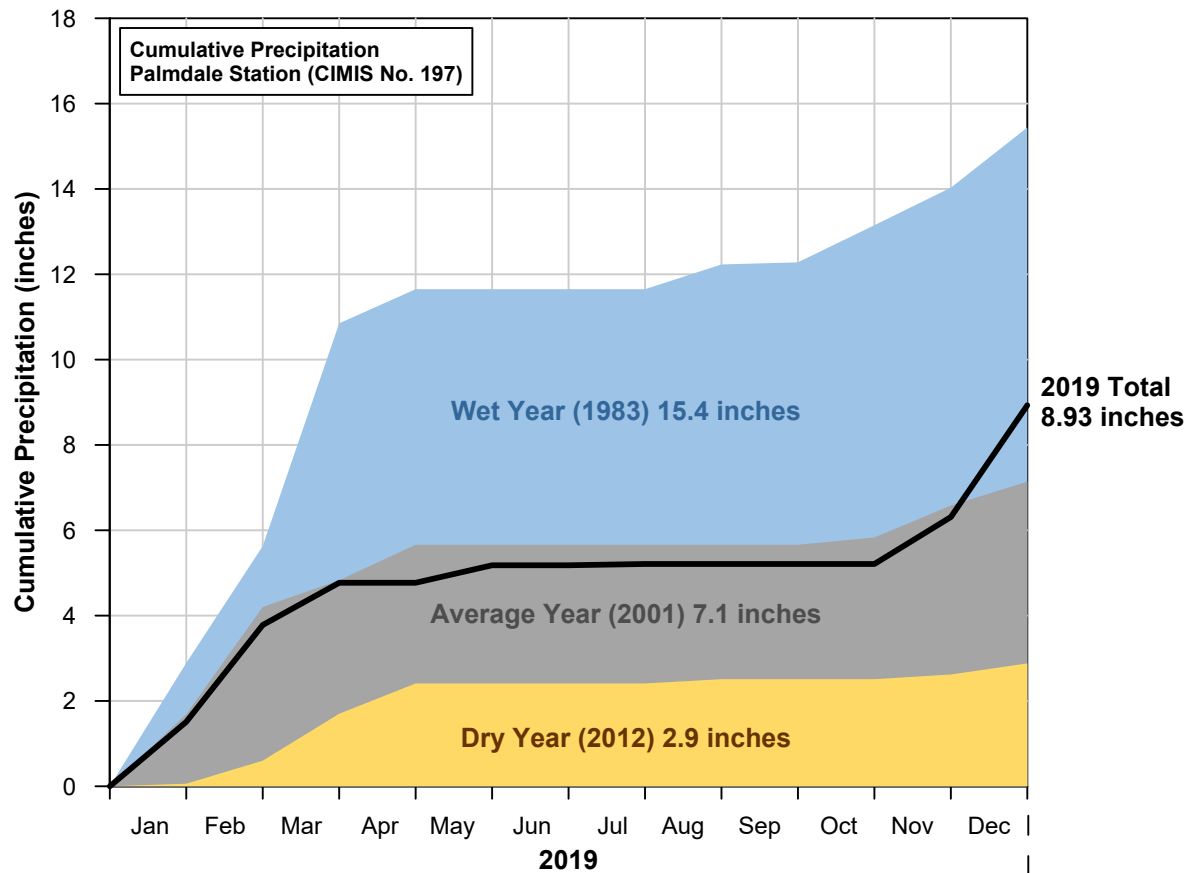
May 2020

TODD
 GROUNDWATER

Figure 4
Conceptual Diagram
of Safe Yield
Components



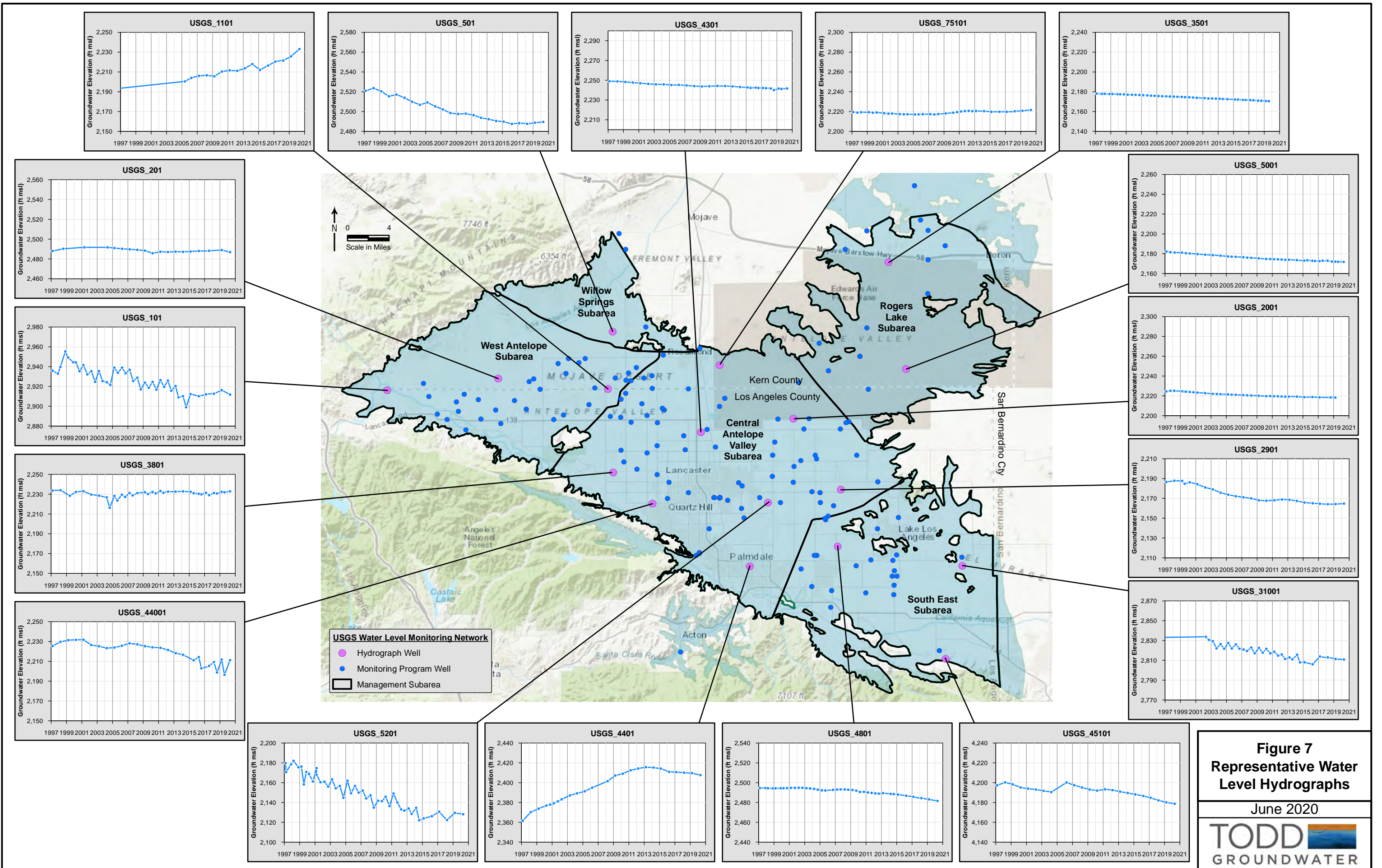
Note: DWR Hydrologic Unit is slightly different than the watershed outline in Exhibit 9 of the Judgement

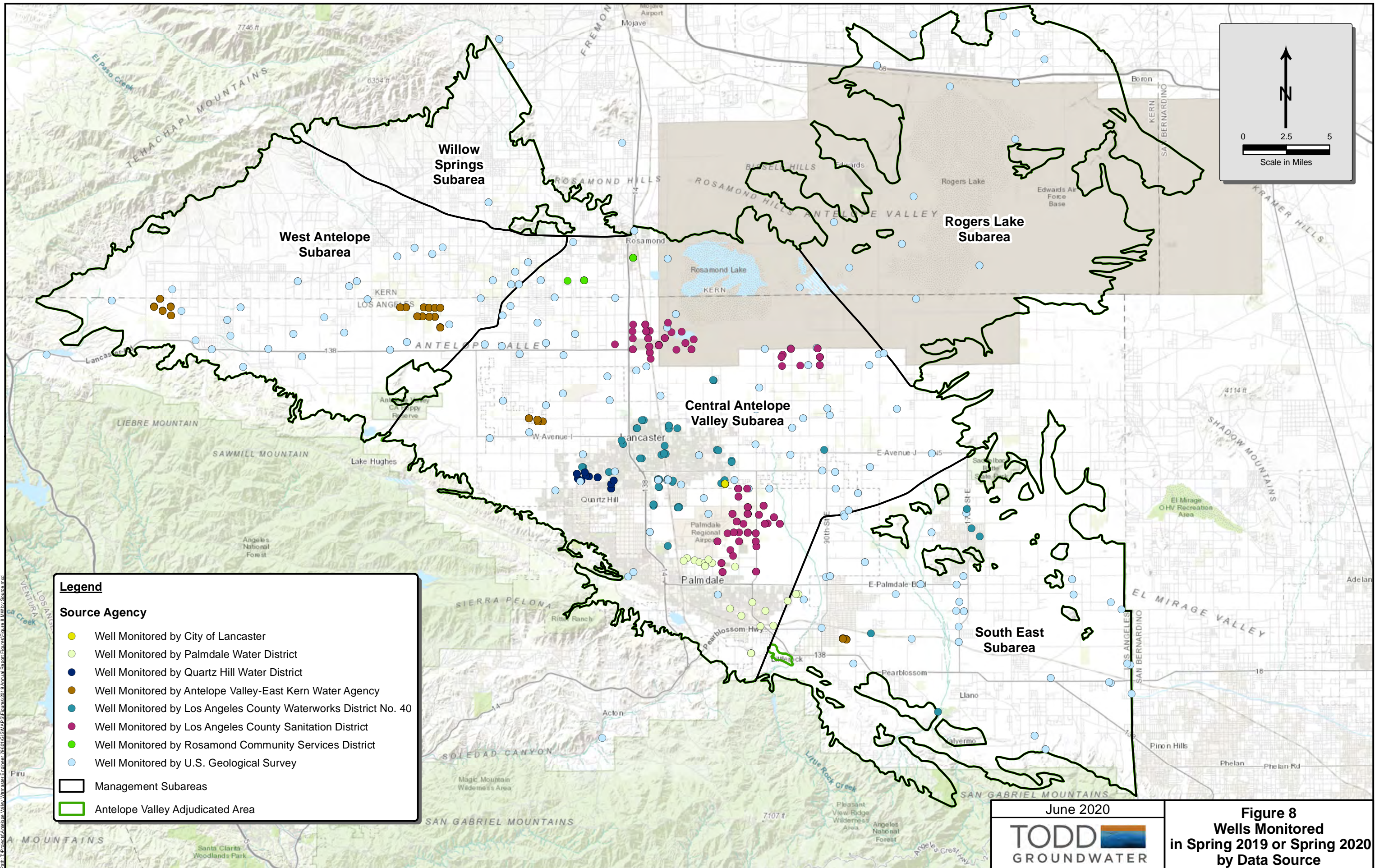


May 2020



Figure 6
Antelope Valley
Precipitation
2019





June 2020
TODD 
 GROUNDWATER

Figure 8
Wells Monitored
in Spring 2019 or Spring 2020
by Data Source

Path: T:\Projects\Antelope Valley Watermaster Engineer_7/20/19\ISMAP_SIF_Figure_8_MW_by_Source.mxd

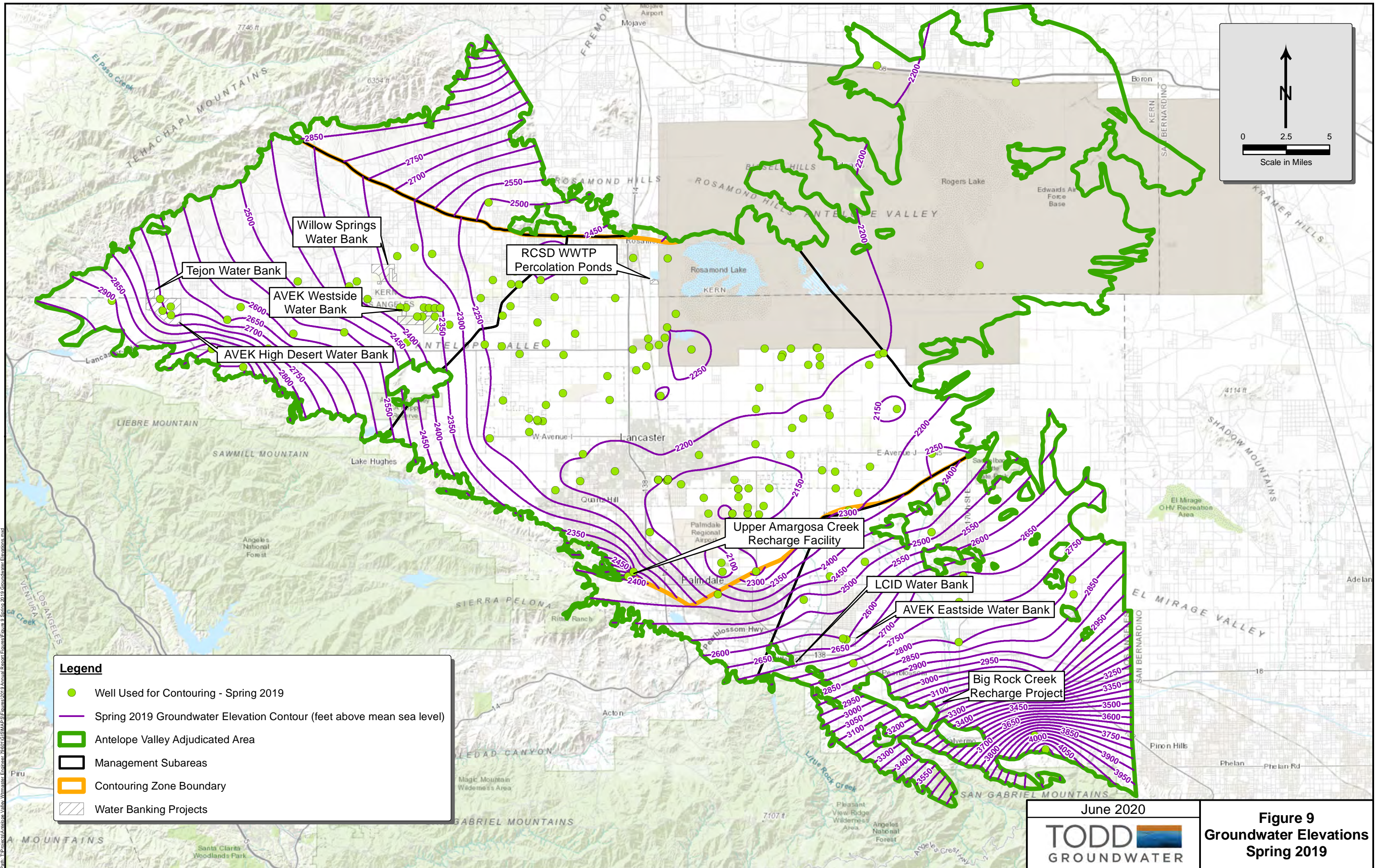
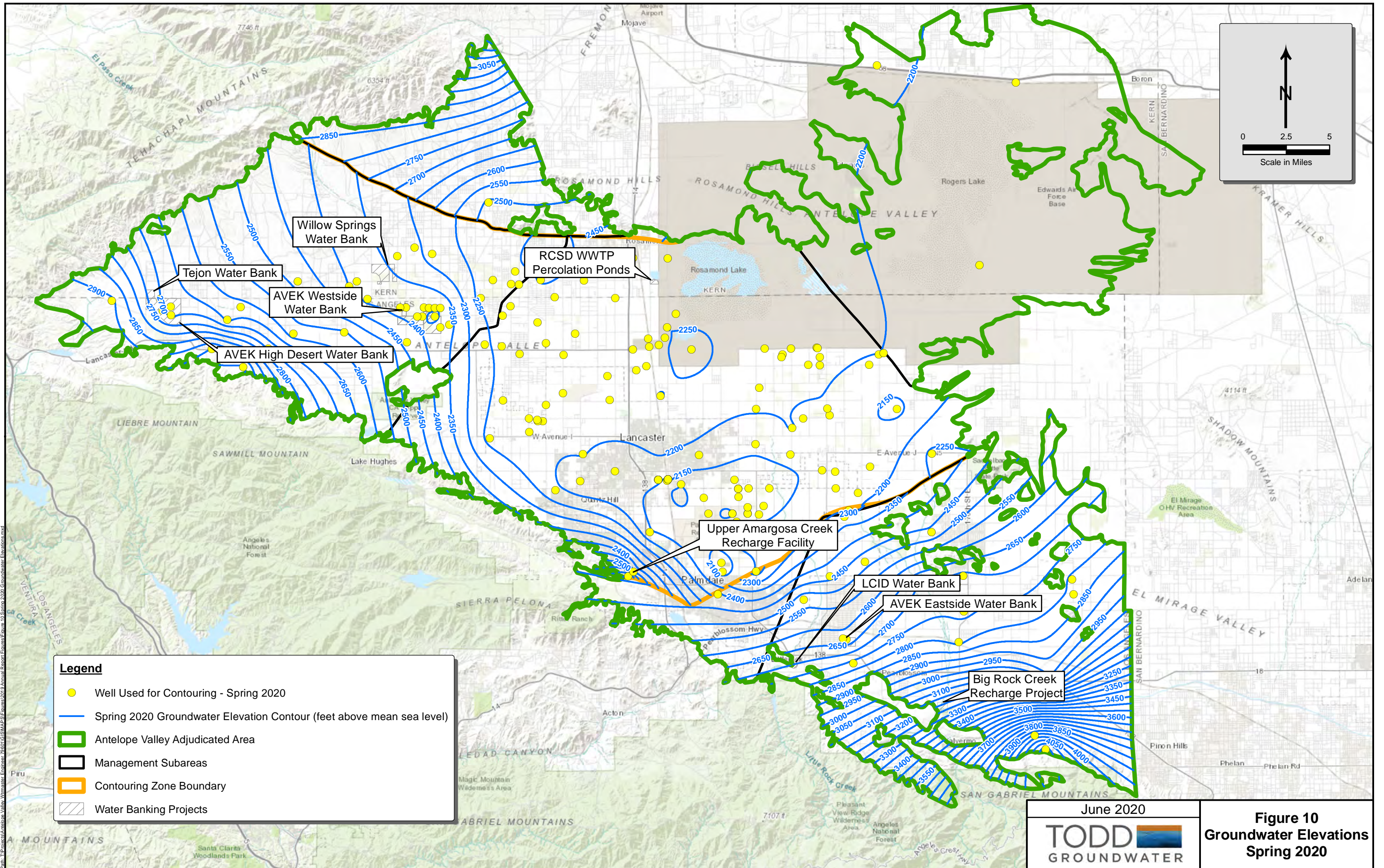


Figure 9
Groundwater Elevations
Spring 2019



Legend

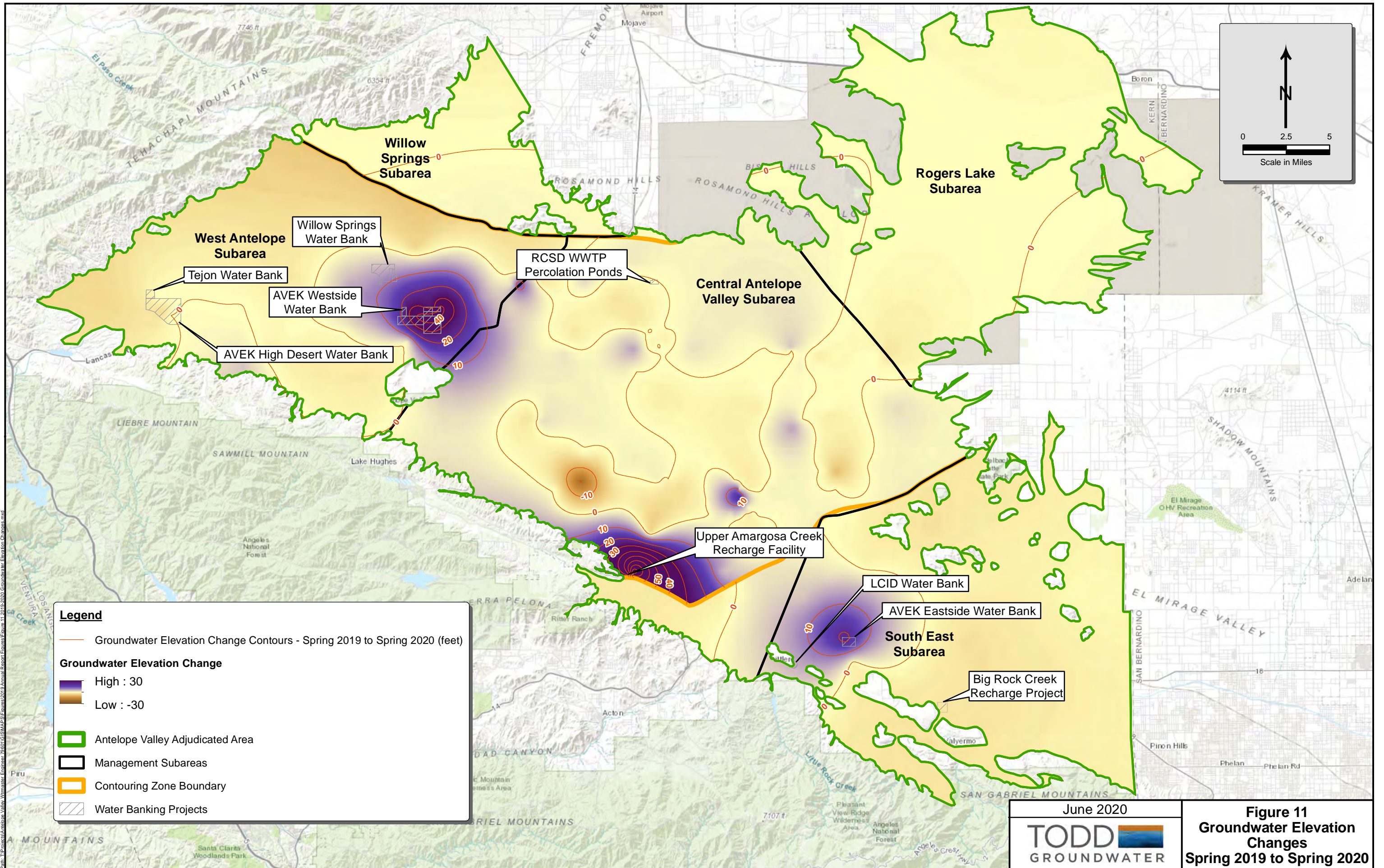
- Well Used for Contouring - Spring 2020
- Spring 2020 Groundwater Elevation Contour (feet above mean sea level)
- Antelope Valley Adjudicated Area
- Management Subareas
- Contouring Zone Boundary
- Water Banking Projects

June 2020

TODD **GROUNDWATER**

Figure 10
Groundwater Elevations
Spring 2020

Path: T:\Projects\Antelope Valley Watermaster Engineer_7/20/20\GIS\Map_Series\2019 Annual Report_Elevation_Figure_10_Spring_2020_Groundwater_Elevations.mxd



Legend

- Groundwater Elevation Change Contours - Spring 2019 to Spring 2020 (feet)
- Groundwater Elevation Change**
- High : 30
- Low : -30
- Antelope Valley Adjudicated Area
- Management Subareas
- Contouring Zone Boundary
- Water Banking Projects

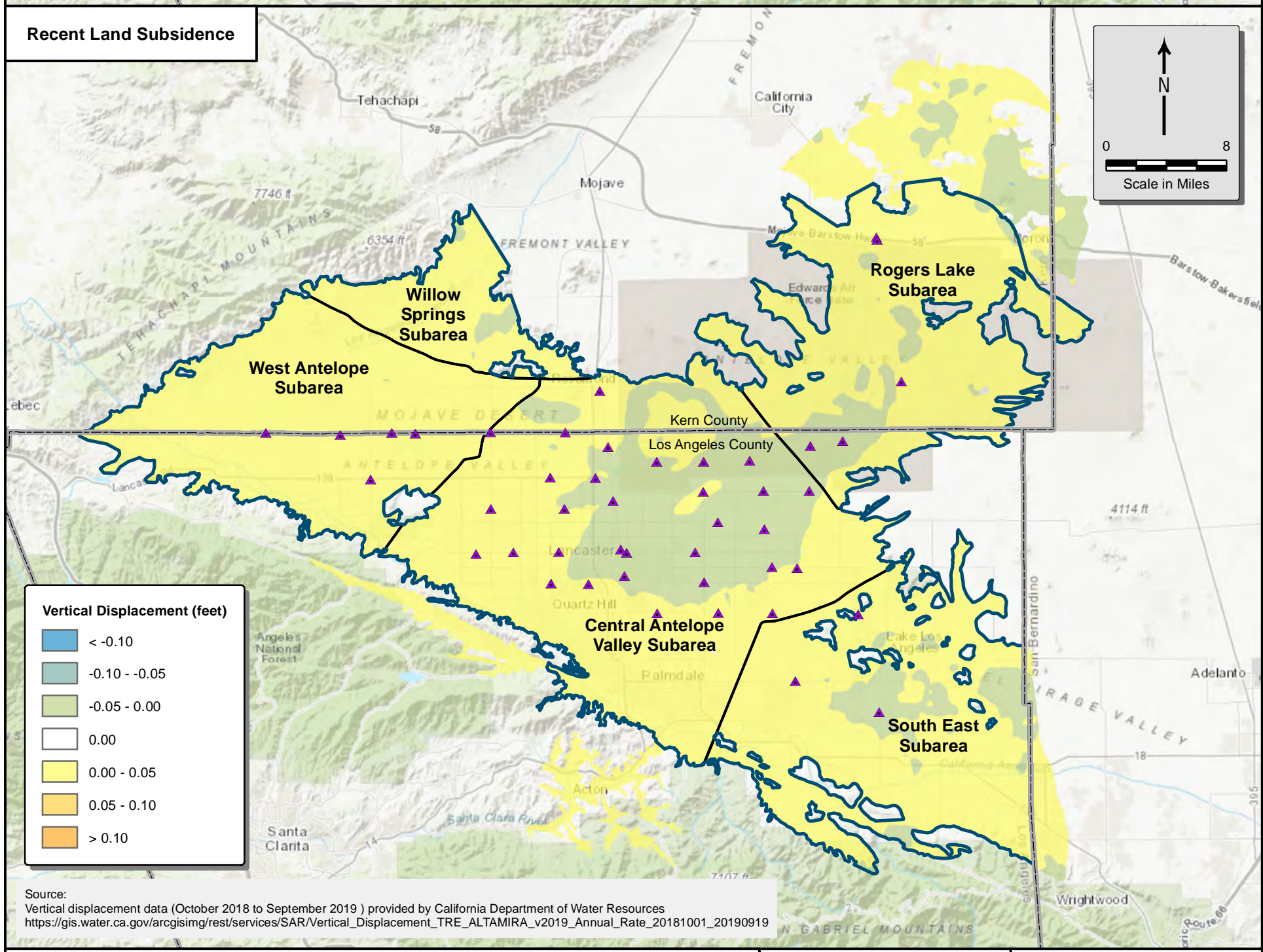
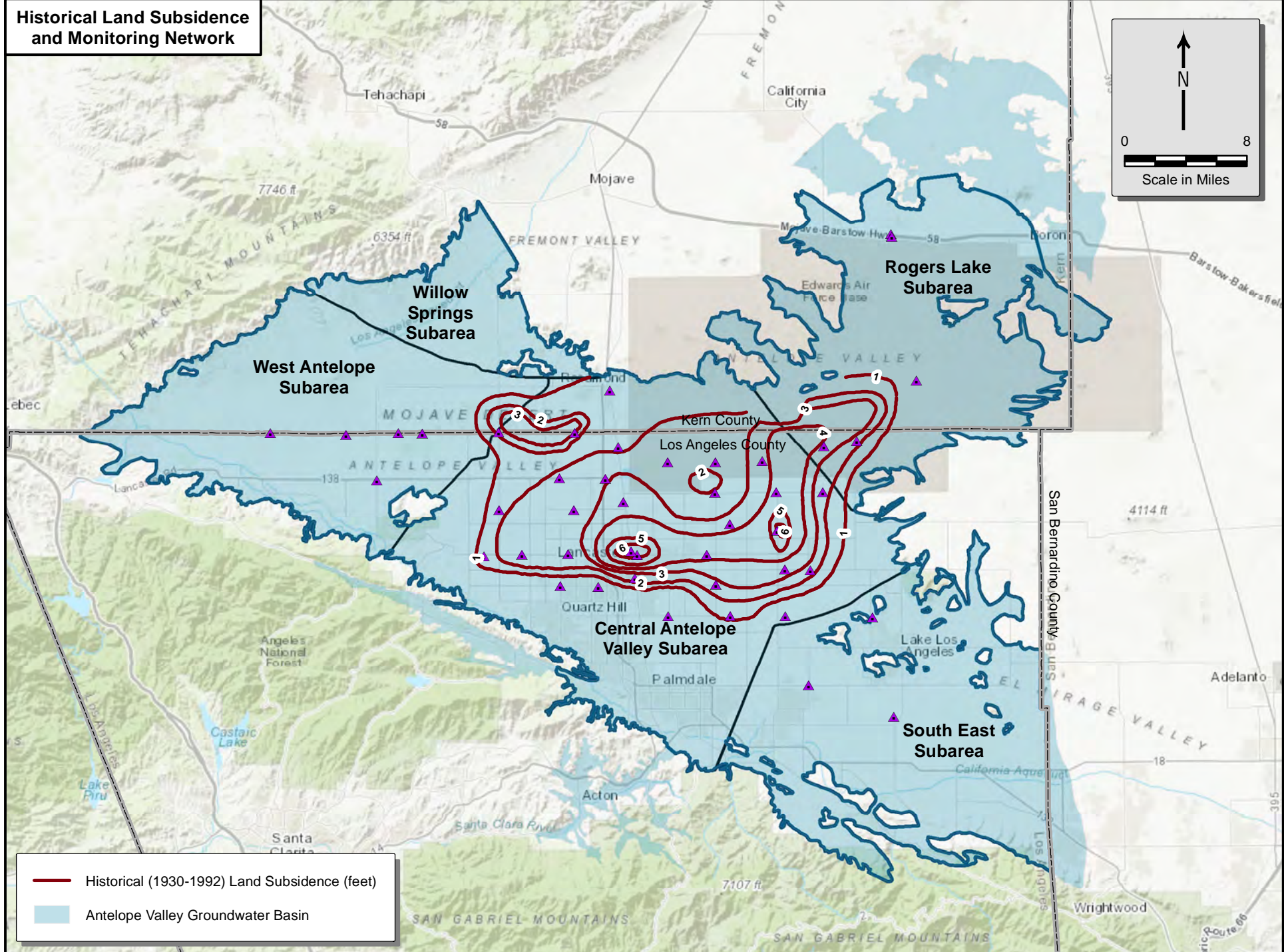
June 2020

TODD 

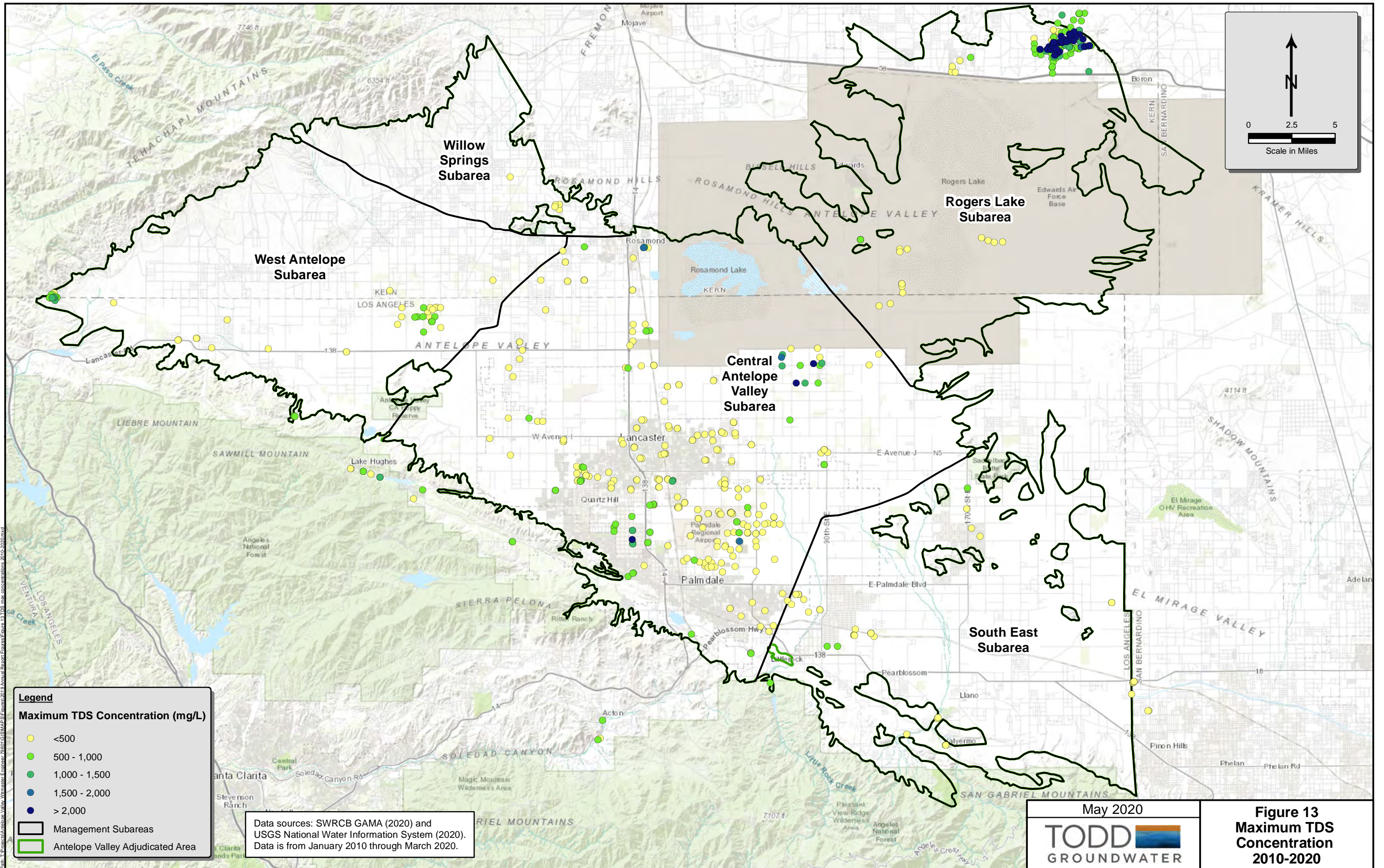
GROUNDWATER

Figure 11
Groundwater Elevation Changes
 Spring 2019 to Spring 2020

Path: T:\Projects\Antelope Valley\Wm\master\Engineer_70601\GIS\MAP_Series\2019 Annual Report\Figures\Figure 11 2019-2020 Groundwater Elevation Changes.mxd



Source: Vertical displacement data (October 2018 to September 2019) provided by California Department of Water Resources https://gis.water.ca.gov/arcgisimg/rest/services/SAR/Vertical_Displacement_TRE_ALTAMIRA_v2019_Annual_Rate_20181001_20190919



Legend

Maximum TDS Concentration (mg/L)

- <500
- 500 - 1,000
- 1,000 - 1,500
- 1,500 - 2,000
- > 2,000

- Management Subareas
- Antelope Valley Adjudicated Area

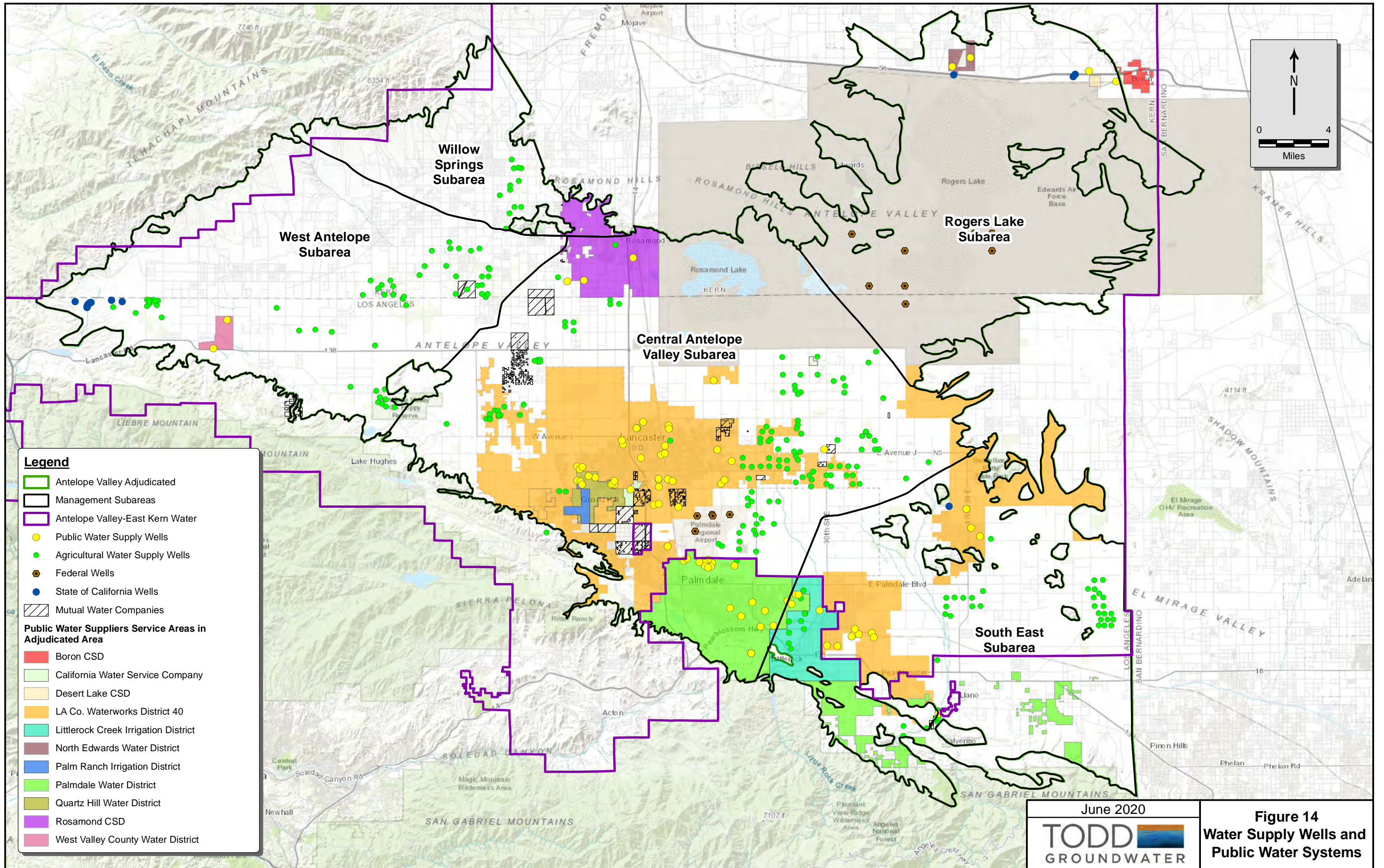
Data sources: SWRCB GAMA (2020) and USGS National Water Information System (2020). Data is from January 2010 through March 2020.

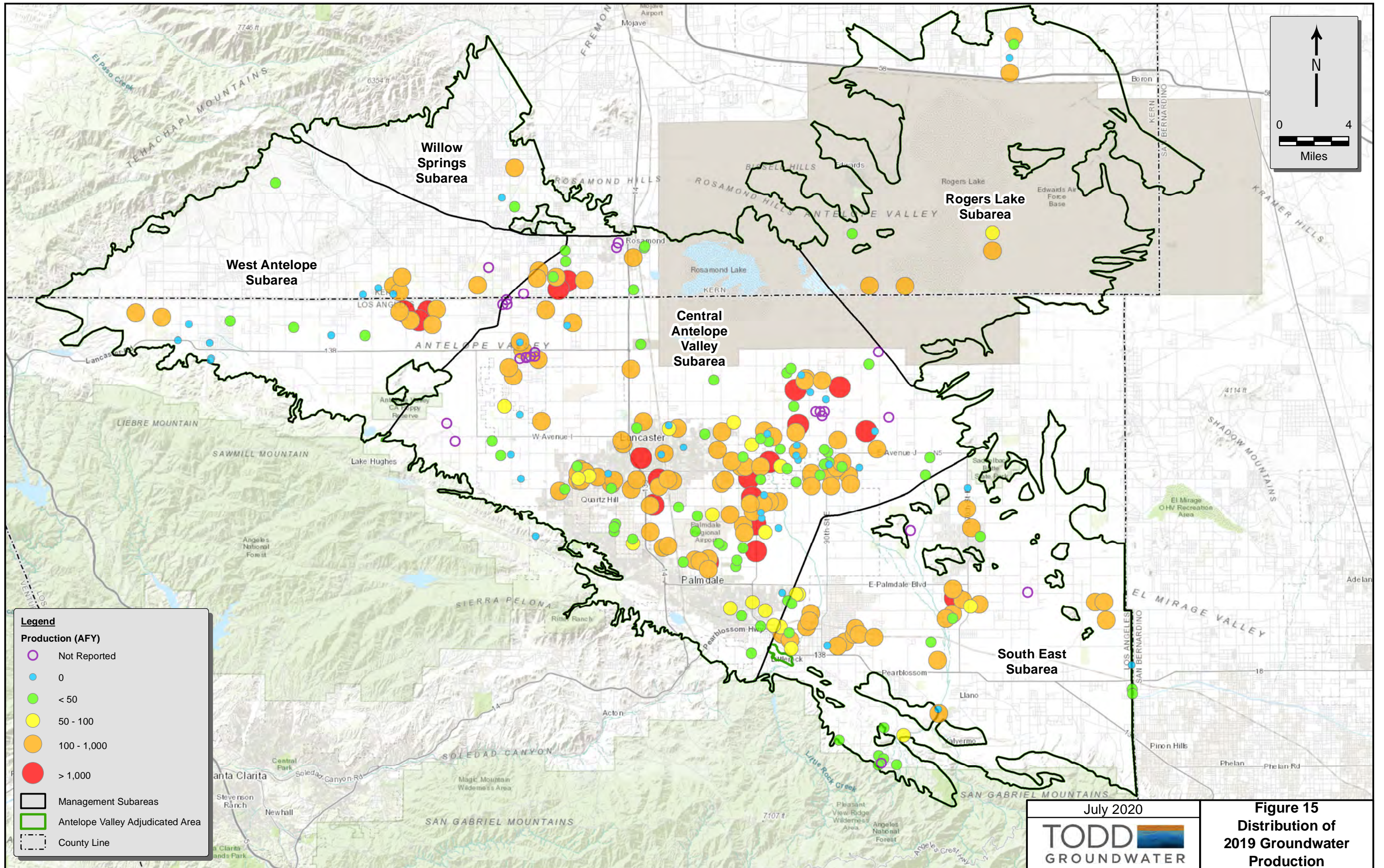
May 2020

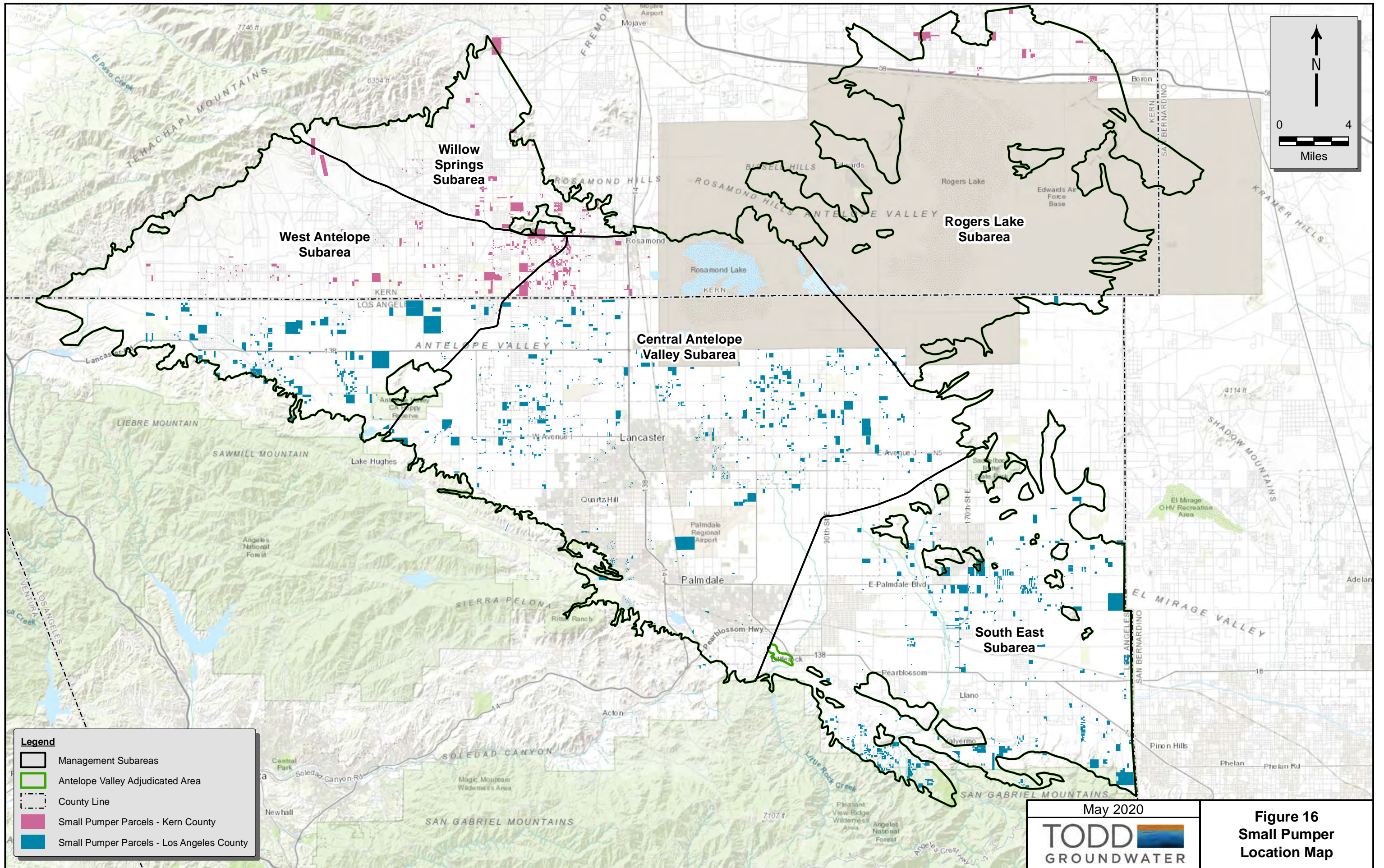
TODD **GROUNDWATER**

Figure 13
Maximum TDS
Concentration
2010-2020

Path: T:\Projects\Antelope Valley\Watermaster\Engineer_70601\GIS\MAP_Series\2019 Annual Report\Figure 13 TDS max concentrations_2010-2020.mxd







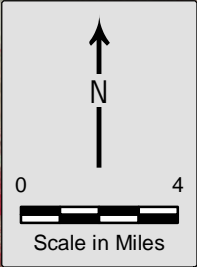
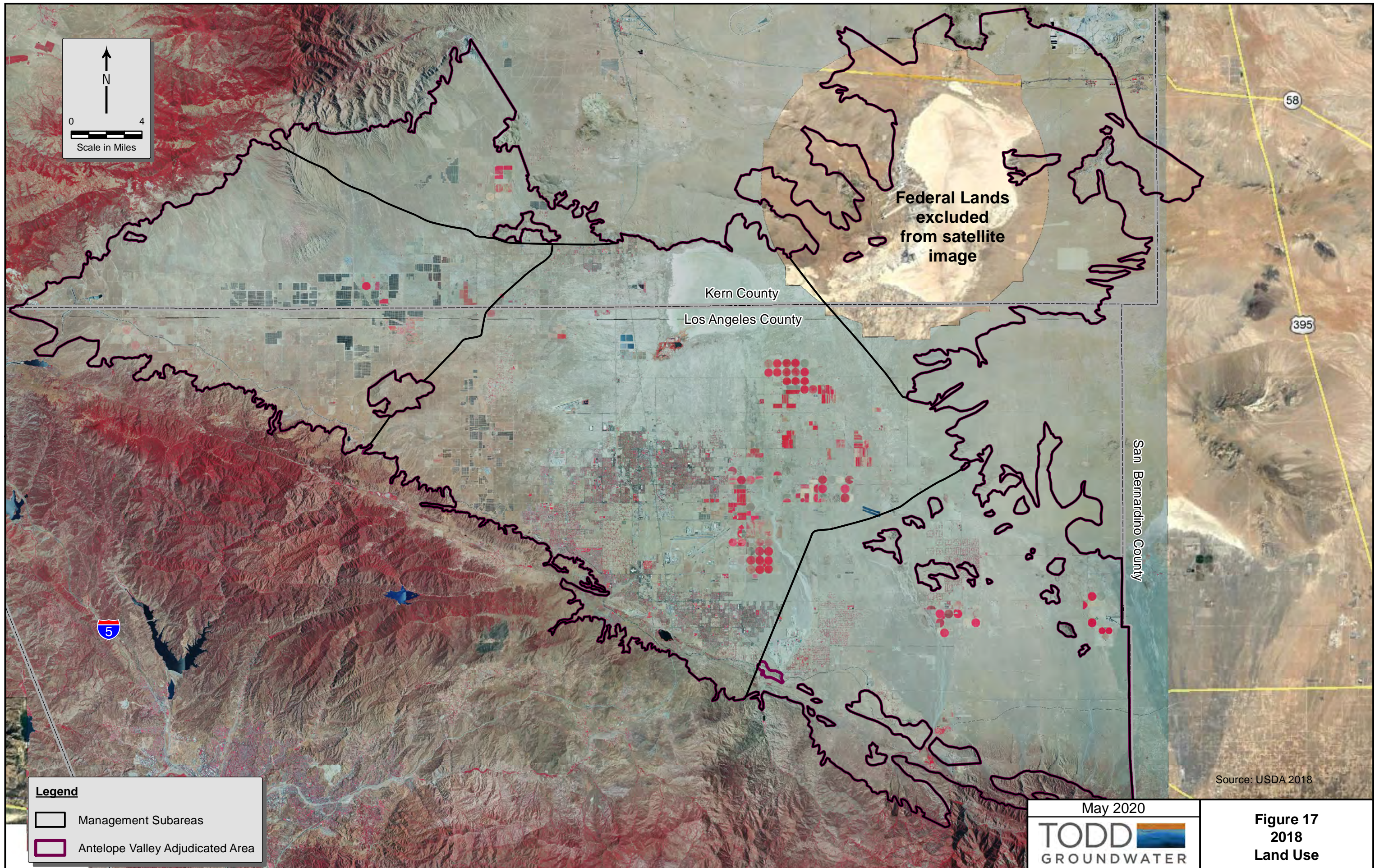
Legend

- Management Subareas
- Antelope Valley Adjudicated Area
- County Line
- Small Pumper Parcels - Kern County
- Small Pumper Parcels - Los Angeles County

May 2020

TODD **GROUNDWATER**

Figure 16
Small Pumper
Location Map



Federal Lands
excluded
from satellite
image

Kern County
Los Angeles County

San Bernardino County

Legend

- Management Subareas
- Antelope Valley Adjudicated Area

May 2020

TODD **GROUNDWATER**

Source: USDA 2018

Figure 17
2018
Land Use

Appendices

Appendix A

Rampdown Tables

- A-1. Exhibit 3 Non-Overlying Producers and Non-Stipulating Parties Rampdown Schedule
- A-2. Exhibit 4 Overlying Producers Rampdown Schedule

Table A-1 Exhibit 3 Non-Overlying Producers and Non-Stipulating Parties Rampdown Schedule

Exhibit 3 Non-Overlying Producers	Pre-Rampdown Production (AFY)	Rampdown Targets (AFY)							Production Right (AFY)
		2016	2017	2018	2019	2020	2021	2022	
Boron Community Services District	153.02	153.02	153.02	135.85	118.68	101.51	84.34	67.17	50.00
California Water Services Company	589.76	589.76	589.76	548.66	507.56	466.45	425.35	384.24	343.14
Desert Lake Community Services District	73.53	73.53	73.53	73.53	73.53	73.53	73.53	73.53	73.53
Littlerock Creek Irrigation District	1,420.19	1,420.19	1,420.19	1,316.25	1,212.32	1,108.38	1,004.45	900.51	796.58
Los Angeles County Waterworks District No. 40	6,789.26	6,789.26	6,789.26	6,789.26	6,789.26	6,789.26	6,789.26	6,789.26	6,789.26
North Edwards Water District	102.92	102.92	102.92	93.94	84.95	75.97	66.99	58.00	49.02
Palm Ranch Irrigation District	1,095.47	1,095.47	1,095.47	990.51	885.55	780.58	675.62	570.65	465.69
Palmdale Water District	2,769.63	2,769.63	2,769.63	2,769.63	2,769.63	2,769.63	2,769.63	2,769.63	2,769.63
Quartz Hill Water District	2,397.09	2,397.09	2,397.09	2,091.53	1,785.97	1,480.41	1,174.85	869.29	563.73
Rosamond Community Services District	2,917.88	2,917.88	2,917.88	2,498.97	2,080.06	1,661.15	1,242.24	823.33	404.42
West Valley County Water District	185.00	185.00	185.00	160.83	136.67	112.50	88.33	64.17	40.00
Total	18,493.75	18,493.75	18,493.75	17,468.96	16,444.17	15,419.38	14,394.58	13,369.79	12,345.00

Non-Stipulating Parties	Pre-Rampdown Production (AFY)	Rampdown Targets (AFY)							Production Right (AFY)
		2016	2017	2018	2019	2020	2021	2022	
Desert Breeze MHP, LLC	20.35	20.35	20.35	19.98	19.60	19.23	18.85	18.48	18.10
Milana VII, LLC dba Rosamond Mobile Home Park	28.00	28.00	28.00	26.95	25.90	24.85	23.80	22.75	21.70
Reesdale Mutual Water Company	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Juanita Eyherabide, Eyherabide Land Co., LLC and Eyherabide Sheep Company	14.56	14.56	14.56	14.13	13.71	13.28	12.85	12.43	12.00
Clan Keith Real Estate Investments, LLC dba Leisure Lake Mobile Estates	148.10	148.10	148.10	134.08	120.07	106.05	92.03	78.02	64.00
White Fence Farms Mutual Water Company No. 3	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
LV Ritter Ranch, LLC	950.87	950.87	950.87	792.39	633.91	475.44	316.96	158.48	0.00
Robar Enterprises, Inc., HI-Grade Materials, Co., and CJR, a General Partnership	675.00	675.00	675.00	596.67	517.33	438.00	358.67	279.33	200.00
SCI California Funeral Services, Inc. dba Joshua Memorial Park ¹	To be determined	To be determined	To be determined	To be determined	To be determined	To be determined	To be determined	To be determined	To be determined
Total	1,863.88	1,863.88	1,863.88	1,611.20	1,357.52	1,103.84	850.16	596.48	342.80

1. SCI California Funeral Services, Inc. dba Joshua Memorial Park intervened to become Non-Stipulating Party in 2019. The Parties and Court are in the process of determining Its Production Right and Rampdown.

Table A-2 Exhibit 4 Overlying Producers Rampdown Schedule

Original Exhibit 4 Producers	Transferees	Pre-Rampdown Production ¹ (AF)	Rampdown Targets (AF)								Production Right (AF)
			2016	2017	2018	2019	2020	2021	2022		
60th Street Association Water System	-	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
Adams Bennett Investments, LLC	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Antelope Park Mutual Water Company	-	208.75	208.75	208.75	202.27	195.80	189.32	182.84	176.37	169.89	169.89
Antelope Valley Joint Union High School District	-	71.74	71.74	71.74	66.62	61.49	56.37	51.25	46.12	41.00	41.00
Antelope Valley Mobile Estates	-	19.88	19.88	19.88	18.03	16.17	14.32	12.46	10.61	8.75	8.75
Antelope Valley Water Storage LLC	-	1,772.00	1,772.00	1,772.00	1,772.00	1,772.00	1,772.00	1,772.00	1,772.00	1,772.00	1,772.00
Antelope Valley-East Kern Water Agency (AVEK)	-	4,000.00	4,000.00	4,000.00	3,925.00	3,850.00	3,775.00	3,700.00	3,625.00	3,550.00	3,550.00
Aqua-J Mutual Water Company	-	44.90	44.90	44.90	44.81	44.72	44.63	44.53	44.44	44.35	44.35
AV Solar Ranch 1, LLC	-	96.00	96.00	96.00	96.00	96.00	96.00	96.00	96.00	96.00	96.00
Averdale Mutual Water Company	-	257.95	257.95	257.95	257.35	256.75	256.15	255.55	254.95	254.35	254.35
Bahlman: Gene Bahlman	Hernandez: Luis Hernandez; property sale (2017)	5.25	5.25	5.25	5.21	5.17	5.13	5.08	5.04	5.00	5.00
Baxter Mutual Water Company	-	44.75	44.75	44.75	43.13	41.51	39.89	38.26	36.64	35.02	35.02
Benz: Mark W. And Nancy L. Benz	Terraza: Gloria Terrazas; property sale (2015)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Big Rock Mutual Water Company	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bittner Trust, Glen Bittner, Trustee	-	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Bleich Flat Mutual Water Company	-	33.50	33.50	33.50	33.50	33.50	33.50	33.50	33.50	33.50	33.50
Blum: Sheldon R. Blum, Trustee of the 1998 Family Trust	-	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Bolthouse Properties LLC	-	16,805.89	16,805.89	16,805.89	15,662.41	14,518.93	13,375.45	12,231.96	11,088.48	9,945.00	9,945.00
Bookman: Thomas and Julie Bookman 2007 Trust	-	272.50	272.50	272.50	249.75	227.00	204.25	181.50	158.75	136.00	136.00
Borax: U.S. Borax	-	1,905.00	1,905.00	1,905.00	1,905.00	1,905.00	1,905.00	1,905.00	1,905.00	1,905.00	1,905.00
Bridwell: James and Elizabeth Bridwell	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Burrows/200 A40 H LLC	-	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00
Calandri Water Company, LLC (Sonrise Farms)	-	3,803.00	3,803.00	3,803.00	3,465.17	3,127.33	2,789.50	2,451.67	2,113.83	1,776.00	1,776.00
Cardile: Sal and Connie Cardile	Pool: Noel Pool; property sale (2015)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Carle: Irma Ann Carle Trust, Irma-Anne Carle, Trustee	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Chavez: Effen Chavez	-	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00
City of Los Angeles, Department of Airports	-	7,851.00	7,851.00	7,851.00	7,205.00	6,559.00	5,913.00	5,267.00	4,621.00	3,975.00	3,975.00
Close: C. Louise R. Close Living Trust	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Colorado Mutual Water Company	-	25.90	25.90	25.90	25.84	25.78	25.72	25.66	25.60	25.54	25.54
Copa De Oro Land Company	Copa De Oro Land Company (2020)	325.00	325.00	325.00	325.00	325.00	10.00	10.00	10.00	10.00	10.00
	WDS California II, LLC (2020)										
County Sanitation Districts of Los Angeles 14 & 20	LA County District No. 14: 3,060 AFY (2019)	8,000.00	8,000.00	8,000.00	7,233.33	5,820.00	5,130.00	4,440.00	3,750.00	3,060.00	3,060.00
	LA County District No. 20: 340 AFY (2019)										
Del Sur Ranch LLC	-	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00
Diamond Farming/Crystal Organic LLC/Grimmway/Lapis	-	3,354.00	3,354.00	3,354.00	3,126.00	2,898.00	2,670.00	2,442.00	2,214.00	1,986.00	1,986.00
Dickey: Randall and Billie Dickey	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
El Dorado Mutual Water Company	-	276.05	276.05	276.05	275.40	274.75	274.11	273.46	272.81	272.16	272.16
eSolar Inc., Red Dawn Suntower LLC	Rosamond Community Services District (2016)	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00
eSolar Inc., Sierra Sun Tower, LLC	-	5.76	5.76	5.76	5.30	4.84	4.38	3.92	3.46	3.00	3.00
eSolar Inc., Tumbleweed Suntower LLC	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Evans: Lawrence Dean Evans, Jr. and Susan Evans	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Evergreen Mutual Water Company	-	69.50	69.50	69.50	69.34	69.18	69.02	68.86	68.70	68.54	68.54
Findley: Ruth C. Findley	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
First Mutual Water Company	-	15.62	15.62	15.62	13.89	12.16	10.44	8.71	6.98	5.25	5.25
Frankenberg: Leah Frankenberg	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Godde: Steve, Pamela & Gary Godde c/o Rife Silva & Co LLC	[Receives IWRP Rights from Forrest Godde (an Exhibit B Party (2017))]	1,461.50	1,461.50	1,461.50	1,331.75	1,202.00	1,072.25	942.50	812.75	683.00	683.00
Gorrindo Resourceful LLC	-	629.00	629.00	629.00	629.00	629.00	629.00	629.00	629.00	629.00	629.00
Granite Construction Company (Big Rock Facility)	-	126.00	126.00	126.00	126.00	126.00	126.00	126.00	126.00	126.00	126.00
Granite Construction Company (Little Rock Sand and Gravel, Co.)	Rampdown & Production Rights split equally between Granite Construction and Little Rock Sand and Gravel (50/50 Split) (2018)	400.00	400.00	400.00	372.33	344.67	317.00	289.33	261.67	234.00	234.00
Griffin: Laura Griffin Trustee of the Family Bypass Trust	-	1,170.00	1,170.00	1,170.00	1,086.33	1,002.67	919.00	835.33	751.67	668.00	668.00
H & N Development Co. West Inc.	-	1,799.75	1,799.75	1,799.75	1,634.46	1,469.17	1,303.88	1,138.58	973.29	808.00	808.00
Healy: Jane Healy and Healy Enterprises Inc.	-	700.00	700.00	700.00	700.00	700.00	700.00	700.00	700.00	700.00	700.00
Kyle: Trustees of the Kyle Revocable Living Trust	-	9,275.00	9,275.00	9,275.00	8,340.83	7,406.67	6,472.50	5,538.33	4,604.17	3,670.00	3,670.00
Land Projects Mutual Water Company	-	622.50	622.50	622.50	621.01	619.51	618.02	616.53	615.03	613.54	613.54
Landale Mutual Water Company	-	157.75	157.75	157.75	157.39	157.02	156.66	156.30	155.93	155.57	155.57
Landinv Inc.	FS Land Holding Company, LLC; property sale; 736.44 AF (2016)	2,000.00	1,520.00	1,520.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00
	600 AFY to Diamond Farming (217 AF), Crystal Organic (190 AF), Grimmway (193 AF) (2018)										
	Remain with FS Land Holding Company, LLC; 136.44 AF (2018)										
	Radcast: merger; 232.56 AF (2017)	480.00	480.00	438.76	397.52	356.28	315.04	273.80	232.56	232.56	
Lands of Promise Mutual Water Company	-	64.61	64.61	64.61	57.46	50.30	43.15	36.00	28.84	21.69	21.69
Lane Family Trusts	-	1,402.00	1,402.00	1,402.00	1,297.17	1,192.33	1,087.50	982.67	877.83	773.00	773.00
LeClair: Marie A. Unini and Robert J. LeClair	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table A-2 Exhibit 4 Overlying Producers Rampdown Schedule

Original Exhibit 4 Producers	Transferees	Pre-Rampdown Production ¹ (AF)	Rampdown Targets (AF)							Production Right (AF)	
			2016	2017	2018	2019	2020	2021	2022		
Leer: James M. Leer, III and Diane Leer	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Littlerock Aggregate Co., Inc., Holiday Rock Co., Inc.	-	405.00	405.00	405.00	362.67	320.33	278.00	235.67	193.33	151.00	
Llano Del Rio Water Company	-	572.65	572.65	572.65	523.71	474.77	425.83	376.88	327.94	275.00	
Llano Mutual Water Company	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Maritorea: Trustees of the Maritorea Living Trust	-	3,800.55	3,800.55	3,800.55	3,462.96	3,125.37	2,787.78	2,450.18	2,112.59	1,775.00	
McWilliams: Dennis M. and Diane K. McWilliams	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Miner: Richard Miner	-	1,089.40	1,089.40	1,089.40	1,074.33	1,059.27	1,044.20	1,029.13	1,014.07	999.00	
Miracle Improvement Corporation dba Golden Sands Mobile Home Park/Trailer Park	New Goldensands investment; property sale (2016)	45.40	45.40	45.40	42.33	39.27	36.20	33.13	30.07	27.00	
Munz: 2014 Revocable Trust, Terry A. & Kathleen M. Munz	-	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	
Nebeker: Eugene B. Nebeker	-	4,016.00	4,016.00	4,016.00	3,642.50	3,269.00	2,895.50	2,522.00	2,148.50	1,775.00	
Northrop Grumman Systems Corporation	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
NRG Solar Alpine, LLC	-	64.21	64.21	64.21	59.84	55.47	51.11	46.74	42.37	38.00	
R and M Ranch, Inc.	-	1,458.00	1,458.00	1,458.00	1,329.33	1,200.67	1,072.00	943.33	814.67	686.00	
Reca: John and Adrienne Reca	-	501.45	501.45	501.45	459.71	417.97	376.23	334.48	292.74	251.00	
Richter: Suzanne J. Richter	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Rosamond High School	-	586.40	586.40	586.40	522.37	458.34	394.32	330.29	266.26	202.23	
Rosamond Ranch	FS Land Holding Company, LLC, property sale (2015)	598.00	598.00	598.00	598.00	598.00	598.00	598.00	598.00	598.00	
Rose Villa Apartments	-	22.72	22.72	22.72	20.20	17.69	15.17	12.65	10.14	7.62	
Sahara Nursery and Farm	-	22.18	22.18	22.18	22.15	22.12	22.09	22.06	22.03	22.00	
Saint Andrew's Abbey, Inc.	-	175.00	175.00	175.00	162.83	150.67	138.50	126.33	114.17	102.00	
Schilling: Lawrence J. and Mary P. Schilling Trustees of the L&M Schilling 1992 Family Trust	-	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
Selak: Lilia Mabel Selak; Barbara Aznarez Decd Trust and Mabel Selak Trust	[Received 1 AF from Siebert (July 2018)] See Siebert for this reporting.	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	
Service Rock Products, LP.	-	503.00	503.00	503.00	463.67	424.33	385.00	345.67	306.33	267.00	
SGS Antelope Valley Development, LLC	-	57.00	57.00	57.00	57.00	57.00	57.00	57.00	57.00	57.00	
Shadow Acres Mutual Water Company	-	52.60	52.60	52.60	52.46	52.31	52.17	52.03	51.88	51.74	
Sheep Creek Water Company	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Siebert: Jeffrey and Nancee Siebert	Remaining Siebert Rights after 1 AF transferred to Selak (July 2018)	200.00			183.33	167.67	152.00	136.33	120.67	105.00	
	Transferred 1 AF to Selak (July 2018)	1.00	200.00	200.00	1.00	1.00	1.00	1.00	1.00	1.00	
Sonrise Ranch, LLC	-	662.00	662.00	662.00	551.67	441.33	331.00	220.67	110.33	0.00	
Southern California Edison Company	-	17.75	17.75	17.75	16.13	14.50	12.88	11.25	9.63	8.00	
Sundale Mutual Water Company	-	472.23	472.23	472.23	472.23	472.23	472.23	472.23	472.23	472.23	
Sunyside Farms Mutual Water Company, Inc.	-	75.40	75.40	75.40	75.21	75.02	74.83	74.64	74.45	74.26	
Tejon Ranchcorp and Tejon Ranch Co.	-	3,414.00	3,414.00	3,414.00	3,117.33	2,820.67	2,524.00	2,227.33	1,930.67	1,634.00	
Tierra Bonita Mutual Water Company	-	40.75	40.75	40.75	40.68	40.61	40.54	40.46	40.39	40.32	
Tierra Bonita Ranch	-	505.00	505.00	505.00	492.50	480.00	467.50	455.00	442.50	430.00	
Triple M Property Co.	-	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	
Turk Trust dated December 16, 1998	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Van Dam: Craig Van Dam, Marta Van Dam, Nick Van Dam, Janet Van Dam	Van Dam: Craig and Marta: 610 AFY (2018)	1,037.00	1,037.00	1,037.00	925.32	862.26	799.19	736.13	673.06	610.00	
	Van Dam, Nick and Janet: 30 AFY (2018)				45.51	42.41	39.31	36.20	33.10	30.00	
Van Dam Family Trust - 1996; High Desert Dairy	High Desert Dairy LLC 1,817 AFY (2020)						3,714.97	3,082.31	2,449.66	1,817.00	
	Gary Van Dam 466 AFY (2020)	9,931.50	9,931.50	9,931.50	8,812.08	7,692.67	952.76	790.51	628.25	466.00	
	Craig & Marta Van Dam 466 AFY (2020)						952.76	790.51	628.25	466.00	
	Nick & Janet Van Dam 466 AFY (2020)						952.76	790.51	628.25	466.00	
Vulcan Materials Co., Vulcan Lands Inc., Consolidated Rock Products Co., Calmat Lands, Co., Allied Concrete & Materials	-	519.10	519.10	519.10	475.92	432.73	389.55	346.37	303.18	260.00	
WAGAS Land Company LLC	-	984.15	984.15	984.15	916.79	849.43	782.08	714.72	647.36	580.00	
WDS California II, LLC	[Received 315 AF from Copa de starting Jan 2020]	2,397.00	2,397.00	2,397.00	2,190.67	1,984.33	1,778.00	1,571.67	1,365.33	1,159.00	
Weatherbie: Michael and Dolores A. Weatherbie	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
West Side Park Mutual Water Co.	-	280.75	280.75	280.75	280.10	279.45	278.81	278.16	277.51	276.86	
White Fence Farms Mutual Water Co.	-	783.05	783.05	783.05	781.23	779.41	777.59	775.77	773.95	772.13	
William Fisher Memorial Water Company	-	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	
Willow Springs Company: Richard Nelson	-	180.65	180.65	180.65	173.04	165.43	157.83	150.22	142.61	135.00	
Wilson: Donna Wilson	-	10.00	10.00	10.00	9.50	9.00	8.50	8.00	7.50	7.00	
Total		105,893.63	105,892.63	105,892.63	97,964.23	90,035.83	82,107.43	74,179.03	66,250.63	58,322.23	

1. Exhibit 4 of the Judgment shows a Pre-Rampdown Production total of 105,878.08 AF due to the inadvertent omission of the last two entries in the sum on Exhibit 4 (Donna Wilson and William Fisher Memorial Water Company). The corrected sum of 105,892.63 will be used going forward.

Appendix B

Water Accounting Tables

- B-1. Exhibit 3 Non-Overlying Producers Water Accounting
- B-2. Exhibit 4 Overlying Producers Water Accounting
- B-3. Other Parties (Non-Exhibit 3 or -Exhibit 4) Water Accounting
- B-4. New Production Water Accounting

Table B-1 Exhibit 3 Non-Overlying Producers Water Accounting

last updated 6/29/20

Original Exhibit 3 Producers Public Water Suppliers	Water Available for Use in 2019 (AF)									2019 Water Use and Accounting (AF)										2020 Water Sources (AF)							
	Production Right	2019 Rampdown Production	Unused Federal Reserve Right for use in 2019	Imported Water Return Flows for 2019	Transfers (Not Permanent)	Transfer Water used for a 2018 Replacement Water Obligation	Carry Over Water for use in 2019	Carry Over Water plus Transfer Water for use in 2019	Total Water for use in 2019	2019 Total Groundwater Production	Amount of Groundwater Production that is recovery of stored water	Adjusted Groundwater Production	Production Right Used	Rampdown Used (Max is Rampdown-Production Right)	Unused Federal Reserve Right Used	IWRP Used	Carry Over and Transfer Water Used	Over Production	Replacement Obligation ¹	Production Right to Carry Over for use in 2020	IWRP to Carry Over for use in 2020	Remaining Carry Over Water	2020 Rampdown	Unused Federal Reserve Right	Imported Water Return Flows for 2020	Carry Over Water (including past Transfer Water) for use in 2020	2020 Transfers (Not Permanent)
	Judgment	As per Resolution R-18-22	Allocated as per Judgment	Imported Water Use Table from AVEK and information from PWD and LCID	See Appendix F	See Appendix E	From 2018 Annual Report	[Unused Transfer Water + Carry Over Water] [5-6+7]	2+3+4+8	Annual Production Reporting	Recovered Stored Water from Annual Production Reporting	[Total GW Production - Amount that is recovered stored water] [10-11]	If [12>1] then [1], otherwise 12	If [12 ≤ 13] then 0, if [12>2] then [2-13], otherwise 12-13]]	If [12 ≤ 13+14] then 0, if [12-13-14>3] then [3], otherwise [12-13-14]	If [12 ≤ 13+14+15] then 0, if [12-13-14-15>4] then 4], otherwise [12-13-14-15-16]	If [12-13-14-15-16-17]>0 then [12-13-14-15-16-17], otherwise 0	[18]	If [1-13]>0 then [1-13], otherwise 0	If [4-16]>0 then [4-16], otherwise 0	[8-17]	Agreed Upon	Allocated as per Judgment [6,359.24 AF]	Imported Water Use Data from AVEK, PWD, and LCID	[20+21+22]	See Appendix F	
Boron Community Services District	50.00	118.68	0.00	68.77	0.00	0.00	73.34	73.34	260.79	0.17	0.00	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00	49.83	68.77	73.34	101.51	0.00	79.40	191.94	-
California Water Services Company	343.14	507.56	175.80	1.32	0.00	0.00	101.63	101.63	786.31	373.60	0.00	373.60	343.14	30.46	0.00	0.00	0.00	0.00	0.00	0.00	1.32	101.63	466.45	178.06	2.63	102.95	-
Desert Lake Community Services District	73.53	73.53	37.67	35.90	0.00	0.00	327.44	327.44	474.54	0.51	0.00	0.51	0.51	0.00	0.00	0.00	0.00	0.00	0.00	73.02	35.90	327.44	73.53	38.16	39.19	436.36	-
Littlerock Creek Irrigation District	796.58	1,212.32	408.12	0.00	0.00	0.00	0.00	0.00	1,620.44	1,293.46	28.00	1,265.46	796.58	415.74	53.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,108.38	413.35	33.85	0.00	-
Los Angeles County Waterworks District No. 40, Antelope Valley ²	6,789.26	6,789.26	3,478.41	9,782.54	0.00	0.00	11,343.65	11,343.65	31,393.86	12,812.68	0.00	12,812.68	6,789.26	0.00	3,478.41	2,545.01	0.00	0.00	0.00	0.00	7,237.53	11,343.65	6,789.26	3,523.01	10,396.33	18,581.18	8,581.60
North Edwards Water District	49.02	84.95	25.11	0.00	0.00	0.00	0.00	0.00	110.07	75.48	0.00	75.48	49.02	26.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.97	25.44	0.00	0.00	-
Palm Ranch Irrigation District ¹	465.69	885.55	238.59	7.68	2,850.00	41.65	0.00	2,808.35	3,940.17	883.44	0.00	883.44	465.69	417.75	0.00	0.00	0.00	0.00	0.00	0.00	7.68	2,808.35	780.58	241.65	33.78	2,816.03	-
Palmdale Water District	2,769.63	2,769.63	1,418.99	3,798.05	100.00	0.00	5,904.19	6,004.19	13,990.86	4,425.03	0.00	4,425.03	2,769.63	0.00	1,418.99	236.41	0.00	0.00	0.00	0.00	3,561.64	6,004.19	2,769.63	1,437.19	4,085.72	9,565.83	-
Quartz Hill Water District	563.73	1,785.97	288.82	1,055.44	0.00	0.00	3,730.38	3,730.38	6,860.61	1,365.00	0.00	1,365.00	563.73	801.27	0.00	0.00	0.00	0.00	0.00	0.00	1,055.44	3,730.38	1,480.41	292.53	1,016.03	4,785.82	-
Rosamond Community Services District	404.42	2,080.06	207.20	5.02	0.00	0.00	371.65	371.65	2,663.93	2,275.80	0.00	2,275.80	554.42	1,675.64	45.74	0.00	0.00	0.00	0.00	0.00	5.02	371.65	1,661.15	209.86	9.55	376.67	1,180.00
Transfer from eSolar Inc.; Red Dawn Suntuwer LLC - Exhibit 4	150.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	150.00	0.00	0.00	0.00	-	-
West Valley County Water District	40.00	136.67	0.00	0.00	0.00	0.00	0.00	0.00	136.67	125.15	0.00	125.15	40.00	85.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112.50	0.00	0.00	0.00	-
Total³	12,495.00	16,594.17	6,278.73	14,754.72	2,950.00	41.65	21,852.28	24,760.63	62,388.24	23,630.32	28.00	23,602.32	12,372.15	3,452.47	4,996.29	2,781.42	0.00	0.00	0.00	122.85	11,973.30	24,760.63	15,569.38	6,359.24	15,696.48	36,856.78	9,761.60

1. PRID's 2018 Replacement Obligation was revised to 41.65 AF in January 2020 to reflect error in Unused Federal Reserved Water Right formula in 2018 water accounting tables.
 2. Los Angeles County Waterworks District No. 40 also received a transfer of 4,487.13 AF of stored imported water from AVEK's Westside Water Bank. Recovery of this stored imported water will be shown in the Appendix C tables when recovery occurs.
 3. Production Right total of 12,495 AF does not include the 150 AF that RCSD received from an Exhibit 4 Party transfer (eSolar Inc.; Red Dawn Suntuwer LLC)
 Future tables may include rights to Stored Water.

Table B-2 Exhibit 4 Overlying Producers Water Accounting

last updated 7/17/20

Original Exhibit 4 Overlying Producers	Transfers of Permanent PR	Water Available for Use in 2019 (AF)							2019 Water Use and Accounting (AF)										2020 Water Sources (AF)						
		Production Right	2019 Rampdown Production	Imported Water Return Flows for 2019	Transfers (Not Permanent)	Transfer Water used for a 2018 Replacement Water Obligation	Carry Over Water for use in 2019	Carry Over Water plus Transfer Water for use in 2019	Total Water for use in 2019	2019 Total Groundwater Production	Amount of Groundwater Production that is recovery of stored water	Adjusted Groundwater Production	Production Right Used	Rampdown Used	IWRP Used	Carry Over and Transfer Water Used	Over Production	Replacement Obligation	Production Right to Carry Over for use in 2020	IWRP to Carry Over for use in 2020	Remaining Carry Over Water	2020 Rampdown	Imported Water Return Flows for 2020	Carry Over Water (including past Transfer Water) for use in 2020	2020 Transfers (Not Permanent)
		Judgment	Judgment	Imported Water Use Table from AVEK	See Appendix F	See Appendix E	From 2018 Annual Report	[Unused Transfer Water + Carry Over Water] [4-5+6]	2+3+7	Annual Production Reporting	Recovered Stored Water from Annual Production Reporting	[Total GW Production - Amount that is recovered stored water] [9-10]	If [11>1] then [1], otherwise [11]	If [11<=12] then 0, if [11>2] then [2-12], otherwise [11-12]	If [11<12+13] then 0, if [11-12-13-3] then [3], otherwise [11-12-13]	If [11<12+13+14] then 0, if [11-12-13-14-7] then [7], otherwise [11-12-13-14]	[16]	If [1-12]>0 then [1-12], otherwise 0	If [3-14]>0, then [3-14], otherwise 0	[7-15]	Rampdown Tables	Imported Water Use Table from AVEK	[18+19+20]	See Appendix F	
60th Street Association Water System	-	2.16	2.16	0.00	0.00	0.00	0.00	0.00	2.16	4.78	0.00	4.78	2.16	0.00	0.00	0.00	2.62	2.62	0.00	0.00	0.00	2.16	0.00	0.00	-
Adams Bennett Investments, LLC	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Antelope Park Mutual Water Company	-	169.89	195.80	0.00	0.00	0.00	167.12	167.12	362.92	108.13	0.00	108.13	108.13	0.00	0.00	0.00	0.00	0.00	61.76	0.00	167.12	189.32	0.00	228.88	-
Antelope Valley Joint Union High School District ¹	-	41.00	61.49	0.00	0.00	0.00	0.00	0.00	61.49	108.87	0.00	108.87	41.00	20.49	0.00	0.00	47.38	47.38	0.00	0.00	0.00	56.37	0.00	0.00	-
Antelope Valley Mobile Estates	-	8.75	16.17	0.00	0.00	0.00	5.71	5.71	21.88	5.14	0.00	5.14	5.14	0.00	0.00	0.00	0.00	0.00	3.61	0.00	5.71	14.32	0.00	9.32	-
Antelope Valley Water Storage LLC	-	1,772.00	1,772.00	0.00	0.00	0.00	1,999.16	1,999.16	3,771.16	634.60	0.00	634.60	634.60	0.00	0.00	0.00	0.00	0.00	1,137.40	0.00	1,999.16	1,772.00	0.00	3,136.56	-
Antelope Valley-East Kern Water Agency (AVEK)	-	3,550.00	3,850.00	862.73	0.00	0.00	3,346.33	3,346.33	8,059.06	9,233.96	0.00	9,233.96	0.00	0.00	0.00	0.00	0.00	0.00	3,550.00	862.73	3,346.33	3,775.00	822.54	7,759.06	-8,581.60
Aqua-J Mutual Water Company	-	44.35	44.72	0.00	0.00	0.00	64.15	64.15	108.87	22.00	0.00	22.00	22.00	0.00	0.00	0.00	0.00	0.00	22.35	0.00	64.15	44.63	0.00	86.50	-
AV Solar Ranch 1, LLC	-	96.00	96.00	0.00	0.00	0.00	252.54	252.54	348.54	2.73	0.00	2.73	2.73	0.00	0.00	0.00	0.00	0.00	93.27	0.00	252.54	96.00	0.00	345.81	-
Averydale Mutual Water Company	-	254.35	256.75	0.00	0.00	0.00	32.17	32.17	288.92	210.48	0.00	210.48	210.48	0.00	0.00	0.00	0.00	0.00	43.87	0.00	32.17	256.15	0.00	76.04	-
Bahlman: Gene Bahlman	Hernandez: Luis Hernandez; property sale (2017)	5.00	5.17	0.00	0.00	0.00	4.00	4.00	9.17	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	5.13	0.00	#VALUE!	-
Baxter Mutual Water Company	-	35.02	41.51	0.00	0.00	0.00	0.00	0.00	41.51	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	39.89	0.00	#VALUE!	-
Benz: Mark W. And Nancy L. Benz	Terrazas: Gloria Terrazas; property sale (2015)	1.00	1.00	0.00	0.00	0.00	Missing 2016, 2017, 2018 production reporting	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	1.00	0.00	#VALUE!	-
Big Rock Mutual Water Company	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Brittner Trust: Glen Brittner, Trustee (corrected spelling but kept old order in table)	-	4.00	4.00	0.00	0.00	0.00	0.00	0.00	4.00	15.00	0.00	15.00	4.00	0.00	0.00	0.00	11.00	11.00	0.00	0.00	0.00	4.00	0.00	0.00	-
Bleich Flat Mutual Water Company	-	33.50	33.50	0.00	0.00	0.00	61.30	61.30	94.80	11.72	0.00	11.72	11.72	0.00	0.00	0.00	0.00	0.00	21.78	0.00	61.30	33.50	0.00	83.08	-
Blum: Sheldon R. Blum, Trustee of the 1998 Family Trust	-	50.00	50.00	0.00	0.00	0.00	150.00	150.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	150.00	50.00	0.00	200.00	-
Boithouse Properties LLC	-	9,945.00	14,518.93	0.00	0.00	0.00	0.00	0.00	14,518.93	11,441.34	0.00	11,441.34	9,945.00	1,496.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13,375.45	0.00	0.00	-
Bookman: Thomas and Julie Bookman 2007 Trust	-	136.00	227.00	0.00	0.00	0.00	136.87	136.87	363.87	80.05	0.00	80.05	80.05	0.00	0.00	0.00	0.00	0.00	55.95	0.00	136.87	204.25	0.00	192.82	-
Borax: U.S. Borax	-	1,905.00	1,905.00	414.69	0.00	0.00	3,375.23	3,375.23	5,694.92	1,040.00	0.00	1,040.00	1,040.00	0.00	0.00	0.00	0.00	0.00	865.00	414.69	3,375.23	1,905.00	456.85	4,654.92	-
Bridwell: James and Elizabeth Bridwell	-	1.00	1.00	0.00	0.00	0.00	Missing 2016, 2017, 2018 production reporting	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	1.00	0.00	#VALUE!	-
Burrows/200 A40 H LLC	-	295.00	295.00	0.00	0.00	0.00	Missing 2016, 2017, 2018 production reporting	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	295.00	0.00	#VALUE!	-
Calandri Water Company, LLC (Sonrise Farms) ³	-	1,776.00	3,127.33	0.00	0.00	0.00	86.83	86.83	3,214.16	3,127.33	0.00	3,127.33	1,776.00	1,351.33	0.00	0.00	0.00	0.00	0.00	0.00	86.83	2,789.50	0.00	86.83	-
Cardile: Sai and Connie Cardile	Pool: Noel Pool; property sale (2015)	1.00	1.00	0.00	0.00	0.00	Missing 2016 & 2017 production reporting	#VALUE!	#VALUE!	0.16	0.00	0.16	0.16	0.00	0.00	0.00	0.00	0.00	0.84	0.00	#VALUE!	1.00	0.00	#VALUE!	-
Carle: Irma Ann Carle Trust, Irma-Anne Carle, Trustee	-	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.21	0.00	0.21	0.21	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	1.00	0.00	0.79	-
Chavez: Effren Chavez	-	44.00	44.00	0.00	0.00	0.00	Missing 2017 production reporting	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	44.00	0.00	#VALUE!	-
City of Los Angeles, Department of Airports	-	3,975.00	6,559.00	0.00	0.00	0.00	2,320.60	2,320.60	8,879.60	2,452.40	0.00	2,452.40	2,452.40	0.00	0.00	0.00	0.00	0.00	1,522.60	0.00	2,320.60	5,913.00	0.00	3,843.20	-
Close: C. Louise R. Close Living Trust	-	1.00	1.00	0.00	0.00	0.00	Missing 2016, 2017, 2018 production reporting	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	1.00	0.00	#VALUE!	-
Colorado Mutual Water Co.	-	25.54	25.78	0.00	0.00	0.00	29.53	29.53	55.31	15.75	0.00	15.75	15.75	0.00	0.00	0.00	0.00	0.00	9.79	0.00	29.53	25.72	0.00	39.32	-
Copa De Oro Land Company	WDS CA II 315 AFY (start Jan 2020)	325.00	325.00	0.00	0.00	0.00	871.40	871.40	1,196.40	16.00	0.00	16.00	16.00	0.00	0.00	0.00	0.00	0.00	309.00	0.00	871.40	315.00	0.00	1,154.40	-
	Copa De Oro 10 AFY (start Jan 2020)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00	0.00	26.00	-
County Sanitation Districts of Los Angeles 14 & 20 ²	District No. 14: 3,060 AFY (2019)	3,060.00	5,820.00	0.00	-2,850.00	0.00	8,026.41	5,176.41	10,996.41	1,079.40	0.00	1,079.40	1,079.40	0.00	0.00	0.00	0.00	0.00	1,980.60	0.00	5,176.41	5,130.00	0.00	7,157.01	-4,152 (pending V Lions intervention)
	District No. 20 340 AFY (2019)	340.00	646.67	0.00	0.00	0.00	918.00	918.00	1,564.67	247.96	0.00	247.96	247.96	0.00	0.00	0.00	0.00	0.00	92.04	0.00	918.00	570.00	0.00	1,010.04	-
Del Sur Ranch LLC	-	600.00	600.00	0.00	0.00	0.00	1,800.00	1,800.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	600.00	0.00	1,800.00	600.00	0.00	2,400.00	-
Diamond Farming/Crystal Organic LLC/Grimmway/Lapis	-	1,986.00	2,898.00	0.00	0.00	0.00	0.00	0.00	2,898.00	2,461.98	0.00	2,461.98	1,986.00	475.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,670.00	0.00	0.00	-
Dickey: Randall and Billie Dickey	-	1.00	1.00	0.00	0.00	0.00	2.90	2.90	3.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	2.90	1.00	0.00	3.90	-
El Dorado Mutual Water Company	-	272.16	274.75	3.57	0.00	0.00	124.90	124.90	403.22	201.12	0.00	201.12	201.12	0.00	0.00	0.00	0.00	0.00	71.04	3.57	124.90	274.11	4.28	199.51	-
eSolar Inc.; Red Dawn Suntower LLC	RCS: Exhibit 3 Party	150.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#VALUE!	-	-	-	-	-	-
eSolar Inc.; Sierra Sun Tower, LLC	-	3.00	4.84	0.00	0.00	0.00	Missing 2016, 2017, 2018 production reporting	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	4.38	0.00	#VALUE!	-
eSolar Inc.; Tumbleweed Suntower LLC	-	0.00	0.00	0.00	0.00	0.00	Missing 2016, 2017, 2018 production reporting	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.00	0.00	#VALUE!	-
Evans: Lawrence Dean Evans, Jr. and Susan Evans	-	1.00	1.00	0.00	0.00	0.00	3.00	3.00	4.00	0.07	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.93	0.00	3.00	1.00	0.00	3.93	-
Evergreen Mutual Water Company	-	68.54	69.18	0.00	0.00	0.00	20.61	20.61	89.79	59.70	0.00	59.70	59.70	0.00	0.00	0.00	0.00	0.00	8.84	0.00	20.61	69.02			

Table B-2 Exhibit 4 Overlying Producers Water Accounting

last updated 7/17/20

Original Exhibit 4 Overlying Producers	Transfers of Permanent PR	Water Available for Use in 2019 (AF)								2019 Water Use and Accounting (AF)										2020 Water Sources (AF)					
		Production Right	2019 Rampdown Production	Imported Water Return Flows for 2019	Transfers (Not Permanent)	Transfer Water used for a 2018 Replacement Water Obligation	Carry Over Water for use in 2019	Carry Over Water plus Transfer Water for use in 2019	Total Water for use in 2019	2019 Total Groundwater Production	Amount of Groundwater Production that is recovery of stored water	Adjusted Groundwater Production	Production Right Used	Rampdown Used	IWRF Used	Carry Over and Transfer Water Used	Over Production	Replacement Obligation	Production Right to Carry Over for use in 2020	IWRF to Carry Over for use in 2020	Remaining Carry Over Water	2020 Rampdown	Imported Water Return Flows for 2020	Carry Over Water (including past Transfer Water) for use in 2020	2020 Transfers (Not Permanent)
		Judgment	Judgment	Imported Water Use Table from AVEK	See Appendix F	See Appendix E	From 2018 Annual Report	[Unused Transfer Water + Carry Over Water] [4-5+6]	2+3+7	Annual Production Reporting	Recovered Stored Water from Annual Production Reporting	[Total GW Production - Amount that is recovered stored water] [9-10]	If [11>] then [1], otherwise [11]	If [11<12] then 0, if [11>2] then [2-12], otherwise [11-12]	If [11<12+13] then 0, if [11-12-13-3] then [3], otherwise [11-12-13]	If [11<12+13+14] then 0, if [11-12-13-14-7] then [7], otherwise [11-12-13-14]	[16]	If [1-12]>0 then [1-12], otherwise 0	If [3-14]>0, then [3-14], otherwise 0	[7-15]	Rampdown Tables	Imported Water Use Table from AVEK	[18+19+20]	See Appendix F	
Frankenberg: Leah Frankenberg	-	1.00	1.00	0.00	0.00	0.00	1.56	1.56	2.56	0.36	0.00	0.36	0.36	0.00	0.00	0.00	0.00	0.64	0.00	1.56	1.00	0.00	2.20		
Godde: Steve, Pamela & Gary Godde c/o Rife Silva & Co LLC	[Receives IWRF Rights from Forrest Godde (an Exhibit 8 Party (2017))]	683.00	1,202.00	0.00	0.00	0.00	683.00	683.00	1,885.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	683.00	0.00	683.00	1,072.25	0.00	1,366.00		
Gorrindo Resourceful LLC	-	629.00	629.00	0.00	0.00	0.00	1,887.00	1,887.00	2,516.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	629.00	0.00	1,887.00	629.00	0.00	2,516.00		
Granite Construction Company (Big Rock Facility)	-	126.00	126.00	0.12	0.00	0.00	314.92	314.92	441.04	118.20	0.00	118.20	118.20	0.00	0.00	0.00	0.00	7.80	0.12	314.92	126.00	0.08	322.84		
Granite Construction Company (Little Rock Sand and Gravel, Co.)	Rampdown & Production Rights split equally between Granite Construction and Little Rock Sand and Gravel (6/27/18 Stipulation and Order)	234.00	344.67	0.00	0.00	0.00	21.29	21.29	365.96	211.79	0.00	211.79	211.79	0.00	0.00	0.00	0.00	22.21	0.00	21.29	317.00	0.00	43.50		
Griffin: Laura Griffin Trustee of the Family Bypass Trust	-	668.00	1,002.67	0.00	0.00	0.00	665.80	665.80	1,668.47	2.10	0.00	2.10	2.10	0.00	0.00	0.00	0.00	665.90	0.00	665.80	919.00	0.00	1,331.70		
H & N Development Co. West Inc.	-	808.00	1,469.17	0.00	0.00	0.00	0.00	0.00	1,559.94	0.00	1,559.94	808.00	661.17	0.00	0.00	90.77	90.77	0.00	0.00	0.00	1,303.88	0.00	0.00		
Healy: Jane Healy and Healy Enterprises Inc.	-	700.00	700.00	0.00	0.00	0.00	#VALUE!	#VALUE!	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	700.00	0.00	#VALUE!	700.00	0.00	#VALUE!		
Kyle: Trustees of the Kyle Revocable Living Trust	-	3,670.00	7,406.67	0.00	0.00	0.00	0.00	0.00	7,406.67	4,679.55	0.00	4,679.55	3,670.00	1,009.55	0.00	0.00	0.00	0.00	0.00	0.00	6,472.50	0.00	0.00		
Land Projects Mutual Water Co.	-	613.54	619.51	0.00	0.00	0.00	95.62	95.62	715.13	575.00	0.00	575.00	575.00	0.00	0.00	0.00	0.00	38.54	0.00	95.62	618.02	0.00	134.16		
Landale Mutual Water Co.	-	155.57	157.02	4.05	0.00	0.00	82.77	82.77	243.84	123.34	0.00	123.34	123.34	0.00	0.00	0.00	0.00	32.23	4.05	82.77	156.66	4.99	119.05		
Landinv Inc.	FS Land Holding Company, LLC. 736.44 AF (2016)	600 AF to Diamond Farming (217 AF), Crystal Organic (130 AF), Grimmway (193 AF) (2018)	600.00	600.00	0.00	0.00	0.00	367.40	367.40	967.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	600.00	0.00	367.40	600.00	0.00	967.40	
		Remain with FS Land Holding Company, LLC. 136.44 AF (2018)	136.44	658.81	0.00	0.00	0.00	1,600.22	1,600.22	2,259.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	136.44	0.00	1,600.22	528.22	0.00	1,736.66	
		Radcast: merger, 232.56 AF (2017)	232.56	397.52	0.00	0.00	0.00	697.68	697.68	1,095.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	232.56	0.00	697.68	356.28	0.00	930.24	
Lands of Promise Mutual Water Company	-	21.69	50.30	0.00	0.00	0.00	#VALUE!	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	43.15	0.00	#VALUE!	
Lane Family Trusts	-	773.00	1,192.33	6.17	0.00	0.00	96.79	96.79	1,295.29	735.05	0.00	735.05	735.05	0.00	0.00	0.00	0.00	37.95	6.17	96.79	1,087.50	8.08	140.91	-205.00	
LeClair: Marie A. Unini and Robert J. LeClair	-	1.00	1.00	0.00	0.00	0.00	0.90	0.90	1.90	0.70	0.00	0.70	0.70	0.00	0.00	0.00	0.00	0.30	0.00	0.90	1.00	0.00	1.20		
Leer: James M. Leer, III and Diane Leer	-	1.00	1.00	0.00	0.00	0.00	1.27	1.27	2.27	0.43	0.00	0.43	0.43	0.00	0.00	0.00	0.00	0.57	0.00	1.27	1.00	0.00	1.84		
Littlerock Aggregate Co., Inc., Holliday Rock Co., Inc.	-	151.00	320.33	0.00	0.00	0.00	0.00	0.00	320.33	208.33	0.00	208.33	151.00	57.33	0.00	0.00	0.00	0.00	0.00	0.00	278.00	0.00	0.00		
Llano Del Rio Water Company	-	279.00	474.77	0.00	0.00	0.00	563.01	563.01	1,037.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	279.00	0.00	563.01	425.83	0.00	842.01		
Llano Mutual Water Company	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Maritorea: Trustees of the Maritorea Living Trust	-	1,775.00	3,125.37	0.00	0.00	0.00	3,639.01	3,639.01	6,764.38	549.04	0.00	549.04	549.04	0.00	0.00	0.00	0.00	1,225.96	0.00	3,639.01	2,787.78	0.00	4,864.97		
McWilliams: Dennis M. and Diane K. McWilliams	-	1.00	1.00	0.00	0.00	0.00	3.00	3.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	3.00	1.00	0.00	4.00		
Miner: Richard Miner	-	999.00	1,059.27	0.00	0.00	0.00	2,093.27	2,093.27	3,152.54	5.50	0.00	5.50	5.50	0.00	0.00	0.00	0.00	993.50	0.00	2,093.27	1,044.20	0.00	3,086.77		
Miracle Improvement Corporation dba Golden Sands Mobile Home Park/Trailer Park	New Goldensands Investment; property sale (2016)	27.00	39.27	0.00	0.00	0.00	0.00	0.00	39.27	28.50	0.00	28.50	27.00	1.50	0.00	0.00	0.00	0.00	0.00	0.00	36.20	0.00	0.00		
Munz: 2014 Revocable Trust, Terry A. & Kathleen M. Munz	-	5.00	5.00	0.00	0.00	0.00	10.80	10.80	15.80	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	5.00	0.00	#VALUE!	
Nebeker: Eugene B. Nebeker	-	1,775.00	3,269.00	0.00	-1,391.00	0.00	1,391.10	0.10	3,269.10	592.80	0.00	592.80	592.80	0.00	0.00	0.00	0.00	1,182.20	0.00	0.10	2,895.50	0.00	1,182.30	-1,180.00	
Northrop Grumman Systems Corporation	-	2.00	2.00	0.00	0.00	0.00	3.00	3.00	5.00	0.43	0.00	0.43	0.43	0.00	0.00	0.00	0.00	1.57	0.00	3.00	2.00	0.00	4.57		
NRG Solar Alpine, LLC	-	38.00	55.47	0.00	0.00	0.00	105.91	105.91	161.38	2.08	0.00	2.08	2.08	0.00	0.00	0.00	0.00	35.92	0.00	105.91	51.11	0.00	141.83		
R and M Ranch, Inc.	-	686.00	1,200.67	0.00	0.00	0.00	0.00	0.00	1,200.67	792.00	0.00	792.00	686.00	106.00	0.00	0.00	0.00	0.00	0.00	0.00	1,072.00	0.00	0.00		
Reca: John and Adrienne Reca	-	251.00	417.97	0.00	0.00	0.00	604.00	604.00	1,021.97	61.00	0.00	61.00	61.00	0.00	0.00	0.00	0.00	190.00	0.00	604.00	376.23	0.00	794.00		
Richter: Suzanne J. Richter	-	1.00	1.00	0.00	0.00	0.00	2.50	2.50	3.50	0.40	0.00	0.40	0.40	0.00	0.00	0.00	0.00	0.60	0.00	2.50	1.00	0.00	3.10		
Rosamond High School	-	202.23	458.34	0.00	0.00	0.00	486.97	486.97	945.31	68.84	0.00	68.84	68.84	0.00	0.00	0.00	0.00	133.39	0.00	486.97	394.32	0.00	620.36		
Rosamond Ranch	FS Land Holding Company, LLC, property sale (2015)	598.00	598.00	0.00	0.00	0.00	1,794.00	1,794.00	2,392.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	598.00	0.00	1,794.00	598.00	0.00	2,392.00		
Rose Villa Apartments	-	7.62	17.69	0.00	0.00	0.00	#VALUE!	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	15.17	0.00	#VALUE!	
Sahara Nursery and Farm	-	22.00	22.12	0.00	0.00	0.00	42.81	42.81	64.93	11.17	0.00	11.17	11.17	0.00	0.00	0.00	0.00	10.83	0.00	42.81	22.09	0.00	53.64		
Saint Andrew's Abbey, Inc.	-	102.00	150.67	0.00	0.00	0.00	87.86	87.86	238.53	79.81	0.00	79.81	79.81	0.00	0.00	0.00	0.00	22.19	0.00	87.86	138.50	0.00	110.05		
Schilling: Lawrence J. and Mary P. Schilling Trustees of the L&M Schilling 1992 Family Trust	-	4.00	4.00	0.00	0.00	0.00	1.80	1.80	5.80	2.84	0.00	2.84	2.84	0.00	0.00	0.00	0.00	1.16	0.00	1.80	4.00	0.00	2.96		
Selak: Lilla Mabel Selak; Barbara Aznarez Decd Trust and Mabel Selak Trust	Selak, Steve (intervened, Aug/Sept 2011); Richard and Steve Selak (successors in interest) [Received 1 AF from Siebert (July 2018) - See Siebert for this reporting].	150.00	150.00	0.00	-397.00	0.00	450.00	53.00	203.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	150.00	0.00	53.00	150.00	0.00	203.00		
Service Rock Products, LP.	-	267.00	424.33	0.00	0.00	0.00	198.30	198.30	622.63	395.30	0.00	395.30	267.00	128.30	0.00	0.00	0.00	0.00	0.00	198.30	385.00	0.00	198.30		
SGS Antelope Valley Development, LLC	-	57.00	57.00	0.00	0.00	0.00	#VALUE!	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	57.00	0.00	#VALUE!	
Shadow Acres Mutual Water Company ²	-	51.74	52.31	53.56	0.00	0.00	67.07	67.07	172.94	67.30	0.00	67.30	51.74	0.57	14.99	0.00	0.00	0.00	38.57	67.07	52.17				

Table B-2 Exhibit 4 Overlying Producers Water Accounting

last updated 7/17/20

Original Exhibit 4 Overlying Producers	Transfers of Permanent PR	Water Available for Use in 2019 (AF)								2019 Water Use and Accounting (AF)										2020 Water Sources (AF)					
		Production Right	2019 Rampdown Production	Imported Water Return Flows for 2019	Transfers (Not Permanent)	Transfer Water used for a 2018 Replacement Water Obligation	Carry Over Water for use in 2019	Carry Over Water plus Transfer Water for use in 2019	Total Water for use in 2019	2019 Total Groundwater Production	Amount of Groundwater Production that is recovery of stored water	Adjusted Groundwater Production	Production Right Used	Rampdown Used	IWRF Used	Carry Over and Transfer Water Used	Over Production	Replacement Obligation	Production Right to Carry Over for use in 2020	IWRF to Carry Over for use in 2020	Remaining Carry Over Water	2020 Rampdown	Imported Water Return Flows for 2020	Carry Over Water (including past Transfer Water) for use in 2020	2020 Transfers (Not Permanent)
		Judgment	Judgment	Imported Water Use Table from AVEK	See Appendix F	See Appendix E	From 2018 Annual Report	[Unused Transfer Water + Carry Over Water] [4-5+6]	2+3+7	Annual Production Reporting	Recovered Stored Water from Annual Production Reporting	[Total GW Production - Amount that is recovered stored water] [9-10]	If [11>1] then [1], otherwise [11]	If [11<=12] then 0, if [11>2] then [2-12], otherwise [11-12]	If [11<=12+13] then 0, if [11-12-13-3] then [3], otherwise [11-12-13]	If [11<=12+13+14] then 0, if [11-12-13-14-7] then [7], otherwise [11-12-13-14]	[16]	If [1-12]>0 then [1-12], otherwise 0	If [3-14]>0, then [3-14], otherwise 0	[7-15]	Rampdown Tables	Imported Water Use Table from AVEK	[18+19+20]	See Appendix F	
Sheep Creek Water Co.	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Siebert: Jeffrey and Nance Siebert	Remaining Siebert Rights after 1 AF transferred to Selak (July 2018)	105.00	167.67	0.00	0.00	0.00	210.00	210.00	377.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	105.00	0.00	210.00	152.00	0.00	315.00		
	Transferred 1 AF to Selak (July 2018)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00		
Sonrise Ranch, LLC	-	0.00	441.33	0.00	0.00	0.00	0.00	0.00	441.33	19.46	0.00	19.46	0.00	19.46	0.00	0.00	0.00	0.00	0.00	0.00	331.00	0.00	0.00		
Southern California Edison Company	-	8.00	14.50	0.00	0.00	0.00	22.93	22.93	37.43	0.30	0.00	0.30	0.30	0.00	0.00	0.00	0.00	7.70	0.00	22.93	12.88	0.00	30.63		
Sundale Mutual Water Company	-	472.23	472.23	0.00	0.00	0.00	202.86	202.86	675.09	382.00	0.00	382.00	382.00	0.00	0.00	0.00	0.00	90.23	0.00	202.86	472.23	0.00	293.09		
Sunnyside Farms Mutual Water Company, Inc. ²	-	74.26	75.02	37.37	0.00	0.00	58.22	58.22	170.61	122.10	0.00	122.10	74.26	0.76	37.37	9.71	0.00	0.00	0.00	48.51	74.83	34.63	48.51		
Tejon Ranchcorp and Tejon Ranch Co.	-	1,634.00	2,820.67	292.81	0.00	0.00	876.70	876.70	3,990.18	1,523.09	0.00	1,523.09	1,523.09	0.00	0.00	0.00	0.00	110.91	292.81	876.70	2,524.00	396.37	1,280.42		
Tierra Bonita Mutual Water Company	-	40.32	40.61	0.00	0.00	0.00	18.95	18.95	59.56	32.01	0.00	32.01	32.01	0.00	0.00	0.00	0.00	8.31	0.00	18.95	40.54	0.00	27.26		
Tierra Bonita Ranch	-	430.00	480.00	0.00	0.00	0.00	0.00	0.00	480.00	480.00	0.00	480.00	430.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	467.50	0.00	0.00		
Triple M Property Co.	-	15.00	15.00	0.00	0.00	0.00	33.00	33.00	48.00	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	15.00	0.00	#VALUE!		
Turk Trust dated December 16, 1998	-	1.00	1.00	0.00	0.00	0.00	2.90	2.90	3.90	0.06	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.94	0.00	2.90	1.00	0.00	3.84		
Van Dam: Craig Van Dam, Marta Van Dam, Nick Van Dam, Janet Van Dam (640 AFY Production Right)	Van Dam: Craig and Marta: 608 AFY (2020)	608.00																			799.19	0.00	656.75	-450.00	
	Van Dam: Craig and Marta: 610 AFY (2018)	1.00	862.26	0.00	-400.00	0.00	606.88	206.88	1,069.14	158.13	0.00	158.13	158.13	0.00	0.00	0.00	0.00	449.87	0.00	206.88	0.00	0.00	0.00		
	Calandri Farms: 1 AFY (2020-pending intervention)	1.00																			0.00	0.00	0.00	4,152 (pending intervention)	
	V Lions: 1 AFY (2020-pending intervention)	1.00																			0.00	0.00	0.00		
Van Dam, Nick and Janet: 30 AFY (2018)	30.00	42.41	0.00	0.00	0.00	0.00	0.00	42.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00	0.00	0.00	39.31	0.00	0.00		
Van Dam Family Trust - 1996; High Desert Dairy	High Desert Dairy: 1,817 AFY (2020)																				3,714.97	0.00	0.00		
	Van Dam, Gary and Sonrise Ranch: 466 AFY (2020)	3,215.00	7,692.67	0.00	0.00	0.00	0.00	0.00	7,692.67	5,880.73	0.00	5,880.73	3,215.00	2,665.73	0.00	0.00	0.00	0.00	0.00	0.00	952.76	0.00	0.00		
	Van Dam: Craig and Marta: 466 AFY (2020)																				952.76	0.00	0.00		
	Van Dam, Nick and Janet: 466 AFY (2020)																				952.76	0.00	0.00		
Vulcan Materials Co., Vulcan Lands Inc., Consolidated Rock Products Co., Calmat Lands, Co., Allied Concrete & Materials	-	260.00	432.73	0.00	0.00	0.00	0.00	0.00	432.73	619.25	0.00	619.25	260.00	172.73	0.00	0.00	186.52	186.52	0.00	0.00	389.55	0.00	0.00	205.00	
WAGAS Land Company LLC	-	580.00	849.43	0.00	0.00	0.00	#VALUE!	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	782.08	0.00	#VALUE!		
WDS California II, LLC	[Received 315 AF from Copa de starting Jan 2020]	1,159.00	1,984.33	0.00	-100.00	0.00	3,477.00	3,377.00	5,361.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,159.00	0.00	3,377.00	1,778.00	0.00	4,536.00		
Weatherbie: Michael and Dolores A. Weatherbie	Graves: Thomas Graves; property sale (2020)	1.00	1.00	0.00	0.00	0.00	3.00	3.00	4.00	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	1.00	0.00	#VALUE!		
West Side Park Mutual Water Co.	-	276.86	279.45	0.00	0.00	0.00	217.08	217.08	496.53	205.80	0.00	205.80	205.80	0.00	0.00	0.00	0.00	71.06	0.00	217.08	278.81	0.00	288.14		
White Fence Farms Mutual Water Co.	-	772.13	779.41	67.66	0.00	0.00	1,154.83	1,154.83	2,001.90	431.97	0.00	431.97	431.97	0.00	0.00	0.00	0.00	340.16	67.66	1,154.83	777.59	76.78	1,562.65		
William Fisher Memorial Water Company	-	4.53	4.53	0.00	0.00	0.00	#VALUE!	#VALUE!	#VALUE!	Outside of Basin	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	4.53	0.00	#VALUE!		
Willow Springs Company: Richard Nelson	-	135.00	165.43	0.00	0.00	0.00	99.87	99.87	265.30	84.78	0.00	84.78	84.78	0.00	0.00	0.00	0.00	50.22	0.00	99.87	157.83	0.00	150.09		
Wilson: Donna Wilson	-	7.00	9.00	0.00	0.00	0.00	18.00	18.00	27.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.00	18.00	8.50	0.00	25.00		
-	-	58,322.23	89,885.83	1,742.73	-5,138.00	0.00	#VALUE!	#VALUE!	#VALUE!	53,395.20	9,233.96	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	12,115.14	81,957.43	1,864.02	#VALUE!	-10,211.60

1. Pursuant to Section 5.1.8 of the Judgment, Antelope Valley Joint Union High School District has an additional 29 AF of Production for use on its athletic fields and other public spaces. When recycled water becomes available to Quartz Hill High School at a price equal to or less than the lowest cost of any of the following: Replacement Obligation, Replacement Water, or other water that is delivered to AVJUHS at Quartz Hill High School, AVJUHS will stop producing the 29 AF groundwater and use recycled water. AVJUHS produced 137.87 AF in 2019. 108.87 AF is included in Table B-2 and 29 AF is included in Table B-3.

2. There was an error in the Carry Over Water for use in 2018 values in previous tables for Shadow Acres MWC and Sunnyside Farms MWC. Actual values are slightly higher and have been corrected in this table.

3. In early 2020, Calandri reduced the amount of its 2018 Production from its own Production Right and increased the amount of Production from the County Sanitation Districts by 470.10 AF. The County Sanitation Districts agreed to this change via a 2/4/20 email. Consequently, the Water Available for use in 2019 in the 2019 Annual Report is different from those listed in the 2018 Annual Report. Future tables may include rights to Stored Water.

Table B-3 Other Parties (Non Exhibit 3 or Exhibit 4) Water Accounting

last updated 7/8/20

Other Parties (Non Exhibit 3 or Exhibit 4)	Transferees	Water Available for Use in 2019 (AF)							2019 Water Use and Accounting (AF)											2020 Water Sources (AF)							
		Production Right ⁵	2019 Rampdown or Right to Produce	Imported Water Return Flows for 2019	Transfers (Not Permanent)	Transfer Water used for a 2018 Replacement Water Obligation	Carry Over Water for use in 2019	Carry Over Water plus Transfer Water for use in 2019	Total Water for use in 2019	2019 Total Groundwater Production (blank if not yet reported)	Amount of Groundwater Production that is recovery of stored water	Adjusted Groundwater Production	Production Right or Right to Produce Used	Rampdown Used	IWRF Used	Carry Over and Transfers Water Used	Over Production	Replacement Obligation	Production Right to Carry Over for use in 2019 ¹	IWRF to Carry Over for use in 2019	Remaining Carry Over Water	2020 Rampdown or Right to Produce	Imported Water Return Flows for 2020	Carry Over Water (including past Transfers Water) for use in 2020	2020 Transfers (Not Permanent)		
		Judgment	As per Judgment and Resolution R-18-22	Imported Water Use Table from AVEK	See Appendix F	See Appendix E	From 2018 Annual Report	[Unused Transfer Water + Carry Over Water] [4-5+6]	2+3+7	Recovered Stored Water from Annual Production Reporting	Recovered Stored Water from Annual Production Reporting	[Total GW Production - Amount that is recovered stored water] [9-10]	If [11>1] then [1], otherwise [11]	If [11<12] then 0, if [11=12] then [12], otherwise [11-12]	If [11<12+13] then 0, if [11=12-13+3] then [3], otherwise [11-12-13]	If [11<12+13+14] then 0, if [11=12-13-14+7] then [7], otherwise [11-12-13-14]	If [11-12-13-14-15+0] then [15], otherwise 0	[16]	If [1-12]>0 then [1-12], otherwise 0	If [3-14]>0 then [3-14], otherwise 0	[7-15]	Agreed Upon	Imported Water Use Table from AVEK	[18+19+20]	See Appendix F		
Federal Reserved Water Right																											
United States ¹		7,600.00	7,600.00	0.00	0.00	0.00	0.00	0.00	7,600.00	1,240.76	0.00	1,240.76	1,240.76	0.00	0.00	0.00	0.00	0.00	0.00	6,359.24	0.00	0.00	7,600.00	0.00	0.00	-	
State of California																											
Department of Water Resources		104.00	104.00	0.00	0.00	0.00	0.00	0.00	Missing 2016, 2017 & 2018 production information	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	104.00	0.00	#VALUE!	-		
Department of Parks and Recreation		9.00	9.00	2.58	0.00	0.00	0.00	0.00	Missing 2016, 2017 & 2018 production information	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	9.00	2.63	#VALUE!	-		
Department of Transportation		47.00	47.00	0.00	0.00	0.00	0.00	0.00	Missing 2016, 2017 & 2018 production information	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	47.00	0.00	#VALUE!	-		
State Lands Commission		3.00	3.00	0.00	0.00	0.00	0.00	0.00	Missing 2016, 2017 & 2018 production information	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	3.00	0.00	#VALUE!	-		
Department of Corrections and Rehabilitation		3.00	3.00	0.00	0.00	0.00	0.00	0.00	Missing 2016, 2017 & 2018 production information	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	3.00	0.00	#VALUE!	-		
50th District Agricultural Association		32.00	32.00	0.00	0.00	0.00	64.00	64.00	96.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.00	0.00	64.00	32.00	0.00	96.00	-	
Department of Veteran Affairs		3.00	3.00	0.00	0.00	0.00	0.00	0.00	Missing 2016, 2017 & 2018 production information	#VALUE!	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	#VALUE!	3.00	0.00	#VALUE!	-
Highway Patrol		3.00	3.00	0.00	0.00	0.00	0.00	0.00	Missing 2016, 2017 & 2018 production information	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	3.00	0.00	#VALUE!	-		
Department of Military		3.00	3.00	0.00	0.00	0.00	0.00	0.00	Missing 2016, 2017 & 2018 production information	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	3.00	0.00	#VALUE!	-		
Non-Stipulating Party																											
Desert Breeze MHP, LLC		18.10	19.60	0.00	0.00	0.00	Not applicable	#VALUE!	#VALUE!	16.01	0.00	16.01	16.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Not Applicable	19.23	0.00	Not Applicable	-	
Milana VII, LLC dba Rosamond Mobile Home Park		21.70	25.90	0.00	0.00	0.00	Not applicable	#VALUE!	#VALUE!	24.22	0.00	24.22	21.70	2.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Not Applicable	24.85	0.00	Not Applicable	-	
Reesdale Mutual Water Company		23.00	23.00	0.00	0.00	0.00	0.00	0.00	23.00	12.00	0.00	12.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Not Applicable	23.00	0.00	Not Applicable	-	
Juanita Eyherabide, Eyherabide Land Co., LLC and Eyherabide Sheep Company		12.00	13.71	0.00	0.00	0.00	0.00	0.00	13.71	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	Not Applicable	13.28	0.00	Not Applicable	-	
Clan Keith Real Estate Investments, LLC dba Leisure Lake Mobile Estates		64.00	120.07	0.00	0.00	0.00	0.00	0.00	120.07	131.78	0.00	131.78	64.00	56.07	0.00	0.00	0.00	11.71	11.71	0.00	0.00	Not Applicable	106.05	0.00	Not Applicable	-	
White Fence Farms Mutual Water Company No. 3		4.00	4.00	0.00	0.00	0.00	NA, missing 2016, 2017 & 2018 production information	#VALUE!	#VALUE!	0.43	0.00	0.43	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Not Applicable	4.00	0.00	Not Applicable	-	
LV Ritter Ranch, LLC		0.00	633.91	0.00	0.00	0.00	NA, missing 2016, 2017 & 2018 production information	#VALUE!	#VALUE!	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.00	#VALUE!	Not Applicable	475.44	0.00	Not Applicable	-	
Robar Enterprises, Inc., HI-Grade Materials, Co., and CIR, a General Partnership		200.00	517.33	0.00	0.00	0.00	0.00	0.00	517.33	324.46	0.00	324.46	200.00	124.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Not Applicable	438.00	0.00	Not Applicable	-	
SOJ California Funeral Services, Inc. dba Joshua Memorial Park (intended to become Non-Stipulating Party, 2019)		To be determined	To be determined	0.00	0.00	0.00	0.00	0.00	#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Not Applicable	23.00	0.00	Not Applicable	-		
Others with Rights to Produce																											
Antelope Valley Joint Union High School District ²		29.00	29.00	0.00	0.00	0.00	0.00	0.00	29.00	29.00	0.00	29.00	29.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Not Applicable	29.00	0.00	Not applicable	-	
City of Lancaster		500.00	500.00	0.00	0.00	0.00	0.00	0.00	500.00	447.93	0.00	447.93	447.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Not Applicable	500.00	0.00	Not applicable	-	
Phelan Pinon Hills CSD ³		1,200.00	1,200.00	0.00	0.00	0.00	0.00	0.00	1,200.00	3.16	0.00	3.16	3.16	0.00	0.00	0.00	0.00	0.00	0.00	3.16	0.00	0.00	Not Applicable	1,200.00	0.00	Not applicable	-
Small Pumpers⁴ (known or suspected to have produced over 3 AFY)																											
Antelope Valley Country Club		3.00	3.00	38.82	400.00	112.35	0.00	287.65	329.47	465.05	0.00	465.05	3.00	0.00	38.82	287.65	135.58	135.58	0.00	0.00	0.00	3.00	40.86	0.00	450.00		
Derrick, Olin & Beatrice	AV Hemp Farms, property sale (2019)	3.00	3.00	0.00	397.00	397.00	0.00	0.00	3.00	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.00	0.00	0.00	3.00	0.00	0.00	0.00	
Long Valley Road LP.		3.00	3.00	0.00	1,391.00	322.69	0.00	1,068.31	1,071.31	287.59	0.00	287.59	3.00	0.00	0.00	284.59	0.00	0.00	0.00	0.00	0.00	783.72	3.00	0.00	783.72		
Martinez, Elmer	Hernandez, Carlos and Paiz, property sale (2018)	3.00	3.00	0.00	0.00	0.00	0.00	0.00	3.00	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.00	#VALUE!	#VALUE!	3.00	0.00	#VALUE!	-	
Ritter, Mark		3.00	3.00	0.00	0.00	0.00	0.00	0.00	3.00	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.00	#VALUE!	#VALUE!	3.00	0.00	#VALUE!	-	
Tapia Brothers Farms		3.00	3.00	0.00	0.00	0.00	0.00	0.00	3.00	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.00	0.00	0.00	3.00	0.00	0.00	-	
Zamrzla, Johnny		3.00	3.00	0.00	0.00	0.00	0.00	0.00	3.00	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.00	#VALUE!	#VALUE!	3.00	0.00	#VALUE!	-	
Rights to Imported Water Return Flows (Parties with No Production Rights and may not have production wells)																											
A.V. Materials		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	
Antelope Valley Water Company		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	
Edgemont Acres MWC		0.00	0.00	60.48	0.00	0.00	0.00	0.00	60.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.48	0.00	0.00	58.30	-		
Godde: Forrest Godde		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	
Harter: Scott Harter		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	
Warnack Trust		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	
Defaulted Parties or Non-Parties (in process of requesting New Production or discussions with AVWM Staff and Legal Counsel)																											
40th Street Mutual Water Company		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.95	0.00	20.95	0.00	0.00	0.00	0.00	0.00	20.95	20.95	0.00	0.00	0.00	0.00	0.00	0.00	-	
AV Resource Conservation District		0.00	0.00	60.48	0.00	0.00	0.00	0.00	60.48	9.62	0.00	9.62	0.00	0.00	9.62	0.00	0.00	0.00	0.00	50.86	0.00	0.00	0.00	58.30	-		
Piute Mutual Water Company	Became New Production Party (2020)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.13	0.00	11.13	0.00	0.00	0.00	0.00	0.00	11.13	11.13	0.00	0.00	0.00	0.00	0.00	0.00	-	
sPower		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Not Reported	0.00	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.00	#VALUE!	#VALUE!	0.00	0.00	#VALUE!	-	

1. United States Production Right to Carry Over for use in 2019 is the Unused Federal Reserved Water Right available to 9 public water suppliers in 2019 as per the Judgment.
 2. Pursuant to Section 5.1.8 of the Judgment, Antelope Valley Joint Union High School District has an additional 29 AF of Production for use on its athletic fields and other public spaces. When recycled water becomes available to Quartz Hill High School at a price equal to or less than the lowest cost of any of the following: Replacement Obligation, Replacement Water, or other water that is delivered to AVJUHS at Quartz Hill High School, AVJUHS will stop producing the 29 AF groundwater and use recycled water. This 29 AF has been subtracted from their reported 2016 through 2019 Production shown on the Exhibit 4 Overlying Producers Water Accounting table.
 3. Phelan Pinon Hills CSD Replacement Obligation is equal to its total groundwater production as per Judgment Section 5.4.1.2.
 4. The 3.0 acre-foot Production Right for the Small Pumper Class reflects the maximum annual Production by Small Pumper Class members without incurring a Replacement Water Assessment. Additional Small Pumpers may be overproducing and include William Felder, Parvaneh Kadivar, Johnny Rogers/Mark Ritter, Philip Arkin, Mountain Brook LLC, and Magaly Molina (from AVWM Admin Staff database). Future tables may include rights to Stored Water.

Table B-4 New Production Water Accounting

Includes approved New Production applications through June 2020

New Production (date approved)	Estimated Production on Application (AFY)	2019 Total Groundwater Production	Inside State Water Contractor Area	Replacement Water Assessment ¹	Status of Intervening ³
40th Street East Water Group (May 2020) (previous name: 40th St MWC)	21 to 37	NA since approved in 2020	Yes		NA: Defaulted Party
Alegre, Juan Carlos & Ceidy D. (March 2018)	<1.0	Not Reported	Yes		NA: Willis Class
Ambriz, Juan (December 2018)	<1.0	0.07	Yes	\$32	NA: Willis Class
Ancheta, Nathaniel (April 2020)	1.0	NA since approved in 2020	Yes	NA	NA: Willis Class
Carmen Vela, Maria del (July 2018)	<1.0	Not Reported	Yes		NA: Willis Class
Castillo, Juan (March 2018)	<1.0	Decided not to drill at this time			
Collins, Raymond & Maryann (January 2019)	<2.0	0.00	Yes	\$0	NA: Willis Class
Connelly, Myles (January 2019)	≤1.0	Not Reported	Yes		NA: Willis Class
Cooper, Ron (March 2018)	<1.0	Unable to build his proposed house. Well drilled by Abundant and capped.			
Copart, Inc. (June 2020)	21.6 initially reducing to 12.2	NA since approved in 2020	Yes	NA	PENDING
Espinoza, Leticia (April 2019)	<3.0	Started pumping in 2020	Yes	NA	NA: Willis Class
Estrada, Jesus (Sept 2019)	<1.0	Not Reported	Yes		NA: Willis Class
Estrada, Juan & Mayra (April 2020)	1.0	NA since approved in 2020	Yes	NA	NA: Willis Class
Fong, Alama (April 2018)	<1.0	Not Reported	Yes		NA: Willis Class
French, Christopher & Nancy (March 2018) DRY	<1.0	Borehole was dry so applicant withdrew application			
Garcia, Ervin and Carolina Espina (June 2019)	<1.0	Well completed May 2020	Yes	NA	NA: Willis Class
Hounanian, Masis (June 2019)	<2.5	Not Reported	Yes		NA: Willis Class
Jimenez Esparza, David (June 2018)	<1.0	Well completed Feb 2020	Yes	NA	NA: Willis Class
Juniper Hills Land Conservation Trust (May 2019)	<1.0	Not Reported	No		NA: Willis Class
Korn, Carrie (March 2018) DRY	<1.0	Borehole was dry so applicant withdrew application			
LA COSEPA (May 2018) ²	14.16	Meter documentation in progress, will send production report when available	Yes		Motion for Leave to Intervene in the Judgment 8-9-2018
Magana, Paul (March 2018)	<1.0	Well completed May 2018, no electricity or production as of May 2020	Yes	NA	NA: Willis Class
Meng, Sifan (April 2020)	<1.0	NA since approved in 2020	Yes	NA	NA: Willis Class
Ming, Lin (April 2019)	<1.0	Not Reported	Yes		NA: Willis Class
Ormonde, Antonio (Sept 2019)	2.0	Well completed Aug 2016, waiting for permits to build	Yes	NA	NA: Willis Class
Ovespyan, Andrey (May 2019)	<1.0	0.00	Yes	\$0	NA: Willis Class
Park, Young (August 2018)	3.0	Well completed Dec 2019, no electricity or production at this time	Yes	NA	NA: Willis Class
Perez, Espiridion and Yvonne (March 2018)	<1.0	0.10	Yes	\$45	NA: Willis Class
Piute MWC (April 2020)	21.0	11.13	Yes	\$5,020	NA: Defaulted Party
Rodriguez, Erik (March 2019)	<1.0	Well completed Dec 2019, no electricity or production at this time	Yes	NA	NA: Willis Class
Torres, J. Martin (Jan 2020)	1.0	NA since approved in 2020	Yes	NA	NA: Willis Class
Trang, Sroy (May 2019)	<1.0	Well completed Aug 2019, no pump or electricity at this time	Yes	NA	NA: Willis Class
Ugonwa, Bonaventure (June 2019)	6.00	Well completed Jan 2020, no meter at this time	Yes	NA	NA: Willis Class
Webster, Anthony (March 2018)	<1.0	Decided not to drill			
Witmeyer Trust (Randy Sharp) (March 2018)	<1.0	Well completed Sept 2018, sold property to Emmanuel Jimenez (No contact information available)	Yes		NA: Willis Class
Zaghian, Roben (May 2019)	2.0-3.0	Not Reported	Yes		NA: Willis Class

1. The 2019 Replacement Water Assessment (RWA) for wells within the boundaries of AVEK, PWD or LCID is \$451. The 2019 RWA for wells outside these boundaries is \$948.

2. Estimated production amount listed is water demand at full buildout of project.

3. Defaulted and Willis Class members are in the Judgment and do not need to intervene.

Appendix C

Imported Water Tables

C-1. Imported Water, 2019

C-2. AVEK Storage and Recovery Locations, 2019

C-3. Other Storage and Recovery Locations, 2019

Appendix C-1 Imported Water, 2019

Importer of State Water Project (SWP) Water	2019 Imported Water (AF)
Antelope Valley-East Kern Water Agency (AVEK)	61,787.05
Palmdale Water District (PWD)	12,066.00
Littlerock Creek Irrigation District (LCID)	434.00
Total Imported SWP Water	74,287.05

AVEK Use of Imported Water (inside Adjudicated Area)	2019 Imported Water (AF)
SWP Water Deliveries to Treatment Plants	
For Customer Use Inside the Adjudicated Area	30,340.49
For Customer Use Outside the Adjudicated Area	1,437.43
SWP (Untreated) Water Deliveries to AVEK Other Locations	
For AVEK Customer Use Inside the Adjudicated Area	77.65
For AVEK Customer Use Outside the Adjudicated Area	26.55
AVEK Storage (Spreading) to High Desert Water Bank	0.00
AVEK Storage (Spreading) to Westside Water Bank	26,654.00
AVEK Storage (Spreading) to Eastside Water Bank	1,160.00
AVEK Storage (Spreading) to Big Rock Creek	245.00
AVEK Storage (Spreading) to Upper Amargosa Creek	9.00
Storage (Spreading) - Willow Springs Water Bank ¹	0.00
Storage (Spreading) - Tejon Ranch Co. Water Bank ¹	1,523.00
Total SWP Water Deliveries Unaccounted-for Water ²	313.92
Total	61,787.05

PWD Use of Imported Water	2019 Imported Water (AF)
SWP Entering Lake Palmdale for Customer Use	11,821.00
SWP Spread at Big Rock Creek	245.00
Total	12,066.00

LCID Use of Imported Water	2019 Imported Water (AF)
SWP Spread at LCID Recharge Site	234.00
SWP Spread at Big Rock Creek	200.00
Total	434.00

1. Amount of imported water delivered to non-AVEK facilities.

2. Unaccounted-for Water could include losses/gains due to inaccuracies in meters, measurements, & record keeping, as well as operational uses & losses due to repair, maintenance, evaporation, & leakage.

Appendix C-2 AVEK Storage and Recovery Locations, 2019

Antelope Valley-East Kern Water Agency (AVEK) Storage and Recovery Locations	Acre-feet
High Desert Water Bank-AVEK Water	
Total Recoverable Stored Water at end of 2018 ¹	5,213.55
Amount Spread in 2019	0.00
Storage Loss Factor ²	10%
Additional Amount of Water Stored in 2019 (after applying 10% loss factor) ²	0.00
Amount Recovered for use inside Adjudicated Area	0.00
Total Amount Recovered for use outside Adjudicated Area	0.00
Amount Recovered Unaccounted-for Water ³	0.00
Total Amount of Stored Water Recovered in 2019	0.00
Amount of Recoverable Stored Water for use inside Adjudicated Area	5,213.55
Amount of Recoverable Stored Water for use outside Adjudicated Area	0.00
Total of Recoverable Stored Water at end of 2019	5,213.55
Westside Water Bank-AVEK Water	
Total Recoverable Stored Water at end of 2018 ¹	62,411.59
Amount Spread in 2019	26,654.00
Storage Loss Factor ²	10%
Additional Amount of Water Stored in 2019 (after applying 10% loss factor) ²	23,988.60
Amount Recovered for use inside Adjudicated Area	5,811.36
Total Amount Recovered for use outside Adjudicated Area	896.99
Amount Recovered Unaccounted-for Water ³	232.78
Total Amount of Stored Water Recovered in 2019 ⁴	6,941.13
Amount of Recoverable Stored Water for use inside Adjudicated Area ⁵	79,459.06
Amount of Recoverable Stored Water for use outside Adjudicated Area	0.00
Total of Recoverable Stored Water at end of 2019 ⁵	79,459.06
Westside Water Bank-Others Imported Water	
Total Recoverable Stored Water at end of 2018 ⁶	9,810.00
Amount Spread in 2019 ⁶	20,000.00
Storage Loss Factor ²	10%
Additional Amount of Water Stored in 2019 (after applying 10% loss factor) ²	18,000.00
Amount Recovered for use inside Adjudicated Area	0.00
Total Amount Recovered for use outside Adjudicated Area	0.00
Amount Recovered Unaccounted-for Water ³	0.00
Total Amount of Stored Water Recovered in 2019 ⁴	0.00
Amount of Recoverable Stored Water for use inside Adjudicated Area	0.00
Amount of Recoverable Stored Water for use outside Adjudicated Area	27,810.00
Total of Recoverable Stored Water at end of 2019 (Others Imported Water) ⁶	27,810.00

Appendix C-2 AVEK Storage and Recovery Locations, 2019

Eastside Water Bank-AVEK Water	
Total Recoverable Stored Water at end of 2018^{1,7}	(931.09)
Amount Spread in 2019	1,160.00
Storage Loss Factor ²	10%
Additional Amount of Water Stored in 2019 (after applying 10% loss factor)²	1,044.00
Amount Recovered for use inside Adjudicated Area	766.88
Total Amount Recovered for use outside Adjudicated Area	0.00
Amount Recovered Unaccounted-for Water ³	0.00
Total Amount of Stored Water Recovered in 2019	766.88
Amount of Recoverable Stored Water for use inside Adjudicated Area	(653.97)
Amount of Recoverable Stored Water for use outside Adjudicated Area	0.00
Total of Recoverable Stored Water at end of 2019⁷	(653.97)
Other Recovery Locations-AVEK Water	
Total Recoverable Stored Water at end of 2018^{7,8}	(2,607.35)
Amount Spread in 2019	NA
Storage Loss Factor ²	NA
Additional Amount of Water Stored in 2019 (after applying 10% loss factor)²	NA
Amount Recovered for use inside Adjudicated Area	1,371.93
Total Amount Recovered for use outside Adjudicated Area	148.66
Amount Recovered Unaccounted-for Water ³	5.36
Total Amount of Stored Water Recovered in 2019	1,525.95
Amount of Recoverable Stored Water for use inside Adjudicated Area ⁵	(4,133.30)
Amount of Recoverable Stored Water for use outside Adjudicated Area	0.00
Total of Recoverable Stored Water at end of 2019⁷	(4,133.30)

1. Amount of Total Recoverable Stored Water at end of 2018 may differ from AV Watermaster Final 2018 Report due to the addition/removal of Others (i.e., non-AVEK agencies) previously stored/recovered water at AVEK storage/recovery facilities.

2. Storage loss factors may not yet have been verified by the Watermaster Engineer.

3. Unaccounted-for Water could include losses/gains due to inaccuracies in meters, measurements, timing and record keeping, as well as operational uses and losses due to repair, maintenance, evaporation and leakage.

4. Total Amount of Stored Water Recovered at AVEK Westside Water Bank includes production from AVEK "EW" (potable) and "RG" (non-potable) groundwater wells.

5. Recoverable Stored Water at end of 2019 includes a small portion of recovered water made available for future delivery to two AVEK customers outside of the Adjudicated Area, as reported in that year's annual report in which the water was used. For example, in 2019, 567.05 AF was provided to outside customers.

6. Amount of Others (i.e. non-AVEK) Imported Water delivered to AVEK storage/recovery facilities located inside the Adjudicated Area.

7. Recoverable Stored Water deficit shown is short-term, limited to a single location, and/or due to required drought/emergency production or minimal operations for equipment maintenance. Overall long-term recharge/recovery operations can expect fluctuation in groundwater storage balances related to annual availability of Imported Water and customer demand.

8. Other recovery locations include West Avenue H Wellfield Project and the WSSP-1 Well locations and are pre-existing AVEK projects used for water production during local supply or operational drought/emergency conditions only. Minimal operations for equipment maintenance may occur.

Appendix C-3 Other Storage and Recovery Locations, 2019

Antelope Valley Water Storage, LLC Storage and Recovery		Acre-feet
Willow Springs Water Bank		
Total Recoverable Stored Water at end of 2018		18,610.10
Amount Spread in 2019		0.00
Storage Loss Factor ¹		10%
Additional Amount of Water Stored in 2019 (after applying 10% loss factor) ¹		0.00
Amount Recovered for use inside Adjudicated Area		0.00
Total Amount Recovered for use outside Adjudicated Area		0.00
Amount Recovered Unaccounted-for Water ²		0.00
Total Amount of Stored Water Recovered in 2019		0.00
Amount of Recoverable Stored Water for use inside Adjudicated Area		18,610.10
Amount of Recoverable Stored Water for use outside Adjudicated Area		0.00
Total of Recoverable Stored Water at end of 2019		18,610.10

Tejon Ranchcorp and Tejon Ranch Company Storage and Recovery		Acre-feet
Tejon Water Bank		
Total Recoverable Stored Water at end of 2018		45,896.44
Amount Spread in 2019		1,523.00
Storage Loss Factor ¹		6%
Additional Amount of Water Stored in 2019 (after applying 6% loss factor) ¹		1,431.62
Amount Recovered for use inside Adjudicated Area		0.00
Total Amount Recovered for use outside Adjudicated Area		0.00
Amount Recovered Unaccounted-for Water ²		0.00
Total Amount of Stored Water Recovered in 2019		0.00
Amount of Recoverable Stored Water for use inside Adjudicated Area		47,328.06
Amount of Recoverable Stored Water for use outside Adjudicated Area		0.00
Total of Recoverable Stored Water at end of 2019		47,328.06

Littlerock Creek Irrigation District Storage and Recovery³		Acre-feet
LCID SWP Recharge Site		
Total Recoverable Stored Water at end of 2018		0.00
Amount Spread in 2019		234.00
Storage Loss Factor		10%
Additional Amount of Water Stored in 2019 (after applying 10% loss factor)		210.60
Amount Recovered for use inside Adjudicated Area		28.00
Total Amount Recovered for use outside Adjudicated Area		0.00
Amount Recovered Unaccounted-for Water ²		0.00
Total Amount of Stored Water Recovered in 2019		28.00
Amount of Recoverable Stored Water for use inside Adjudicated Area		182.60
Amount of Recoverable Stored Water for use outside Adjudicated Area		0.00
Total of Recoverable Stored Water at end of 2019		182.60

Appendix C-3 Other Storage and Recovery Locations, 2019

Upper Amargosa Creek Recharge Project Parties: AVEK, City of Palmdale, PWD, and District No. 40		Acre-feet
Upper Amargosa Creek Recharge Site⁴		
Total Recoverable Stored Water at end of 2018		0.00
Amount Spread in 2019		9.00
Storage Loss Factor ¹		10%
Additional Amount of Water Stored in 2019 (after applying 10% loss factor) ¹		8.10
Amount Recovered for use inside Adjudicated Area		0.00
Total Amount Recovered for use outside Adjudicated Area		0.00
Amount Recovered Unaccounted-for Water ²		0.00
Total Amount of Stored Water Recovered in 2019		0.00
Amount of Recoverable Stored Water for use inside Adjudicated Area		8.10
Amount of Recoverable Stored Water for use outside Adjudicated Area		0.00
Total of Recoverable Stored Water at end of 2019		8.10

AV State Water Contractors Association: AVEK, PWD, and LCID		Acre-feet
Big Rock Creek Recharge Site⁵		
Total Recoverable Stored Water at end of 2018		0.00
Amount Spread in 2019		690.00
Storage Loss Factor ¹		10%
Additional Amount of Water Stored in 2019 (after applying 10% loss factor) ¹		621.00
Amount Recovered for use inside Adjudicated Area		0.00
Total Amount Recovered for use outside Adjudicated Area		0.00
Amount Recovered Unaccounted-for Water ²		0.00
Total Amount of Stored Water Recovered in 2019		0.00
Amount of Recoverable Stored Water for use inside Adjudicated Area		621.00
Amount of Recoverable Stored Water for use outside Adjudicated Area		0.00
Total of Recoverable Stored Water at end of 2019		621.00

- Storage loss factors may not yet have been verified by the Watermaster Engineer.
- Unaccounted-for Water could include losses/gains due to inaccuracies in meters, measurements, and record keeping, as well as operational uses and losses due to repair, maintenance, evaporation and leakage.
- LCID also spread 200 AF at the Big Rock Creek Recharge Site.
- Upper Amargosa Creek Recharge Project (UACP) is a pre-existing Project proposed by the City of Palmdale in 2006, with agreement executed between the participating Project Parties (City of Palmdale, PWD, LACWW District 40, and AVEK) in 2013. All water recharged in 2019 (9.0 AF) is currently classified as AVEK SWP Imported Water, notwithstanding any agreement between the parties. No recovery of water has occurred to date, and will be based on future agreement between Project parties.
- Big Rock Creek recharge site is an AV State Water Contractors Association (AVSWCA) preexisting project proposed for recharge prior to 2002. AVSWCA members are AVEK, PWD, and Littlerock Creek ID. As part of the pilot testing of this site, the total Imported Water spread at Big Rock Creek in 2019 was 690 AF (PWD=245 AF, LCID=200 AF, AVEK= 245 AF). Development of this site by the AVSWCA as a long-term project will require further approval.

Appendix D

Imported Water Return Flows

Appendix D Imported Water Return Flows, 2016-2019 (for Parties listed on Exhibit 8 of Judgment)

Imported Water Deliveries - Exhibit 8 Parties ¹	Water Use Type ²	Return Flow Percent	Imported Water Use (AF)													2016 Return Flow Credit (AF)	2017 Return Flow Credit (AF)	2018 Return Flow Credit (AF)	2019 Return Flow Credit (AF)	2020 Return Flow Credit (AF)	
			2011	2012	2013	2014	2015	2016	2017	2018	2019	2011-2015 Five Year Average	2012-2016 Five Year Average	2013-2017 Five Year Average	2014-2018 Five Year Average						2015-2019 Five Year Average
Imported by AVEK																					
A.V. Materials	M&I	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Antelope Valley Country Club	M&I	39	76.50	134.14	125.57	76.78	105.17	88.00	139.12	88.68	102.81	103.63	105.93	106.93	99.55	104.76	40.42	41.31	41.70	38.82	40.86
Antelope Valley-East Kern Water Agency (AVEK) (Amount sold to Parties not on Exhibit 8)	M&I	39	2,565.28	2,668.56	2,389.40	2,155.94	1,897.88	2,132.00	2,260.03	2,282.25	1,725.51	2,335.41	2,248.76	2,167.05	2,145.62	2,059.53	910.81	877.01	845.15	836.79	803.22
	Ag	34	3,107.41	1,969.88	2,195.17	134.82	47.65	40.65	116.97	41.33	37.59	1,490.99	877.63	507.05	76.28	56.84	506.94	298.40	172.40	25.94	19.32
Antelope Valley Water Company	M&I	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Antelope Valley Water Storage, LLC	Ag	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Boron CSD ³	M&I	39	195.75	201.59	197.01	180.13	158.50	162.21	171.75	209.13	316.42	186.60	179.89	173.92	176.34	203.60	72.77	70.16	67.83	68.77	79.40
California Department of Parks	M&I	39	4.50	6.00	6.00	5.50	9.07	6.57	6.00	6.00	6.05	6.21	6.63	6.63	6.63	6.74	2.42	2.58	2.58	2.58	2.63
California Water Service Company-Lancaster	M&I	39	0.00	0.00	0.00	0.00	0.00	1.00	5.00	10.87	16.84	0.00	0.20	1.20	3.37	6.74	0.00	0.08	0.47	1.32	2.63
Copa de Oro Land Co.	Ag	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crystal Organic Farms	Ag	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Desert Lake CSD	M&I	39	112.63	116.14	90.67	82.21	92.50	78.99	81.46	125.14	124.31	98.83	92.10	85.17	92.06	100.48	38.54	35.92	33.21	35.90	39.19
Diamond Farming Company	Ag	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Edgemont Acres MWC	M&I	39	145.23	191.86	182.31	165.51	131.33	154.34	159.85	164.34	137.64	163.25	165.07	158.67	155.07	149.50	63.67	64.38	61.88	60.48	58.30
El Dorado MWC	M&I	39	0.00	0.00	4.58	4.59	1.02	3.57	1.53	35.10	13.63	2.04	2.75	3.06	9.16	10.97	0.79	1.07	1.19	3.57	4.28
Eyherabide Sheep Co.	Ag	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Godde, Forrest	Ag	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Granite Construction Co	M&I	39	2.50	2.00	1.50	0.50	1.00	0.00	0.00	0.00	0.00	1.50	1.00	0.60	0.30	0.20	0.59	0.39	0.23	0.12	0.08
Grimmway	Ag	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H&N Development Co. West	M&I	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Harter, Scott	Ag	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LADPW- District No. 40	M&I	39	30,110.72	31,259.56	31,170.24	22,741.50	20,344.18	26,459.24	26,946.45	28,925.81	30,610.54	27,125.24	26,394.94	25,532.32	25,083.44	26,657.24	10,578.84	10,294.03	9,957.61	9,782.54	10,396.33
Landale MWC	M&I	39	6.76	0.00	8.51	0.00	32.29	0.00	18.78	0.82	12.15	9.51	8.16	11.92	10.38	12.81	3.71	3.18	4.65	4.05	4.99
Lane Family Trust	Ag	34	18.50	19.78	22.59	15.61	15.90	15.70	15.40	28.18	43.59	18.48	17.92	17.04	18.16	23.75	6.28	6.09	5.79	6.17	8.08
Little Rock Aggregate, Co.	M&I	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Ranch ID	M&I	39	594.53	97.91	35.53	2.85	3.00	56.64	30.98	4.97	337.55	146.76	39.19	25.80	19.69	86.63	57.24	15.28	10.06	7.68	33.78
Quartz Hill WD	M&I	39	3,883.40	4,229.00	3,352.78	3,436.24	2,608.19	2,453.25	2,385.86	2,647.75	2,930.99	3,501.92	3,215.89	2,847.26	2,706.26	2,605.21	1,365.75	1,254.20	1,110.43	1,055.44	1,016.03
Rosamond CSD	M&I	39	333.75	40.09	122.85	30.42	1.41	10.38	19.92	2.21	88.53	105.70	41.03	37.00	12.87	24.49	41.22	16.00	14.43	5.02	9.55
Shadow Acres MWC	M&I	39	217.61	204.88	235.25	84.39	139.70	139.12	161.40	162.07	159.49	176.37	160.67	151.97	137.34	152.36	68.78	62.66	59.27	53.56	59.42
St. Andrew's Abbey, Inc.	M&I	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sunnyside Farms MWC	M&I	39	154.94	159.16	148.46	103.37	55.98	111.12	123.87	84.71	68.34	124.38	115.62	108.56	95.81	88.80	48.51	45.09	42.34	37.37	34.63
Tejon Ranch Co.	Ag	34	0.00	1,046.80	1,801.00	0.00	0.00	0.00	0.00	4,306.03	1,523.00	569.56	569.56	360.20	861.21	1,165.81	193.65	193.65	122.47	292.81	396.37
U.S. Borax	M&I	39	1,872.88	1,617.09	1,172.19	866.80	1,127.86	931.87	1,165.22	1,224.78	1,407.27	1,331.36	1,143.16	1,052.79	1,063.31	1,171.40	519.23	445.83	410.59	414.69	456.85
Warnack Trust	Ag	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Westside Park MWC	M&I	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
White Fence Farms MWC	M&I	39	157.19	200.00	230.26	112.12	154.12	184.54	217.74	198.86	229.07	170.74	176.21	179.76	173.48	196.87	66.59	68.72	70.10	67.66	76.78
AVEK Total⁴	-	-	43,560.08	44,164.44	43,491.87	30,199.28	26,926.75	33,029.19	34,027.33	40,549.03	39,891.32	37,668.48	35,562.31	33,534.88	32,946.32	34,884.72	14,586.76	13,796.04	13,034.39	12,801.28	13,542.72
Imported by LCID																					
Little Rock Creek ID ⁵	M&I	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	390.60	0.00	0.00	0.00	0.00	78.12	0.00	0.00	0.00	0.00	30.47
Imported by PWD																					
Palmdale WD ⁶	M&I	39	10,032.29	16,365.15	10,599.21	8,353.44	5,853.82	10,451.26	13,824.40	10,210.00	12,041.50	10,240.78	10,324.58	9,816.43	9,738.58	10,476.20	3,993.90	4,026.58	3,828.41	3,798.05	4,085.72
Total	-	-	53,592.37	60,529.59	54,091.08	38,552.72	32,780.57	43,480.45	47,851.73	50,759.03	52,323.42	47,909.27	45,886.88	43,351.31	42,684.90	45,439.04	18,580.66	17,822.63	16,862.80	16,599.33	17,658.91

1. Imported water use data from AVEK with the exception of PWD and LCID.

2. Some water use types were uncertain and assigned a likely type.

3. As per Judgment, Boron CSD has the right to Produce Imported Water Return Flows, up to 78 AFY, based on the applicable percentage multiplied by the average amount of Imported Water used by Boron CSD outside the Basin, but within its service area in the preceding five Year period (not including Imported Stored Water in the Basin) without having to establish that the Imported Water Return Flows augment the Basin Groundwater supply.

4. Imported Water Deliveries include a portion of water AVEK recovered from banking in previous years.

5. LCID imported 434 AF of water in 2019. 200 AF as spread at LCID's recharge location and 234 AF was spread at Big Rock Creek recharge location. Ninety percent of that banked imported water is recoverable for delivery for its customers consequently its IWRF credit is 90% of the total amount imported.

6. PWD imported 12,066 AF of water in 2019. 245 AF was spread at the Big Rock Creek recharge location and 11,821 AF went directly into Lake Palmdale. Ninety percent of that banked imported water is recoverable for delivery for its customers consequently its IWRF credit is 90% of the total amount imported.

Appendix E

Replacement Obligations

Appendix E Replacement Obligations

last updated 7/20/20

Producer	2018 (and 2016, 2017 for select producers)				2019			
	Groundwater Production Subject to a Replacement Obligation (AF)	Used Transfer or Paid	Replacement Water Assessment Status ³	Status of Recharge	Groundwater Production Subject to a Replacement Obligation (AF)	Used Transfer or Paid	Replacement Water Assessment Status ³	Status of Recharge
40th Street MWC (Defaulted Party)	2016=23.76 2017=19.74 2018=20.18	Was approved New Production in May of 2020 and will be invoiced.	Pending	Pending	20.95	Was approved New Production in May of 2020 and will be invoiced.	Pending	Pending
60th Street Association Water System	4.66	Submitted 2016-2019 Production Reporting on 6/2/20 and will be invoiced.	Pending	Pending	2.62	Submitted 2016-2019 Production Reporting on 6/2/20 and will be invoiced.	Pending	Pending
Antelope Valley Country Club	112.35	Transfer	In 2019, AV Country Club received a one-time transfer of 400 AF of which 112.35 AF will be used as its 2018 Replacement Obligation.	NA	135.58	Transfer	In 2020, AV Country Club received a one-time transfer of 450 AF of which 135.58 AF will be used as its 2019 Replacement Obligation.	NA
Antelope Valley Joint Union High School District	58.54	Received 8/26/19	\$24,294.10	Pending	47.38	Pending	Pending	Pending
Brittner Trust, Glen Brittner, Trustee	6.88	2018 Annual Production Report was submitted in August 2019, after the 2018 Annual Report was completed. Party has been invoiced.	Pending	Pending	11.00	Pending	Pending	Pending
Cian Keith Real Estate Investments, LLC dba Leisure Lake Mobile Estates	18.51	Received 10/28/20	\$7,681.65	Pending	11.71	Pending	Pending	Pending
Derrick, Olin & Beatrice	397.00	Transfer	In 2019, the Derricks received a one-time transfer of 397 AF for their 2018 Replacement Obligation.	NA	2019 Production Not Reported			
H & N Development Co. W	0.00	NA	NA	NA	90.77	Used a portion of its 2020 Production Right	Used a portion of its 2020 Production Right	NA
Long Valley Road L.P.	322.69	Transfer	In 2019, Long Valley Road received a one-time transfer of 1,391 AF of which 322.69 AF was used for its 2018 Replacement Obligation.	NA	0.00	NA	NA	NA
New Goldensands Investment (Miracle Improvement Corporation dba Golden Sands Mobile Home Park/Trailer Park)	17.67	Received 8/26/19	\$7,333.05	Pending	0.00	NA	NA	NA
Palm Ranch Irrigation District ¹	41.65	Transfer	In 2019, Palm Ranch ID received a one-time transfer of 2,850 AF of which 41.65 AF was used for its 2018 Replacement Obligation.	NA	0.00	NA	NA	NA
Phelan Pinon Hills CSD ²	2016=770.63 2017=385.18 2018=176.83	In litigation	In litigation	In litigation	3.16	In litigation	In litigation	In litigation
Piute MWC (Defaulted Party)	2016=14.29 2017=9.88 2018=9.14	Was approved New Production in April of 2020 and has been invoiced.	Pending	Pending	11.13	Was approved New Production in April of 2020 and was billed for its RWAs.	Pending	Pending
Ritter, Mark	2016 - 2018=791	Received 5/2/19	\$328,265.00	Pending	2019 Production Not Reported			
sPower	Dates to be determined=151.74	Received 1/10/19	\$62,972.10	Pending	2019 Production Not Reported			
Vulcan Materials Co., Vulcan Lands Inc., Consolidated Rock Products Co., Calmat Lands, Co., Allied Concrete & Materials	54.65	Received 8/26/19	\$22,679.75	Pending	186.52	Transfer	In 2020, Vulcan received a one-time transfer of 205 AF of which 186.52 AF will be used as its 2019 Replacement Obligation.	NA

Table summarizes Replacement Obligations as of May 2020. Note that not all Parties have reported production. Other entities have potential Replacement Obligations and are in discussions with the Watermaster Attorney and include Small Pumps pumping more than 3 AFY and entities with no rights to produce. Additional unidentified entities may also have Replacement Obligations and will be added to the table when identified.

Littlerock Aggregate/Holiday Rock had a 2018 Replacement Obligation of 651.33 AF based on reported 2018 production. Subsequently, they provided information on a potential meter reading error and requested to have production reduced from 1,014 AF to 284 AF. The Watermaster agreed to this smaller amount but retains the right to request full payment if future information indicates otherwise.

1. PRID's 2018 Replacement Obligation was revised to 41.65 AF in January 2020 to reflect error in Unused Federal Reserved Water Right formula in 2018 water accounting tables.

2. PPHCSD does not have Production Rights but can pump up to 1,200 AFY from Well #14 and pay a Replacement Water Assessment

3. Replacement Water Assessment rates are as follows:

Year	Antelope Valley State Water Contractor Boundaries	
	Inside	Outside
2016	\$415.00	\$888.00
2017	\$415.00	\$896.00
2018	\$415.00	\$914.00
2019	\$451.00	\$948.00
2020	\$486.00	\$989.00

Appendix F

- F-1. Permanent Transfers (not related with split of rights), 2016 through June 2020
- F-2. Non-Permanent Transfers, 2016 through June 2020
- F-3. Split of Production Rights Transfers, 2016 through June 2020

Appendix F-1 Permanent Transfers (not related with split of rights), 2016 through June 2020

Transferor	Transferee	Type of Transfer	Amount (AFY)	Original Parcel(s) (APN#)	Parcels Water Transferred to (APN#)	Type of Right Transferred	Voting Rights after Transfer	Date/Comments
Copa de Oro	WDS CA II	Transfer of Production Rights and All Remaining Carry Over Water (associated with a transfer of Carry Over water -see Appendix F-2)	315 AFY Production Rights and 871.4 AF of 2016-2018 Carry Over and 283 AF of 2019 Carry Over water (see comments)	359-032-40	359-011-01 and 359-011-05	Permanent: Exhibit 4 Production Rights and Remaining Carry Over Water	No Change-Exhibit 4	Approved August 2019: 315 AFY of Production Rights and all remaining Carry Over water at the end of 2019. With this transfer, Copa de Oro Land Company will maintain a Production Right of 10 AFY.
eSolar Inc.; Red Dawn Suntower LLC	Rosamond Community Services District	Transfer of Production Rights	150	3256-006-901 (new LA County numbering- was previously 3256-006-013)	RCSO Service Area, specifically Well #9 on 375-113-19	Permanent: Exhibit 4 Production Right	Will need to remain an Exhibit 4 landowner voting right although transferred to an Exhibit 3 Party	Approved May 2019. February 16, 2016 Purchase and Sale Agreement.
Godde: Forrest G. Godde 1998 Trust (has only Imported Water Return Flow rights - No Production Rights)	Steven F. Godde, Pamela M. Godde, Gary M. Godde	All interests of Forrest G. Godde 1998 Trust assigned to Steven, Pamela, and Gary Godde.	Right to Imported Water Return Flows	3205-001-084	3205-001-084 3219-015-001 374-302-04	Imported Water Return Flow Right	Not applicable since only Imported Water Return Flows were transferred	As per a June 8, 2017 assignment of Forrest G. Godde 1998 Trust to Steven Forrest Godde, Pamela Marie Godde, and Gary Matthias Godde. Steven, Pamela, and Gary Godde have a combined Exhibit 4 Production Right.
Siebert; Jeffrey and Nancee Siebert	Selak: Steven and Christine Selak	Transfer of a portion of their Production Rights	1	3256-018-001 3256-018-005 to -012 3256-008-005 3256-008-009	Buying as investment	Permanent: Exhibit 4 Production Right	No Change-Exhibit 4	Approved July 2018
Van Dam: Craig	Calandri Farms	Transfer of a portion of their Production Rights	1	3220-006-097 3384-001-001 3384-001-003	3307-017-959 3307-017-948 3307-017-938 3307-017-941 3301-017-937 3307-017-902 3307-017-936 3307-017-935	Permanent: Exhibit 4 Production Right	No Change-Exhibit 4 (new Exhibit 4 Party)	Conditionally approved June 2020 pending Calandri Farms intervenes into the Judgement
Van Dam: Craig	V Lions Operations, L.P.	Transfer of a portion of their Production Rights	1	3220-006-097 3384-001-001 3384-001-003	Buying as investment	Permanent: Exhibit 4 Production Right	No Change-Exhibit 4 (new Exhibit 4 Party)	Conditionally approved June 2020 pending V Lions intervenes into the Judgement

Appendix F-2 Non-Permanent Transfers, 2016 through June 2020

Transferor	Transferee	Type of Transfer	Amount (AFY)	Original Parcel(s) (APN#)	Parcels Water Transferred to (APN#)	Type of Right Transferred	Voting Rights after Transfer	Date/Comments
Antelope Valley East Kern Water Agency (AVEK)	Los Angeles County Waterworks District No. 40	One time transfer of Carry Over Water, Production Rights, and Stored Imported Water	13,068.73 (7,759.06 AF of Carry Over water, 822.54 AF of Production Rights and 4,487.13 AF of Stored Imported Water)	AVEK well locations and Westside Water Bank	Los Angeles County Waterworks District No. 40 well locations	One-time: Exhibit 4 Production Right and Stored Imported Water	NA: one-time transfer	June 2020. In response to lease agreement for 2016-2020.
County Sanitation District #14 of Los Angeles County (via an agreement with Calandri Farms)	Palm Ranch Irrigation District	One time transfer of Production Rights (via an agreement with Calandri Farms)	2,850	3307-017-902 3307-017-935 3307-007-936 3307-017-937 3307-017-938 3307-017-941 3307-017-948 3307-017-959	3203-016-900 3203-032-902 3204-012-902 3204-012-903	One-time: Exhibit 4 Production Right	NA: one-time transfer	March 2019
County Sanitation District #14 of Los Angeles County (via an agreement with Calandri Farms)	V Lions Operations	One time transfer of Production Rights (via an agreement with Calandri Farms)	4,152	3307-017-902 3307-017-935 3307-007-936 3307-017-937 3307-017-938 3307-017-941 3307-017-948 3307-017-959	Buying as investment	One-time: Exhibit 4 Production Right	NA: one-time transfer	Conditionally approved June 2020 pending V Lions intervenes into the Judgement
Lane Family Trust	Vulcan Materials Co.	Transfer of Production Rights	205	3051-008-007 3051-008-010 3102-027-034 3248-024-031 261-196-07	3080-021-003 3051-009-016	One-time: Exhibit 4 Production Right	NA: one-time transfer	Approved February 2020
Nebeker: Gene	Long Valley Road L.P.	One time transfer of Carry Over Water	1,391	3260-010-109	3075-007-001 3075-007-002 3075-007-003 3075-007-009 3075-007-010	One-time: Exhibit 4 Carry Over	NA: one-time transfer	Approved May 2019
Nebeker: Gene	RCSD	One time transfer of Carry Over Water	1,180	3260-010-109	375-010-20 375-113-19	One-time: Exhibit 4 Carry Over	NA: one-time transfer	Approved February 2020
Selak: Lilia Mabel Selak Trust	Olin & Beatrice Derrick	One time transfer of Carry Over Water	397	3219-012-007	3374-003-002 3374-003-005 3374-003-006 3374-003-007	One-time: Exhibit 4 Carry Over	NA: one-time transfer	Approved October 2019: Transfer for 2018 Replacement Water Assessments as per Agreement with AV Watermaster. 200 AF from Richard Selak and 197 AF from Steven Selak.
Van Dam: Craig and Marta Van Dam	Antelope Valley Country Club	One time transfer of Carry Over Water	400	3220-006-097 3384-001-001 3384-001-003	3005-004-081 3005-003-026 3005-003-028 3005-003-029	One-time: Exhibit 4 Carry Over	NA: one-time transfer	Approved April 2019. To be used for Replacement Water Obligations. (Updated AVCC parcel numbers 4/9/20)
Van Dam: Craig and Marta Van Dam	Antelope Valley Country Club	One time transfer of Carry Over Water	450	3220-006-097 3384-001-001 3384-001-003	3005-004-081 3005-003-026 3005-003-028 3005-003-029	One-time: Exhibit 4 Carry Over	NA: one-time transfer	Approved April 2020. To be used for Replacement Water Obligations.
WDS California II, LLC	Palmdale Water District	One time transfer of Carry Over Water	100	359-011-01 359-011-05 359-041-27 359-041-30 359-174-12 359-175-01 359-321-01 359-331-24 261-194-45	PWD service area	One-time: Exhibit 4 Carry Over	NA: one-time transfer	Approved December 2018. September 11, 2018 Transfer Request. Water to be used in 2018.
WDS California II, LLC	AVEK	One time transfer of Stored Imported Water	11,643	359-011-01 359-011-05 359-041-27 359-041-30 359-174-12 359-175-01 359-321-01 359-331-24 261-194-45	3258-001-902 3258-010-900 3258-010-901 3258-010-902 3261-001-900 3261-001-901 3261-099-900	NA: One-time stored imported water	NA: one-time transfer	Approved April 2020.

Appendix F-3 Split of Production Rights Transfers, 2016 through June 2020

Transferor	Transferee	Type of Transfer	Amount (AFY)	Original Parcel(s) (APN#)	Parcels Water Transferred to (APN#)	Type of Right Transferred	Voting Rights after Transfer	Date/Comments
County Sanitation Districts Nos. #14 and #20 of Los Angeles County split of Production Rights	District #14	Split up Production Rights, Rampdown, and Carry Over water	3,060	3116-007-900 3302-015-904 3302-027-915 3302-030-909 3307-002-904	3116-007-900 3302-015-904 3302-027-915 3302-030-909 3307-002-904	Permanent Split of Exhibit 4 Production Rights	No Change-Exhibit 4	Approved October 2019: Rampdown and Carry Over water will also be divided in accordance with the 90% and 10% split (minus the above transfer from District #14 to PRID).
	District #20		340	3025-035-292 3025-024-900 3025-054-275	3025-050-270	Permanent Split of Exhibit 4 Production Rights	No Change-Exhibit 4	
FS Holding Company (originally Landinv rights)	Diamond Farming	Transfer of Production Rights	217	358-030-03 359-011-28 359-051-01 359-051-02	346-031-08 346-031-10 346-031-11 3376-032-001 3378-001-003 3378-001-004 3378-001-005 3378-001-006 3378-002-002 3378-002-004 3378-002-005 3386-014-005	Permanent: Exhibit 4 Production Right	No Change-Exhibit 4	Approved August 2018. September 27, 2017 Water Rights Grant Deed: Landinv, Inc. had 969 AFY of Overlying Production Rights. In 2016, 736.44 AF was transferred to FS Land Holding Company. This FS Land Holding transfer to Diamond is for a portion (217 AF) of those rights. Transfer form signed July 26, 2018.
	Grimmway Enterprises	Transfer of Production Rights	193		346-031-08 346-031-10 346-031-11 3376-032-001 3378-001-003 3378-001-004 3378-001-005 3378-001-006 3378-002-002 3378-002-004 3378-002-005 3386-014-005	Permanent: Exhibit 4 Production Right	No Change-Exhibit 4	Approved August 2018. September 27, 2017 Water Rights Grant Deed: Landinv, Inc. had 969 AFY of Overlying Production Rights. In 2016, 736.44 AF was transferred to FS Land Holding Company. This FS Land Holding transfer to Grimmway is for a portion (193 AF) of those rights. Transfer form signed July 26, 2018.
	Crystal Organic Farms	Transfer of Production Rights	190		346-031-08 346-031-10 346-031-11 3376-032-001 3378-001-003 3378-001-004 3378-001-005 3378-001-006 3378-002-002 3378-002-004 3378-002-005 3386-014-005	Permanent: Exhibit 4 Production Right	No Change-Exhibit 4	Approved August 2018. September 27, 2017 Water Rights Grant Deed: Landinv, Inc. had 969 AFY of Overlying Production Rights. In 2016, 736.44 AF was transferred to FS Land Holding Company. This FS Land Holding transfer to Crystal Organic is for a portion (190 AF) of those rights. Transfer form signed July 26, 2018.
Landinv, Inc.	FS Land Holding Company, LLC via North Rosamond Solar	Transfer in connection with property sale (subsequently transferred 600 AFY to Grimmway, Diamond, Crystal-see separate entry for FS Land Holding Company)	736.44	358-030-03 359-011-28 359-051-01 359-051-02	same	Permanent: Exhibit 4 Production Right	No Change-Exhibit 4	July 21, 2016 & December 15, 2016 (as per January 19, 2017 letter): Landinv, Inc. has 969 AFY of Overlying Production Rights. Landinv, Inc. transferred a portion of its overlying production rights (736.44 AFY) from four parcels to North Rosamond Solar on July 21, 2016. On December 15, 2016 North Rosamond Solar deeded rights to FS Land Holding Company.
	RADCAST Investments, Inc.	Transfer in connection with a company merger	232.56	3201-003-005 3201-003-006 3201-004-007	same	Permanent: Exhibit 4 Production Right	No Change-Exhibit 4	July 30, 2017 (as per February 6, 2018 letter): Landinv, Inc. merged into RADCAST investments. The remaining rights are 969 - 736.44 = 232.56 AFY.
Van Dam: Craig Van Dam, Marta Van Dam, Nick Van Dam, Janet Van Dam	Craig and Marta Van Dam	Split up Production Rights (640 AF total)	610	3220-006-006 3220-006-097 3220-006-098 3220-006-099 3220-006-100 3384-001-001 3384-001-002 3384-001-003	3220-006-006 3220-006-097 3220-006-099 3384-001-001 3384-001-002 3384-001-003	Permanent Split of Exhibit 4 Production Rights	No Change-Exhibit 4	Approved June 2018
	Nick and Janet Van Dam		30		3220-006-098 3220-006-100	Permanent Split of Exhibit 4 Production Rights	No Change-Exhibit 4	
Van Dam Family Trust - 1996; High Desert Dairy	High Desert Dairy LLC	Split up Production Rights (3,215 AF total)	1817	3307-014-019 3382-017-015 3382-018-026 3307-014-019 3382-017-015 3382-018-026 3382-011-009 3382-011-010 3386-028-012 3386-028-013 3386-028-014 3386-028-015	3307-014-019 3382-017-015 3382-018-026	Permanent Split of Exhibit 4 Production Rights	No Change-Exhibit 4	Approved February 2020. Transfer effective January 1, 2020.
	Gary Van Dam (Including Sunrise Ranch)		466		3220-006-097	Permanent Split of Exhibit 4 Production Rights	No Change-Exhibit 4	
	Craig & Marta Van Dam		466		3302-024-003 3302-024-903	Permanent Split of Exhibit 4 Production Rights	No Change-Exhibit 4	
	Nick & Janet Van Dam		466		3302-024-003 3302-031-003 3302-024-903	Permanent Split of Exhibit 4 Production Rights	No Change-Exhibit 4	

Appendix G

Storage Agreements

Appendix G Storage Agreements

Party	Description and Date Approved
Littlerock Creek Irrigation District	<p>LCID completed an upgrade to its existing State Water Project water recharge facility: (1) recharging will be monitored throughout the calendar year on a monthly basis during operation; (2) banking delivery rates will generally range from 0.5-4 cfs (1-8 AF/day); (3) estimated recharge will generally be a minimum of 400 acre-feet per year; and (4) the 1.25-acre recharge basin can hold approximately 7.5 acre-feet of water at one time. The Storage Agreement was approved at the February 26, 2020 Antelope Valley Watermaster Board meeting.</p>
Rosamond Community Services District	<p>RCSD is upgrading its wastewater treatment facility to treat up to 1.27 million gallons per day to acceptable levels for disposal by percolation to groundwater: (1) continuous average flow of 1.20 MGD to percolation ponds 24 hours a day 365 days a year; (2) expected infiltration rate for the percolation ponds is approximately 0.5 feet per day; and (3) expected monthly and annual recharge of 112 AF and 1,343 AF, respectively. The Storage Agreement was approved at the April 22, 2020 Antelope Valley Watermaster Board meeting.</p>

Appendix H

Approved Well Applications and Small Pumper Qualifying Documentation, 2019

Appendix H Approved Well Applications and Small Pumper Qualifying Documentation

Date on Application	Date Todd Received Complete Application Material	APN#	Request Type	Use of Well	Provided Small Pumper Qualifying Documentation	Subarea	Applicant/ Property Owner	Owner Phone	Owner email	Well Driller	Driller email	Driller Phone	In State Water Contractor Service Area (AVEK, PWD or LCA?)	Estimated Pumping	Well Depth (feet)	Screened Interval (feet-depth)	Casing Diameter (inches) and Material	
Approved Well Applications: January 2019 - December 2019																		
Approved on 1/23/19: (2 New Production, 1 New Pt of Extraction, 1 Replacement, 12 SM P Q applications) 16 Total																		
6/18/2018	11/27/2018	3277-029-006	New Production	Domestic	No	West Antelope	Raymond and Maryann Collins	310-936-1188	remcollins@gmail.com	Bryant Pump & Drilling (Glenn (Bud) Bryant)	bryantsh204u@yahoo.com	661-256-2117	AVEK	<2 AFY	420	240-420	6" SDR 17 PVC	
7/27/2018	12/13/2018	3059-022-059	New Production	Domestic	No	South East	Myles Connelly	805-490-4262	mtchammer1@gmail.com	Vics Well Drilling (Victor Lyles)	vicswelldrilling@yahoo.com	661-917-7560	PWD	<1 AFY	unknown, between 250 and 400	Not Provided	unknown, 4.5" to 5"	
11/29/2018	11/29/2018	3220-002-034	New Point of Extraction	Municipal - MWC	No	Central	Land Projects MWC	661-948-2550	LPMWC@verizon.com	Not Available	Not Available	Not Available	AVEK	400 AFY now	450	300-450	12" SDR 17 PVC	
11/21/2018	11/29/2018	3278-021-024	Small Pumper Qualifying	Agricultural	Yes	West Antelope	Elmer Martinez	818-388-4522	elmerwcv@yahoo.com	Existing well drilled in April 2011 by Bryant Pump & Drilling	bryantsh204u@yahoo.com	661-256-2117	AVEK	possibly -> 3 AFY, meter required	400	50-400	6 5/8" Sch 80 PVC	
11/30/2018	12/11/2018	3059-012-006	Small Pumper Qualifying	Domestic	Yes	South East	Hugo and Siouxsie Calderon	661-944-9497	sxcalderon@live.com	Two wells supply property? One drilled in 1965; other is unknown (pre-2012)?	Not Available	Not Available	PWD	< 3 AFY	Not Available	Not Available	Not Available	
11/13/2018	12/11/2018	3059-022-043	Small Pumper Qualifying-2 parcels	Domestic	Yes	South East	Alan and Michelle Kirschenbaum	661-944-2678	drivlines@sbcglobal.net	Existing well drilled in 2012 by Rottman Drilling	edward.robledo@rotmandrilling.com	661-942-6125		10 gpm; 0.06 AFY	412	210-412	6" SDR 17 PVC	
		3059-022-044		Domestic	Yes	South East	Alan and Michelle Kirschenbaum	661-944-2678	drivlines@sbcglobal.net									
		3032-04-21	Replacement Well	Agricultural	No	South East	Bolthouse Farms											
		252-311-22-00-8	Small Pumper Qualifying	Domestic	Yes	Willow Springs	DeLano, Milton & Sherry											
		3059-08-11	Small Pumper Qualifying	Domestic	Yes	South East	Hardy, Frank & Pamela											
		3059-021-019	Small Pumper Qualifying	Domestic	Yes	South East	Hardy, Corrine Family Trust											
		3059-026-012	Small Pumper Qualifying	Domestic	Yes	South East	Pierce Trust, Donald & Ella											
		3059-026-002	Small Pumper Qualifying	Domestic	Yes	South East	Powell Revocable Trust, Stephany											
		3059-022-039	Small Pumper Qualifying	Domestic	Yes	South East	Uner, Atilla											
		3060-020-093	Small Pumper Qualifying	Domestic	Yes	South East	West, Anthony											
		3059-019-036	Small Pumper Qualifying	Domestic	Yes	South East	Whitt, Ronald & Louise											
Approved on 2/27/19: (2 Monitoring Wells and 3 SM P Q applications) 5 Total																		
		3266-017-015	Small Pumper Qualifying	Domestic	Yes	Central	Burr, Terry and Gail											
		3279-009-020	Small Pumper Qualifying	Domestic	Yes	West Antelope	Czaki, Isabella											
		3059-022-045	Small Pumper Qualifying	Domestic	Yes	South East	Ohnmacht, Greg & Amy											
		3022-028-904	Monitoring Well	Monitoring	No	Central	US Air Force - Plant 42											
		3000-034-901	Monitoring Well	Monitoring	No	Central	US Air Force - Plant 42											
Approved on 3/27/19: (1 New Production, 1 New Pt of Extraction, 5 SM P Q applications) 7 Total																		
1/30/2019	2/19/2019	3080-022-013	New Point of Extraction	Industrial	No	South East	Granite Construction	661-802-2744	karan.pateli@pcinc.com	Myers Bros Well Drilling	sim@myersbroswell.com	559-582-9031	No	225 AFY	700	400-700	16" steel	
2/4/2019	3/1/2019	3170-010-002	New Production	Domestic	No	Central	Rodriguez, Erik	661-456-6874	antelopescocerleague@yahoo.com	Abundant Water Well, Inc	abundantwaterwells@yahoo.com	661-713-3443	AVEK	<1 AFY	300	Not provided	5" SDR 17	
		3059-018-060	Small Pumper Qualifying	Domestic	Yes	South East	Benefiel, Jane											
		375-180-25	Small Pumper Qualifying	Domestic	Yes	Central	Little Family Trust, Gary & Debra											
		3059-022-064	Small Pumper Qualifying	Domestic	Yes	South East	Myers, William & Linda											
		3059-022-003	Small Pumper Qualifying	Domestic	Yes	South East	Vegos, Charles & Tamara											
		3059-021-022	Small Pumper Qualifying	Domestic	Yes	South East	Witt, Robert & Evelyn											
Approved on 4/24/19: (2 New Production, 2 SM P Q applications) 4 Total																		
11/11/2018	4/4/2019	3384-007-007	New Production	Domestic	No	Central	Ming, Lin	912-665-0051	mxlinming@hotmail.com	Abundant Water Well, Inc	abundantwaterwells@yahoo.com	661-713-3443	AVEK	<1 AFY	400'	Not provided	5" SDR 17	
2/28/2019	4/5/2019	3307-014-052	New Production	Domestic	No	Central	Espinoza, Leticia	661-371-6514	armasstar97@gmail.com	Bryant Pump & Drilling (Glenn (Bud) Bryant)	bryantsh204u@yahoo.com	661-256-2117	AVEK	<3 AFY	350'	200-350	6" SDR 17	
		3060-022-034	Small Pumper Qualifying	Domestic	Yes	South East	Edgar, Micheal Ann (Ronald Sugajski Trust)											
		3060-030-059	Small Pumper Qualifying	Domestic	Yes	South East	Richards, Monica											

Appendix H Approved Well Applications and Small Pumper Qualifying Documentation

Date on Application	Date Todd Received Complete Application Material	APN#	Request Type	Use of Well	Provided Small Pumper Qualifying Documentation	Subarea	Applicant/ Property Owner	Owner Phone	Owner email	Well Driller	Driller email	Driller Phone	In State Water Contractor Service Area (AVEK, PWD or LCP)	Estimated Pumping	Well Depth (feet)	Screened interval (feet-depth)	Casing Diameter (inches) and Material	
Approved on 5/22/19: (4 New Production applications) 4 Total																		
no date	4/8/2019	3218-033-012	New Production	Domestic & agricultural	No	Central	Zaghian, Roben	818-660-9319	zaghianart@outlook.com	Bryant Pump & Drilling (Glenn (Bud) Bryant)	bryantsh204u@yahoo.com	661-256-2117	AVEK	2-3 AFY	400'	300-400	6" SDR 17	
3/20/2019	4/16/2019	3240-006-053	New Production	Agricultural, family garden	No	Central	Ovespyan, Andrey	818-456-2949	dredavlove76@gmail.com	Bryant Pump & Drilling (Glenn (Bud) Bryant)	bryantsh204u@yahoo.com	661-256-2117	AVEK	<1 AFY	400'	Not provided	6" SDR 17	
April 2019 (no day)	4/19/2019	3060-022-056	New Production	Domestic	No	South East	Juniper Hills Land Conservation Trust	818-913-1334	nevadainc@yahoo.com	Lundigan Drilling (Britt Lundigan)	lundiganbritt@gmail.com	661-944-3129	No	<1 AFY	Not provided	Not provided	4.5" or 5" PVC	
4/15/2019	5/2/2019	3363-006-010	New Production	Domestic outdoor irrigation of landscaping	No	South East	Trang, Sroy	626-476-9399	sroytrang@gmail.com	Abundant Water Well, Inc	abundantwaterwells@yahoo.com	661-713-3443	AVEK	0.50 AFY	400'	Not provided	5" SDR 17	
Approved on 6/25/19: (3 New Production) 3 Total																		
4/15/2019	5/7/19 & 5/15/19	3111-005-080, 3111-003-116, 3111-003-121	New Production, shared well	Domestic	No	Central	Ugonwa, Bonaventure	231-884-7386	newosu5566@roadrunner.com	Vics Well Drilling	vicswelldrilling@yahoo.com	661-917-7560	AVEK	15 gpm/6 AFY	500'	400-500	6" ?	
4/23/2019	5/16/2019	3118-005-043	New Production	Industrial office	No	Central	Hounanian, Masis	818-726-8299	zaghianart@outlook.com	Bryant Pump & Drilling (Glenn (Bud) Bryant)	bryantsh204u@yahoo.com	661-256-2117	AVEK	5 gpm/<2.5 AFY	300'	220-400'	6" SDR 17	
No date but signed on 5/20/19	6/6/2019	3047-011-006	New Production	Domestic	No	South East	Garcia, Ervin and Carolina Espina	323-434-3489	garciafamily342@yahoo.com	Lundigan Drilling (Britt Lundigan)	lundiganbritt@gmail.com	661-944-3129	PWD	5-10 gpm/<1 AFY	Not provided	Not provided	4.5" or 5" PVC	
Approved on 7/24/19: (1 Replacement w/ Sm P Q, 1 additional SM P Q applications) 2 Total																		
		3059-012-024	Small Pumper Qualifying	Domestic	Yes	South East	Creelman, Peter and Diana											
		3060-030-036	Replacement Well (and Sm P Q)	Domestic	Yes	South East	Rutledge, William											
Approved on 8/28/19: (3 New Pt of Extraction, 1 SM P Q applications) 4 Total																		
6/5/2019	7/15/2019	3386-028-009 3386-028-007 3386-027-001	New Point of Extraction	Agricultural	No	Central	Calandri Water Company	661-946-9022	brad@calandrisonrisefarms.com	Existing Tierra Bonita Ranch well			AVEK	Not provided	Not provided	Not provided	Not provided	
6/5/2019	7/15/2019	3302-027-915 3302-030-909 3307-002-904	New Point of Extraction	Agricultural	No	Central	Calandri Water Company	661-946-9022	brad@calandrisonrisefarms.com	Existing LA County Sanitation Districts well			AVEK	Not provided	Not provided	Not provided	Not provided	
6/5/2019	7/15/2019	375-020-012	New Point of Extraction	Agricultural	No	Central	Calandri Water Company	661-946-9022	brad@calandrisonrisefarms.com	Existing AVEK Stoner Ranch well			AVEK	Not provided	Not provided	Not provided	Not provided	
		3060-020-015	Small Pumper Qualifying	Domestic	Yes	South East	Letterman, Salvador & Joanne											
Approved on 9/25/19: (2 New Production, 1 New Point of Extraction, 1 Replacement (w/Sm P Q), 4 SM P Q applications) 8 Total																		
7/31/2019	8/7/2019	3040-008-046	New Production	Domestic	No	South East	Estrada, Jesus	310-292-3349	estrada111569@gmail.com	Abundant Water Well, Inc	abundantwaterwells@yahoo.com	661-713-3443	AVEK	10-15 gpm; 0.5 AFY	300	Not provided	5" SDR 17	
5/29/2019	9/4/2019	3175-001-017	New Production	Industrial	No	Central	Ormonde, Antonio	661-944-2666	rishbanks@gmail.com	Bryant Pump & Drilling (Glenn (Bud) Bryant)	bryantsh204u@yahoo.com	661-256-2117	AVEK	30-40 gpm; 2 AFY	360	200-360	8.625" PVC Sch. 80	
9/11/2019	9/11/2019	252-312-05	New Pt of Extraction (shared well)	Domestic	Yes	Willow Springs	Ross, Donald and Cindy	323-376-5360	donleeross@aol.com	Bryant Pump & Drilling (Glenn (Bud) Bryant)	bryantsh204u@yahoo.com	661-256-2117	AVEK	< 3 AFY	300	120-300	6.625" SDR 17 PVC	
		3039-019-063	Small Pumper Qualifying	Domestic	Yes	South East	Coronado, Bryan											
		3060-020-088	Small Pumper Qualifying	Domestic	Yes	South East	Lowe, Delores											
		3060-021-045	Small Pumper Qualifying	Domestic	Yes	South East	Lowe, Steven & Margot											
		252-312-05	Small Pumper Qualifying	Domestic	Yes	Willow Springs	Ross, Donald & Cindy											
		3268-001-005	Small Pumper Qualifying	Domestic	Yes	South East	Shu, Joseph & Rosa											
		3268-001-005	Replacement Well (and Sm P Q)	Domestic	Yes	South East	Shu, Joseph & Rosa											

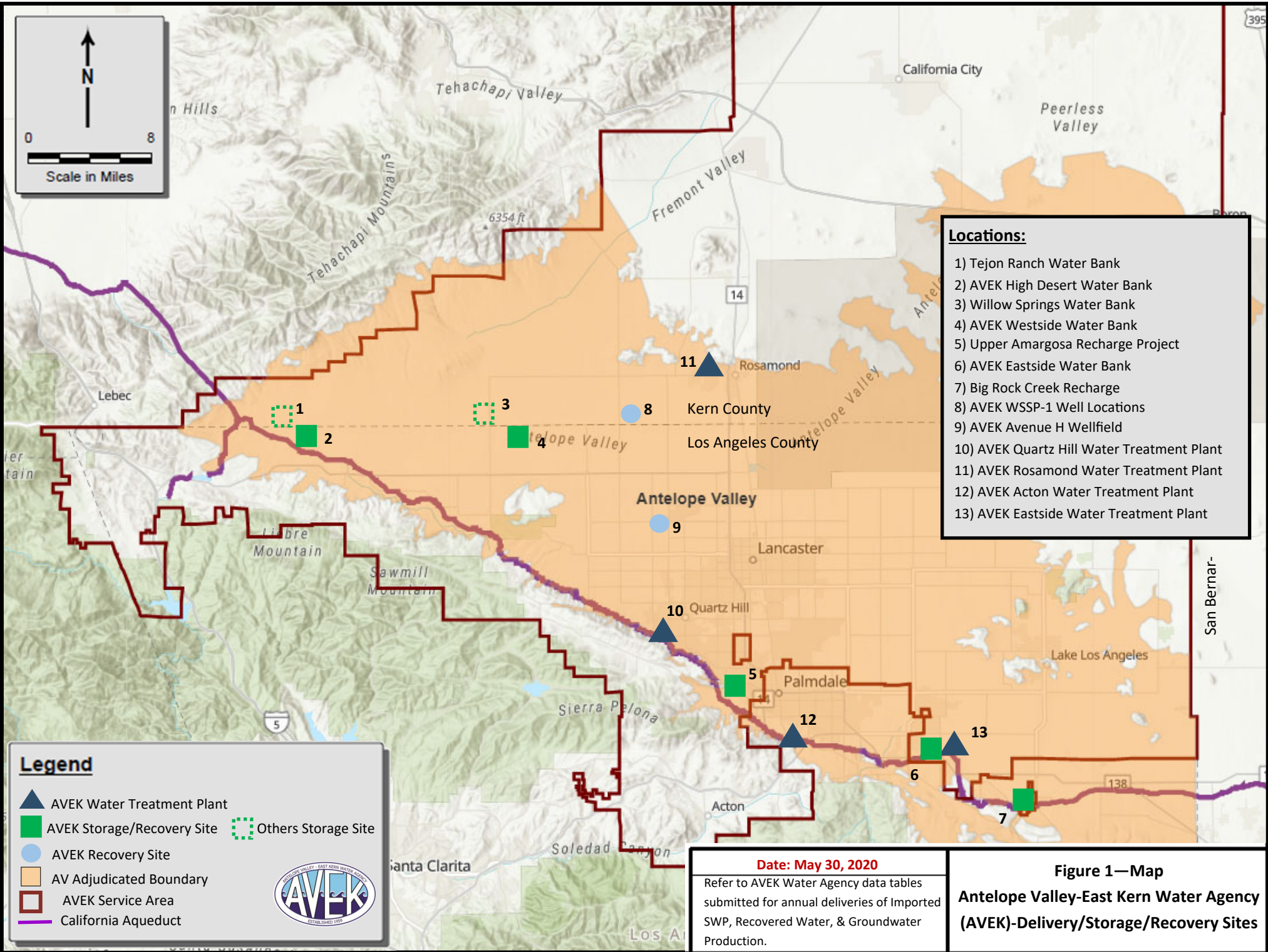
Appendix H Approved Well Applications and Small Pumper Qualifying Documentation

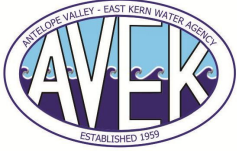
Date on Application	Date Todd Received Complete Application Material	APN#	Request Type	Use of Well	Provided Small Pumper Qualifying Documentation	Subarea	Applicant/ Property Owner	Owner Phone	Owner email	Well Driller	Driller email	Driller Phone	In State Water Contractor Service Area (AVEX, PWD or LGD)	Estimated Pumping	Well Depth (feet)	Screened Interval (feet-depth)	Casing Diameter (inches) and Material	
Approved on 10/23/19: (1 Replacement, 1 SM P Q applications, 3 monitoring wells) 5 Total																		
		3059-007-049	Small Pumper Qualifying	Domestic	Yes	South East	Granger, Tracy											
		3145-013-007	Replacement Well	Domestic	No	Central	Guerrero, Samuel											
		3137-015-036	Monitoring Well	Monitoring	No	Central	Petro Lock, Inc.											
		3048-018-910	Monitoring Well	Monitoring	No	South East	Littlerock Creek Irrigation District											
		3137-015-054	Monitoring Well	Monitoring	No	Central	MJNA LLC											
Approved on 12/18/19: (1 Replacement (with Sm P Q), 1 SM P Q applications, 2 monitoring wells) 4 Total																		
		3137-011-039	2 Monitoring Wells	Monitoring	No	Central	Estahbanati Family Trust											
		3256-017-016	Replacement Well	Domestic	Yes	West Antelope	Kiattisak, Seuy and Nattawat											
		3060-022-048	Small Pumper Qualifying	Domestic	Yes	South East	Martin, Charles and Sandra											

Appendix I

AVEK Facilities Map and Water Use Flowcharts

Appendix I AVEK Facilities Map and Water Use Flowcharts



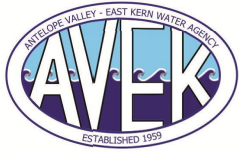


Antelope Valley-East Kern Water Agency Flowchart 2019 Delivery/Storage/Recovery Amounts

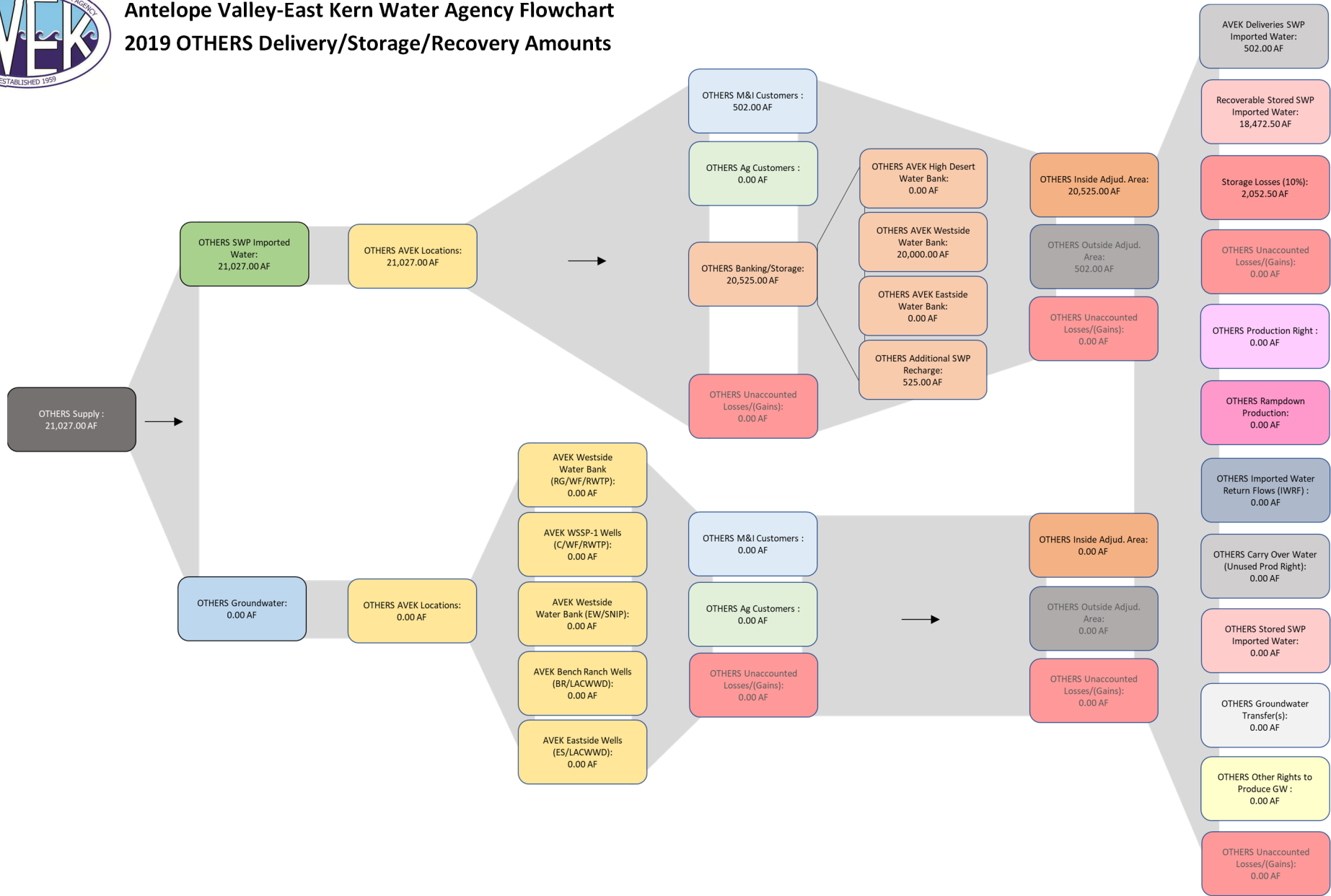


Date: May 22, 2020
Refer to AVEK Water Agency data tables submitted for annual deliveries of Imported SWP, Recovered Water, & Groundwater Production.

**Figure 2—Flowchart
Antelope Valley-East Kern Water Agency
(AVEK)-2019 Delivery/Storage/Recovery**



Antelope Valley-East Kern Water Agency Flowchart 2019 OTHERS Delivery/Storage/Recovery Amounts



Date: May 22, 2020
 Refer to AVEK Water Agency data tables submitted for annual deliveries of Imported SWP, Recovered Water, & Groundwater Production.

**Figure 3—Flowchart
 Antelope Valley-East Kern Water Agency
 Others 2019 Delivery/Storage/Recovery**

Appendix J

Wastewater and Recycled Water, 2019

Appendix J Wastewater and Recycled Water, 2019

Plant	Treated Plant Effluent (AF)	Reuse of Treated Wastewater (AF)	
Lancaster WRP ¹	15,052	12,490	
Palmdale WRP ²	9,021	8,653	
Plant	Treated Plant Effluent (AF)	To Percolation Test Basin (AF)	To Evaporation Ponds (AF)
RCS D	1,222	95	1,127
Plant	Total Flow to Plant (AF)	Irrigation (AF)	To Evaporation Ponds (AF)
Edward AFB-Main Plant ³	391	257	130
Edwards AFB-AFRL ⁴	34	0	34

1. All the effluent is recycled. Effluent totals may not match reuse amounts because of changes in storage, losses due to evaporation, and metering differences. Recycled water produced by the Lancaster WRP was delivered to three main reuse sites: Piute Ponds (also known as Paiute Ponds), Apollo Community Regional Park, and the Eastern Agricultural Site. Recycled water was also delivered to the City of Lancaster's Division Street Corridor Recycled Water Project for municipal uses in the Antelope Valley and a small portion was provided for Lancaster WRP in-plant uses. Four lined and four unlined reservoirs at the Lancaster WRP provided seasonal storage of recycled water.

2. All the effluent is recycled. Effluent totals may not match reuse amounts because of changes in storage, losses due to evaporation, and metering differences. Recycled water produced by the Palmdale WRP was used for agricultural purposes at the Palmdale Agricultural Site, municipal and industrial uses by Palmdale Recycled Water Authority recycled water customers, and landscape and other in-plant uses at the Palmdale WRP.

3. All the effluent is recycled. Plant inflow may not match reuse amounts because of changes in storage, losses due to evaporation, and metering differences.

4. Totals do not include potential losses but only the amounts sent to evaporation ponds.

Data from: LACSD Lancaster Water Reclamation Plant 2019 Annual Water Recycling Monitoring Report, March 27, 2020.

LACSD Palmdale Water Reclamation Plant 2019 Annual Water Monitoring Report, February 28, 2020.

RCS D data from email received 4/14/20

EAFB data from 2019 Annual Monitoring and Source Report for the Main Base WWTP (1/10/20) and 2019 Annual Monitoring and Source Report for the Air Force Research Lab (AFRL) WWTP (1/9/20)

Appendix K

Watermaster Financial Budgets

K-1. Approved Administrative Budget, 2020

K-2. Financial Audit, 2019

Appendix K-1 Approved Administrative Budget, 2020

Exhibit "A"

Antelope Valley Watermaster
Final - Administrative Budget CY 2020

	BUDGET 2020	PROJECTED 2019	BUDGET 2019	ACTUAL 2018
Revenue - Administrative Assessments				
1000 Non-Overlying Production Rights (Exhibit 3)	61,725	61,725	84,225	107,109
1100 Overlying Production Rights (Exhibit 4)	291,610	291,610	370,000	370,652
1300 Small Pumpers (Based on 75% Collection Rate)	75,600	TBD	TBD	Deferred
1500 State of California	1,035	1,035	1,035	2,992
1600 City of Lancaster	2,500	2,500	2,500	2,500
1650 Phelan Pinon Hill CSD		1,925		2,697
1675 Supporting Landowner Parties	1,750	1,710	1,710	1,749
1700 Federal Reserve Water Right	8,000	8,000	8,000	1,094
1800 Unused Federal Reserve Water Right	25,500	25,500	25,500	
1900 Imported Water Return Flows	87,500	84,785	90,000	179,621
1925 Variable Assessments	100,000	109,446		
1950 Miscellaneous				
Application Fees (Admin. and Engineer)	25,000	50,965	25,000	22,450
Late Fees/Outstanding Assessments		2,726	12,443	3,916
1975 New Production Parties		130	130	
1990 Excess / (Loss) from Previous Year	4,978	(57,002)	(74,451)	(23,853)
Total Revenue	685,198	585,055	546,092	670,927
Expenses - Administration/Engineer/Legal				
2000 Contracted Administrative Expenses				
AVEK Interim Administrative Staff				35,000
PWD Interim Administrative Staff				10,000
Administrative Services - AVEK and PWD	75,000	70,000	108,901	
Administrative Services - Meter Compliance	35,000			
Annual Financial Audit	5,000	4,000	4,000	7,000
Processing Various Applications (Admin. and Engineer)	25,000	50,965		
2100 Postage and Printing				
Postage and P.O. Box Rental	500	100	100	96
Outside Printing and Supplies	1,000	200	250	121
2200 Information and Document Management				
Glotrans Document Management	14,400	14,400	14,400	14,400
Computer Software	200	150	150	109
Website	1,200	1,068		4,069
2300 Membership and Insurance				
D&O Coverage	1,750	1,523	2,600	2,621
2400 Watermaster Legal Services				
Legal Services - Board and Administrative Functions	210,000	210,000	255,000	251,212
2500 Watermaster Engineer				
Watermaster Engineer - TODD 2020 Scope	224,310			
Watermaster Engineer - TODD Per Original Proposal		141,126	252,538	289,648
Watermaster Engineer - Amendment No. 1 (2018 Scope)				98,653
Watermaster Engineer - Amendment No. 2 (2019 Scope)			(111,412)	
Watermaster Engineer - Amendment No. 3 (2019 Scope)		20,320		
Watermaster Engineer - Amendment No. 4 (2019 Scope)		50,000		
2600 Watermaster Special Contract Services				
USGS Contract - Water Level Monitoring (25%)	16,375	16,225	16,225	15,000
Watermaster Engineer Recruitment Contract				
2700 Watermaster Administrative Stabilization Fund	75,463			
Total Administrative Expenses	685,198	580,077	542,752	727,929

Appendix K-2. Financial Audit, 2019



Antelope Valley Watermaster

Annual Financial Report

For the Fiscal Year Ended December 31, 2019



**Antelope Valley Watermaster
Board of Directors as of December 31, 2019**

<u>Name</u>	<u>Title</u>	<u>Elected/ Appointed</u>	<u>Current Term</u>
Robert Parris	Chair	Appointed	Ongoing
Dennis Atkinson	Vice-Chair	Appointed	Ongoing
Adam Arika	Director	Appointed	Ongoing
John Calandri	Director	Appointed	Ongoing
Leo Thibault	Director	Appointed	Ongoing

**Antelope Valley Watermaster
Matthew Knudson, Administrator
PO Box 3025
Quartz Hill, California 93586
(661) 234-8233 – <https://avwatermaster.net/>**

Antelope Valley Watermaster

Annual Financial Report

For the Fiscal Year Ended December 31, 2019

**Antelope Valley Watermaster
Annual Financial Report
For the Fiscal Year Ended December 31, 2019**

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Financial Section



Fedak & Brown LLP
Certified Public Accountants

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Independent Auditor's Report

Board of Directors
Antelope Valley Watermaster
Quartz Hill, California

Report on the Financial Statements

We have audited the accompanying financial statements of the Antelope Valley Watermaster (Watermaster), which comprises the statement of net position as of December 31, 2019, and the related statement of revenues, expenses, and changes in net position for the year then ended, and the related notes to the financial statements, which collectively comprise the Watermaster's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the State Controller's Minimum Audit Requirements for California Special Districts. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Independent Auditor's Report, continued

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the Antelope Valley Watermaster as of December 31, 2019, and the respective changes in net position, and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated June 30, 2020, on our consideration of the Watermaster's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Watermaster's internal control over financial reporting and compliance. This report can be found on pages 18 and 19.

Fedak & Brown LLP

Fedak & Brown LLP

Cypress, California

June 30, 2020

Antelope Valley Watermaster
Management's Discussion and Analysis
For the Year Ended December 31, 2019

The following Management's Discussion and Analysis (MD&A) of activities and financial performance of the Antelope Valley Watermaster (Watermaster) provides an introduction to the financial statements of the Watermaster for the year ended December 31, 2019. We encourage readers to consider the information presented here with additional information that we have furnished in the accompanying basic financial statements and related notes, which follow this section.

Financial Highlights

- The Watermaster's net position increased 8,807.41% or \$2,047,900 to \$2,071,152.
- The Watermaster's total revenues increased 240.82% or \$1,840,223 to \$2,604,381.
- The Watermaster's total expenses decreased 28.94% or \$226,664 to \$556,481.

Using This Financial Report

This annual report consists of a series of financial statements. The Statement of Net Position, Statement of Revenues, Expenses, and Changes in Net Position, and Statement of Cash Flows provide information about the activities and performance of the Watermaster using accounting methods similar to those used by private sector companies.

The Statement of Net Position includes all of the Watermaster's investments in resources (assets), deferred outflows of resources, obligations to creditors (liabilities), and deferred inflows of resources. It also provides the basis for evaluating the results of operations, evaluating the capital structure of the Watermaster, and assessing the liquidity and financial flexibility of the Watermaster. All of the current year's revenues and expenses are accounted for in the Statement of Revenues, Expenses, and Changes in Net Position. This statement measures the success of the Watermaster's operations over the past year and can be used to determine if the Watermaster has successfully recovered all of its costs through its rates and other charges. In addition to tracking cost recovery performance, this statement can also be used to evaluate the results of operations and creditworthiness. The final required financial statement is the Statement of Cash Flows, which provides information about the Watermaster's cash receipts and cash payments during the reporting period. The Statement of Cash Flows reports cash receipts, cash payments, and net changes in cash resulting from operations, investing, non-capital financing, and capital and related financing activities, and provides answers to such questions as where did cash come from, what was cash used for, and what was the change in cash balance during the reporting period.

Financial Analysis of the Watermaster

One of the most important questions asked about the Watermaster's finances is, "Is the Watermaster better off or worse off as a result of this year's activities?" The Statement of Net Position and the Statement of Revenues, Expenses, and Changes in Net Position report information about the Watermaster in a way that helps answer this question. These statements include all assets, deferred outflows of resources, liabilities, and deferred inflows of resources using the *accrual basis of accounting*, which is similar to the accounting method used by most private sector companies. All of the current year's revenues and expenses are taken into account regardless of when the cash is received or paid.

These two statements report the Watermaster's net position and changes in them. You can think of the Watermaster's net position – the difference between assets and deferred outflows of resources less liabilities and deferred inflows of resources – as one way to measure the Watermaster's financial health, or financial position. Over time, increases or decreases in the Watermaster's net position are one indicator of whether its financial health is improving or deteriorating. However, one will need to consider other non-financial factors such as changes in economic conditions, population growth, zoning, and new or changed government legislation, such as changes in Federal and State water quality standards.

Antelope Valley Watermaster
Management's Discussion and Analysis, continued
For the Year Ended December 31, 2019

Notes to the Basic Financial Statements

The notes to the basic financial statements provide additional information that is essential to a full understanding of the data provided in the basic financial statements. The notes to the basic financial statements can be found on pages 9 through 17.

Statements of Net Position

Condensed Statements of Net Position

	<u>2019</u>	<u>2018</u>	<u>Change</u>
Assets:			
Current assets	\$ 2,126,004	79,335	2,046,669
Total assets	<u>2,126,004</u>	<u>79,335</u>	<u>2,046,669</u>
Liabilities:			
Current liabilities	54,852	56,083	(1,231)
Total liabilities	<u>54,852</u>	<u>56,083</u>	<u>(1,231)</u>
Net position:			
Restricted	2,063,167	65,832	1,997,335
Unrestricted	7,985	(42,580)	50,565
Total net position	<u>\$ 2,071,152</u>	<u>23,252</u>	<u>2,047,900</u>

As noted earlier, net position may serve over time as a useful indicator of a government's financial position. In the case of the Watermaster, assets exceeded liabilities by \$2,071,152, as of December 31, 2019.

Statements of Revenues, Expenses, and Changes in Net Position

Condensed Statements of Revenues, Expenses, and Changes in Net Position

	<u>2019</u>	<u>2018</u>	<u>Change</u>
Revenues:			
Operating revenues	\$ 2,603,806	763,246	1,840,560
Non-operating revenues	575	912	(337)
Total revenues	<u>2,604,381</u>	<u>764,158</u>	<u>1,840,223</u>
Expenses:			
Operating expenses	556,481	783,145	(226,664)
Total expenses	<u>556,481</u>	<u>783,145</u>	<u>(226,664)</u>
Change in net position	2,047,900	(18,987)	2,066,887
Net position, beginning of year	<u>23,252</u>	<u>42,239</u>	<u>(18,987)</u>
Net position, end of year	<u>\$ 2,071,152</u>	<u>23,252</u>	<u>2,047,900</u>

Net position increased 8,807.41% or \$2,047,900 to \$2,071,152, as a result of ongoing operations.

Total revenues increased 240.82% or \$1,840,223 to \$2,604,381, primarily due to an increase of \$1,927,253 in replacement water assessments, which was offset by a decrease of \$95,579 in imported water return flow.

Total expenses decreased 28.94% or \$226,664 to \$556,481, primarily due to a decrease of \$221,471 in watermaster engineer expenses, which was offset by an increase of \$17,957 in contracted administrative services.

Antelope Valley Watermaster
Management's Discussion and Analysis, continued
For the Year Ended December 31, 2019

Conditions Affecting Current Financial Position

Management is unaware of any conditions which could have a significant impact on the Watermaster's current financial position, net position, or operating results based on past, present, and future events.

Requests for Information

This financial report is designed to provide the Watermaster's present users, including funding sources, customers, stakeholders, and other interested parties with a general overview of the Watermaster's finances and to demonstrate the Watermaster's accountability with an overview of the Watermaster's financial operations and financial condition. Should the reader have questions regarding the information included in this report or wish to request additional financial information, please contact the Watermaster's Administrator, Matthew Knudson at Antelope Valley Watermaster, PO Box 3025, Quartz Hill, California, 93586 or (661) 234-8233.

Basic Financial Statements

Antelope Valley Watermaster
Statement of Net Position
December 31, 2019

	<u>2019</u>
Current assets:	
Cash and cash equivalents (note 2)	\$ 62,837
Cash and cash equivalents - restricted (note 2)	451,507
Accounts receivable - restricted	<u>1,611,660</u>
Total current assets	<u>2,126,004</u>
Total assets	<u>2,126,004</u>
Current liabilities:	
Accounts payable and accrued expenses	33,852
Customer deposits	<u>21,000</u>
Total current liabilities	<u>54,852</u>
Total liabilities	<u>54,852</u>
Net position:	
Restricted	2,063,167
Unrestricted	<u>7,985</u>
Total net position	<u>\$ 2,071,152</u>

See accompanying notes to the basic financial statements

Antelope Valley Watermaster
Statement of Revenues, Expenses, and Changes in Net Position
For the Year Ended December 31, 2019

	2019
Operating revenues:	
Fixed production rights	\$ 385,349
Variable assessments	109,446
Replacement water assessments	1,997,335
Imported water return flow	84,785
Application fees	26,891
Total operating revenues	2,603,806
Operating expenses:	
Contracted administrative services	66,699
Watermaster engineer	218,497
Watermaster special contract	20,022
Information and documents	16,800
Legal and professional fees	232,378
Insurance expenses	1,829
Dues and subscriptions	256
Total operating expenses	556,481
Operating income	2,047,325
Non-operating revenue:	
Interest earnings	575
Total non-operating revenue	575
Change in net position	2,047,900
Net position, beginning of year	23,252
Net position, end of year	\$ 2,071,152

See accompanying notes to the basic financial statements

**Antelope Valley Watermaster
Statement of Cash Flows
For the Year Ended December 31, 2019**

	<u>2019</u>
Cash flows from operating activities:	
Cash receipts from purveyors	\$ 1,068,434
Cash paid to vendors and suppliers for materials and services	<u>(557,712)</u>
Net cash provided by operating activities	<u>510,722</u>
Cash flows from investing activities:	
Investment earnings	<u>575</u>
Net cash provided by investing activities	<u>575</u>
Net increase in cash and cash equivalents	511,297
Cash and cash equivalents, beginning of year	<u>3,047</u>
Cash and cash equivalents, end of year	<u>\$ 514,344</u>
 Reconciliation of cash and cash equivalents to the statement of net position:	
Cash and cash equivalents	\$ <u>514,344</u>
Total cash and cash equivalents	<u>\$ 514,344</u>
 Reconciliation of operating income to net cash provided by operating activities:	
Operating income	\$ <u>2,047,325</u>
Changes in assets, deferred outflows of resources, liabilities, and deferred inflows of resources:	
Increase in assets:	
Accounts receivable	(1,535,372)
Increase (Decrease) in liabilities:	
Accounts payable and accrued expenses	(22,231)
Customer deposits	21,000
Total adjustments	<u>(1,536,603)</u>
Net cash provided by operating activities	<u>\$ 510,722</u>

See accompanying notes to the basic financial statements

**Antelope Valley Watermaster
Notes to the Financial Statements
For the Year Ended December 31, 2019**

(1) Reporting Entity and Summary of Significant Accounting Policies

A. Organization and Operations of the Reporting Entity

The Antelope Valley Watermaster (Watermaster) was formed by the Antelope Valley Groundwater Cases Final Judgment Santa Clara Case No. 1-05-CV-049053 signed on December 23, 2015. The Watermaster's primary duty is to administer a Judgment that has the goal of protecting the sustainable use of the Antelope Valley Groundwater Basin (Basin) as a source of groundwater supply. The Basin is located in the western Mojave Desert – it encompasses 1,580 square miles in Los Angeles, Kern, and San Bernardino Counties. Approximately two-thirds of the Basin lies in Los Angeles County, with small portions extending into San Bernardino County, and the remainder in southeastern Kern County.

To administer the Judgment, the Court directed appointment of the Watermaster (a five-member board). In 2016, the Watermaster Board and an Advisory Committee were formed. The Board finalized the hiring of Todd Groundwater as Watermaster Engineer (required by the Judgment) in April 2017 to provide hydrogeological and technical analyses and to guide administrative functions to fulfill the Judgment.

The court-appointed Watermaster Board is made up of five members: One representative from the Antelope Valley East Kern Water Agency; one representative from the Los Angeles County Waterworks District No. 40; one representative from a public water supplier selected by various government districts; and two landowner representatives (exclusive of public agencies and members of the Non-Pumper and small pumper class). The Watermaster normally conducts monthly general meetings of the Board which are held on the fourth Wednesday of the month at the Watermaster's office.

B. Basis of Accounting and Measurement Focus

The Watermaster reports its activities as an enterprise fund, which is used to account for operations that are financed and operated in a manner similar to a private business enterprise, where the intent of the Watermaster is that the cost administering the Judgment on a continuing basis be financed or recovered primarily through various assessments. Revenues and expenses are recognized on the full accrual basis of accounting. Revenues are recognized in the accounting period in which they are earned, and expenses are recognized in the period incurred, regardless of when the related cash flows take place.

Operating revenues and expenses result from exchange transactions associated with the principal activity of the Watermaster. Exchange transactions are those in which each party receives and gives up essentially equal value. Management and administration expenses are also considered operating expenses. Other revenues and expenses not included in the above categories are reported as non-operating revenues and expenses.

C. Financial Reporting

The Watermaster's basic financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (GAAP), as applied to enterprise funds. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and financial reporting principles. The Watermaster solely operates as a special-purpose government which means it is only engaged in business-type activities; accordingly, activities are reported in the Watermaster's proprietary fund.

Antelope Valley Watermaster
Notes to the Financial Statements, continued
For the Year Ended December 31, 2019

(1) Reporting Entity and Summary of Significant Accounting Policies, continued

C. Financial Reporting, continued

The Watermaster has adopted the following GASB pronouncements in the current year:

Governmental Accounting Standards Board Statement No. 83

In November 2016, the GASB issued Statement No. 83 – *Certain Asset Retirement Obligations*. This Statement (1) addresses accounting and financial reporting for certain asset retirement obligations (AROs), (2) establishes criteria for determining the timing and pattern of recognition of a liability and a corresponding deferred outflow of resources for AROs, (3) requires that recognition occur when the liability is both incurred and reasonably estimable, (4) requires the measurement of an ARO to be based on the best estimate of the current value of outlays expected to be incurred, (5) requires the current value of a government’s AROs to be adjusted for the effects of general inflation or deflation at least annually, and (6) requires disclosure of information about the nature of a government’s AROs, the methods and assumptions used for the estimates of the liabilities, and the estimated remaining useful life of the associated tangible capital assets.

Governmental Accounting Standards Board Statement No. 84

In January 2017, the GASB issued Statement No. 84 – *Fiduciary Activities*. The objective of this Statement is to improve guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported.

This Statement establishes criteria for identifying fiduciary activities of all state and local governments. The focus of the criteria generally is on (1) whether a government is controlling the assets of the fiduciary activity and (2) the beneficiaries with whom a fiduciary relationship exists. Separate criteria are included to identify fiduciary component units and postemployment benefit arrangements that are fiduciary activities.

This Statement describes four fiduciary funds that should be reported, if applicable: (1) pension (and other employee benefit) trust funds, (2) investment trust funds, (3) private-purpose trust funds, and (4) custodial funds. Custodial funds generally should report fiduciary activities that are not held in a trust or equivalent arrangement that meets specific criteria.

Governmental Accounting Standards Board Statement No. 88

In April 2018, the GASB issued Statement No. 88 – *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements*. The primary objective of this Statement is to improve the information that is disclosed in notes to government financial statements related to debt, including direct borrowings and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt.

This Statement defines debt for purposes of disclosure in notes to financial statements as a liability that arises from a contractual obligation to pay cash (or other assets that may be used in lieu of cash) in one or more payments to settle an amount that is fixed at the date the contractual obligation is established.

This Statement requires that additional essential information related to debt be disclosed in notes to financial statements, including unused lines of credit; assets pledged as collateral for the debt; and terms specified in debt agreements related to significant events of default with finance-related consequences, significant termination events with finance-related consequences, and significant subjective acceleration clauses.

Antelope Valley Watermaster
Notes to the Financial Statements, continued
For the Year Ended December 31, 2019

(1) Reporting Entity and Summary of Significant Accounting Policies, continued

C. Financial Reporting, continued

Governmental Accounting Standards Board Statement No. 88, continued

For notes to financial statements related to debt, this Statement also requires that existing and additional information be provided for direct borrowings and direct placements of debt separately from other debt.

Governmental Accounting Standards Board Statement No. 90

In August 2018, the GASB issued Statement No. 90 – *Majority Equity Interests—an amendment of GASB Statements No. 14 and No. 61*. The primary objectives of this Statement are to improve the consistency and comparability of reporting a government’s majority equity interest in a legally separate organization and to improve the relevance of financial statement information for certain component units. It defines a majority equity interest and specifies that a majority equity interest in a legally separate organization should be reported as an investment if a government’s holding of the equity interest meets the definition of an investment. A majority equity interest that meets the definition of an investment should be measured using the equity method, unless it is held by a special-purpose government engaged only in fiduciary activities, a fiduciary fund, or an endowment (including permanent and term endowments) or permanent fund. Those governments and funds should measure the majority equity interest at fair value.

For all other holdings of a majority equity interest in a legally separate organization, a government should report the legally separate organization as a component unit, and the government or fund that holds the equity interest should report an asset related to the majority equity interest using the equity method. This Statement establishes that ownership of a majority equity interest in a legally separate organization results in the government being financially accountable for the legally separate organization and, therefore, the government should report that organization as a component unit.

This Statement also requires that a component unit in which a government has a 100 percent equity interest account for its assets, deferred outflows of resources, liabilities, and deferred inflows of resources at acquisition value at the date the government acquired a 100 percent equity interest in the component unit. Transactions presented in flows statements of the component unit in that circumstance should include only transactions that occurred subsequent to the acquisition.

The requirements of this Statement are effective for reporting periods beginning after December 15, 2018. Earlier application is encouraged. The requirements should be applied retroactively, except for the provisions related to (1) reporting a majority equity interest in a component unit and (2) reporting a component unit if the government acquires a 100 percent equity interest. Those provisions should be applied on a prospective basis.

Governmental Accounting Standards Board Statement No. 95

In May 2020, the GASB issued Statement No 95 – *Postponement of the Effective Dates of Certain Authoritative Guidance*. The primary objective of this Statement is to provide temporary relief to governments and other stakeholders in light of the COVID-19 pandemic. That objective is accomplished by postponing the effective dates of certain provisions in Statements and Implementation Guides that first became effective or are scheduled to become effective for periods beginning after June 15, 2018, and later.

Antelope Valley Watermaster
Notes to the Financial Statements, continued
For the Year Ended December 31, 2019

(1) Reporting Entity and Summary of Significant Accounting Policies, continued

D. Assets, Liabilities, and Net Position

1. Use of Estimates

The preparation of the basic financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets, deferred outflows of resources, liabilities, and deferred inflows of resources, and disclosures of contingent assets, deferred outflows of resources, liabilities, and deferred inflows of resources, at the date of the financial statements and the reported changes in net position during the reporting period. Actual results could differ from those estimates.

2. Cash and Cash Equivalents

All deposits of the Watermaster are made in board-designated official depositories and are secured as required by State Law. Starting in 2019, the Watermaster created a money market cash account, where most of its cash is held. The Watermaster considers all highly liquid investments with a maturity of three months or less to be cash equivalents.

3. Accounts Receivable and Allowance for Uncollectible Accounts

The Watermaster extends credit to customers in the normal course of operations. When management deems customer accounts uncollectible, the Watermaster uses the allowance method for the reservation and write-off of those accounts. There is no allowance for uncollectible accounts as of December 31, 2019, as management believes all accounts will be collected.

4. Net Position

The financial statements utilize a net position presentation. Net position is categorized as follows:

- **Net Investment in Capital Assets** – Consists of capital assets, net of accumulated depreciation and amortization, and reduced by outstanding balances of any debt, or other long-term borrowings that are attributable to the acquisition, construction, or improvement of those assets.
- **Restricted** – Consists of assets that have restrictions placed upon their use by external constraints imposed either by creditors (debt covenants), grantors, contributors, or laws and regulations of other governments, or constraints imposed by law through enabling legislation.
- **Unrestricted** – Consists of the net amount of assets, deferred outflows of resources, liabilities, and deferred inflows of resources that are not included in the determination of the net investment in capital assets or restricted components of net position.

5. Water Production Assessments

Water production assessments are billed on a yearly basis and the respective revenues are recognized when earned.

6. Customer Deposits

Customer deposits consists of customer and developer deposits held at year-end.

7. Budgetary Policies

In accordance with the Judgment, the Watermaster shall prepare a proposed administrative budget for each year. The Watermaster shall hold a public hearing regarding the proposed administrative budget and adopt an administrative budget. The Watermaster's governing board is to make sure the administrative budget sets forth budgeted items and shows the allocation of the expenses amongst producers.

Antelope Valley Watermaster
Notes to the Financial Statements, continued
For the Year Ended December 31, 2019

(2) Cash and Cash Equivalents

Cash and cash equivalents as of December 31 are classified in the accompanying financial statements as follows:

		2019
Cash and cash equivalents	\$	62,837
Cash and cash equivalents - restricted		451,507
Total cash and cash equivalents	\$	514,344

Cash and cash equivalents as of December 31 consist of the following:

		2019
Deposits held with financial institutions	\$	514,344
Total cash and cash equivalents	\$	514,344

Custodial Credit Risk

Custodial credit risk for *deposits* is the risk that, in the event of the failure of a depository financial institution, a government will not be able to recover its deposits, or will not be able to recover collateral securities that are in the possession of an outside party. The California Government Code and the Watermaster's investment policy do not contain legal or policy requirements that would limit the exposure to custodial credit risk for deposits or investments, other than the following provision for deposits: The California Government Code requires that a financial institution secure deposits made by state or local governmental units by pledging securities in an undivided collateral pool held by a depository regulated under state law (unless so waived by the governmental unit). The market value of the pledged securities in the collateral pool must equal at least 110% of the total amount deposited by the public agencies. Of the bank balances, up to \$250,000 is federally insured and the remaining balance is collateralized in accordance with the Code; however, the collateralized securities are not held in the Watermaster's name.

(3) Net Position

Calculation of net position as of December 31 is as follows:

		2019
Restricted net position:		
Replacement water assessments	\$	2,063,167
Total restricted net position		2,063,167
Unrestricted net position		7,985
Total net position	\$	2,071,152

Antelope Valley Watermaster
Notes to the Financial Statements, continued
For the Year Ended December 31, 2019

(4) Risk Management

The Watermaster is exposed to various risks of loss related to torts, theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The Watermaster is a member of the Association of California Water Agencies/Joint Powers Insurance Authority (ACWA/JPIA), an intergovernmental risk sharing joint powers authority created to provide self-insurance programs for California water agencies. The purpose of the ACWA/JPIA is to arrange and administer programs of self-insured losses and to purchase excess insurance coverage.

At December 31, 2019, the Watermaster participated in the liability program of the ACWA/JPIA as follows:

- General and auto liability, public officials and employees' errors and omissions: Total risk financing self-insurance limits of \$5,000,000, combined single limit at \$5,000,000 per occurrence. The JPIA purchases additional excess coverage layers up to \$55 million per occurrence total for general, auto and public officials liability, which increases the limits on the insurance coverage noted above.

Settled claims have not exceeded any of the coverage amounts in any of the last three years and there were no reductions in the Watermaster's insurance coverage during the years ended December 31, 2019, 2018 and 2017. Liabilities are recorded when it is probable that a loss has been incurred and the amount of the loss can be reasonably estimated net of the respective insurance coverage. Liabilities include an amount for claims that have been incurred but not reported (IBNR). There was no IBNR claims payable as of December 31, 2019, 2018 and 2017.

(5) Governmental Accounting Standards Board Statements Issued, Not Yet Effective

The Governmental Accounting Standards Board (GASB) has issued several pronouncements prior to December 31, 2019, that has effective dates that may impact future financial presentations.

Governmental Accounting Standards Board Statement No. 87

In June 2017, the GASB issued Statement No. 87 – *Leases*. The objective of this Statement is to better meet the information needs of financial statement users by improving accounting and financial reporting for leases by governments. This Statement increases the usefulness of governments' financial statements by requiring recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under this Statement, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources, thereby enhancing the relevance and consistency of information about governments' leasing activities.

The requirements of this Statement are effective for reporting periods beginning after June 15, 2021. Earlier application is encouraged.

Governmental Accounting Standards Board Statement No. 89

In June 2018, the GASB issued Statement No. 89 – *Accounting for Interest Cost Incurred Before the End of a Construction Period*. The objectives of this Statement are (1) to enhance the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period and (2) to simplify accounting for interest cost incurred before the end of a construction period.

Antelope Valley Watermaster
Notes to the Financial Statements, continued
For the Year Ended December 31, 2019

(5) Governmental Accounting Standards Board Statements Issued, Not Yet Effective, continued

Governmental Accounting Standards Board Statement No. 89, continued

This Statement establishes accounting requirements for interest cost incurred before the end of a construction period. Such interest cost includes all interest that previously was accounted for in accordance with the requirements of paragraphs 5–22 of Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements*, which are superseded by this Statement. This Statement requires that interest cost incurred before the end of a construction period be recognized as an expense in the period in which the cost is incurred for financial statements prepared using the economic resources measurement focus. As a result, interest cost incurred before the end of a construction period will not be included in the historical cost of a capital asset reported in a business-type activity or enterprise fund.

This Statement also reiterates that in financial statements prepared using the current financial resources measurement focus, interest cost incurred before the end of a construction period should be recognized as an expenditure on a basis consistent with governmental fund accounting principles.

The requirements of this Statement are effective for reporting periods beginning after December 15, 2020. Earlier application is encouraged. The requirements of this Statement should be applied prospectively.

Governmental Accounting Standards Board Statement No. 91

In May 2019, the GASB issued Statement No. 91 – *Conduit Debt Obligations*. The primary objectives of this Statement are to provide a single method of reporting conduit debt obligations by issuers and eliminate diversity in practice associated with (1) commitments extended by issuers, (2) arrangements associated with conduit debt obligations, and (3) related note disclosures. This Statement achieves those objectives by clarifying the existing definition of a conduit debt obligation; establishing that a conduit debt obligation is not a liability of the issuer; establishing standards for accounting and financial reporting of additional commitments and voluntary commitments extended by issuers and arrangements associated with conduit debt obligations; and improving required note disclosures.

This Statement also addresses arrangements—often characterized as leases—that are associated with conduit debt obligations. In those arrangements, capital assets are constructed or acquired with the proceeds of a conduit debt obligation and used by third-party obligors in the course of their activities. Payments from third-party obligors are intended to cover and coincide with debt service payments. During those arrangements, issuers retain the titles to the capital assets. Those titles may or may not pass to the obligors at the end of the arrangements.

This Statement requires issuers to disclose general information about their conduit debt obligations, organized by type of commitment, including the aggregate outstanding principal amount of the issuers' conduit debt obligations and a description of each type of commitment. Issuers that recognize liabilities related to supporting the debt service of conduit debt obligations also should disclose information about the amount recognized and how the liabilities changed during the reporting period.

The requirements of this Statement are effective for reporting periods beginning after December 15, 2021. Earlier application is encouraged.

Governmental Accounting Standards Board Statement No. 92

In January 2020, the GASB issued Statement No. 92 – *Omnibus 2020*. The objectives of this Statement are to enhance comparability in accounting and financial reporting and to improve the consistency of authoritative literature by addressing practice issues that have been identified during implementation and application of certain GASB Statements.

Antelope Valley Watermaster
Notes to the Financial Statements, continued
For the Year Ended December 31, 2019

(5) Governmental Accounting Standards Board Statements Issued, Not Yet Effective, continued

Governmental Accounting Standards Board Statement No. 92, continued

The requirements of this Statement are as follows: (1) The requirements related to the effective date of Statement 87 and Implementation Guide 2019-3, reinsurance recoveries, and terminology used to refer to derivative instruments are effective upon issuance; (2) The requirements related to intra-entity transfers of assets and those related to the applicability of Statements 73 and 74 are effective for fiscal years beginning after June 15, 2020; (3) The requirements related to application of Statement 84 to postemployment benefit arrangements and those related to nonrecurring fair value measurements of assets or liabilities are effective for reporting periods beginning after June 15, 2020; and (4) The requirements related to the measurement of liabilities (and assets, if any) associated with AROs in a government acquisition are effective for government acquisitions occurring in reporting periods beginning after June 15, 2021. Earlier application is encouraged and is permitted by topic.

Governmental Accounting Standards Board Statement No. 93

In March 2020, the GASB issued Statement No. 93 – *Replacement of Interbank Offered Rates*. The objective of this Statement is to address accounting and financial reporting implications that result from the replacement of an IBOR. This Statement achieves that objective by: (1) Providing exceptions for certain hedging derivative instruments to the hedge accounting termination provisions when an IBOR is replaced as the reference rate of the hedging derivative instrument's variable payment; (2) Clarifying the hedge accounting termination provisions when a hedged item is amended to replace the reference rate; (3) Clarifying that the uncertainty related to the continued availability of IBORs does not, by itself, affect the assessment of whether the occurrence of a hedged expected transaction is probable; (4) Removing LIBOR as an appropriate benchmark interest rate for the qualitative evaluation of the effectiveness of an interest rate swap; (5) Identifying a Secured Overnight Financing Rate and the Effective Federal Funds Rate as appropriate benchmark interest rates for the qualitative evaluation of the effectiveness of an interest rate swap; (6) Clarifying the definition of reference rate, as it is used in Statement 53, as amended; and (7) Providing an exception to the lease modifications guidance in Statement 87, as amended, for certain lease contracts that are amended solely to replace an IBOR as the rate upon which variable payments depend.

The requirements of this Statement are effective as follows: (1) The removal of LIBOR as an appropriate benchmark interest rate is effective for reporting periods ending after December 31, 2021; and (2) All other requirements of this Statement are effective for reporting periods beginning after June 15, 2021. Earlier application is encouraged.

Governmental Accounting Standards Board Statement No. 94

In March 2020, the GASB issued Statement No. 94 – *Public-Private and Public-Public Partnerships and Availability Payment Arrangements*. The primary objective of this Statement is to improve financial reporting by addressing issues related to public-private and public-public partnership arrangements (PPPs). As used in this Statement, a PPP is an arrangement in which a government (the transferor) contracts with an operator (a governmental or nongovernmental entity) to provide public services by conveying control of the right to operate or use a nonfinancial asset, such as infrastructure or other capital asset (the underlying PPP asset), for a period of time in an exchange or exchange-like transaction. Some PPPs meet the definition of a service concession arrangement (SCA), which the Board defines in this Statement as a PPP in which (1) the operator collects and is compensated by fees from third parties; (2) the transferor determines or has the ability to modify or approve which services the operator is required to provide, to whom the operator is required to provide the services, and the prices or rates that can be charged for the services; and (3) the transferor is entitled to significant residual interest in the service utility of the underlying PPP asset at the end of the arrangement.

Antelope Valley Watermaster
Notes to the Financial Statements, continued
For the Year Ended December 31, 2019

(5) Governmental Accounting Standards Board Statements Issued, Not Yet Effective, continued

Governmental Accounting Standards Board Statement No. 94, continued

The requirements of this Statement are effective for reporting periods beginning after June 15, 2022, and all reporting periods thereafter. Earlier application is encouraged.

Governmental Accounting Standards Board Statement No. 96

In May 2020, the GASB issued Statement No. 96 – *Subscription-Based Information Technology Arrangements*. This Statement provides guidance on the accounting and financial reporting for subscription-based information technology arrangements (SBITAs) for government end users (governments). This Statement (1) defines a SBITA; (2) establishes that a SBITA results in a right-to-use subscription asset—an intangible asset—and a corresponding subscription liability; (3) provides the capitalization criteria for outlays other than subscription payments, including implementation costs of a SBITA; and (4) requires note disclosures regarding a SBITA. To the extent relevant, the standards for SBITAs are based on the standards established in Statement No. 87, Leases, as amended.

The requirements of this Statement are effective for reporting periods beginning after June 15, 2022, and all reporting periods thereafter. Earlier application is encouraged.

(6) Commitments and Contingencies

Grant Awards

Grant funds received by the Watermaster are subject to audit by the grantor agencies. Such audit could lead to requests for reimbursements to the grantor agencies for expenditures disallowed under terms of the grant. Management of the Watermaster believes that such disallowances, if any, would not be significant.

Litigation

In the ordinary course of operations, the Watermaster is subject to claims and litigation from outside parties. After consultation with legal counsel, the Watermaster believes the ultimate outcome of such matters, if any, will not materially affect its financial condition.

(7) Subsequent Events

Events occurring after December 31, 2019, have been evaluated for possible adjustment to the financial statements or disclosure as of June 30, 2020, which is the date the financial statements were available to be issued.

Report on Internal Controls and Compliance



Charles Z. Fedak, CPA, MBA
Christopher J. Brown, CPA, CGMA
Andy Beck, CPA

Fedak & Brown LLP
Certified Public Accountants

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**Independent Auditor's Report on Internal Controls Over Financial Reporting
and on Compliance and Other Matters Based on an Audit of Financial Statements
Performed in Accordance with *Government Auditing Standards***

Board of Directors
Antelope Valley Watermaster
Quartz Hill, California

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Antelope Valley Watermaster (Watermaster) as of and for the year ended December 31, 2019, and the related notes to the financial statements, which collectively comprises the Watermaster's basic financial statements, and have issued our report thereon dated June 30, 2020.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Watermaster's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Watermaster's internal control. Accordingly, we do not express an opinion on the effectiveness of the Watermaster's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Watermaster's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

**Independent Auditor's Report on Internal Controls Over Financial Reporting
And on Compliance and Other Matters Based on an Audit of Financial Statements
Performed in Accordance with *Government Auditing Standards*, (continued)**

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Watermaster's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Watermaster's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Fedak & Brown LLP

Fedak & Brown LLP
Cypress, California
June 30, 2020

**Antelope Valley Watermaster
Management Report
December 31, 2019**



Fedak & Brown LLP
Certified Public Accountants

Antelope Valley Watermaster

Management Report

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CONFIDENTIAL

Board of Directors
Antelope Valley Watermaster
Quartz Hill, California

Dear Members of the Board:

In planning and performing our audit of the financial statements of the Antelope Valley Watermaster (Watermaster) as of and for the year ended December 31, 2019, in accordance with auditing standards generally accepted in the United States of America, we considered Watermaster internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Watermaster's internal control. Accordingly, we do not express an opinion on the effectiveness of the Watermaster's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis.

Our consideration of internal control was for the limited purpose described in the first paragraph and was not designed to identify all deficiencies in internal control that might be material weakness. Given these limitations during our audit we did not identify any deficiencies in internal control that we considered to be material weaknesses. However, material weaknesses may exist that have not been identified.

Summary of Current Year Comments and Recommendations

Our comments, all of which have been discussed with the appropriate members of management, are summarized as follows:

Net Position

We noted that the Watermaster's current year beginning net position as reported on the trial balance did not reconcile to its prior year ending net position as reported on prior year's audited financial statements. Generally, the ending net position should roll forward to the next year where current year beginning net position equals prior year ending net position. A variance can indicate an accounting error. In order to correct the discrepancy, an adjusting journal entry was posted to properly state net position and agree it to the Watermaster's prior year financial statements.

We recommend that the Watermaster implement procedures to ensure that prior year ending net position reconciles with current year beginning net position.

Management's Response

During the year, the Watermaster's bank account was compromised due to fraud. In the process of accounting for the transfer of funds to a new bank account, there were limitations in the accounting software and the transaction was applied to net position. Management and administration of the Watermaster is taking the proper corrective actions to prevent transactions from affecting net position.

Summary of Current Year Comments and Recommendations

Accounts Payable

We noted that the Watermaster's accounting records did not include an accounts payable balance for the current year and the prior year. The Watermaster is a proprietary enterprise fund where revenues are recorded when earned and expenses are recorded when incurred. Consequently, purchases and professional expenses should be reported as an expense as they are incurred, and a respective liability should be recorded.

We recommend that the Watermaster record its financial transactions on the full accrual basis of accounting; whereby, expenses are recorded as they are incurred instead of when they are paid.

Management's Response

The Watermaster's accounting software has limitations that create challenges in recording accounts payable. Management and administration of the Watermaster is exploring different options to report accounts payable at the end of the year.

Disclosure of Audit Adjustments and Reclassifications

As your external auditor, we assume that the books and records of the Watermaster are properly adjusted before the audit begins. In many cases, however, audit adjustments and reclassifications are made in the normal course of the audit process to present the Watermaster's financial statements in conformity with accounting principles generally accepted in the United States of America or for comparison purposes with the prior year. For the Board of Directors to gain a full and complete understanding and appreciation of the scope and extent of the audit process, we have presented these audit adjustments and reclassifications as an attachment to this letter. There can be very reasonable explanations for situations of having numerous adjustments as well as having no adjustments at all. However, the issue is simply disclosure of the adjustments and reclassifications that were made and to provide the Board of Directors with a better understanding of the scope of the audit.

Management's Response

We have reviewed and approved the audit adjustment entries provided by the auditor and have entered the entries into the Watermaster's accounting system.

* * * * *

This communication is intended solely for the information and use of management, Board of Directors, and others within the Watermaster, and is not intended to be, and should not be, used by anyone other than these specified parties.

We appreciate the courtesy and cooperation extended to us during our examination. We would be pleased to discuss the contents of this letter with you at your convenience. Please do not hesitate to contact us.



Fedak & Brown LLP
Cypress, California
June 30, 2020

APPENDIX

**Antelope Valley Watermaster
Audit/Finance Committee Letter
December 31, 2019**



Charles Z. Fedak, CPA, MBA
Christopher J. Brown, CPA, CGMA
Andy Beck, CPA

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Board of Directors
Antelope Valley Watermaster
Quartz Hill, California

We have audited the financial statements of the business-type activities of the Antelope Valley Watermaster (Watermaster) for the year ended December 31, 2019. Professional standards require that we provide you with information about our responsibilities under generally accepted auditing standards (and, if applicable, *Government Auditing Standards* and the Uniform Guidance), as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our engagement letter to you dated April 23, 2020. Professional standards also require that we communicate to you the following information related to our audit.

Significant Audit Matters

Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the Watermaster are described in Note 1 to the financial statements. No new accounting policies were adopted and the application of existing policies was not changed during 2019. We noted no transactions entered into by the Watermaster during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimate affecting the Watermaster's financial statements was:

Management's estimate of the fair value of cash and cash equivalents is based on information provided by financial institutions. We evaluated the key factors and assumptions used to develop the fair value of cash and cash equivalents in determining that it is reasonable in relation to the financial statements taken as a whole.

Certain financial statement disclosures are particularly sensitive because of their significance to financial statement users. The most sensitive disclosure affecting the financial statements were:

The disclosure of fair value of cash and cash equivalents in Note 2 to the financial statements represents amounts susceptible to market fluctuations.

The financial statement disclosures are neutral, consistent, and clear.

Difficulties Encountered in Performing the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management has corrected all such misstatements. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to each opinion unit's financial statements taken as a whole.

Disagreements with Management

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

Management Representations

We have requested certain representations from management that are included in the management representation letter dated June 30, 2020.

Management Consultations with Other Independent Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the Watermaster's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the Watermaster's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Restriction on Use

This information is intended solely for the information and use of the Board of Directors and management of the Watermaster and is not intended to be, and should not be, used by anyone other than these specified parties. This restriction is not intended to limit the distribution of this letter, which is a matter of public record.

Conclusion

We appreciate the cooperation extended to us by Matthew Knudson, Administrator, and the Watermaster staff in the performance of our audit testwork.

We will be pleased to respond to any questions you have about the foregoing. We appreciate the opportunity to continue to be of service to the Watermaster.

Fedak & Brown LLP

**Antelope Valley Watermaster
 Schedule of Adjusting Journal Entries
 December 31, 2019**

Account	Description	Debit	Credit
Adjusting Journal Entries JE # 1			
AJE - To agree net position to prior year financial statements.			
3001	Retained Earnings	\$ 56,083.17	
5005	Legal & Professional Fees		23,042.92
5007	Watermaster Engineer		33,040.25
Total		<u>56,083.17</u>	<u>56,083.17</u>
Adjusting Journal Entries JE # 2			
AJE - To adjust automatic QuickBooks journal entry when a new cash account was opened during FY19.			
2001	Retainers	288,578.07	
3000	Opening Balance Equity		288,578.07
Total		<u>288,578.07</u>	<u>288,578.07</u>
Adjusting Journal Entries JE # 3			
CPE - To record manual A/P accrual due to QuickBooks Online limitations.			
5001	Contracted Administrative Services	3,268.75	
5001	Contracted Administrative Services	498.10	
5003	Information and Document Management	1,200.00	
5004	Insurance Expenses	306.99	
5005	Legal & Professional Fees	16,317.83	
5007	Watermaster Engineer	9,532.71	
2000	Accounts Payable (A/P)		31,124.38
Total		<u>31,124.38</u>	<u>31,124.38</u>
Adjusting Journal Entries JE # 4			
AJE - To record adjustments to A/P related to an AVSWCA invoice for the services rendered November 1, 2019 through October 31, 2020. The accrual is for the months of November 2019 and December 2019.			
5008	Watermaster Special Contract Services	2,729.17	
2000	Accounts Payable (A/P)		2,729.17
Total		<u>\$ 2,729.17</u>	<u>2,729.17</u>

Antelope Valley Watermaster
Schedule of Adjusting Journal Entries, continued
December 31, 2019

Account	Description	Debit	Credit
Adjusting Journal Entries JE # 5			
RJE - To reclassify Replacement Water Assessment credit memo to Olin Derrick related to a carryover water transfer per Court Judgment.			
4502	Replacements Water Assessments	\$ 81,755.00	
4502	Replacements Water Assessments	83,000.00	
4503	Temporary Water Transfer Request Fees		164,755.00
Total		\$ 164,755.00	164,755.00
	Total Adjusting Journal Entries	\$ 543,269.79	543,269.79

Legend:

AJE	Audit Adjusting Entry
CPE	Client Prepared Entry
RJE	Reclassifying Journal Entry

Appendix L

Notice List

Appendix L Notice List

Producer A-Z	Party	Producer Name	Street Address	City, State and Zip	Phone	Email	Notes
60th Street Association Water System	Exhibit 4	60th Street Association Water System	5836 Hidden Trail Road	Rosamond, Ca 93560			unknown email
Adams Bennett Investments, LLC	Exhibit 4	Adams Bennett Investments, LLC	200 S. Main St Suite 200	Corona, CA 92882		mye@rrmca.com	
Alegre, Juan & Ceidy	New Production	Juan and Ceidy Alegre	4001 East Avenue E	Lancaster, Ca 93535			
Ambriz, Juan	New Production	Juan Ambriz	PO Box 382	Pearblossom, Ca 93553	(661) 713-3443		
Antelope Park Mutual Water Company	Exhibit 4	Antelope Park Mutual Water Company	P.O. Box 1712	Lancaster, CA 93539		apmw615@yahoo.com ; greydog1835@yahoo.com ; mhavens@avhsd.org ;	
Antelope Valley Joint Union High School District	Exhibit 4	Antelope Valley Joint Union High School District	44811 Sierra Hwy	Lancaster, CA 93534	661-952-2287		Mat Havens
Antelope Valley Mobile Estates	Exhibit 4	Antelope Valley Mobile Estates	8101 E Marita Street	Long Beach Ca, 90816	310-871-8516	Jeanetteso@aol.com	Jeanette Kolar - Co-Owner
Antelope Valley Resource Conservation District	Unauthorized Pumper	Antelope Valley Resource Conservation District	10148 West Avenue I	Lancaster, CA 93536			
Antelope Valley Water Storage LLC	Exhibit 4	Antelope Valley Water Storage LLC	4700 Wilshire Blvd	Los Angeles, CA 90010		mbeuhler@vewwaterbank.com ; zahngam@cmgroup.com ;	
Aqua-J Mutual Water Company	Exhibit 4	Aqua-J Mutual Water Company	P.O. Box 4778	Lancaster, CA 93539	(661) 733-6147	kjirdles@gmail.com ;	Kent Girdlestone
Arklin, Philip	Over Pumping Small Pumper	Philip Arklin	P.O. Box 900697	Palmdale, CA 93590			
AV Solar Ranch 1, LLC	Exhibit 4	AV Solar Ranch 1, LLC	300 Exelon Way, Suite 330	Kennett Square, PA 19348		stanley.teheer@exeloncorp.com ;	
AVEK	Exhibit 4	AVEK	6500 W Avenue N	Palmdale, CA 93551		dchisam@avek.org ;	
Averydale Mutual Water Company	Exhibit 4	Averydale Mutual Water Company	P.O. Box 191 Lancaster, CA 93584	Lancaster, CA 93584		bbraman1@msn.com ; averydale@verizon.net ;	
Basner, William	Unauthorized Pumper	William Basner c/o Aaron DeFranco	48745 3 Points Road	Lake Hughes, CA 93532	909-583-4045	a.defranco@kw.com	
Baxter Mutual Water Company	Exhibit 4	Baxter Mutual Water Company	46163 125th Street East	Lancaster, CA 93535		tencowfam@gmail.com ;	
Big Rock Mutual Water Company	Exhibit 4	Big Rock Mutual Water Company	32810 165th St E	Llano, CA 93544			unknown email
Bleich Flat Mutual Water Company	Exhibit 4	Bleich Flat Mutual Water Company	P.O. Box 1307 46410 Kings Canyon Rd	Lancaster, CA 93584	661-724-9012	cassidy.skellon@yahoo.com ; bfwaterco@gmail.com ; jandmrugs@aol.com ;	
Blum, Sheldon R. Blum, Trustee of the 1998 Family Trust	Exhibit 4	Sheldon R. Blum, Trustee of the 1998 Family Trust	2242 Camden Ave, Suite 104	San Jose, CA 95124		blumlaw@sbcglobal.net ;	
Bothouse Properties LLC c/o Brad DeBranch	Exhibit 4	Bothouse Properties LLC c/o Brad DeBranch	PO Box 20157	Bakersfield, CA 93390		dbranch@bothouseproperties.com ; dyurosek@bothouseproperties.com ;	
Bookman; Thomas and Julie Bookman 2007 Trust	Exhibit 4	Thomas and Julie Bookman 2007 Trust	46806 120th St. E	Lancaster, CA 93535		tom@speerconstruction.com ;	
Boron Community Services District	Exhibit 3	Boron Community Services District	PO Box 1060	Boron, CA 93596		boroncsd@yahoo.com	
Bridwell, James & Elizabeth	Exhibit 4	James & Elizabeth Bridwell	9363 Colley Pl	Littlerock, Ca 93543			unknown email
Brittner, George	Exhibit 4	Brittner Family Trust	P.O. Box 720173	Pinon, CA 92372	760-669-8792	brittnerwaterdelivery2015@yahoo.com ;	Brittner Water Delivery
Burrows/200 A40 H LLC	Exhibit 4	Burrows/200 A40 H LLC	PO Box 802948	Santa Clarita, CA 91380		bruce@remingtonwater.com ;	unknown email
C. Louise R. Close Living Trust	Exhibit 4	C. Louise R. Close Living Trust					unknown email
Calandri Water Company, LLC.	Exhibit 4	Calandri Water Company, LLC.	P.O. Box 8010	Lancaster, CA 93539		connie@calandrisonssefarm.com ; brad@calandrisonssefarm.com ;	
California Department of Corrections and Rehabilitation	State of California	California Department of Corrections and Rehabilitation	9838 Old Placerville Road, Suite B-2	Sacramento, CA 95827	(916) 255-3029	SBDVBEAdvocate@CDCR.ca.gov	
California Department of Military	State of California	California Department of Military	Joint Force Headquarters 9800 Goethe Road	Sacramento, CA 95827	(916) 854 - 3000		
California Department of Parks and Recreation	State of California	California Department of Parks and Recreation	15101 Lancaster Road	Lancaster, CA 93536	(916) 653-6995	info@parks.ca.gov	
California Department of Transportation	State of California	California Department of Transportation	1120 N Street MS 49	Sacramento, CA 95814	(916) 654-7287	Assistant.to.Budgets@dot.ca.gov	
California Department of Veteran Affairs	State of California	California Department of Veteran Affairs	P.O. Box 942895	Sacramento, CA 94295	(916) 653-1961	phil.mcallister@calvet.ca.gov	
California Department of Water Resources	State of California	California Department of Water Resources	P.O. Box 1187	Pearblossom, Ca 93553	(916) 653-5791		
California Highway Patrol	State of California	California Highway Patrol	601 North 7th Street	Sacramento, CA 95811	(916) 843-3000		
California State Lands Commission	State of California	California State Lands Commission	100 Howe Avenue, Suite 100 South	Sacramento, CA 95825	(916) 574-1900	Brian.Bugsch@slc.ca.gov	
California Water Services Company	Exhibit 3	California Water Services Company	5015 West Avenue L-14 Suite #2	Quartz Hill, CA 93536		jojeda@calwater.com	
Castillo, Juan	New Production	Juan Castillo	1534 East Lingard Street	Lancaster, Ca 93535			
Chavez, Effren	Exhibit 4	Effren Chavez	17340 High Acres Ave.	Palmdale, CA 93591			unknown email
City of Lancaster	Others with Rights to Produce	City of Lancaster	44933 Fern Avenue	Lancaster, CA 93534			
City of Los Angeles, Department of Airports	Exhibit 4	City of Los Angeles, Department of Airports	6053 W. Century Blvd., Suite 400	Los Angeles, CA 90045		RDOMASH@lawa.org ; spowell@kmtg.com ; rfreeman@lawa.org ;	
Clan Keith Real Estate Investments, LLC dba Leisure Lake Mobile Home Park	Supporting Land Owners	Clan Keith Real Estate Investments, LLC	2320 West Ray Street, Suite 3	Chandler, AZ 95224	(213) 891-8532	lucas.quass@lw.com	
Collins, Raymond & Maryam	New Production	Raymond & Maryam Collins	1865 Greenfield Avenue, #201	Los Angeles, Ca 90025	(651) 639-9449		
Colorado Mutual Water Co.	Exhibit 4	Colorado Mutual Water Co.	P.O. Box 482	Lancaster, CA 93584		showtimeranch@msn.com ;	
Connelly, Myles	New Production	Myles Connelly	PO Box 1816	Simi Valley, Ca 93062			
Cookson, William	Known Small Pumper	William Cookson	6848 105th Street West	Rosamond, Ca 93560		wcookson54@gmail.com	
Cooper, Ronald	New Production	Ronald J. Cooper	1155 W 104th Street	Los Angeles, Ca 90044	(760) 388-4907	carrieskorn@gmail.com	
Copa De Oro Land Company	Exhibit 4	Copa De Oro Land Company	9250 Wilshire Blvd, Suite 300	Beverly Hills, CA 90212		elliott@southbrookequities.com	
Corona, Gilardo	Qualified Small Pumpers	Gilardo R. Corona	8715 Favonito Ave.	Rosamond, CA 93560	(661) 256-3168		
County Sanitation Districts of Los Angeles 14 & 20	Exhibit 4	County Sanitation Districts of Los Angeles 14 & 20	1955 Workman Mill Rd.	Whittier, CA 90601		erikabensch@lascsd.org ;	
Crystal Organic LLC/Grimmway/Lapis	Exhibit 4	Crystal Organic LLC/Grimmway/Lapis	P.O. Box 81498	Bakersfield, CA 93380		cvoss@grimmway.com ;	
Dayan, Benjamin & Flor	Unauthorized Pumper	Benjamin & Flor Dayan	449 N. Laurel	Los Angeles, CA 90048			
Del Carmen Vala, Maria	New Production	Maria Del Carmen Vala	2131 Ivanhoe Avenue	Oxnard, Ca 93030			
Del Sur Gardens, LLC. (RV Park)	Non Party	Del Sur Gardens, LLC	9020 West Avenue J	Lancaster, CA 93535			
Del Sur Ranch LLC	Exhibit 4	Del Sur Ranch LLC	16633 Ventura Blvd. Suite 1040	Encino, CA 91436		george@haggargroup.com ;	
Derrick, Olin	Over Pumping Small Pumper	Becki Derrick	8847 East Avenue G-12	Lancaster, CA 93535			
Desert Breeze MHP, LLC	Supporting Land Owners	Desert Breeze MHP, LLC	c/o Daniel Epstein P.O. Box 17482	Encino, CA 91416	(661) 256-4577		
Desert Lake Community Services District	Exhibit 3	Desert Lake Community Services District	17200 Del Oro Street	Boron, CA 93596		desertlakecsd@gmail.com	
Dickey, Randall & Billie	Exhibit 4	Randall and Billie Dickey	P.O. Box 694	Pearblossom, CA 93553			unknown email
Edwards Air Force Base	Supporting Land Owners	412 CE/CENP - FIS2AA	255 N. Rosamond Blvd Bldg 3500	Edwards, AFB, CA 93524	(661) 277-4695	gerald.boetsch.1@us.af.mil	
Lockheed Martin		Steven Chov	1011 Lockheed Way, MZ 6454	Palmdale, CA 93599			
El Dorado Mutual Water Company	Exhibit 4	El Dorado Mutual Water Company	PO Box 900519	Palmdale, CA 93590		eldmwc@gmail.com ;	
eSolar Inc.; Sierra Sun Tower, LLC	Exhibit 4	eSolar Inc.; Sierra Sun Tower, LLC	P.O. Box 10189	Burbank, CA 91510			unknown email
eSolar Inc.; Tumbleweed Soutower LLC	Exhibit 4	eSolar Inc.; Tumbleweed Soutower LLC	3355 W. Empire Ave. Suite 200	Burbank, CA 91504			unknown email
eSolar Inc.; Red Dawn Soutower LLC	Exhibit 4	eSolar Inc.; Red Dawn Soutower LLC	3355 W. Empire Ave. Suite 200	Burbank, CA 91504			unknown email
Esparza Jimenez, David	New Production	David Esparza Jimenez	2330 East Avenue J-8 #39	Lancaster, Ca 93535			
Espinoza, Leticia	New Production	Leticia Espinoza	1805 La France Drive	Bakersfield, Ca 93307			
Estrada, Jesus	New Production	Jesus Estrada	109 Buckhorn Apt 1	Inglewood, Ca 90301	310-292-3349		
Estrada, Juan & Mayra	New Production	Juan & Mayra Estrada	PO Box 2071	Littlerock, Ca 93543	(770) 496-1893		

Appendix L Notice List

Producer A-Z	Party	Producer Name	Street Address	City, State and Zip	Phone	Email	Notes
Evans, Lawrence Dean and Susan	Exhibit 4	Lawrence Dean Evans, Jr. and Susan Evans	P.O. Box 560	Pearblossom, Ca 93553		susieq4522@me.com	
Evergreen Mutual Water Company	Exhibit 4	Evergreen Mutual Water Company	4646 Lumar Street	Lancaster, Ca 93535		todd_lemen@msn.com	
Eyherabide Sheep Co., Eyherabide Land Co., LLC	Supporting Land Owners	Eyherabide Sheep Co., Eyherabide Land Co., LLC	5284 Kent Drive	Bakersfield, Ca 93306			
Felder, William	Over Pumping Small Pumper	William Felder	5859 East Avenue F	Lancaster, Ca 93535	661-609-9866		
Findley, Ruth	Exhibit 4	Ruth Findley	9363 Colley Pl.	Littlerock, Ca 93543			unknown email
First Mutual Water Company	Exhibit 4	First Mutual Water Company	5848 Gobi Avenue	Rosamond, Ca 93560		papa@global.net	
FS Land Holdings First Solar Development	Exhibit 4	FS Land Holdings, First Solar Development	2049 Century Park East, Suite 3550	Los Angeles, Ca 90067		BHerrema@bhfs.com; mark.osterhoff@firstsolar.com;	
First Solar, Inc.	Exhibit 4	First Solar, Inc.	135 Main Street, 6th Floor	San Francisco, Ca 94105		Jack.Pigott@firstsolar.com	
Fong, Alma	New Production	Alma Fong	PO Box 989	Littlerock, Ca 93543			
Foroughi Family LLC	Non Party	Foroughi Family LLC	268 Loch Lomond Road	Rancho Mirage, Ca 92270			
Frankenburg, Leah	Exhibit 4	Leah Frankenberg	PO Box 99	Littlerock, Ca 93543	661-623-3197	leah.frankenberg@gmail.com	
French, Christopher & Nancy	New Production	Nancy & Christopher French	4800 50th Street West	Rosamond, Ca 93560			
García, Ervin & Espina, Caroline	New Production	Ervin Garcia & Caroline Espina	PO Box 456	Littlerock, Ca 93543		alegre4321@aol.com	
Godde: Steve Pam and Gary	Exhibit 4	Steve, Pamela & Gary Godde c/o Rife Silva & Co LLC	22 State Route 208	Yerington, NV 89447		g_godde@msn.com	
Gorrindo Resourceful LLC	Exhibit 4	Gorrindo Resourceful LLC	P.O. Box 341	Minden, NV 89423		bob@gorrindo.com	
Granite Construction Company (Big Rock Facility)	Exhibit 4	Granite Construction Company (Big Rock Facility)	213 East Avenue M	Lancaster, Ca 93535		William.taylor@qcinc.com	
Granite Construction Company (Little Rock Sand and	Exhibit 4	Granite Construction Company (Little Rock Sand and	213 East Avenue M	Lancaster, Ca 93535		William.taylor@qcinc.com	
Griffin, Laura	Exhibit 4	Laura Griffin	48009 70th Street East	Lancaster, Ca 93535		James.Sauder@qcinc.com	
H & N Development Co. West Inc.	Exhibit 4	H & N Development Co. West Inc.	P.O. Box 1496	Santa Cruz, Ca 95061		hideserlimbo@verizon.net	
Healy Enterprises, Inc.	Exhibit 4	Jane Healy and Healy Enterprises Inc.	2460 Waldemar Drive	Thousand Oaks, Ca 91361	661-724-7813	jnhstep12@gmail.com	
Hemme, John	Over Pumping Small Pumper	John Hemme	43719 Sierra Highway	Lancaster, Ca 93534			
Hernandez, Luis	Exhibit 4	Luis Hernandez	2096 Alta Pasa Drive	Altadena, Ca 91001		scrip2nife@aol.com	
High Desert Dairy	Exhibit 4	High Desert Dairy	9753 East Avenue F-8	Lancaster, Ca 93535		vandamgary@gmail.com	avfarming@yahoo.com
Houanlian, Masis	New Production	Masis Houanlian	10909 Woodward Ave	Sunland, Ca 91040			
Hyde, Richard	Qualified Small Pumpers	Richard L Hyde	43627 Colony Drive	Lancaster, Ca 93536			
Irma Ann Carle Trust, Irma-Anne Carle, Trustee	Exhibit 4	Irma Ann Carle Trust, Irma-Anne Carle, Trustee	30701 Longview Rd	Pearblossom, Ca 93553		licarle@icloud.com	
40th Street East Water Group (previous name 40th St. Mutual Water Company)	Defaulted Party	40th Street East Water Group	43031 40th Street East	Lancaster, Ca 93535	661-946-1976	emac43031@gmail.com	Contact Name: Elaine Macdonald
Joshua Acres Mutual Water Company	Defaulted Party	Joshua Acres Mutual Water Company	36420 41st Street East	Palmdale, Ca 93552			
Joshua Memorial Park	Section 5.1.10 Non-Stipulating Party	Joshua Memorial Park	808 East Lancaster Blvd	Lancaster, Ca 93535		Christopher.Twitchell@Dignitymemorial.com	
Juniper Hills Land Conservation Trust	New Production	Juniper Hills Land Conservation Trust	1634 W. Glenoaks Blvd. #254	Glendale, Ca 91201			
Korn, Carrie	New Production	Carrie Korn	253 Mountain Avenue	Monrovia, Ca 91016	(661) 944-1384		
Kyle Revocable Living Trust	Exhibit 4	Trustees of The Kyle Revocable Living Trust	12345 E. Ave. J	Lancaster, Ca 93535		gitrdunkyle@msn.com	
La Cosepa (Christ of the Desert)	New Production	La Cosepa Christ of the Desert	3900 East 170th Street	Lake Los Angeles, Ca 93591			
Land Projects Mutual Water Co.	Exhibit 4	Land Projects Mutual Water Co.	8810 W Ave. E8	Lancaster, Ca 93536		lpmwc@verizon.net	
Landale Mutual Water Co.	Exhibit 4	Landale Mutual Water Co.	P.O. Box 5908	Lancaster, Ca 93539		landale1948@gmail.com	
Landaverde, Angela	Qualified Small Pumpers	Angela Landaverde	10503 Alexander Avenue	South Gate, Ca 90280			
Lands of Promise Mutual Water Company	Exhibit 4	Lands of Promise Mutual Water Company	P.O. Box 874	Buttontwillow, Ca 93506		rhouchin@gcagenteraccounting.com	
Lane Family Trust	Exhibit 4	Lane Family Trust	42220 10th St. West Suite 101	Lancaster, Ca 93534		mvs@verizon.net	G. Lane Family (Frank and Yvonne Lane 1993 Family Trust, Little Rock Sand and Gravel, Inc., George and Charlene Lane Family Trust) (Done not include water pumped on land leased to Granite Construction)
LeClair Robert, Unini Marie	Exhibit 4	LeClair Robert, Unini Marie	PO Box 207	Pearblossom, Ca 93553		unininia@gmail.com	
Leer, James and Diana	Exhibit 4	James and Diana Leer	11850 Nearwood Rd.	Juniper Hills, Ca 93543	(661) 265-7788	roe@gmail.org	
Littlerock Aggregate Co., Inc., Holiday Rock Co.	Exhibit 4	Littlerock Aggregate Co., Inc., Holiday Rock Co.	1401 N. Benson Ave.	Upland, Ca 91786	909-982-1553 Ext 4219	dbrowning@holidayrock.com	Dean Browning
Littlerock Creek Irrigation District	Exhibit 3	Littlerock Creek Irrigation District	35141 87th Street East	Littlerock, Ca 93543		bhogan@avc.edu	
Llano Del Rio Water Company	Exhibit 4	Llano Del Rio Water Company	32810 S. 165th St East	Llano, Ca 93544			unknown email
Llano Mutual Water Company	Exhibit 4	Llano Mutual Water Company	32810 S. 165th St East	Llano, Ca 93544			unknown email
Long Valley Road LP	Over Pumping Small Pumper	Long Valley Road LP	23475 Long Valley Road	Woodland Hills, Ca 91367			
Los Angeles County Waterworks District No. 40	Exhibit 3	Los Angeles County Waterworks District No. 40	PO Box 7508	Alhambra, Ca 91802		aariki@dpw.lacounty.gov	keskridge@dpw.lacounty.gov
LV Ritter Ranch	Supporting Land Owners	LV Ritter Ranch	333 South Hope Street 16th Floor	Los Angeles, Ca 98071			
Magana, Paul (Woodstone Construction)	New Production	Paul Magana	2332 Oak Crest Avenue	Palmdale, Ca 93550	(661) 713-3443		
Maritorena, Jose	Exhibit 4	Trustees of the Maritorena Living Trust	300 Panama Rd.	Bakersfield, Ca 93307		jmsheep@aol.com	
McWilliams, Dennis & Diane	Exhibit 4	Dennis & Diane McWilliams	15335 E. Ave. G Apt G	Lancaster, Ca 93535			unknown email
Mettler Valley Mutual Water Company	Defaulted Party	Mettler Valley Mutual Water Company	28115 West Avenue C-6	Lancaster, Ca 93536			
Miner, Richard	Exhibit 4	Richard Miner	9678 Dawn Rd.	Rosamond, Ca 93560		rhmfarmer@gmail.com	
Ming, Lin	New Production	Lin Ming	425 Keiffer Dr.	Rincon, Ga 31326	(661) 803-7698		
Molina, Magaly	Over Pumping Small Pumper	Magaly Molina	62 Parc Place Drive	Milpitas, Ca 95035			
Moody, Dwight and Kennan	Qualified Small Pumpers	Dwight and Kennan Moody	5062 Balsawood	Irvine, Ca 92612			
Mountain Brooks LLC	Over Pumping Small Pumper	Mountain Brooks LLC	PO Box 900697	Palmdale, Ca 93590			
Munz: 2014 Revocable Trust, Terry A. & Kathleen M. Munz	Exhibit 4	Barry and Sharon Munz 2014 Revocable Trust, Terry A. & Kathleen M. Munz	129 West Pondera Street	Lancaster, Ca 93534		munzranch@msn.com	
Nebeker, Eugene	Exhibit 4	Eugene Nebeker	400 N. Rockingham Ave.	Los Angeles, Ca 90049		enebeker@roadrunner.com	
New Goldensands Investment, LLC	Exhibit 4	New Goldensands Investment, LLC	2479 Stevens Avenue	Rosemead, Ca 91770	(661) 946-5900	lotsbabylove@gmail.com	Christina Penz
North Edwards Water District	Exhibit 3	North Edwards Water District	13525 Fran Street	North Edwards, Ca 93523		newd@verizon.net	
Northrop Grumman Systems Corporation	Exhibit 4	Northrop Grumman Systems Corporation	Alston & Bird LLP 333 South Hope Street, 16th Floor	Los Angeles, Ca 90071		clynton.namuo@alston.com	

Appendix L Notice List

Producer A-Z	Party	Producer Name	Street Address	City, State and Zip	Phone	Email	Notes
NRG Energy Inc. / Alpine LLC. / Clearway Energy (bought NRG)	Exhibit 4	NRG Energy Inc.	Attn: PFS Billing 4900 N. Scottsdale Rd, Suite 5000	Scottsdale, AZ 85251	(661) 528-1798	susan.jackson@clearwayenergy.com	
Ormonde, Antonio (Triple O Livestock)	New Production	Triple O Livestock c/o Antonio Ormonde	14657 Chandler Street	Eastvale, CA 92880	661-944-2666		
Osoioquispe, Rafael	Qualified Small Pumpers	Rafael Osoioquispe	37012 Cooper Ter	Palmdale, CA 93550			
Ovesepyan, Andrey	New Production	Andrey Ovesepyan	38713 Tierra Subida Avenue, #30	Palmdale, CA 93551		Randy.Sharp@sympatico.ca	
Palm Ranch Irrigation District	Exhibit 3	Palm Ranch Irrigation District	4871 West Columbia Way	Quartz Hill, CA 93536		pete@palmranchid.com	
Palmdale Mobile Franks, LLC	Defaulted Party	Palmdale Mobile Franks, LLC	38015 65th Street East	Palmdale, CA 93552			
Palmdale Water District	Exhibit 3	Palmdale Water District	2029 East Avenue Q	Palmdale, CA 93550		diamoreaux@palmdalewater.org	
Park, Young	New Production	Young Park	325 W 124th Street	Los Angeles, Ca 90061			
Parvaneh Kadivar	Over Pumping Small Pumper	Kadivar Parvaneh	18017 Bluesail Drive	Pacific Palisades, CA 90272	310-612-6115		
Perez, Espiridion & Yvonne	New Production	Espiridion & Yvonne Perez	PO Box 2004	Rosamond, Ca 93560	(661) 942-6125		
Phelan Pinon Hills CSD	Others with Rights to Produce	Phelan Pinon Hills CSD	4176 Warbler Rd.	Phelan, CA 92371	(760) 868-1212		
Plute Mutual Water Company	Defaulted Party	Plute Mutual Water Company	43322 147th Street East	Lancaster, CA 93535			
Pool, Noel	Exhibit 4	Noel Pool	P.O. Box 900	Juniper Hills, CA 93543		noelpoolir@gmail.com ;	
Quartz Hill Water District	Exhibit 3	Quartz Hill Water District	5034 West Avenue L	Quartz Hill, CA 93536		creed@qhwd.org	
R and M Ranch Inc.	Exhibit 4	R and M Ranch Inc.	4655 Via Grande	Newbury Park, CA 91320		lonedrsk@aol.com ;	
Radcast Investments	Exhibit 4	Radcast Investments	28382 Constellation Road	Valencia, CA 91355		ydq@vkccorporateservices.com ;	
Rancho Sierra Properties, LLC (Rancho Sierra Golf Course)	Non Party	Rancho Sierra Properties, LLC.	1168 Valley Quail Circle	San Jose, CA 95120			
Reca, John and Adrienne	Exhibit 4	John and Adrienne Reca	2727 W. Ave. 04	Palmdale, CA 93551		adrienne@sbmarvin.com; recaranch@att.net ;	
Reesdale Mutual Water Company	Supporting Land Owners	Reesdale Mutual Water Company	44609 86th Street East	Lancaster, CA 93534	(661) 946-1889		
Rezvani, Mike	New Production	Mike Rezvani	19556 Shadow Glen Circle	Porter Ranch, Ca 91326	(805) 962-2318		
Richter, Suzanne	Exhibit 4	Suzanne Richter	P.O. Box 290	Pearblossom, CA 93553		suzanne93553@yahoo.com ;	
Robar Enterprises, HI-Grade Materials Co.	Supporting Land Owners	Robar Enterprises, HI-Grade Materials Co.	17671 Bear Valley Rd.	Hesperia, CA 92345			
Rodriguez, Erik	New Production	Erik Rodriguez	1221 East Avenue J-7	Lancaster, CA 93535			
Rogers, Johnny (Mark Ritter)	Over Pumping Small Pumper	Johnny Rogers					Bought Mark Ritter Property
Rosamond Community Services District	Exhibit 3	Rosamond Community Services District	3179 35th Street W	Rosamond, Ca 93560		rsmith@rosamondcsd.com	
Rosamond High School	Exhibit 4	Rosamond High School	2925 W. Rosamond Blvd.	Rosamond, CA 93560		sduran@skusd.K12.ca.us ;	
Rosamond Mobile Home Park Milana VII LLC	Supporting Land Owners	Rosamond Mobile Home Park Milana VII LLC	c/o Milana VII LLC P.O. Box 915	Tustin, CA 92781	(661) 256-2084		
Rose Villa Apartments	Exhibit 4	Rose Villa Apartments	1223 MI. Rainier Rd.	Rancho Palos Verdes, CA 90275		rwabuzor@cox.net ;	
Sahara Nursery and Farm	Exhibit 4	Sahara Nursery and Farm	14848 E. Ave. J	Lancaster, CA 93535		martim@earthlink.net ;	
Saint Andrew's Abbey, Inc.	Exhibit 4	Saint Andrew's Abbey, Inc.	PO Box 40	Valyermo, CA 93563		francisbenedit@rocktelmail.com ;	
Schilling 1992 Family Trust	Exhibit 4	Trustees of the L&M Schilling 1992 Family Trust	11317 E. Ave. E	Lancaster, CA 93535		2_desertrats@verizon.net ;	
Selek Family Trust	Exhibit 4	TTEE; Barbara Aznarez Decd Trust and Selak, Mabel	1200 Lida	Pasadena, CA 91103	(626) 584-8110	steve@selakenertainment.com ;	
Service Rock Products, L.P.	Exhibit 4	Service Rock Products, L.P.	550 East Hospitality Lane, Suite 300	San Bernardino, CA 92408		anthony@rrmca.com ;	
SGS Antelope Valley Development, LLC (Sempra)	Exhibit 4	SGS Antelope Valley Development, LLC	101 Ash St HQ-07	San Diego, CA 92101	619-696-4861		unknown email
Shadow Acres Mutual Water Company	Exhibit 4	Shadow Acres Mutual Water Company	P.O. 900669	Palmdale, CA 93590		samwcd@gmail.com	
Sheep Creek Water Co.	Exhibit 4	Sheep Creek Water Co	P.O. Box 291820	Phelan, CA 92329		sheepcreek@verizon.net ;	
Siebert, Jeffery and Nancee	Exhibit 4	Jeffrey and Nancee Siebert	30689 Dutra Lane	Oakdale, CA 95361		desertjeff@icloud.com ;	
Silva, Ruben & Maria	Unauthorized Pumper	Ruben & Maria Silva	1715 Turnbull Canyon Rd	Hacienda Heights, VA 93745			
Sonrise Ranch, LLC	Exhibit 4	Sonrise Ranch, LLC	9711 East Avenue F-8	Lancaster, CA 93535		vandamqary@gmail.com ;	
Southern California Edison Company	Exhibit 4	Southern California Edison Company	2244 Walnut Grove Ave.	Rosemead, CA 91770		Julia.mosel@sce.com ;	
Sundale Mutual Water Company	Exhibit 4	Sundale Mutual Water Company	P.O. Box 6708	Lancaster, CA 93539		sundalemutual@gmail.com ;	
Sunnyside Farms Mutual Water Company, Inc.	Exhibit 4	Sunnyside Farms Mutual Water Company, Inc.	P.O. Box 901025	Palmdale, CA 93590		ssfwmc@gmail.com ;	
Tejon Ranchcorp and Tejon Ranch Co.	Exhibit 4	Tejon Ranchcorp and Tejon Ranch Co.	P.O. Box 1000	Lebec, CA 93243		atkinson@tejonranch.com ;	
Terrazas, Gloria	Exhibit 4	Gloria Terrazas	10640 Four Winds road	Juniper Hills, CA 93543		glopez@tejonranch.com ;	
The 50th District Agriculture Association	Exhibit 4	The 50th District Agriculture Association	2551 West Avenue H, Suite 102	Lancaster, CA 93536	(661) 948-6060		unknown email
Tierra Bonita Mutual Water Company	Exhibit 4	Tierra Bonita Mutual Water Company	5159 East Avenue K-8	Lancaster, CA 93535		tierrabonitawater@yahoo.com ;	
Tierra Bonita Ranch	Exhibit 4	Tierra Bonita Ranch c/o Ruth Kremen	17434 Palora St.	Encino, CA 91316		paulkremen@mac.com ;	
Torres, Tomas and Irma	Qualified Small Pumpers	Tomas and Irma Torres	3310 Wisconsin Avenue	South Gate, CA 90280			
Trang, Sroy	New Production	Sroy Trang	PO Box 116	Alhambra, CA 91803			
Triple M Property Co.	Exhibit 4	Triple M Property Co.	75 Malaga Cove, Suite 14	Palos Verdes Estates, CA 90274		michaelsoffice@gmail.com	
Trono, Peter	Qualified Small Pumpers	Peter J Trono	29125 Devils Punch Bowl Drive Rd	Pearblossom, Ca 93553			
Turk Trust	Exhibit 4	Randy Turk	P.O. Box 1016	Littlerock, CA 93543		grahamcrx@gmail.com ;	
U.S. Borax	Exhibit 4	U.S. Borax	14486 Borax Rd.	Boron, CA 93516		nathan.francis@riotonto.com ;	
Ugonwa, Bonaventure	New Production	Bonaventure Ugonwa	2156 Avenida Del Mar	Lancaster			
Van Dam, Craig and Marta	Exhibit 4	Craig and Marta Van Dam	7316 W. Ave. D8	Lancaster, CA 93536		avfarming@yahoo.com ;	
Van Dam, Gary	Exhibit 4	Gary Van Dam	9711 East Avenue F-8	Lancaster, CA 93535			
Van Dam, Nick and Janet	Exhibit 4	Nick and Janet Van Dam	7283 East Avenue F-8	Lancaster, CA 93535			unknown email
Vulcan Materials Co., Vulcan Lands Inc.,	Exhibit 4	Vulcan Materials Co., Vulcan Lands Inc.,	405 North Indian Hill Blvd.	Claremont, CA 91700	909-621-1266	ksage@irmwater.com ;	Kevin Sage
WAGAS Land Company LLC	Exhibit 4	WAGAS Land Company LLC	906 Indiana Way	La Canada, CA 91011			
WDS California II, LLC	Exhibit 4	WDS California II, LLC	113 S. LaBrea Avenue 3rd Floor	Los Angeles, CA 90036		andrewwerner@westerndev.com ;	
Weatherbie, Michael & Dolores	Exhibit 4	Michael and Dolores A. Weatherbie	9950 Cima Mesa Rd	Littlerock, Ca 93543		mikew@qnet.com ;	
Webster, Anthony	New Production	Anthony Webster	11757 Satcoy Street, Apt # 101	North Hollywood, Ca 91605			
West Side Park Mutual Water Co.	Exhibit 4	West Side Park Mutual Water Co.	40317 11th St West	Palmdale, CA 93551		info@westsideparkmutual.com ;	
West Valley County Water District	Exhibit 3	West Valley County Water District	25315 West Ideal Avenue	Lancaster, CA 93536		wvcwd@verizon.net	
White Fence Farms Mutual Water Co.	Exhibit 4	White Fence Farms Mutual Water Co.	41901 20th St. West	Palmdale, CA 93551		wffmutual@gmail.com ;	
White Fence Farms MWC #3	Supporting Land Owners	White Fence Farms MWC #3	P.O. Box 3411	Quartz Hill, CA 93586			
William Fisher Memorial Water Company C/o McMor	Exhibit 4	William Fisher Memorial Water Company	4700 District Blvd.	Bakersfield, CA 93313		grisner@mcmorchlor.com ;	
Willow Springs Co.	Exhibit 4	Richard Nielson	4145 Manly Rd. 2568	Rosamond, CA 93560		willow_springs@mindspring.com ;	
Wilson, Donna	Exhibit 4	Donna Wilson	18130 West Avenue F	Lancaster, CA 93536			
Wilsona Gardens Mutual Water Company	Defaulted Party	Wilsona Gardens Mutual Water Company	17001 East Avenue N, Suite L	Lancaster, CA 93535			unknown email
Witmyer: The Donald Witmyer Trust (Wendy Rudisill)	New Production	The Donald Witmyer Trust	6399 Vineyard Avenue	Ann Arbor, MI 48108			
Zaghian, Roben	New Production	Roben Zaghian	9220 West Avenue I	Lancaster, CA 93536			

From Watermaster Administrative Staff May 28, 2020 plus 2 contacts update in June.

Appendix M

M-1. Delinquent Assessments

M-2. List of Parties with Incomplete Annual
Production Reporting

Appendix M–1 Delinquent Assessments (includes Administrative Assessments, Variable Assessments, and Replacement Water Assessments)

Antelope Valley Watermaster

A/R AGING SUMMARY

As of June 25, 2020

	CURRENT	1 - 30	31 - 60	61 - 90	91 AND OVER	TOTAL
1000 Non-Overlying Production Rights						\$0.00
California Water Services Company		165.45				\$165.45
Los Angeles County Waterworks District No. 40		69,373.70				\$69,373.70
Total 1000 Non-Overlying Production Rights		69,539.15				\$69,539.15
1100 Overlying Production Rights						\$0.00
60th Street Association Water System	3,169.28					\$3,169.28
AVEK		4,112.70				\$4,112.70
Baxter Mutual Water Company		17.33			173.27	\$190.60
Bolthouse Properties LLC c/o Brad DeBranch		7,481.70				\$7,481.70
C. Louise R. Close Living Trust		0.50			23.26	\$23.76
c/o George Brittner		636.54			6,365.32	\$7,001.86
eSolar Inc.; Sierra Sun Tower, LLC		1.50			77.82	\$79.32
Gailen W. Kyle and Julie Kyle, Trustees of The Kyle Revocable Living Trust		-2.25				\$ -2.25
Gloria Terrazas		0.50			5.00	\$5.50
Granite Construction Company (Big Rock Facility)		0.40				\$0.40
Granite Construction Company (Little Rock Sand and Gravel)				-		\$ -104.05
				104.05		
H & N Development Co. West Inc.		4,213.55				\$4,213.55
Irma Ann Carle Trust, Irma-Anne Carle, Trustee					-0.50	\$ -0.50
James and Elizabeth Bridwell		0.50			5.50	\$6.00
John A. Calandri		6,756.65				\$6,756.65
John and Adrienne Reca		-3.00				\$ -3.00
Leah Frankenberg		0.50			5.00	\$5.50
Randy Turk					-8.60	\$ -8.60
Rose Villa Apartments					-0.32	\$ -0.32
Ruth C. Findley		0.50			6.90	\$7.40
SGS Antelope Valley Development, LLC		28.50			1,322.69	\$1,351.19
Sonrise Ranch, LLC		97.30				\$97.30
Tejon Ranchcorp and Tejon Ranch Co.		1,981.85				\$1,981.85
Tierra Bonita Ranch		250.00			2.25	\$252.25
Triple M Property Co.		7.50			389.09	\$396.59
U.S. Borax		2,284.25				\$2,284.25
Vulcan Materials Co.		771.25				\$771.25
WAGAS Land Company LLC		290.00			2,900.00	\$3,190.00
Total 1100 Overlying Production Rights	3,169.28	28,928.27		-	11,266.68	\$43,260.18
				104.05		
1300 Small Pumpers						\$0.00
Charlie Tapia					137,365.00	\$137,365.00
Johnny Zamrzla					273,165.00	\$273,165.00
Total 1300 Small Pumpers					410,530.00	\$410,530.00
1500 State of California						\$0.00
California Department of Corrections and Rehabilitation		1.50			31.50	\$33.00
California Department of Military		1.50			16.50	\$18.00

Antelope Valley Watermaster

A/R AGING SUMMARY

As of June 25, 2020

	CURRENT	1 - 30	31 - 60	61 - 90	91 AND OVER	TOTAL
California Department of Transportation		23.50			1,119.07	\$1,142.57
California State Lands Commission		0.51			5.13	\$5.64
Total 1500 State of California		27.01			1,172.20	\$1,199.21
1650 Phelan Pinon Hills						\$0.00
Phelan Pinon Hills CSD		3,011.48			1,191,063.34	\$1,194,074.82
Total 1650 Phelan Pinon Hills		3,011.48			1,191,063.34	\$1,194,074.82
1675 Supporting Landowners (Formerly 2000)						\$0.00
Db a Leisure Lake Mobile Home Park Clan Keith Real Estate Investments, LLC	5,620.11					\$5,620.11
Total 1675 Supporting Landowners (Formerly 2000)	5,620.11					\$5,620.11
1950 New Production						\$0.00
40th Street Mutual Water Company	18,151.26					\$18,151.26
Piute Mutual Water Company		19,008.32				\$19,008.32
Total 1950 New Production	18,151.26	19,008.32				\$37,159.58
Class 1350 - Known Small Pumpers			-4.00			\$ -4.00
TOTAL	\$26,940.65	\$120,510.23	\$0.00	\$ -	\$1,614,032.22	\$1,761,379.05
				104.05		

Appendix M-2 List of Parties with Incomplete Annual Production Reporting

last updated 7/22/20

Blank/dashed values indicate missing production

Party	Transferees	Production Right (AFY)	Annual Production Reporting (AFY)			
			2016	2017	2018	2019
Exhibit 4 - Overlying Producers						
Bahlman: Gene Bahlman	Hernandez: Luis Hernandez; property sale (2017)	5.00	-	0.00	1.00	-
Baxter Mutual Water Company		35.02	37.06	37.80	35.50	-
Benz: Mark W. And Nancy L. Benz	Terrazas: Gloria Terrazas; property sale (2015)	1.00	-	-	-	-
Bridwell: James and Elizabeth Bridwell		1.00	-	-	-	-
Burrows/200 A40 H LLC		295.00	-	-	-	-
Cardile: Sal and Connie Cardile	Pool: Noel Pool; property sale (2015)	1.00	-	-	0.50	0.16
Chavez: Effen Chavez		44.00	41.50	-	48.00	-
Close: C. Louise R. Close Living Trust		1.00	-	-	-	-
eSolar Inc.; Sierra Sun Tower, LLC		3.00	-	-	-	-
eSolar Inc.; Tumbleweed Suntower LLC		0.00	-	-	-	-
Findley: Ruth C. Findley		1.00	-	-	-	-
Healy: Jane Healy and Healy Enterprises Inc.		700.00	-	-	-	0.00
Lands of Promise Mutual Water Company		613.54	-	-	27.07	-
Munz: 2014 Revocable Trust, Terry A. & Kathleen M. Munz		5.00	2.10	2.10	-	-
Rose Villa Apartments		7.62	-	-	-	-
SGS Antelope Valley Development, LLC		57.00	-	-	-	-
Triple M Property Co.		15.00	4.00	4.00	4.00	-
WAGAS Land Company LLC		580.00	-	-	682.90	-
Weatherbie: Michael and Dolores A. Weatherbie	Graves: Thomas; property sale (2020)	1.00	0.00	0.00	0.00	-
William Fisher Memorial Water Company		4.53	-	-	-	-
State of California						
Department of Water Resources		104.00	-	-	-	-
Department of Parks and Recreation		9.00	-	-	0.08	-
Department of Transportation		47.00	-	-	-	-
State Lands Commission		3.00	-	-	-	-
Department of Corrections and Rehabilitation		3.00	-	-	-	-
Department of Veteran Affairs		3.00	-	-	0.00	0.00
Highway Patrol		3.00	-	-	-	-
Department of Military		3.00	-	-	-	-
Supporting Landowners						
Juanita Eyherabide, Eyherabide Land Co., LLC and Eyherabide Sheep Company		12.00	-	-	-	-
LV Ritter Ranch, LLC.		0.00	-	-	-	-

List does not include missing production reporting from a few other entities including Small Pumpers known or suspected to have produced over 3 AFY and New Production Parties. Appendix B-3 and B-4 tables provide status of annual production reporting for these other entities.

Appendix N

List of Forms

Appendix N. List of Forms

The following forms are available on the Watermaster website: <https://avwatermaster.net>.

Requests:

- Request for Information
- Parcel Location Request

Reporting:

- Annual Water Production Report
- Annual Water Storage and Recovery Report
- Monthly Flowmeter Reporting

Well Applications:

- Small Pumper Qualifying Documentation
- Replacement Well Application
- Non-Production Well Application (e.g., monitoring wells, test wells, etc.)
- New Point of Extraction Application
- Use of Production Right at a New Location
- New Production Application
- Water Conservation Form

Transfers:

- Transfer Request Form
- Transfer Bulletin Board Request Form
- Transfer Bulletin Board Withdraw Request Form

Appendix O

Financial Analysis Study for Replacement Water Assessment

ANTELOPE VALLEY

STATE WATER CONTRACTORS ASSOCIATION

Financial Analysis Study for Replacement Water Assessment

Final Report / March 6, 2019



March 6, 2019

Mr. Matthew Knudson
General Manager
Antelope Valley State Water Contractors Association
2029 East Avenue Q
Palmdale, CA 93550

Subject: Financial Analysis Study for Replacement Water Assessment

Dear Mr. Knudson,

Raftelis Financial Consultants, Inc. (Raftelis) is pleased to provide this Financial Analysis Study for Replacement Water Assessment Report (Report) for the Antelope Valley State Water Contractors Association (AVSWCA). The primary objective of the study was to perform a financial analysis of the imported water costs associated with AVSWCA's groundwater basin recharge, and to develop Replacement Water Assessment fees to be assessed to property owners or agencies outside of AVSWCA's service area.

This Report summarizes the key findings and recommendations related to the financial analysis conducted as part of the study. It has been a pleasure working with you, and we thank you and other key staff from Antelope Valley-East Kern Water Agency, Littlerock Creek Irrigation District, and Palmdale Water District for the support provided during the course of this study.

Sincerely,
Raftelis Financial Consultants, Inc.

A blue ink signature of Sudhir Pardiwala, written in a cursive style.

Sudhir Pardiwala
Executive Vice President

A blue ink signature of Charles Diamond, written in a cursive style.

Charles Diamond
Consultant

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Introduction

The Antelope Valley State Water Contractors Association (AVSWCA) is a joint powers authority created in 1999 to optimize the use of water resources and to protect surface water and groundwater storage within the Antelope Valley. AVSWCA's three member agencies include the Antelope Valley-East Kern Water Agency (AVEK), Littlerock Creek Irrigation District (LCID), and Palmdale Water District (PWD). Each of the member agencies has a contract with the California Department of Water Resources for entitlement to and delivery of imported water from the State Water Project (SWP).

The AVSWCA's service area lies within the adjudicated Antelope Valley Groundwater Basin. As part of the adjudication judgement, the Antelope Valley Watermaster is tasked with determining the amount of imported Replacement Water from the SWP to be used to recharge the groundwater basin in order to ensure that the basin's Total Safe Yield is not exceeded. Imported SWP water to be utilized as Replacement Water will be purchased from AVSWCA's member agencies or other entities. AVSWCA is therefore interested in determining the per acre-foot (AF) cost for Replacement Water Assessments to be charged to groundwater producers within and surrounding its service area who do not have any entitlement in the SWP or rights in the Groundwater Basin.

Property owners subject to the proposed Replacement Water Assessments that reside within the service areas of AVSWCA's three member agencies contribute to the recovery of SWP capital costs through property taxes. However, property owners outside of the three member agencies' service areas (herein referred to as "Outside Users") do not own any entitlement rights and do not contribute to SWP costs. Therefore, it is appropriate for Replacement Water Assessments to be charged to Outside Users who are not SWP members or own rights in the Groundwater Basin. Although AVSWCA has preliminarily set the Replacement Water Assessment fee for groundwater users within its member agencies' service areas at \$415 per acre-foot for 2018, Replacement Water Assessment fees for Outside Users have to be developed.

The AVSWCA engaged Raftelis Financial Consultants, Inc. (Raftelis) in 2018 to conduct a Financial Analysis Study for Replacement Water Assessment (Study). The primary objective of the Study was to conduct financial analyses necessary to develop the proposed Replacement Water Assessments for Outside Users related to AVSWCA's groundwater recharge activities. This Financial Analysis Study for Replacement Water Assessment Report (Report) details the analysis performed by Raftelis as well as all results and recommendations.

Methodology & Assumptions

METHODOLOGY

Based on discussions with staff from each of AVSWCA's member agencies, Raftelis recommends establishing Replacement Water Assessment fees for Outside Users based on fixed cost payments made by each member agency to the California Department of Water Resources for the importation of SWP water as well as the variable cost associated with delivering Replacement Water. The member agencies and the property owners within their service areas continue to fund the fixed costs associated with importing SWP water. Therefore, if any SWP water entitlement of the three member agencies is utilized as Replacement Water by Outside Users, it is reasonable and equitable for the Outside Users to pay a Replacement Water Assessment based in part on the investments of the SWP members. AVSWCA's member agencies have been paying the capital costs of the SWP since the 1960s. The present value of those investments in the SWP should be accounted for in determining a fair price for the Replacement Water.

The primary steps required to calculate the proposed Replacement Water Assessment to charge to Outside Users are outlined below:

1. Calculate the unit rate designed to recover SWP fixed costs:
 - a) Determine the present value of SWP fixed costs through 2017 (delivery data, used in the analysis, was available through 2017) for all three member agencies as defined in Tables A, C, D, E, F, and G of each member agencies' water supply contract with the California Department of Water Resources. The SWP fixed costs included are the Capital Cost Component of the Transportation Charge, the Minimum OMP&R Component of the Transportation Charge, Delta Water Charges, Water System Revenue Bond Surcharge and Off-Aqueduct Power Facilities costs. The capital costs in each year is then converted to 2018 dollars using an average cost escalation factor of 3.9 percent which is equal to the average annual increase in the Consumer Price Index (CPI) between 1962 and 2017 as shown below in Table 1.

Table 1: Annual Cost Escalation

Key Assumption	Value	Notes
Annual Cost Escalation	3.90%	Average CPI from 1962 to 2017

- b) Calculate the fixed payment per acre-foot by dividing the result from Step 1a by total SWP deliveries received through 2017 across all three member agencies. This number represents the value of the SWP delivered water in dollars per acre-foot. This would represent the approximate value of purchasing SWP water entitlement and the corresponding deliveries.
2. Calculate the unit rate designed to recover variable water costs:
 - a) Take the existing Untreated Water Availability Charge rate in dollars per acre-foot for agricultural water delivered under terms of water service agreements through AVEK-owned facilities and adjust to account for 10% water loss due to leakage.
3. Add the SWP fixed cost unit rate from Step 1 and the variable cost unit rate from Step 2 to determine the Replacement Water Assessment for Outside Users to be charged by AVSWCA.

The following key inputs were utilized to calculate the proposed Water Replacement Assessment fees presented in this Report. Firstly, total SWP deliveries through 2017 to each member agency are shown below in **Error! Reference source not found.** AVEK and LCID first began receiving SWP water in 1972, while PWD began receiving SWP water in 1985. Information on SWP deliveries was provided to Raftelis by member agency staff.

Table 2: Total SWP Deliveries through 2017 in Acre-Feet

Member Agency	SWP Deliveries
AVEK	2,242,419 AF
LCID	13,310 AF
PWD	338,659 AF
Total	2,594,388 AF

Analysis & Results

This section outlines the calculation of the proposed Replacement Water Assessment for AVSWCA. Table 3 below shows the determination of the present value of total annual SWP fixed cost payments for each member agency through 2017. As stated previously, SWP fixed costs included in this analysis are the Capital Cost Component of the Transportation Charge, the Minimum OMP&R Component of the Transportation Charge, Delta Water Charges, Water System Revenue Bond Surcharges, and Off-Aqueduct Power Facilities costs. Each of these annual costs in nominal USD are contained in Tables A, C, D, E, F, and G of each member agency's Water Supply Contract with the California Department of Water Resources. Raftelis then converted these costs into 2018 USD assuming annual cost escalation of 3.90% (as shown previously in **Error! Reference source not found.**). Table 3 below shows a summary of total SWP fixed cost payments through 2017 for each member agency in both nominal and 2018 USD. Please refer to Appendices A, B, and C for detailed SWP fixed costs by year and category for AVEK, LCID, and PWD respectively.

Table 3: Present Value of SWP Fixed Costs

Member Agency	Total SWP Fixed Cost Payments (Nominal)	Present Value of Total SWP Fixed Cost Payments (2018 USD)
AVEK	\$518,309,936	\$1,110,446,654
LCID	\$8,009,081	\$17,901,835
PWD	\$77,201,475	\$160,873,533
Total	\$602,520,492	\$1,289,222,022

Table 4 below shows the development of SWP fixed cost payments per acre-foot of delivery for AVSWCA's member agencies. The present value of total SWP fixed cost payments (from Table 3) is simply divided by the SWP entitlements in acre-feet (from Table 2) to arrive at unit cost per acre-foot. This result represents the unit rate to recover SWP fixed costs as described previously in Step 1b on page 2. The SWP fixed cost unit rate constitutes the first of two rate components used to determine the proposed Replacement Water Assessment.

Table 4: Calculation of Unit Rate to Recover SWP Fixed Costs

Line	Description	Amount	Notes/Source
1	Present Value of Total SWP Fixed Cost Payments	\$1,289,222,022	Table 3
2	Total SWP Deliveries	2,594,388 AF	Table 2
3	SWP Fixed Cost Unit Rate	\$496.93 / AF	= [Line 1] / [Line 2]

The second of the two rate components used to determine the proposed Replacement Water Assessment is the variable cost unit rate. This unit rate is designed to recover the variable cost of Replacement Water and is determined by taking the 2019 Untreated Water Availability Charge rate of \$406 per AF for agricultural water delivered under terms of water service agreements through AVEK-owned facilities and adjusting to account for an assumed 10% of water loss due to the recharge process. This calculation is shown in Equation 1 below.

$$\text{Equation 1: Variable Cost Unit Rate} = \frac{\$406/AF}{100\% - 10\%} = \$451.11/AF$$

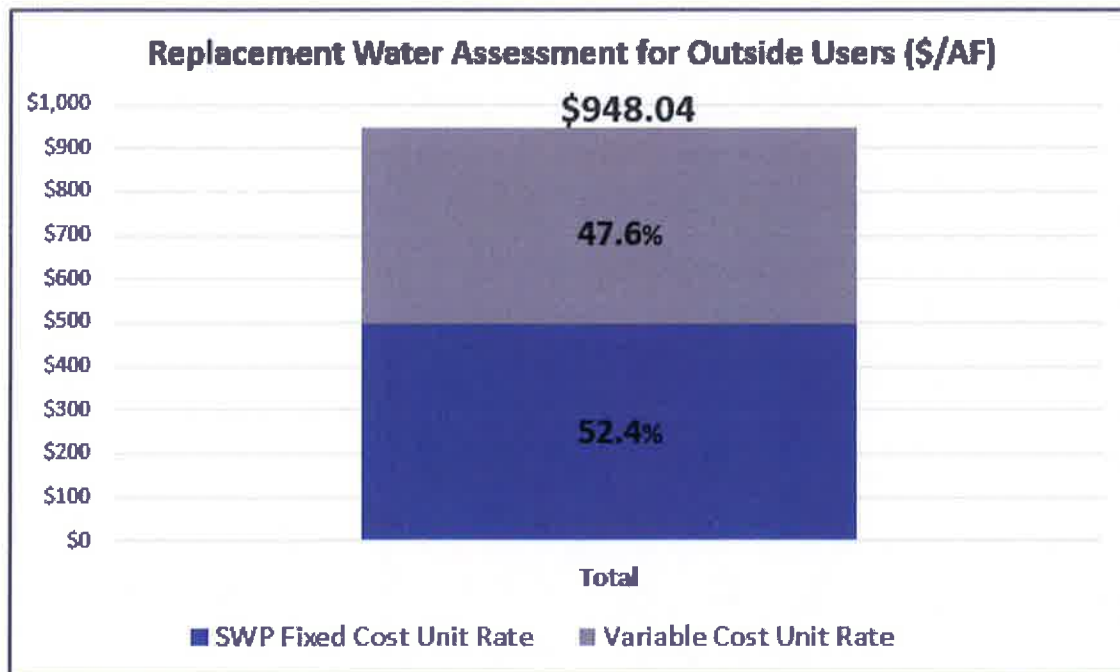
The proposed Replacement Water Assessment for Outside Users is determined by simply adding the SWP fixed cost unit rate (from Line 3 in Table 4) to the variable cost unit rate shown in Equation 1. The proposed Replacement Water Assessments for Outside is shown below in Table 5.

Table 5: Proposed Replacement Water Assessment for Outside Users

Line	Description	Amount	Notes/Source
1	SWP Fixed Cost Unit Rate	\$496.93 / AF	Table 4
2	Variable Cost Unit Rate	\$451.11 / AF	Equation 1
3	Proposed Replacement Water Assessment	\$948.04 / AF	= [Line 1] + [Line 2]

Figure 1 shows the proposed Replacement Water Assessment per acre-foot, as determined above in Table 5. The proposed Replacement Water Assessment of \$948.04 per acre-foot is split relatively evenly between the SWP fixed cost unit rate (52.4%) and variable cost unit rate (47.6%).

Figure 1: Proposed Replacement Water Assessment for Outside Users



APPENDIX A: SWP FIXED COSTS - AVEK

Tables A, C, D, E, F, and G
of the
Water Supply Contract
between
The State of California
Department of Water Resources
ANTELOPE VALLEY-EAST KERN WATER AGENCY

(in dollars except where otherwise noted)

Calendar Year	Transportation Charge			Delta Water Charges	Water System Revenue Bond Surcharge	Off-Aquaduct Power Facilities	RAFTELIS CALCULATED: Total Fixed Payments (Nominal)	RAFTELIS CALCULATED: Total Fixed Payments in 2018 \$
	Capital Costs (Table D)		Minimum OMP&R Component (Table E & G)					
	Annual Payment of Principal	Annual Interest Payment						
1960	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-
1963	3,656	46,476	-	-	-	-	50,132	411,121
1964	7,020	75,472	-	-	-	-	82,492	651,106
1965	13,398	47,551	-	-	-	-	60,949	463,010
1966	24,589	178,207	-	-	-	-	202,796	1,482,750
1967	47,671	250,066	-	-	-	-	297,737	2,095,201
1968	77,671	591,387	114,164	-	-	-	783,222	5,304,717
1969	114,658	867,559	88,040	-	-	-	1,070,257	6,976,698
1970	152,774	1,166,566	135,082	-	-	-	1,454,422	9,125,081
1971	188,395	1,053,317	186,373	-	-	-	1,428,085	8,623,524
1972	211,795	1,406,105	377,265	160,756	-	-	2,155,921	12,529,912
1973	227,084	1,734,633	461,155	222,207	-	-	2,645,079	14,795,794
1974	239,569	1,690,415	164,921	279,090	-	-	2,373,995	12,780,972
1975	253,219	1,507,558	574,928	319,822	-	-	2,655,527	13,760,026
1976	266,367	1,481,561	405,268	431,018	-	-	2,584,214	12,887,880
1977	280,012	1,476,986	638,666	469,922	-	-	2,865,586	13,754,693
1978	294,057	1,496,166	693,608	600,180	-	-	3,084,011	14,247,472
1979	309,317	1,480,783	712,340	720,173	-	-	3,222,613	14,328,955
1980	325,592	1,477,558	1,000,550	857,818	-	-	3,661,518	15,669,386
1981	351,120	2,268,109	733,695	1,355,100	-	-	4,708,024	19,391,613
1982	366,401	938,765	1,436,719	1,551,434	-	-	4,293,319	17,019,738
1983	392,086	1,617,658	2,407,048	1,110,994	-	1,083,881	6,611,667	25,226,392
1984	421,808	2,625,413	2,004,478	450,405	-	2,499,848	8,001,952	29,384,923
1985	449,800	1,790,324	1,944,232	565,881	-	3,749,257	8,499,494	30,040,430
1986	475,597	1,745,690	2,206,227	635,066	-	3,159,857	8,222,437	27,970,361
1987	502,492	1,782,829	2,533,025	652,450	-	3,167,759	8,638,555	28,282,844
1988	527,761	1,813,260	2,193,438	711,641	64,266	2,688,113	7,998,479	25,204,253
1989	553,780	1,824,686	3,193,094	2,083,593	205,668	2,357,669	10,218,490	30,991,144
1990	586,519	1,815,427	1,719,784	2,207,667	185,010	2,528,625	9,043,032	26,396,686

Tables A, C, D, E, F, and G
of the
Water Supply Contract
between
The State of California
Department of Water Resources
ANTELOPE VALLEY-EAST KERN WATER AGENCY

(in dollars except where otherwise noted)

Calendar Year	Transportation Charge			Delta Water Charges	Water System Revenue Bond Surcharge	Off-Aqueduct Power Facilities	RAFTELIS CALCULATED: Total Fixed Payments (Nominal)	RAFTELIS CALCULATED: Total Fixed Payments in 2018 \$
	Capital Costs (Table D)		Minimum OMP&R Component (Table E & G)					
	Annual Payment of Principal	Annual Interest Payment						
1991	618,476	1,785,880	2,644,074	2,454,678	296,854	1,048,414	8,848,376	24,858,983
1992	653,283	1,773,406	2,998,849	2,804,695	402,015	2,760,199	11,392,447	30,805,003
1993	688,496	1,666,698	2,667,894	2,811,318	424,871	3,559,487	11,818,764	30,758,188
1994	725,604	1,639,187	2,922,011	2,694,116	424,023	3,963,982	12,368,923	30,981,685
1995	763,215	1,652,147	3,088,320	2,883,156	500,084	4,324,009	13,210,931	31,848,649
1996	802,713	1,565,704	3,333,727	2,834,460	606,388	3,572,856	12,715,848	29,504,440
1997	842,729	1,624,187	3,322,103	3,133,957	626,151	3,411,379	12,960,506	28,943,327
1998	886,136	1,605,665	3,270,632	3,155,093	602,091	3,977,988	13,497,605	29,011,332
1999	929,559	1,593,859	4,090,299	3,262,870	826,108	3,696,973	14,399,668	29,788,448
2000	975,533	1,528,659	4,232,460	3,314,278	940,325	2,372,130	13,363,385	26,607,026
2001	1,022,242	1,512,697	4,040,411	3,315,004	925,355	2,680,895	13,496,604	25,863,590
2002	1,078,342	1,658,005	3,949,101	3,437,351	974,814	1,668,457	12,766,070	23,545,395
2003	1,130,557	1,579,003	5,598,522	3,365,016	1,015,056	1,445,146	14,133,300	25,088,621
2004	1,183,761	1,530,822	2,549,377	3,333,008	1,016,092	1,813,317	11,426,377	19,522,086
2005	1,239,565	1,489,361	2,664,386	3,461,814	959,268	2,047,638	11,862,032	19,505,685
2006	1,300,414	1,427,276	4,436,843	3,507,524	1,038,026	2,845,985	14,556,068	23,037,251
2007	1,366,303	1,373,827	4,762,823	3,855,524	666,215	2,990,954	15,015,646	22,872,574
2008	1,434,161	1,334,202	5,654,630	3,943,904	999,433	3,547,772	16,914,102	24,797,301
2009	1,503,269	1,373,641	3,726,039	4,310,140	1,080,062	3,357,450	15,350,601	21,660,342
2010	1,585,038	1,297,433	5,686,181	5,385,764	1,033,467	4,321,133	19,309,016	26,223,130
2011	1,672,991	1,250,140	4,229,644	5,928,431	1,116,181	4,952,954	19,150,341	25,031,412
2012	1,758,667	1,210,162	4,248,790	6,189,558	1,090,934	5,401,397	19,899,508	25,034,310
2013	1,812,060	1,128,915	6,343,556	6,550,942	1,186,869	2,563,236	19,585,578	23,714,509
2014	1,899,283	1,533,728	5,209,033	6,368,143	1,345,233	1,148,978	17,504,398	20,399,023
2015	1,954,611	1,479,091	9,320,182	8,666,793	1,288,246	530,003	23,238,926	26,065,298
2016	1,978,002	1,495,875	7,174,136	10,359,280	1,287,598	153,406	22,448,297	24,233,408
2017	1,906,927	1,461,139	5,510,660	9,976,357	1,186,800	120,731	20,162,614	20,948,956

APPENDIX B: SWP FIXED COSTS – LCID

Tables A, C, D, E, F, and G
of the
Water Supply Contract
between
The State of California
Department of Water Resources
Little Rock Creek Irrigation District
(in dollars except where otherwise noted)

Calendar Year	Transportation Charge			Delta Water Charges	Water System Revenue Bond Surcharge	Off-Aqueduct Power Facilities	RAFTELIS CALCULATED: Total Fixed Payments (Nominal)	RAFTELIS CALCULATED: Total Fixed Payments in 2018 \$
	Capital Costs (Table D)		Minimum OMP&R Component (Table E & G)					
	Annual Payment of Principal	Annual Interest Payment						
1960	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-
1964	121	1,249	-	-	-	1,370	10,813	
1965	227	1,459	-	-	-	1,686	12,808	
1966	415	3,633	-	-	-	4,048	29,597	
1967	809	4,875	-	-	-	5,684	39,999	
1968	1,324	10,347	1,910	-	-	13,581	91,983	
1969	1,966	15,024	1,474	-	-	18,464	120,362	
1970	2,713	21,477	2,255	-	-	26,445	165,917	
1971	3,413	20,231	3,119	-	-	26,763	161,609	
1972	3,832	27,037	7,548	1,367	-	39,784	231,219	
1973	4,113	31,568	9,581	2,577	-	47,839	267,597	
1974	4,336	32,674	2,049	3,721	-	42,780	230,316	
1975	4,580	28,656	10,631	4,752	-	48,619	251,927	
1976	4,818	27,596	6,508	6,269	-	45,191	225,375	
1977	5,063	28,048	11,038	6,861	-	51,010	244,846	
1978	5,317	28,623	12,422	9,687	-	56,049	258,934	
1979	5,590	28,167	12,223	11,889	-	57,869	257,307	
1980	5,880	28,087	17,113	14,256	-	65,336	279,604	
1981	6,327	42,699	13,032	22,946	-	85,004	350,118	
1982	6,605	17,926	26,245	26,335	-	77,111	305,686	
1983	7,051	30,737	41,811	19,002	-	99,851	380,975	
1984	7,564	48,791	34,781	20,719	-	111,932	411,039	
1985	8,060	33,467	35,571	24,474	-	101,572	358,994	
1986	8,503	32,529	38,788	27,822	-	123,515	420,162	
1987	8,946	33,733	44,658	29,064	-	95,994	695,387	
1988	9,392	33,704	39,276	32,024	2,154	30,395	146,945	463,043
1989	9,846	34,245	56,576	36,301	3,763	50,948	191,679	581,334
1990	10,411	33,951	31,445	38,438	3,385	110,678	228,308	666,433

Tables A, C, D, E, F, and G
of the
Water Supply Contract
between
The State of California
Department of Water Resources
Littlerock Creek Irrigation District

(in dollars except where otherwise noted)

Calendar Year	Transportation Charge			Delta Water Charges	Water System Revenue Bond Surcharge	Off-Aqueduct Power Facilities	RAFTELIS CALCULATED: Total Fixed Payments (Nominal)	RAFTELIS CALCULATED: Total Fixed Payments in 2013 \$
	Capital Costs (Table D)		Minimum OMP&R Component (Table E & G)					
	Annual Payment of Principal	Annual Interest Payment						
1991	10,942	33,591	46,035	40,793	5,236	65,111	201,708	566,687
1992	11,535	32,403	51,225	46,610	7,053	22,891	171,717	464,320
1993	12,141	30,180	48,657	46,720	7,437	60,615	205,750	535,462
1994	12,784	29,831	53,958	44,772	7,431	88,549	237,325	594,452
1995	13,436	30,107	51,919	47,914	8,769	43,892	196,037	472,602
1996	14,123	28,753	59,930	47,104	10,640	31,691	192,241	446,055
1997	14,821	29,517	64,464	52,082	10,972	24,319	196,175	438,097
1998	15,579	29,173	58,055	52,433	10,550	30,365	196,155	421,609
1999	16,340	28,928	81,350	54,224	14,475	18,305	213,622	441,918
2000	17,148	27,846	79,374	55,078	16,486	-	195,932	390,108
2001	17,970	27,200	67,726	55,090	16,224	-	184,210	353,002
2002	18,837	26,960	69,689	55,912	16,724	-	188,122	346,967
2003	19,745	25,148	114,340	54,735	17,415	-	231,383	410,738
2004	20,674	24,263	41,999	54,215	17,432	-	158,583	270,941
2005	21,648	23,526	37,282	56,310	16,457	-	155,223	255,246
2006	22,711	22,435	75,875	57,053	17,809	-	195,883	310,015
2007	23,854	21,500	81,033	62,714	11,413	-	200,514	305,433
2008	25,037	20,813	106,363	64,151	17,175	1,845	235,384	345,090
2009	26,245	20,274	57,372	70,109	18,529	3,269	195,798	276,279
2010	27,659	18,849	107,466	87,605	17,731	177	259,487	352,403
2011	29,173	18,001	68,537	96,432	19,149	407	231,699	302,854
2012	30,653	17,291	72,780	100,679	18,453	495	240,351	302,370
2013	32,195	15,825	116,198	106,557	20,052	3,270	294,097	356,097
2014	32,939	14,645	89,881	101,120	21,838	3,804	264,227	307,921
2015	33,975	13,707	161,605	137,621	20,924	2,214	370,046	415,052
2016	34,483	13,912	114,771	164,497	20,895	746	349,304	377,081
2017	33,301	13,387	92,259	158,416	19,257	658	317,278	329,652

APPENDIX C: SWP FIXED COSTS – PWD

Tables A, C, D, E, F, and G
of the
Water Supply Contract
between
The State of California
Department of Water Resources
PALMDALE WATER DISTRICT

(in dollars except where otherwise noted)

Calendar Year	Transportation Charge			Delta Water Charges	Water System Revenue Bond Surcharge	Off-Aqueduct Power Facilities	RAFTELIS CALCULATED: Total Fixed Payments (Nominal)	RAFTELIS CALCULATED: Total Fixed Payments in 2010 \$
	Capital Costs (Table D)		Minimum OMP&R Component (Table E & G)					
	Annual Payment of Principal	Annual Interest Payment						
1960	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-
1964	946	8,222	-	-	-	-	9,168	72,363
1965	1,796	10,440	-	-	-	-	12,236	92,953
1966	3,323	24,593	-	-	-	-	27,916	204,109
1967	6,497	34,366	-	-	-	-	40,863	287,556
1968	10,751	73,446	14,340	-	-	-	98,537	667,385
1969	16,145	110,471	11,056	-	-	-	137,672	897,444
1970	22,300	153,990	16,970	-	-	-	193,260	1,212,518
1971	27,937	147,486	23,402	-	-	-	198,825	1,200,609
1972	31,440	193,968	52,963	13,021	-	-	291,392	1,693,530
1973	33,743	220,289	67,837	26,131	-	-	348,000	1,946,610
1974	35,597	233,427	16,970	39,631	-	-	325,625	1,753,080
1975	37,618	202,360	77,908	50,989	-	-	368,875	1,911,383
1976	39,567	199,484	49,562	67,591	-	-	356,204	1,776,445
1977	41,584	197,159	80,370	77,255	-	-	396,368	1,902,550
1978	43,662	201,374	90,048	98,345	-	-	433,429	2,002,349
1979	45,910	198,167	90,841	117,285	-	-	452,203	2,010,665
1980	48,293	197,299	126,792	138,590	-	-	510,974	2,186,702
1981	52,024	303,742	94,787	211,396	-	-	661,949	2,726,464
1982	54,285	122,914	188,716	235,100	-	-	601,015	2,382,566
1983	59,032	214,456	310,207	163,925	-	-	747,620	2,852,496
1984	63,894	346,012	258,244	174,500	-	-	842,650	3,094,396
1985	68,768	233,039	259,837	200,605	-	157,601	919,850	3,251,098
1986	73,550	225,068	284,701	223,785	-	301,486	1,108,590	3,771,104
1987	78,491	229,358	328,728	228,654	-	258,719	1,123,950	3,679,840
1988	83,316	229,980	270,456	248,146	16,240	126,639	974,777	3,071,650
1989	87,966	231,677	424,450	276,155	27,981	493,424	1,541,653	4,675,602
1990	93,341	228,640	227,818	289,119	24,956	545,342	1,409,216	4,113,513

Tables A, C, D, E, F, and G
of the
Water Supply Contract
between
The State of California
Department of Water Resources
PALMDALE WATER DISTRICT

(in dollars except where otherwise noted)

Calendar Year	Transportation Charge			Delta Water Charges	Water System Revenue Bond Surcharge	Off-Aqueduct Power Facilities	RAFTELIS CALCULATED: Total Fixed Payments (Nominal)	RAFTELIS CALCULATED: Total Fixed Payments in 2018 \$
	Capital Costs (Table D)		Minimum OMP&R Component (Table E & G)					
	Annual Payment of Principal	Annual Interest Payment						
1991	97,336	226,192	340,042	306,835	38,641	488,207	1,497,253	4,206,443
1992	101,682	220,395	380,756	350,587	52,160	367,996	1,473,576	3,984,527
1993	106,683	204,334	353,768	351,415	55,045	640,919	1,712,164	4,455,886
1994	112,034	200,467	390,690	336,766	54,968	678,876	1,773,801	4,443,018
1995	117,527	201,835	404,431	360,394	64,852	636,541	1,785,580	4,304,641
1996	123,261	191,420	442,831	354,307	78,696	723,670	1,914,185	4,441,462
1997	129,259	195,880	478,826	391,745	81,146	648,652	1,925,508	4,300,033
1998	135,477	192,722	447,693	394,387	78,028	657,806	1,906,113	4,096,940
1999	141,897	190,165	607,048	407,859	107,060	710,674	2,164,703	4,478,099
2000	148,667	363,992	685,260	510,073	121,898	257,146	2,087,036	4,155,371
2001	155,717	231,130	595,727	510,185	135,581	445,872	2,074,212	3,974,820
2002	163,127	225,450	617,420	517,791	139,071	529,674	2,192,533	4,043,849
2003	170,744	213,868	961,287	506,894	144,812	277,984	2,275,589	4,039,495
2004	178,712	206,574	374,148	502,073	144,960	368,929	1,775,396	3,033,283
2005	187,084	200,581	367,640	521,475	136,853	400,828	1,814,461	2,983,663
2006	196,108	191,376	666,040	528,361	148,089	442,278	2,172,252	3,437,928
2007	205,998	183,285	707,653	580,783	95,550	710,515	2,483,784	3,783,423
2008	216,175	177,549	925,863	594,096	144,009	1,052,126	3,109,818	4,559,219
2009	226,411	173,072	517,546	649,264	154,087	1,154,433	2,874,813	4,056,482
2010	238,646	160,990	889,664	811,293	147,438	810,142	3,058,173	4,153,234
2011	251,751	154,104	642,842	893,038	159,239	551,068	2,652,042	3,466,484
2012	264,471	148,214	624,548	932,373	154,732	1,072,349	3,196,687	4,021,549
2013	277,541	135,890	1,030,792	986,811	168,130	512,798	3,111,962	3,768,010
2014	283,992	125,755	771,792	936,466	183,142	348,413	2,649,560	3,087,706
2015	292,536	117,899	1,383,482	1,274,493	175,577	131,952	3,375,939	3,786,529
2016	297,194	120,323	1,025,625	1,523,381	175,457	29,017	3,170,997	3,423,158
2017	288,693	114,988	786,871	1,467,071	161,746	21,152	2,840,521	2,951,301

Appendix I- 2015 – 2019 Consumer Confidence Reports



Phelan Piñon Hills

Community Services District

2015 Consumer Confidence Report

PUBLISHED May 2016

MISSION STATEMENT

The Mission of the Phelan Piñon Hills Community Services District is to provide all authorized services reliably and economically for the promotion of community development and to utilize all available resources for the maximum beneficial use.

VISION STATEMENT

To develop a Community Services District that enhances the living experience for all people within the District.

ANNUAL CONSUMER CONFIDENCE REPORT

The Phelan Piñon Hills Community Services District proudly presents our annual Consumer Confidence Report. This report contains water quality information, as required by the State Water Resources Control Board (SWRCB).

The District's water supply is over 2,000 years old according to a report from United States Geological Survey (USGS). Our water supply is primarily from the Oeste aquifer, and partially from the Alto aquifer. The water is supplied to the District's distribution system through eleven groundwater wells which have an average depth of approximately 1,000 feet. The District's water system also consists of 35 reservoirs with a combined capacity of approximately 12,000,000 gallons; 32 pressure reducing stations in 15 pressure zones; 63 booster pumps; and approximately 353 miles of water line. The District currently serves approximately 6,830 metered accounts.

The District's goal is to provide safe, good-tasting drinking water to our customers. We are currently at the forefront of new technologies to meet higher health standards and the demands of a growing area. With ongoing testing, the District plans to meet the toughest drinking water standards.

Phelan Piñon Hills Community Services District

Monday through Friday 8:00 a.m. to 5:00 p.m.

Dan Whalen, President

Cathy Pace, Vice President

Alex Brandon, Director

Al Morrissette, Director

Mark Roberts, Director

Don Bartz, General Manager

The Board of Directors hold public meetings on the 1st and 3rd Wednesdays of each month at 6:00 p.m. in the Phelan Community Center: 4128 Warbler Road, Phelan, CA 92371.

Visit us online at www.pphcsd.org

Special Information Available

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons – such as persons with cancer who are undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants – can be particularly at risk from infections. These people should seek advice about drinking water from their healthcare providers. Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the **United States Environmental Protection Agency's (USEPA) Safe Drinking Water Hotline: (800)426-4791.**

If you have any questions about this report, please contact: Jack Stonesifer, Operations Manager (760) 868-1212.

How pure should our water be?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.



More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline:

1-800-426-4791

**¿No habla inglés?
Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien. Llame 760.868.1212**

POSSIBLE CONTAMINANTS

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, USEPA and the California DHS prescribe regulations that limit the amount of certain contaminants in the water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

An explanation of units of measure used in this report

ND	= Non Detectable
ppm	= parts per million or milligrams per liter (mg/L)
ppb	= parts per billion or micrograms per liter (ug/L)
ppt	= parts per trillion or nanograms per liter (ng/L)
ppq	= parts per quadrillion, or pictogram per liter (pg/L)
pCi/L	= Picocuries per liter (a measure of radioactivity)

DEFINITIONS

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

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

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

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

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

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

Secondary Drinking Water Standard (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

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

Variations and Exemptions: The department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

2015 Drinking Water Consumer Confidence Report

THE PHELAN PIÑON HILLS COMMUNITY SERVICES DISTRICT, IN COMPLIANCE WITH THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH TITLE 22, SECTION 64480, HAS COMPLETED THE REQUIREMENTS TO ISSUE A CONSUMER CONFIDENCE REPORT TO ALL RESIDENTS AND PERSONS OWNING PROPERTY WITHIN ITS SERVICE AREA.

The District tests for hundreds of substances; however, aside from those required, only the substances that were detected in our water are shown in the table below. The District is not required to sample all contaminants annually, therefore the following results reflect some analysis prior to 2015.

Microbiological Contaminants	Highest No. of Detections	No. of months in violation	MCL		PHG (MCLG)	Typical Source of Bacteria
Total Coliform Bacteria	0 in a month	0	More than 1 sample in a month with a detection		0	Naturally present in the environment
Fecal Coliform or E. coli	0 in the year	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or E.coli		0	Human and animal fecal waste
Lead and Copper	No. of Samples Collected	90th Percentile	No. sites exceeding AL	Action Level (AL)	PHG	Typical Source of Contaminant
Lead (ppm)	31 (2015)	ND	No sites exceed AL	15	.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits.
Copper (ppb)	31 (2015)	.210	No sites exceed AL	1.3	.300	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (ppm)	2014	38	15-70	None	None	Salt present in the water and is generally naturally occurring.
Hardness (ppm)	2014	294	34-530	None	None	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring.
DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD						
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	MCL (MRDL)	PHG (MCLG) (MRDLG)	Typical Source of Contaminant
Arsenic (ppb)	2015	.7	0 - 2.1	10	0.004	Erosion of natural deposits, runoff from orchards, glass and electronics production wastes.
Fluoride (ppm)	2015	0.28	0.20-0.30	2	1	Erosion of natural deposits, water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate + Nitrite (as N) (ppb)	2015	507	410 - 580	10000	400	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits.
Gross Alpha (pCi/L)	2015	4.4	3.0-4.4	15	(0)	Decay of natural and man-made deposits; erosion of natural deposits.
Nitrate (as NO3) (ppm)	2015	2.33	ND-18	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits.
TTHMs (Total Trihalometanes) (ppb)	2015	0	0	80	N/A	By-product of drinking water chlorination.
Total Chromium (ppb)	2014	6.67	ND-20	50	100	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits.
Hexavalent Chromium (Chromium 6) (ppb)	2015	16	ND-16	10	0.02	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.
DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD						
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Turbidity (NTU)	2014	.11	0.1-0.4	5	N/A	Soil runoff.
Color (Units)	2014	3	3-5	15		Naturally-occurring organic materials.
Odor—Threshold (Units)	2014	0	0	3		Naturally-occurring organic materials.
Chloride (ppm)	2014	10	2.4-25	500		Runoff/leaching from natural deposits; seawater influence.
Specific Conductance (uS/cm)	2014	693.3	510-990	1600		Substances that form ions when in water; seawater influence.
Total Dissolved Solids (TDS) (ppm)	2014	453	320-650	1000		Runoff/leaching from natural deposits.
Sulfate (ppm)	2014	166	140-190	500		Runoff/leaching from natural deposits; industrial wastes.
<i>*Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.</i>						

Continued on Page 4



Continued from Page 3

DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD					
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	MCL	Typical Source of Contaminant
Iron (ppb)	2014	58.3	ND-350	300	Leaching from natural deposits; industrial wastes.
Zinc (ppm)	2014	65	ND-130	500	Runoff/leaching from natural deposits; industrial wastes.
DETECTION OF UNREGULATED CONTAMINANTS					
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	Notification Level	Health Effects Language
Vanadium (ppb)	2015	12.9 ppb	0-5.6	50 ppb	The babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.

**Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.*

***We test the drinking water quality for many constituents as required by state and federal regulations.
This report shows the results of our monitoring for the period of January 1 - December 31, 2015.***

A source water assessment was performed for each of the District's wells. The assessment was completed on December 16, 2002. Vulnerability included the possibility of Nitrates associated with low density septic systems at Wells 2, 3, 4, 5, 9A, 9B, 11 and 12. A copy of the complete assessment may be viewed at the Phelan Piñon Hills Community Services District Office or at the CDPH San Bernardino District Office, 464 West 4th Street, Suite 437, San Bernardino, CA 92401. You may request a summary of the assessment be sent to you by contacting CDPH District Engineering at (909) 383-4328.

Chromium 6 Information

In 2014, the State Water Resources Control Board adopted a new MCL for Hexavalent Chromium (Chromium 6). The new MCL of 10 ppb is more stringent than the previous MCL of 50 ppb. As a whole, the average for Chromium 6 among the District's wells was 7.98 ppb. However six of those wells (Wells 2, 6A, 6B, 10, 12, and 14) were over the new MCL. The District is currently working on a blending plan which would blend water from other wells to meet the new MCL. A FAQ sheet about Chromium 6 is included in this mailer. Watch your bills and visit the District website for more information: www.pphcsd.org.

Parks and Recreation Programs

FREE Summer Fun

Summer Movie Night 2016: Fridays - June 10 thru August 5, 2016

At the Phelan Community Center 4128 Warbler Road, Phelan, CA (In partnership with the Tri-Community Kiwanis)

Kids Crafts (Ages 5 to 12): Monday & Friday 10 am to noon - June 13 thru July 29, 2016

At the Phelan Community Center (In partnership with the Phelan Seniors) - No classes July 1 & 4

Kids Archery Lessons: Thursday 9 am to 11:30 am - July 7 thru August 4, 2016

At the corner of Eaby Rd and Smoke Tree Rd (In partnership with Mojave Archers)

Be sure to visit our website (www.pphcsd.org) for information on classes and events.





Phelan Piñon Hills Community Services District

2019 Annual Consumer Confidence Report

Published May 2020

2019 Annual Consumer Confidence Report

Our mission is to efficiently provide authorized services and maximize resources for the benefit of the community.

Our vision is to develop a Community Services District that enhances the living experience for all people within the District.



The Phelan Piñon Hills Community Services District proudly presents our annual Consumer Confidence Report. This report contains water quality information, as required by the State Water Resources Control Board (SWRCB).

The District's water supply is over 2,000 years old according to a report from the United States Geological Survey (USGS). Our water supply is primarily from the Oes-te aquifer, and partially from the Alto aquifer. The water is supplied to the District's distribution system through eleven groundwater wells which have an average depth of approximately 1,000 feet. The District's water system also consists of 35 reservoirs with a combined capacity of approximately 12,000,000 gallons; 32 pressure reducing stations in 15 pressure zones; 63 booster pumps;

and approximately 353 miles of water line. The District currently serves over 6,900 metered accounts.

The District's goal is to provide safe, reliable drinking water to our customers. As required, Sodium Hypochlorite is added to the water for disinfecting purposes; Running Annual Average (RAA) for 2018 was .71 mg/L. We are currently at the forefront of new technologies to meet higher health standards and the demands of a growing area. With ongoing testing, the District plans to meet the toughest drinking water standards. To learn more, visit our website at www.pphcsd.org.

Charlie Johnson - President
Kathy Hoffman - Vice-President
Deborah Philips - Director
Mark Roberts - Director
Rebecca Kujawa - Director
Don Bartz - General Manager

The Board of Directors holds public meetings on the 1st and 3rd Wednesdays of each month at 6:00 p.m. in the Phelan Community Center: 4128 Warbler Road, Phelan, CA 92371.
www.pphcsd.org

¿No habla inglés? Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien. Llame 760-868-1212.

Special Information Available

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons, such as persons with cancer who are undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons, and infants, can be particularly at risk from infections. These people should seek advice about drinking water from their healthcare providers. Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the **United States Environmental Protection Agency's (USEPA) Safe Drinking Water Hotline: (800) 426-4791.**



How pure should our water be?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at:

1-800-426-4791

Possible Contaminants

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drinking, USEPA and the California DHS prescribe regulations that limit the amount of certain contaminants in the water provided by public water systems. Department regulations also establish limits for contaminants in bottle water that must provide the same protection for public health.

Water Quality Data

Terms, Abbreviations and Symbols: Some of the terms, abbreviations and symbols contained in this report are unique to the water industry and might not be familiar to all customers. Terms used in the table are explained below.

Contaminant: a potentially harmful physical, biological, chemical or radiological substance.

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

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

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

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

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

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

Secondary Drinking Water Standard (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

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

Variances and Exemptions: The department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

ND = Non Detectable
ppm= parts per million or milligrams per liter (mg/L)
ppb= parts per billion or micrograms per liter (µg/L)
ppt = parts per trillion or nanograms per liter (ng/L)
ppq= parts per quadrillion, or pictogram per liter (pg/L)
pCi/L= picocuries per liter (a measure of radioactivity)

Regulated Water Contaminants: What's in the Water?

Microbiological Contaminants	Units of Measurement	Highest No. of Detections	No. of Months in Violation	MCL	PHG (MCLG)	Violation?	Typical Source of Bacteria
Total Coliform Bacteria	Absent or Present	0 in a month	0	More than 1 sample in a month with a detection	0	No	Naturally present in the environment
Fecal Coliform or E. coli	Absent or Present	0 in the year	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or E. coli	0	No	Human and animal fecal waste

Regulated at the Customer's Tap	Units of Measurement	No. of Samples Collected	90th Percentile	No. Sites Exceeding Action Level	Action Level	PHG (MCLG)	Violation?	Typical Source of Contaminant
Lead	ppb	30 Resident Samples 30 School Samples (2018)	ND	No sites exceed action level	15	.2	No	Internal corrosion of household water plumbing systems; discharged from industrial manufacturers; erosion of natural deposits.
Copper	ppm	30 (2018)	.160	No sites exceed action level	1.3	.300	No	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives.

Detection of Contaminants with a Primary Drinking Water Standard

Chemical or Constituent	Units of Measurement	Sample Date	Level Detected	Range of Detections	MCL (MRDL)	PHG (MCLG) (MRDLG)	Violation?	Typical Source of Contaminant
Arsenic	ppb	2019	1.04	0-4	10	0.004	No	Erosion of natural deposits, runoff from orchards, glass and electronics production wastes.
Fluoride	ppm	2019	.265	.17-.34	2	1	No	Erosion of natural deposits, water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Gross Alpha	pCi/L	2019	0.0	0.0	15	(0)	No	Decay of natural and man-made deposits; erosion of natural deposits.
Uranium	pCi/L	2019	0.0	0.0	20	N/A	No	Erosion of natural deposits.
Nitrate (as N)	ppm	2019	1.04	0-4.5	45	45	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits.
TTHMs (Total Trihalomethanes)	ppb	2019	0	0	80	N/A	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits.
Total Chromium	ppb	2019	7.286	0-16	50	100	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.
Hexavalent Chromium (Chromium 6)	ppb	2019	9.163	0.0-19.6	50	0.02	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.
TCP123 (1,2,3 Trichloropropane)	ppt	2019	0	0-0	.005	.0007	No	Discharge from industrial and agricultural chemical factories; leaching from hazardous waste sites; used as cleaning and maintenance solvent, paint and varnish remover, and cleaning and degreasing agent; byproduct during the production of other compounds and pesticides.

*Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violations is provided in this report.

Detection of Contaminants with a Secondary Drinking Water Standard

Chemical or Constituent	Units of Measurement	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Violation?	Typical Source of Contaminant
Turbidity		2019	.475	0.0-3	5	N/A	No	Soil runoff.
Color		2019	.938	0.0-7.5	15		No	Naturally-occurring organic materials.
Odor - Threshold		2019	1.00	0.0-1	3		No	Naturally-occurring organic materials.
Chloride	ppm	2019	5.211	1.8-28	500		No	Runoff/leaching from natural deposits; seawater influence.
Specific Conductance	uS/cm	2019	520	400-940	490-1600		No	Substances that form ions when in water; seawater influence.
Total Dissolved Solids (TDS)	ppm	2019	349.4	260-660	1000		No	Runoff/leaching from natural deposits.
Sulfate	ppm	2019	143.22	150-200	500		No	Runoff/leaching from natural deposits; industrial wastes.
Iron	ppb	2019	36.7	ND-330	300		No	Leaching from natural deposits; industrial wastes.
Zinc	ppm	2019	0	ND	500		No	Runoff/leaching from natural deposits; industrial wastes.
Lead	ppb	2018	0	0-0	0.015		No	Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and/or flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the U.S. EPA Safe Drinking Water Hotline (1-800-426-4791).

Detection of Unregulated Contaminants

Chemical or Constituent	Units of Measurement	Sample Date	Level Detected	Range of Detections	Notification Level	Violation?	Health Effects Language
Vanadium	ppb	2019	15.4	0-32	50 ppb	No	The babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.

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Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Phelan Piñon Hills Community Services District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

The District takes the health of your children seriously which is why we sampled more than the number of required locations at every school site in the District. As seen on page 6, no lead has been detected at any site tested.





Thank you for your patience as we make improvements to our system by lowering water lines throughout the District. Please continue to call Dig Alert by dialing 811 whenever digging or when grading or dragging a road.



Call 811

Before You Do Any Digging or
Before You Grade/Drag a Road

- ✓ It's Easy
- ✓ It's Free
- ✓ It's the Law

Visit www.digalert.org for More Information



Phelan Piñon Hills Community Services District

2018 Annual Consumer Confidence Report

Published May 2019

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Our vision is to develop a Community Services District that enhances the living experience for all people within the District.



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The District's goal is to provide safe, reliable drinking water to our customers. As required, Sodium Hypochlorite is added to the water for disinfecting purposes; Running Annual Average (RAA) for 2018 was .73 mg/L. We are currently at the forefront of new technologies to meet higher health standards and the demands of a growing area. With ongoing testing, the District plans to meet the toughest drinking water standards. To learn more, visit our website at www.pphcsd.org.

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Charlie Johnson - Vice-President
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Possible Contaminants

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drinking, USEPA and the California DHS prescribe regulations that limit the amount of certain contaminants in the water provided by public water systems. Department regulations also establish limits for contaminants in bottle water that must provide the same protection for public health.

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Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

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

Variances and Exemptions: The department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

ND = Non Detectable
ppm= parts per million or milligrams per liter (mg/L)
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Microbiological Contaminants	Units of Measurement	Highest No. of Detections	No. of Months in Violation	MCL	PHG (MCLG)	Violation?	Typical Source of Bacteria
Total Coliform Bacteria	Absent or Present	0 in a month	0	More than 1 sample in a month with a detection	0	No	Naturally present in the environment
Fecal Coliform or E. coli	Absent or Present	0 in the year	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or E. coli	0	No	Human and animal fecal waste

Regulated at the Customer's Tap	Units of Measurement	No. of Samples Collected	90th Percentile	No. Sites Exceeding Action Level	Action Level	PHG (MCLG)	Violation?	Typical Source of Contaminant
Lead	ppb	30 Resident Samples 30 School Samples (2018)	ND	No sites exceed action level	15	.2	No	Internal corrosion of household water plumbing systems; discharged from industrial manufacturers; erosion of natural deposits.
Copper	ppm	30 (2018)	.160	No sites exceed action level	1.3	.300	No	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives.

Detection of Contaminants with a Primary Drinking Water Standard

Chemical or Constituent	Units of Measurement	Sample Date	Level Detected	Range of Detections	MCL (MRDL)	PHG (MCLG) (MRDLG)	Violation?	Typical Source of Contaminant
Arsenic	ppb	2018	.0	0-0	10	0.004	No	Erosion of natural deposits, runoff from orchards, glass and electronics production wastes.
Fluoride	ppm	2018	.24	.21-.27	2	1	No	Erosion of natural deposits, water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Gross Alpha	pCi/L	2017	3.17	0-5.0	15	(0)	No	Decay of natural and man-made deposits; erosion of natural deposits.
Uranium	pCi/L	2017	1.9	1.6-2.2	20	N/A	No	Erosion of natural deposits.
Nitrate (as N)	ppm	2018	1.09	0-4.6	45	45	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits.
TTHMs (Total Trihalomethanes)	ppb	2018	0	0	80	N/A	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits.
Total Chromium	ppb	2018	0	0-14	50	100	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.
Hexavalent Chromium (Chromium 6)	ppb	2018	11.68	ND-22	50	0.02	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.
TCP123 (1,2,3 Trichloropropane)	ppt	2018	0	0-0	.005	.0007	No	Discharge from industrial and agricultural chemical factories; leaching from hazardous waste sites; used as cleaning and maintenance solvent, paint and varnish remover, and cleaning and degreasing agent; byproduct during the production of other compounds and pesticides.

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Detection of Contaminants with a Secondary Drinking Water Standard

Chemical or Constituent	Units of Measurement	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Violation?	Typical Source of Contaminant
Turbidity		2017	.1	0-0.3	5	N/A	No	Soil runoff.
Color		2017	0	0	15		No	Naturally-occurring organic materials.
Odor - Threshold		2017	1.33	1-2	3		No	Naturally-occurring organic materials.
Chloride	ppm	2017	11.97	1.9-31	500		No	Runoff/leaching from natural deposits; seawater influence.
Specific Conductance	uS/cm	2017	680	440-950	490-1600		No	Substances that form ions when in water; seawater influence.
Total Dissolved Solids (TDS)	ppm	2017	417	310-630	1000		No	Runoff/leaching from natural deposits.
Sulfate	ppm	2017	170	150-200	500		No	Runoff/leaching from natural deposits; industrial wastes.
Iron	ppb	2017	58.3	ND-350	300		No	Leaching from natural deposits; industrial wastes.
Zinc	ppm	2017	65	ND-130	500		No	Runoff/leaching from natural deposits; industrial wastes.
Lead	ppb	2018	0	0-0	0.015		No	Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and/or flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the U.S. EPA Safe Drinking Water Hotline (1-800-426-4791).

Detection of Unregulated Contaminants

Chemical or Constituent	Units of Measurement	Sample Date	Level Detected	Range of Detections	Notification Level	Violation?	Health Effects Language
Vanadium	ppb	2018	12.3	0-21	50 ppb	No	The babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.

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The District takes the health of your children seriously which is why we sampled more than the number of required locations at every school site within the District. As seen on page 6, no lead has been detected at any site tested.





Thank you for your patience as we make improvements to our system by lowering water lines throughout the District. Please continue to call Dig Alert by dialing 811 whenever digging or when grading or dragging a road.



Call 811

Before You Do Any Digging or
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- ✓ It's Easy
- ✓ It's Free
- ✓ It's the Law

Visit www.digalert.org for More Information



Phelan Piñon Hills Community Services District 2017 Consumer Confidence Report

PUBLISHED May 2018

MISSION STATEMENT

The Mission of the Phelan Piñon Hills Community Services District is to provide all authorized services reliably and economically for the promotion of community development and to utilize all available resources for the maximum beneficial use.

VISION STATEMENT

To develop a Community Services District that enhances the living experience for all people within the District.

ANNUAL CONSUMER CONFIDENCE REPORT

The Phelan Piñon Hills Community Services District proudly presents our annual Consumer Confidence Report. This report contains water quality information, as required by the State Water Resources Control Board (SWRCB).

The District's water supply is over 2,000 years old according to a report from United States Geological Survey (USGS). Our water supply is primarily from the Oeste aquifer, and partially from the Alto aquifer. The water is supplied to the District's distribution system through eleven groundwater wells which have an average depth of approximately 1,000 feet. The District's water system also consists of 35 reservoirs with a combined capacity of approximately 12,000,000 gallons; 32 pressure reducing stations in 15 pressure zones; 63 booster pumps; and approximately 353 miles of water line. The District currently serves approximately 6,854 metered accounts.

The District's goal is to provide safe, good-tasting drinking water to our customers. As required, Sodium Hypochlorite is added to the water for disinfecting purposes; Running annual average (RAA) for 2016 was .80 mg/L. We are currently at the forefront of new technologies to meet higher health standards and the demands of a growing area. With ongoing testing, the District plans to meet the toughest drinking water standards.

Phelan Piñon Hills Community Services District

Monday through Friday 8:00 a.m. to 5:00 p.m.

Mark Roberts, President

Alex Brandon, Vice President

Al Morrissette, Director

Cathy Pace Director

Dan Whalen, Director

Don Bartz, General Manager

The Board of Directors hold public meetings on the 1st and 3rd Wednesdays of each month at 6:00 p.m. in the Phelan Community Center: 4128 Warbler Road, Phelan, CA 92371.

Visit us online at www.pphcsd.org

Special Information Available

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons – such as persons with cancer who are undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants – can be particularly at risk from infections. These people should seek advice about drinking water from their healthcare providers. Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the **United States Environmental Protection Agency's (USEPA) Safe Drinking Water Hotline: (800)426-4791.**

If you have any questions about this report, please contact: Sean Wright, Interim Operations Manager (760) 868-1212.

How pure should our water be?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.



More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline:

1-800-426-4791

**¿No habla inglés?
Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien. Llame 760.868.1212**

POSSIBLE CONTAMINANTS

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, USEPA and the California DHS prescribe regulations that limit the amount of certain contaminants in the water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

An explanation of units of measure used in this report

ND	= Non Detectable
ppm	= parts per million or milligrams per liter (mg/L)
ppb	= parts per billion or micrograms per liter (ug/L)
ppt	= parts per trillion or nanograms per liter (ng/L)
ppq	= parts per quadrillion, or pictogram per liter (pg/L)
pCi/L	= Picocuries per liter (a measure of radioactivity)

DEFINITIONS

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

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

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

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

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

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

Secondary Drinking Water Standard (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

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

Variations and Exemptions: The department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

2017 Drinking Water Consumer Confidence Report

THE PHELAN PIÑON HILLS COMMUNITY SERVICES DISTRICT, IN COMPLIANCE WITH THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH TITLE 22, SECTION 64480, HAS COMPLETED THE REQUIREMENTS TO ISSUE A CONSUMER CONFIDENCE REPORT TO ALL RESIDENTS AND PERSONS OWNING PROPERTY WITHIN ITS SERVICE AREA.

The District tests for hundreds of substances; however, aside from those required, only the substances that were detected in our water are shown in the table below. The District is not required to sample all contaminants annually, therefore the following results reflect some analysis prior to 2017.

Microbiological Contaminants	Highest No. of Detections	No. of months in violation	MCL		PHG (MCLG)	Typical Source of Bacteria
Total Coliform Bacteria	0 in a month	0	More than 1 sample in a month with a detection		0	Naturally present in the environment
Fecal Coliform or E. coli	0 in the year	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or E.coli		0	Human and animal fecal waste
Lead and Copper	No. of Samples Collected	90th Percentile	No. sites exceeding AL	Action Level (AL)	PHG	Typical Source of Contaminant
Lead (ppm)	31 (2015)	ND	No sites exceed AL	15	.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits.
Copper (ppb)	31 (2015)	.210	No sites exceed AL	1.3	.300	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (ppm)	2017	44	21-79	None	None	Salt present in the water and is generally naturally occurring.
Hardness (ppm)	2017	274	61-530	None	None	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring.
DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD						
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	MCL (MRDL)	PHG (MCLG) (MRDLG)	Typical Source of Contaminant
Arsenic (ppb)	2017	.0	0 - 0	10	0.004	Erosion of natural deposits, runoff from orchards, glass and electronics production wastes.
Fluoride (ppm)	2017	0.27	0.19-0.38	2	1	Erosion of natural deposits, water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Gross Alpha (pCi/L)	2017	3.17	0-5.0	15	(0)	Decay of natural and man-made deposits; erosion of natural deposits.
Uranium (pCi/L)	2017	1.9	1.6-2.2	20	N/A	Erosion of natural deposits.
Nitrate (as N) (ppm)	2017	1.04	0-4.6	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits.
TTHMs (Total Trihalometanes) (ppb)	2017	0	0	80	N/A	By-product of drinking water chlorination.
Total Chromium (ppb)	2017	0	0-0	50	100	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits.
Hexavalent Chromium (Chromium 6) (ppb)	2017	20	ND-20	50	0.02	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.
DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD						
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Turbidity (NTU)	2017	.1	0-0.3	5	N/A	Soil runoff.
Color (Units)	2017	0	0	15		Naturally-occurring organic materials.
Odor—Threshold (Units)	2017	1.33	1-2	3		Naturally-occurring organic materials.
Chloride (ppm)	2017	11.97	1.9-31	500		Runoff/leaching from natural deposits; seawater influence.
Specific Conductance (uS/cm)	2017	680	440-950	490-1600		Substances that form ions when in water; seawater influence.
Total Dissolved Solids (TDS) (ppm)	2017	417	310-630	1000		Runoff/leaching from natural deposits.
Sulfate (ppm)	2017	170	150-200	500		Runoff/leaching from natural deposits; industrial wastes.
<i>*Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.</i>						

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DETECTION OF CONTAMINANTS WITH A <u>SECONDARY</u> DRINKING WATER STANDARD					
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	MCL	Typical Source of Contaminant/Health Effects Language
Iron (ppb)	2017	58.3	ND-350	300	Leaching from natural deposits; industrial wastes.
Zinc (ppm)	2017	65	ND-130	500	Runoff/leaching from natural deposits; industrial wastes.
Lead (ppb)	2017	0	0-0		Infants and Young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and/or flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the U.S. EPA Safe Drinking Water Hotline (1-800-426-4791).

DETECTION OF UNREGULATED CONTAMINANTS					
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	Notification Level	Health Effects Language
Vanadium (ppb)	2015	12.9 ppb	0-5.6	50 ppb	The babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.

**Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.*

We test the drinking water quality for many constituents as required by state and federal regulations. This report shows the results of our monitoring for the period of January 1 - December 31, 2017.

A source water assessment was performed for each of the District's wells. The assessment was completed on December 20, 2016. Vulnerability included the possibility of Nitrates associated with low density septic systems at Wells 2, 3, 4, 5, 9A, 9B, 11 and 12. A copy of the complete assessment may be viewed at the Phelan Piñon Hills Community Services District Office or at the CDPH San Bernardino District Office, 464 West 4th Street, Suite 437, San Bernardino, CA 92401. You may request a summary of the assessment be sent to you by contacting CDPH District Engineering at (909) 383-4328.

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Phelan Piñon Hills Community Services District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

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Phelan Piñon Hills

Community Services District

2016 Consumer Confidence Report

PUBLISHED May 2017

MISSION STATEMENT

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Total Coliform Bacteria	0 in a month	0	More than 1 sample in a month with a detection		0	Naturally present in the environment
Fecal Coliform or E. coli	0 in the year	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or E.coli		0	Human and animal fecal waste
Lead and Copper	No. of Samples Collected	90th Percentile	No. sites exceeding AL	Action Level (AL)	PHG	Typical Source of Contaminant
Lead (ppm)	31 (2015)	ND	No sites exceed AL	15	.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits.
Copper (ppb)	31 (2015)	.210	No sites exceed AL	1.3	.300	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (ppm)	2016	46	16-82	None	None	Salt present in the water and is generally naturally occurring.
Hardness (ppm)	2016	188	34-210	None	None	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring.
DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD						
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	MCL (MRDL)	PHG (MCLG) (MRDLG)	Typical Source of Contaminant
Arsenic (ppb)	2016	.65	0 - 3.9	10	0.004	Erosion of natural deposits, runoff from orchards, glass and electronics production wastes.
Fluoride (ppm)	2016	0.28	0.18-0.36	2	1	Erosion of natural deposits, water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Gross Alpha (pCi/L)	2016	4.4	3.0-4.4	15	(0)	Decay of natural and man-made deposits; erosion of natural deposits.
Uranium (pCi/L)	2016	2.1	1.2-2.1	20	N/A	Erosion of natural deposits.
Nitrate (as N) (ppm)	2016	1.08	ND-4.4	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits.
TTHMs (Total Trihalometanes) (ppb)	2016	0	0	80	N/A	By-product of drinking water chlorination.
Total Chromium (ppb)	2016	6.50	ND-14	50	100	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits.
Hexavalent Chromium (Chromium 6) (ppb)	2016	18	ND-18	10	0.02	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.
DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD						
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Turbidity (NTU)	2016	.18	0.1-0.8	5	N/A	Soil runoff.
Color (Units)	2016	0	0	15		Naturally-occurring organic materials.
Odor—Threshold (Units)	2016	1	1	3		Naturally-occurring organic materials.
Chloride (ppm)	2016	5.99	2-27	500		Runoff/leaching from natural deposits; seawater influence.
Specific Conductance (uS/cm)	2016	553.7	440-950	1600		Substances that form ions when in water; seawater influence.
Total Dissolved Solids (TDS) (ppm)	2016	342	260-580	1000		Runoff/leaching from natural deposits.
Sulfate (ppm)	2016	139	110-180	500		Runoff/leaching from natural deposits; industrial wastes.

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Continued on Page 4



Continued from Page 3

We test the drinking water quality for many constituents as required by state and federal regulations.

DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD					
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	MCL	Typical Source of Contaminant
Iron (ppb)	2014	58.3	ND-350	300	Leaching from natural deposits; industrial wastes.
Zinc (ppm)	2014	65	ND-130	500	Runoff/leaching from natural deposits; industrial wastes.
DETECTION OF UNREGULATED CONTAMINANTS					
Chemical or Constituent	Sample Date	Level Detected	Range of Detections	Notification Level	Health Effects Language
Vanadium (ppb)	2015	12.9 ppb	0-5.6	50 ppb	The babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.

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This report shows the results of our monitoring for the period of January 1 - December 31, 2016.

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Parks and Recreation Programs

FREE Summer Fun

Summer Movie Night 2017: Fridays - June 16 thru July 28, 2017

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Kids Crafts (Ages 5 to 12): Monday & Friday 10 am to noon - June 12 thru July 28, 2017

At the Phelan Community Center (In partnership with the Phelan Seniors) - No classes July 1 & 4

Kids Archery Lessons: Thursday 9 am to 11 am - June 8 thru July 13, 2017

At the corner of Eaby Rd and Smoke Tree Rd (In partnership with Mojave Archers)

Be sure to visit our website (www.pphcsd.org) for information on classes and events.



Appendix J

Water Shortage Contingency Plan

Assembly Bill (AB) 1668 and Senate Bill (SB) 606 was signed into law in 2018 to build upon California's ongoing efforts to make water conservation a way of life and create a new foundation for long-term improvements in water conservation and drought planning. Part of SB 606 and AB 1668 includes amendments to CWC Section 10632, which is related to water shortage contingency planning.

Key changes per amendments related to requirements in the 2020 UWMP include having agencies analyze its water supply reliability, incorporate an annual water supply and demand assessment in its UWMP, adopt six standard water shortage levels, and establish clear communication, monitoring, and reporting protocols during shortage events.

The Water Shortage and Contingency Plan (WSCP) in essence, is meant to be a stand-alone document within the 2020 UWMP that can be utilized to help the District prepare for, respond to, and mitigate water shortages situations in a timely manner. Examples of conditions that could create water shortages include drought periods, natural disasters due to wildfires, flooding, earthquakes, etc. or even system failures like dam and levee breaks, or energy grid failures. During such events, a WSCP provides a roadmap for decision makers, management, operational staff, communications staff, and customers on how to proceed through various stages or shortage severity. The tool also helps with regional and State coordination and helps facilitate and prioritize drought assistance at the State level during a shortage/drought situation.

The District encourages the community it serves to use water wisely at all times as referenced in Ordinance No. 2016-01, Establishing Conservation Measures. Section 3 of the ordinance specifies water use restrictions that are in effect at all times and authorizes the District to determine and declare water shortages and water shortage emergencies in its service area.

During the most recent drought in 2014, in response to the State Water Resources Control Board (SWRCB) adopted Resolution No. 2014-0038 which adopted Emergency Regulations for Statewide Urban Water Conservation (Regulations), the District moved to Stage 1 of its WSCP per 2010 UWMP. The District has since expanded on these Regulations by adopting several Ordinances targeted at increasing water conservation efforts in the community. A summary of key Ordinances are listed below:

On July 1, 2015, to comply with the SWRCB Regulations, the Board adopted Ordinance 2015-02 which among other things, modified the District's Stage 1 conservation measures and established Stage 2 conditions to achieve the mandated 32% potable water reduction.

On March 16, 2016, the Board adopted Ordinance 2016-01 that further modified Stage 1 and Stage 2 conservation measures in a continuing effort to achieve compliance with the Regulations.

Prior to the 2018 CWC amendments mentioned above, the District's Ordinance specified four water shortage levels. In compliance with new amendments to CWC 10632 (a)(3), District ordinances will be revised to incorporate six water shortage levels.

1. Water Supply Reliability Analysis

Water Code Section 10632(a) (1)

The analysis of water supply reliability conducted pursuant to Section 10635.

The water supply reliability analysis is based on the District's ability to meet long-term, near-term, and annual water demands, as required per CWC Section 10635. The District's primary water supply is local groundwater which is pumped from a total of 13 ground water wells. A majority of groundwater is pumped from 12 wells within the Mojave Basin Area (MBA); and one well within the Antelope Valley Adjudication Area (AVAA). MBA is managed by the Mojave Water Agency (MWA) and AVAA is managed by Antelope Valley Watermaster.

Historically, the District has not experienced water supply shortfalls during periods of drought, including the recent drought in 2012 through 2015. As referenced in Chapter 7, Tables 7-2 through 7-3 of the District's 2020 UWMP, the District is able to meet long-term and near-term demands with its current water supply portfolio under normal, single dry, and multiple dry year conditions. Further, per MWA's 2020 UWMP, the agency has a robust water supply portfolio capable of meeting the water demands in normal, single dry, and five consecutive dry years for the next 45 years. The District also continues to participate in MWA's member agency working group to develop a Groundwater Sustainability Plan to ensure the continued reliability of groundwater to meet current and future water demands of the basin.

The District has purchased water via its emergency interconnects with the City of Victorville Water and Sheep Creek Water Company in the past primarily due to emergency conditions like equipment failures. The District also has another emergency interconnect with County of San Bernardino (County), Special Districts.

Likely threats to the District's groundwater resources are groundwater overdraft and contamination. Hence, the District is taking several countermeasures to mitigate potential threats to its source water supplies. A summary of supply augmentation planning, on-going demand reduction practices, or other mitigative actions are listed below:

Supply Augmentation

- o adding new and/or rehabilitating older (Inactive) wells
- o performing studies to potentially connect to the California Aqueduct that runs east west across the District through purchase from MWA

Demand management

- o studies to understand and potentially reduce evaporative cooler usage in the community

- o water loss prevention, meter and service line replacement, water conservation outreach programs
- o pilot project using drone and thermal imaging technologies to identify leaks

Purchasing additional standby generators at well sites through grant funding

Details on District supply augmentation and demand management measures can be found in Chapters 8 and 9 of respectively of the District's 2020 UWMP.

2. Annual Water Supply and Demand Assessment Procedures

Water Code Section 10632(a) (2)

The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:

(A) The written decision-making process that an urban water supplier will use each year to determine its water supply reliability.

(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:

(i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.

(ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.

(iii) Existing infrastructure capabilities and plausible constraints.

(iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.

(v) A description and quantification of each source of water supply.

Water Code Section 10632.1

An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.

As per the new CWC 10632(a)(2), urban water suppliers shall conduct an annual water supply and demand assessment (Annual Assessment) and submit and Annual Water Shortage assessment report to DWR by July 1, 2022. This WSCP outlines the methodology and key data inputs required to conduct the Annual Assessment and the decision-making process for determining water supply reliability for the upcoming year.

Note: DWR is developing a guidance document that will recommend practical procedures and analytical methods that may be used, at the Supplier’s discretion, to comply with the Annual Assessment requirement due in 2022.

2.1. Decision Making Process

Upon completion of the Annual Assessment by Engineering staff, a presentation to the District Board of Directors shall be made at the beginning of each year. The Board of Directors shall vote on the findings of the Annual Assessment and declare, if needed, any water shortage response actions and at which level. A recommended timeline for the key elements of the Annual Assessment is presented in the Table below.

Approximate Timeline	Activities
January - February	Quantify supplies and demands based on current conditions and submit Annual Assessment to Board of Directors
March – April	Present findings to Board of Directors to vote on water shortage level implementation, if required
April - May	Activate Shortage Response Actions; Draft Annual Water Shortage Assessment Report for Board approval; Prepare public notices if required.
June - July 1	Finalize and Submit Annual Water Shortage Assessment Report to DWR

2.2. Data and Methodologies

This section describes the information and methodologies that will be utilized by the District to complete the Annual Assessment.

Current Year Available Supply

Any regulatory, hydrologic, hydrogeologic, or other restrictions to supplies shall be noted in the Assessment. Available water supplies for the District shall be summed per month for the reporting year. Tables 6-8 and 6-9 of the District’s 2020 UWMP shall be referenced for consistency with actual and projected water supplies. An

analysis with one subsequent dry year shall also be done to forecast any anticipated shortage situation.

Current Year Unconstrained Customer Demand

Any policy changes, population increase that will impact demands shall be noted in the Assessment. Water use for the reporting year shall be calculated by summing billing demand per month. Projected water demands for the upcoming year shall be based on the previous year's water use added to the demand anticipated from new connections, if any, per customer class. Tables 4-2 and 4-3 of the District's 2020 UWMP shall be referenced for consistency with actual and projected demands. There should not be any planned conservation measures associated with these demands.

Evaluation Criteria

If the available water supply is greater than the anticipated customer demand for the upcoming year, no further action is required. If the anticipated customer demand for the upcoming year is greater than the available water supplies, the District shall initiate water shortage actions as detailed in this WSCP.

Infrastructure Considerations

The District shall note any planned infrastructure projects for the upcoming year that could impact water supply production/reduction (e.g., rehabilitation or drilling of new groundwater well, new interconnects or changes in purchase agreements, etc.). These water supply changes shall be evaluated for the following 12 months and adjusted accordingly for each month.

3. Six Standard Water Shortage Levels

Water Code Section 10632(a)(3)

(A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.

(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.

Per new requirements of CWC Section 10632(a)(3), the District will move from a four-stage to a six-stage shortage level process. Table 8-1 shows a summary of the District's shortage levels. Details of each shortage level is described in the following sub-sections.

**Submittal Table 8-1
Water Shortage Contingency Plan Levels**

Shortage Level	Percent Shortage Range	Shortage Response Actions (Narrative description)
1	Up to 10%	Water Shortage Alert - The District is able to meet all customers' demands in the immediate future with voluntary reductions per District Ordinance 2016-01.
2	Up to 20%	Slightly Restricted - Mandatory demand reduction of up to 20% with penalties will be implemented. Conservation measures may include requirements for efficient irrigation systems, automatic controllers, use of drought resistant plants, shrubs, and drought resistant turfs and other restrictions as outlined in Table 8-2.
3	Up to 30%	Moderately Restricted - Mandatory demand reduction of up to 30% with penalties will be implemented. Restriction of landscape irrigation to several days per week. Details in Table 8-2.
4	Up to 40%	Severely Restricted - Mandatory demand reduction of up to 40% with penalties. Further restriction on outdoor water use for landscaping, water features (pools and spas), construction activities, livestock needs. Details in Table 8-2.
5	Up to 50%	Critical Water Supply Shortage - Mandatory demand reduction of up to 50% with penalties will be implemented. Further restrictions on outdoor use for parks, school grounds, golf courses, and landscaping. Details in Table 8-2.
6	>50%	Emergency Water Supply Shortage - Mandatory demand reduction greater than 50% with penalties. All water use shall be limited to human and animal consumption only. Outdoor use prohibited.
NOTES: N/A		

4. Shortage Response Actions

Water Code Section 10632 (a) (4)

Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:

- (A) Locally appropriate supply augmentation actions.*
- (B) Locally appropriate demand reduction actions to adequately respond to shortages.*
- (C) Locally appropriate operational changes.*
- (D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.*
- (E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.*

CWC Section 10632(a)(4) requires water suppliers to implement water shortage response actions per water shortage level. In addition, an estimate of volume or percentage of water reduction achieved at each shortage stage from response actions that include water supply augmentation, demand reduction activities, operational changes, and mandatory prohibitions will need to be provided in the WSCP. The District's response actions and associated percentage reductions per shortage severity are detailed in Tables 8-2 and 8-3.

4.1. Demand Reduction

The District alongside the community it serves has embraced water conservation as a way of life and implements several water use reduction practices under normal or non-shortage level periods. Details of demand management tools & methodologies employed by the District are documented in Chapter 9, 2020 UWMP, Demand Management Measures. Estimates of demand reductions achievable per action are based on staff experiences and historical water shortage events as well as based on additional notable resources listed towards the end of this sub-section.

As mentioned, demand reduction strategies listed below are implemented at all times per District Ordinance 2016-01 (Appendix K, 2020 UWMP) in addition to other on-going demand management practices documented in Chapter 9, District 2020 UWMP. The level of enforcement related to the demand reduction actions below will move from voluntary reduction in Stage 1 to mandatory reduction starting from Stage 2 through Stage 6 with increasing public outreach and engagement to meet percentage reduction targets:

Landscape irrigation restrictions:

- o Watering of lawns, grass, shrubbery, ground cover is prohibited between 9:00 am and 6:00 pm from June through October, and between 3:00 pm and 9:00 am from November through May.
- o Irrigation 48 hours after measurable rainfall is prohibited.
- o Ornamental turf Irrigation on public street medians is prohibited.
- o Landscape irrigation must be consistent with regulations established by the California Building Standards Commission and the Department of Housing and Community Development.
- o New developments need to submit exterior landscape plans, are required timed irrigation systems, and are encouraged to use drought resistant plants, shrubs, and turf. Areas required for turf shall be restricted to no more than 20% of the total landscaped area.

Non-irrigation based water waste reductions:

- o Washing of hard surfaces (driveway, parking lots, etc.) is prohibited with the exception to eliminate risk of fire, contamination, or used for public health/safety needs
- o Washing of vehicles must be done using a hose with an automatic shut-off nozzle or similar device that ceases to dispense water when not in use
- o Water use causing flooding or runoff into gutters, driveways, streets, non-irrigated areas, or adjacent properties is prohibited

Water loss minimization:

- o Water leaks/breaks once found must be repaired promptly
- o All current water customers are encouraged to install low flush toilets, shower heads, flow reducers, and faucet aerators

Water feature use restrictions:

- o Potable water will not be used in a fountain or other decorative water feature unless it is part of a recirculating system.
- o Evaporation resistant covers and water recirculation systems are required for all swimming pools and hot tubs of at least 600 gallons capacity

Commercial restrictions:

- o Operators of hotels and motels shall post notices urging guests to conserve water and provide guests with the option of not having towels and linens laundered daily.

- o Drinking water will not be served other than upon request at restaurants, hotels, cafes, cafeterias, bars, or other public places where food or beverages are served and/or purchased.

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
1	Landscape - Limit landscape irrigation to specific times	1% - 5%	Watering of lawns, grass, shrubbery, ground cover or other landscaping prohibited between 9.00 A.M. and 6:00 p.m. from June through October; and between 3:00 P. M. and 9:00 A.M. from November through May.	No
1	Landscape - Other landscape restriction or prohibition	1% - 5%	Potable water irrigation not allowed during and within 48 hrs after measurable rainfall.	No
1	Landscape - Other landscape restriction or prohibition	<1%	New developments will require timed irrigation systems, and encouraged to use drought resistant plants, shrubs, and turf. Areas required for turf shall be restricted to no more than 20% of the total landscaped area.	No
1	Landscape - Prohibit certain types of landscape irrigation	<1%	No potable water irrigation of ornamental turf on public street medians	No
1	Landscape - Restrict or prohibit runoff from landscape irrigation	<1%	The use of water for any purpose which allows flooding or runoff, including but not limited to the flow of water onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures is prohibited.	No

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions Drop down list <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
1	CII - Lodging establishment must offer opt out of linen service	0%	Although, the District does not have this landuse designation at present, operators of hotels and motels shall post notices urging guests to conserve water and provide guests with the option of choosing not to have towels and linens laundered daily per state law.	No
1	CII - Restaurants may only serve water upon request	<1%	No serving drinking water other than upon request at restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased.	No
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	1% - 5%	Allowing the waste of water through leaks or breaks in the users' water system or devices is prohibited. All leaks or breaks shall be repaired in a timely manner.	No
1	Other - Prohibit use of potable water for washing hard surfaces	1% - 5%	Watering driveways, sidewalks, parking lots, or other hard and/or impervious surfaces with potable water is prohibited.	No
1	Other - Require automatic shut of hoses	1% - 5%	Only the use of a hose fitted with a shut-off nozzle or device attached to it is allowed for washing vehicles.	No

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions Drop down list <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
1	Other water feature or swimming pool restriction	<1%	Evaporation resistant covers and water recirculation systems are required for all swimming pools and hot tubs of at least 600 gallons capacity	No
1	Water Features - Restrict water use for decorative water features, such as fountains	0%	Water shall not be used in a fountain or other decorative water feature, unless part of a recirculating system. Currently, District does not have such features.	No
1	Other	<1%	Irrigation of newly constructed homes/buildings must comply with CA Bldg Standards Commission and Dept. Housing and Community Development	No
1	Other	<1%	All new construction, including residential, commercial and industrial, shall install water conserving devices as required by law.	No
1	Other	<1%	Water used for cooling systems must be recycled to the extent possible	No
1	Other	<1%	All current water customers are encouraged to install low flush toilets, shower heads, flow reducers, and faucet aerators	No

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
2	Expand Public Information Campaign	5% - 10%	Stage 1 Prohibitions will be enforced as needed to meet reduction target	Yes
2	Other	5% - 10%	Persons using water for agricultural practices, whether for the purpose of crop production, growing of commercial ornamental plants or maintaining existing nursery stock shall provide, maintain and use irrigation equipment and practices which are the most efficient possible. District will require owners of these practices to prepare a water conservation plan as needed.	Yes
2	CII - Other CII restriction or prohibition	1% - 5%	Commercial and industrial facilities must provide water conservation plan to reduce water used by that percentage required by the Board of Directors.	Yes
2	Increase Water Waste Patrols	1% - 5%	Use of drone and other water theft identification enforcements	Yes
2	Landscape - Prohibit certain types of landscape irrigation	1% - 5%	Irrigation of landscaping or other outdoor vegetation, plantings, lawns, or other growth is not permitted to exceed reduction amount required	Yes

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
2	Landscape - Restrict or prohibit runoff from landscape irrigation	1% - 5%	The free flow of water away from an irrigated site shall be presumptively considered excessive irrigation and a waste of water.	Yes
2	Pools and Spas - Require covers for pools and spas	1% - 5%	All residential, public, and recreational swimming pools, of all size, shall use evaporation resistant covers and shall recirculate water.	Yes
2	Other water feature or swimming pool restriction	1% - 5%	Public and private parks, golf courses, swimming pools, and school grounds shall only use water for pool filling between the hours of 10:00 p.m. and 6:00 a.m	Yes
3	Expand Public Information Campaign	20% - 30%	The District will expand its public outreach campaign and enhance water waste monitoring programs to help ensure compliance. Stage 1 and Stage 2 prohibitions will be enforced as needed to meet reduction target	Yes
3	Landscape - Limit landscape irrigation to specific days	5% - 10%	Irrigation of exterior vegetation is limited to no more than two (2) days per week. Tuesdays and Saturdays for even-numbered addresses; Wednesdays and Sundays for odd-numbered addresses.	Yes
4	Expand Public Information Campaign	30% - 40%	All prohibitions under Stage 1 through 3 will be enforced to meet reduction target	Yes

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
4	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	<1%	Washing of vehicles is prohibited, except when done by commercial vehicle wash equipment using recycled or reclaimed water	Yes
4	CII - Other CII restriction or prohibition	1% - 5%	No new construction meter permits shall be issued by the District . All existing construction meters to be removed and/or locked	Yes
4	Other	<1%	Watering of livestock shall only be permitted as necessary	Yes
4	Other water feature or swimming pool restriction	5% - 10%	Filling or adding water to pools, water features is prohibited.	Yes
4	Other	1% - 5%	The District will cease operations of the bulk water filling station.	Yes
5	Expand Public Information Campaign	40% - 50%	All prohibitions under Stage 1 through 4 will be enforced to meet reduction target	Yes
5	Landscape - Other landscape restriction or prohibition	5% - 10%	Watering of parks, school grounds and golf courses is prohibited	Yes
5	Landscape - Other landscape restriction or prohibition	1% - 5%	Lawn Watering and Landscaping irrigation is prohibited	Yes

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
5	Other	< 1%	No new customer meters permits will be issued by the District.	Yes
6	Expand Public Information Campaign	40% - 50%	All prohibitions under Stage 1 through 5 will be enforced to meet reduction target	Yes
6	Landscape - Prohibit all landscape irrigation	5% - 10%	All water use limited to human and animal consumption.	Yes
NOTES: All actions in proceeding Stages will employ actions from previous Stages, thereby having a cumulative demand reduction as the Stage level progresses.				

Resources Referred for Estimating Impact of Response Actions

American Water Works Association (AWWA) 2019, AWWA M60: Drought Preparedness and Response Manual. Second Edition

California Department of Water Resources. 2008. Urban Drought Guidebook 2008 updated edition

U.S. EPA. Cases in Water Conservation: How Efficiency Programs Help Water Utilities Save Water and Avoid Costs

4.2. Supply Augmentation

The District has the ability to purchase water via interconnects with Victorville Water District (VWD), San Bernardino County 70 J, and MWA by method of water-wheeling via VWD during water shortage situations. The District anticipates that supply augmentation will likely be triggered from Stage 3 onwards by increasing purchases from the agencies above to meet target reductions from Stages 3 to 6. Another non-agency option is to provide water to its customers using water trucks.

Additional supply augmentation measures being actively explored by the District includes addition of new wells, rehabilitation of inactive wells, and conducting a study to explore the feasibility of receiving water at interconnect(s) from the California Aqueduct via MWA to further diversify its water supply portfolio.

Submittal Table 8-3: Supply Augmentation and Other Actions			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>
1	Other Actions (describe)	1% - 5%	Continue to maintain and upgrade facilities and apply operational changes as needed: e.g., rehabilitate operating wells if needed, apply seals on pumps, proactive leak detection, minimize tank spills, etc.
2	Improve Customer Billing	1% - 5%	Tracking and monitoring high users
3	Implement or Modify Drought Rate Structure or Surcharge	15% - 20%	Modify billing rates
4	Other Purchases	1% - 5%	Activate Victorville Interconnect
5	Other Purchases	1% - 5%	Activate Victorville, SB County 70 J
6	Other Purchases	1% - 5%	Activate Victorville, SB County 70 J, wheel water from MWA through Victorville as needed
	Other Actions (describe)	<1%	Import water by truck
NOTES: All actions in proceeding Stages will employ actions from previous Stages, thereby having a cumulative supply augmentation as the Stage level progresses in order to meet reduction targets per Stage			

4.3. Operational Changes

During all times of a water supply shortage, beginning at Stage 1 (See Table 8-3), the District shall implement operational changes such as:

- reduce, delay, or temporarily suspend system flushing or fire flow testing,
- heighten leak detection and facilities maintenance activities,
- increase hydrant security or water theft policing
- upgrade meters for accurate measurement of water use and enhanced reading capabilities
- reprioritize water capital improvement projects (CIP) to focus on water reducing projects and programs
- monitor usages from customer water meter information to track where water leaks may be occurring to effectively manage conservation targets
- employ pressure management in certain pressure zones

4.4. Additional Mandatory Restrictions

During the most recent drought in 2014, the State Water Resources Control Board (SWRCB) adopted Resolution No. 2014-0038 which adopted Emergency Regulations for Statewide Urban Water Conservation (Regulations). The District has since expanded on and updated these Regulations by adopting several Ordinances (Appendix K, 2020 UWMP) targeted at increasing water conservation efforts in the community. These regulations are adopted by the District to encourage the community it serves to use water wisely at all times.

However, if drought conditions or water shortages warrant further water use restrictions, the District will start to implement mandatory prohibitions per Ordinance No. 2016-01 starting at Stage 2. Further mandatory restrictions will be implemented in subsequent stages on an as-needed basis in order to curtail water use to meet demand reduction targets at each shortage level as presented in Table 8-2.

4.5. Emergency Response Plan

The District has prepared a Risk and Resilience Assessment (RRA) and Emergency Response Plan (ERP) in compliance with the American Water Infrastructure Act (AWIA). In the event of catastrophic reduction in water supplies, the District would implement its emergency preparedness plans, depending on the cause and severity of the water shortage. The ERP describes the organizational and operational policies and procedures required to provide sufficient and safe drinking water, and prioritization of water repairs.

The District's initial response in the event of an emergency is to conduct a damage assessment. Once the assessment is complete and the event has been assigned an emergency level, the Incident Commander will order and direct the appropriate mobilization level that will repair damages and restore reliable water service to the District's customers as quickly as possible. The District will also follow communication protocols per ERP to keep the public informed. The Incident Commander will be the sole source for the public release of all official information regarding an emergency event.

The District has equipped some of its facilities with standby generators that would be operated if the shortage event involved loss of power. Although, not all wells and booster stations are equipped with permanent standby generators and automatic transfer switches, the District owns several portable generators and has a procedure established with a local vendor to provide portable generators as needed that could be used to operate wells. If there is catastrophic rupturing of pipelines, during an earthquake for example, the emergency operations procedures would be followed to isolate the damaged sections, notify customers, and immediately repair the damage.

4.6. Seismic Risk Assessment and Mitigation Plan

Water Code Section 10632.5. (a)

In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.

(b) An urban water supplier shall update the seismic risk assessment and mitigation plan when updating its urban water management plan as required by Section 10621.

(c) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk.

The District is located in the unincorporated area of San Bernardino County (County). Per the County's 2011 Unincorporated Area Multi-Jurisdictional Hazard Mitigation Plan Update (MJHMP), the District is a member of the County CERT program or Community Emergency Response Teams. Following a catastrophic event, CERT members who are trained in basic response skills can assist themselves, their families, and others in their neighborhood or workplace until professional responders arrive. The District is also a member of California Water/Wastewater Agency Response Network (CalWARN) which functions in

coordination with the State Office of Emergency Services (OES) to support and promote statewide emergency preparedness, disaster response, and mutual assistance for public and private water and wastewater utilities.

The County has many active faults and has been subjected to seismic activities in the past and anticipates the same in the future. The District lies about 3 miles north of the historic San Andreas Fault Zone (Mojave Section) and is within an area that has very high seismic hazard¹ properties per United States Geological Survey (USGS).

The MJHMP outlines the following mitigation strategies specifically for water distribution systems:

1. Retrofit structures to higher seismic standards.
2. Purchase portable containers (Conex containers) to stage emergency supplies and equipment for the first responders (i.e., water, food, small off road vehicles, fuel, cots, toiletries, communication devices, blankets, wet weather gear, etc.) at strategic water system locations throughout County of San Bernardino. Conex containers can relocate if necessary to assist field staff during a disaster to maintain the operations of water systems
4. Retrofit existing buildings and facilities with connectors/ATS for emergency generators and/or install permanent emergency generators at critical facilities, including wells and booster station locations.
5. Develop a plan for speeding the repair of and functional restoration of water and wastewater systems through stockpiling of shoring materials, temporary pumps, surface pipelines, portable hydrants, and other supplies.
6. Develop a plan for areas subject to high ground shaking, earthquake-induced ground failure, and surface fault rupture to determine a replacement schedule for pipelines (along with importance, age, type of construction material, size, condition, and maintenance or repair history).
7. Develop a plan for short-term and intermediate-term sheltering of employees.
8. Develop a plan to work with local agencies that handle hazardous materials to coordinate mitigation efforts for the possible release of these materials due to a natural disaster such as an earthquake, flood, fire, or landslide.

In addition to seismic risk mitigation strategies addressed in the MJHMP, the District has done or is actively pursuing the following:

- Follow procedures as presented in District's ERP

¹ <https://www.usgs.gov/media/images/2018-long-term-national-seismic-hazard-map>

- Supply, storage, and distribution facilities are built to seismic code requirements
- Some wells have flex couplings installed to mitigate lateral movements

4.7. Shortage Response Action Effectiveness

The District's drought response team shall convene and monitor the efficacy of proposed response actions in Table 8-2 and 8-3 on a month-by-month basis during a water shortage event.

5. Communication Protocols

Water Code Section 10632 (a) (5)

Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all of the following:

(A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632. 1.

(B) Any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632. 1.

(C) Any other relevant communications

Per CWC Section 10632 (a)(5)(B), the District will be required to notify all customers and stakeholders if any shortage response actions are triggered based on the Annual Assessment. In the event of an anticipated water shortage, the District shall inform the County and MWA via formal notice and inform customers through various outlets like newsletters and messages on the District website, water bill inserts, direct mail, newspapers, social media applications, community meetings, etc. Communication protocols in accordance with Section 6 (Communication) of the District's emergency Response Plan (ERP) shall be followed and the Incident Commander shall be the sole source of public release of all official information regarding the emergency event, whether to the media or others.

6. Compliance and Enforcement

Water Code Section 10632 (a) (6)

For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632. 2.

The District will enforce compliance using the following system set forth in Ordinance 2016-01, Sections 7 through 9:

- First Violation: Written notice is given to the customer and/or property owner in person or by mail.
- Second Violation within a 6-month period: A surcharge of \$250 is imposed on the meter.
- Third Violation within a 12-month period: A monthly penalty surcharge of up to \$500 is imposed on the meter and will continue until the violation is satisfactorily corrected. The District may install a flow-restricting device at the meter. The cost of installing the device will be charged to the customer.
- Subsequent Violations: The District may discontinue water service where the violation occurred. Service will not be restored until the District's General Manager has been reassured that future violations will not occur. In addition, the District may file a civil action in extreme situations of non-compliance.

7. Legal Authorities

Water Code Section 10632 (a) (7)

(A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.

(B) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1. [see below]

(C) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code

Water Code Section Division 1, Section 350

Declaration of water shortage emergency condition. The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, shall declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

The District is authorized by Government Code Section 61100(a) and CWC 375-377, 1009, and 71610.5 to restrict water use during any emergency caused by overdraft, drought, or other threatened or existing water shortage, and to prohibit the waste of District water or the use of District water during such periods. The District has the authority to impose monetary fines and penalties and take other applicable actions pursuant to Government Code Sections 61100(2), 61060(a)-(b), and 25120 et seq., and CWC Sections 350-358, 375-377, 1009, and 71276-71281.

The District shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1.

The District shall coordinate with the San Bernardino County to declare a local water supply emergency per California Government Code, California Emergency Services Act, Article 2, Section 8558.

8. Financial Consequence of WSCP

Water Code Section 10632(a) (8)

A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:

(A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.

CWC Section 10632 (a)(8) requires a description of the impacts of consumption reduction on the revenues and expenditures of the water supplier. Financial impacts from activating the WSCP are mainly from revenue loss due to lower water consumption and increased operational costs for public outreach and enforcement activities.

To mitigate financial impacts during emergencies, the District may choose to implement one or more of the following:

- Use reserve funds that can be used to offset expenditure impacts during times of emergency. The Operations Reserve Fund is typically used as a gap measure during budget shortfalls and the Rates Stabilization Fund is used specifically for drought/water shortage situations.
- Re-evaluate and delay capital projects on an as-needed basis.
- Implement a drought surcharge

At present, the District utilizes a two-tiered water rate structure, in which larger water users are charged higher water commodity rates. The District is evaluating its rate structure in order to better define customer classes and associated rates to help offset high user impact on the distribution system.

9. Monitoring and Reporting

Water Code Section 10632(a)(9)

For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.

Per CWC Section 10632 (a)(9), the District shall collect, track, and analyze water production and metered water use on a monthly basis to determine efficacy of WSCP implementation during a shortage event.

Note: The State Water Resources Control Board is in the process of preparing regulations for regular monthly water use reporting by urban water suppliers.

10. WSCP Refinement Procedures

Water Code Section 10632 (a) (10)

Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.

Per CWC Section 10632 (a) (10), the District may choose to refine the WSCP following significant changes to the District's water supply portfolio or significant changes to the water allocation plans of its supply agencies (e.g., MWA), but no less than every 5 years. District staff from Engineering, Operations, Finance and Administrative staff will convene as needed to refine the WSCP. Any updates to the WSCP will be approved by the Board of Directors to maintain an effective water shortage response plan for the community.

11. Special Water Feature Description

Water Code Section 10632 (b)

For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

Per CWC Section 10632 (b), the District defines water features in the WSCP that are artificially supplied with water to include ornamental ponds, fountains, artificial lakes, etc. which are separate from swimming pools, wading pools, and hot tubs/spas as defined by subdivision (a) of Section 115921 of the Health and Safety Code. At all times, potable water shall not be used in a fountain or other decorative water feature unless part of a recirculating system. From Stage 3 onwards, filling or adding water to pools and spas, ornamental ponds, fountains, and artificial lakes is prohibited.

12. Plan Adoption, Submittal and Availability

Water Code Section 10632 (c)

The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.

The District may choose to periodically amend the WSCP independently of the UWMP, as needed by following similar steps to the UWMP prior to adoption:

notify its customers, MWA, San Bernardino County, and general public of a public hearing

publish notification of public hearing in a local newspaper for two consecutive weeks

hold a public hearing to obtain public comments

the Board of Directors shall formally adopt the WSCP following the public hearing or at a subsequent Board meeting

make the WSCP available on the District's website, <https://www.pphcsd.com/>, within 30 days of adoption by the Board of Directors.

Appendix K- Ordinance 2016-01

ORDINANCE NO. 2016-01

**ORDINANCE OF THE PHELAN PIÑON HILLS
COMMUNITY SERVICES DISTRICT,
COUNTY OF SAN BERNARDINO, CALIFORNIA,
ESTABLISHING CONSERVATION MEASURES**

WHEREAS, the Board of Directors of Phelan Piñon Hills Community Services District ("District") does not dispute findings of the State of California that there is a critical water situation in the State caused by continued overdraft of groundwater resources; and

WHEREAS, District's the Board of Directors has determined that it is essential to conserve water in order to continue to meet the health and safety of the properties and residents of the District.

NOW, THEREFORE, BE IT ORDAINED by the Board of Directors of Phelan Piñon Hills Community District as follows:

SECTION 1. PURPOSE, INTENT AND FINDINGS.

1.1 The District is a public agency created under the Community Services District Law, California Government Code Section 61000 et seq., to, among other purposes, provide water service to the water users within the boundaries of the District.

1.2 Article X, Section 2, of the California Constitution declares that the general welfare requires that water resources be put to beneficial use; waste or unreasonable use, or unreasonable method of use, of water be prevented; and conservation of water be fully exercised with a view to the reasonable and beneficial use thereof.

1.3 The District is authorized by Government Code Section 61100(a) and Water Code Sections 375-377, 1009, and 71610.5 to restrict the use of District water during any emergency caused by overdraft, drought or other threatened or existing water shortage, and to prohibit the waste of District water or the use of District water during such periods, for any purpose other than household uses or such other restricted uses as may be determined to be necessary by the District and may prohibit use of such water during such periods for specific uses which the District may from time to time find to be nonessential.

1.4 The District is further authorized by Government Code Sections 61100(a), 61045(b), 61060(a)-(b), and 25120 et seq., and Water Code Sections 375-377, 1009, and 71276-71281 to prescribe and define by ordinance those restrictions, prohibitions and exclusions it may determine to be necessary to restrict the use of District water during threatened or existing water shortages, and is authorized by Government Code Sections 61064(a) and 25132 and Water Code Section 377 to declare violations of this Ordinance to be a misdemeanor.

1.5 The District's Board of Directors, at a duly-noticed public hearing, considered the following evidence regarding water supplies in the District:

- a. The water production records and consumption of water;
- b. The Water Master Plan for the District;
- c. The stipulated judgment, statement of decision and judgment in City of Barstow v. City of Adelanto (Riverside Superior Court Case No. 208568), in which it has been determined that there is an overdraft of the Mojave River Basin Area and each of its respective Subareas, including but not limited to the Subarea of which Phelan Piñon Hills Community Services District is a part;
- d. Current problems existing with respect to the overuse and waste of water provided by the District to certain customers in connection with various uses thereof, including but not limited to irrigation of landscaping and other outdoor vegetation, lawns, and other growth; and
- e. Other relevant evidence.

1.6 It is in the best interest of the public and the customers and users of District water services, for the Board of Directors to exercise its rights in the operation and use of its water system and providing of water, and to find that the prohibitions in this Ordinance are necessary to restrict the use and misuse of water and to prohibit waste of water, until and subject to further action by the District.

1.7 It is therefore the intent of the District's Board of Directors to establish by the Ordinance those procedures required to maximize the beneficial use of its available water resources to the extent to which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented and the conservation of such water is to be extended with a view to the reasonable and beneficial use thereof in the interests of the people of the community served by the District.

1.8 The purpose of the Ordinance is to provide the District with additional tools to control the amount of water utilized within the District's service area, particularly to control potential wasteful uses of scarce water resources when water supplies are limited. The Board of Directors hereby finds that the Ordinance will have a beneficial effect by ensuring that there will be adequate water supplies for all District customers while protecting the public health and safety. Based on the foregoing, the Board of Directors has determined that there is no possibility that the Ordinance have any potential to cause significant effects on the environment, and that, pursuant to the California Environmental Quality Act (Public Resources Code Sections 21000, et seq.) ("CEQA"), the Ordinance does not constitute a "project" under Sections 15061 and 15378 of the State CEQA Guidelines, and is therefore exempt from environmental review.

SECTION 2. DEFINITIONS.

2.1 "District" shall mean the Phelan Piñon Hills Community Services District.

2.2 "Board" shall mean the Board of Directors of the District.

2.3 "General Manager" shall mean that person appointed by the Board pursuant to California Government Code Sections 61050-61051 to manage the activities of the District or his or her designee.

2.4 "Water" shall mean that water supplied by the District.

2.5 "Overdraft" shall mean that wherein the current total annual consumptive use of water in the Mojave Basin Area exceeds the long-term average annual natural water supply to the Basin Area or Subarea.

2.6 "Consumption" or "Consumptive Use" shall mean the total quantity of water used by a water user.

2.7 "Water User" shall mean any person, firm, partnership, association, corporation or political entity using water obtained from the water system of the District.

2.8 "May" shall mean an action which is discretionary.

2.9 "Shall" or "Must" shall mean an action which is mandatory.

2.10 "Water Supply Shortage" shall mean any water shortage caused by drought or any other threatened or existing water shortage, disaster or facility failure, earthquake, extended loss of electrical power, pipeline failure or other condition which results in or threatens to result in the District's inability to meet the water demands of its customers.

2.11 "Waste of Water" shall mean any unreasonable or non-beneficial use of water or any unreasonable method or use of water, including but expressly not limited to, the specific uses, conditions, actions or omissions prohibited or restricted by this Ordinance, as hereinafter set forth.

SECTION 3. WATER SUPPLY PLAN CREATED.

3.1 Stage No. 1. Normal Conditions: Conservation Measures. Normal conditions shall be in effect when the District is able to meet all the water demands of its customers in the immediate future. During normal conditions, all water users shall continue to use water wisely, to prevent the waste or unreasonable use of water, and to reduce water consumption to that necessary for ordinary domestic and commercial purposes. No water user shall allow water to be wasted or misused. All of the following conservation measures

are hereby imposed by the Board and any violation thereof is hereby determined to be a waste of water and is hereby prohibited, and any violation thereof may be enforced by the District pursuant to Section 6 through 12 of this Ordinance.

a. The watering of lawns, grass, shrubbery, ground cover or other landscaping shall not occur at any time between the hours of 9:00 A.M. and 6:00 p.m. during the months of June through October; and shall not occur at any time between 3:00 P. M. and 9:00 A.M. during the remaining months of November through May.

b. The use of water for any purpose which allows flooding or runoff, including but not limited to the flow of water onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures is prohibited.

c. The application of water to driveways, sidewalks, parking lots, or other hard and/or impervious surfaces is prohibited.

d. Allowing the waste of water through leaks or breaks in the users' water system or devices is prohibited. All leaks or breaks shall be repaired immediately upon discovery.

e. The use of a hose that dispenses potable water to wash a motor vehicle is prohibited, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.

f. Water shall not be used in a fountain or other decorative water feature, unless such water is part of a recirculating system.

g. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased, is prohibited.

h. All new construction, including residential, commercial and industrial, shall install water conserving devices as required by law.

i. Water used for cooling systems must be recycled to the extent possible.

j. Evaporation resistant covers and water recirculation systems are required for all swimming pools and hot tubs of at least 600 gallons capacity.

k. Operators of hotels and motels shall post notices urging guests to conserve water and shall provide guests with the option of choosing not to have towels and linens laundered daily. Notice of this option shall be prominently displayed in each guestroom using clear and easily understood language.

l. All current water customers are encouraged to install low flush toilets, shower heads, flow reducers, and faucet aerators.

m. The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall is prohibited.

n. The irrigation with potable water of ornamental turf on public street medians is prohibited.

o. The irrigation with potable water of landscapes outside of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development is prohibited.

p. Exterior landscape plans for all new multi-family, commercial and industrial development shall provide for timed irrigation systems and shall require the use of drought resistant varieties of plants, shrubs, and turf. Such plans shall be presented to and approved by the District prior to issuance of a water service letter. Areas required for turf shall be restricted to no more than 20% of the total landscaped area.

3.2 Stage No. 2. Threatened Water Supply Shortage. In the event of an Executive Order from the Governor's Office, or the adoption of emergency regulations from the State Water Resources Control Board, or a threatened water supply shortage which could affect the District's ability to provide water for ordinary domestic and commercial uses, the Board shall hold a noticed public hearing after giving at least ten days notice by publication in a newspaper of general circulation. At said public hearing, consumers of the water supply shall have the opportunity to testify concerning the threatened water supply shortage and for the District to determine required conservation measures to include restrictions of use and/or requirements for state of art irrigation systems, automatic controllers, use of drought resistant plants, shrubs, and drought resistant turf. The Board may, by Resolution, declare a threatened water supply shortage condition to exist, and may impose any or all of the following additional conservation measures, the violation of which may be enforced by the District pursuant to Sections 6 through 12 of this Ordinance:

a. Agricultural Irrigation. Persons receiving water from the District who are engaged in agricultural practices, whether for the purpose of crop production, growing of commercial ornamental plants or maintaining existing nursery stock shall provide, maintain and use irrigation equipment and practices which are the most efficient possible. The General Manager may require the owner or operators of these systems to prepare a plan describing their irrigation practices and equipment, including but not limited to, an estimate of the efficiency or the use of water on their properties. After review and approval by the General Manager, the agricultural irrigation plan shall be considered subject to inspection and enforcement by the District.

b. **Commercial Facilities.** Commercial and industrial facilities shall, upon request of the General Manager, provide the District with their plan to insure conservation of water at their facilities. The District will provide these facilities with information regarding the average monthly water use by the facility for the last two year period. The facility shall provide the District with a plan to conserve or reduce the amount of water used by that percentage deemed by the Board of Directors to be necessary under the circumstances. After review and approval by the General Manager, the water conservation plan shall be considered subject to inspection and enforcement by the District.

c. No customer of the District, or other person acting on behalf of or under the direction of a customer, shall cause or permit the use of water for irrigation of landscaping or other outdoor vegetation, plantings, lawns, or other growth, to exceed the amount required to provide reasonable irrigation of same, and shall not cause or permit any unreasonable or excessive waste of water from said irrigation activities or from watering devices or systems. The free flow of water away from an irrigated site shall be presumptively considered excessive irrigation and a waste of water.

d. Public and private parks, golf courses, swimming pools, and school grounds which use water provided by the District shall only use water for pool filling between the hours of 10:00 p.m. and 6:00 a.m.

e. All residential, public, and recreational swimming pools, of all size, shall use evaporation resistant covers and shall recirculate water. Any swimming pool which does not have a cover installed during periods of non-use shall be considered a waste of water.

f. The irrigation of exterior vegetation shall be conducted no more than two (2) days per week. The irrigation of exterior vegetation on properties with an even-numbered physical address shall only be permitted on Tuesdays and Saturdays of each week; the irrigation of exterior vegetation on properties with an odd-numbered physical address shall only be permitted on Wednesdays and Sundays of each week. The irrigation of exterior vegetation at other than the above days and times shall be considered a waste of water.

g. The water consumption practices of water users who have not achieved their individual conservation requirement (as established by the Board by separate Resolution adopted pursuant to Section 3.2 above) may be reviewed, restricted, penalized, and enforced by the District.

3.3 Stage No. 3. Water Supply Shortage. In the event of foreseeable water supply shortage, the Board shall hold a public hearing after giving public notice as deemed reasonable by the General Manager under the circumstances. At any public hearing held under this Section, customers of the District shall have the opportunity to protest and to present their respective needs to the Board. Public notice will follow enactment of the water supply shortage by publishing notice of said action in a newspaper of general

circulation. After declaration of any water supply shortage under this Section, the Board may impose the following additional conservation measures, and any other rules and regulations deemed necessary by the Board and/or General Manager, and their violation may be enforced by the District pursuant to Sections 6 through 12 of this Ordinance:

- a. Watering of parks, school grounds and golf courses is prohibited.
- b. Lawn watering and landscape irrigation is prohibited.
- c. Washing of vehicles is prohibited, except when done by commercial vehicle wash equipment using recycled or reclaimed water.
- d. Filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes is prohibited.
- e. No new construction meter permits shall be issued by the District
- f. All existing construction meters shall be removed and/or locked.
- g. Watering of livestock shall only be permitted as necessary.

3.4 Stage No. 4. Water Supply Shortage Emergency. Conservation measures under this stage are mandatory and are meant to result in an approximate 50% reduction in District-wide average water use. In the event of an unforeseeable water supply shortage, the General Manager is authorized to declare a water shortage emergency, subject to the ratification by the Board of Directors at a public hearing held within 72 hours of such declaration, or within such additional time as may be reasonable and necessary under the circumstances. Under this stage, all water use shall be limited to human and animal consumption only until the water shortage emergency is alleviated. The Board and/or General Manager may enforce a violation thereof pursuant to Sections 6 through 12 of this Ordinance.

SECTION 4. IMPLEMENTATION AND TERMINATION OF MANDATORY COMPLIANCE STAGES. The General Manager shall monitor the supply and demand for water on a daily basis to determine the level of conservation required by the water supply shortage or to recommend termination of the water conservation stages, and shall notify the Board of the necessity for the implementation or termination of each stage. Each declaration of the Board implementing or terminating a water conservation stage shall be published at least once in a newspaper of general circulation, and shall remain in effect until the Board otherwise declares, as provided herein.

SECTION 5. EXCEPTIONS.

5.1 Application for Exception Permit. The General Manager may grant permits for uses of water otherwise prohibited under the provisions of this Ordinance if he finds and

determines that special circumstances make compliance impossible, or that restrictions herein would:

a. Emergency - Cause an emergency condition affecting the health, sanitation, fire protection or safety of the water user or of the public.

b. Hardship - Cause an unnecessary and undue hardship to the water user or the public.

Such exceptions may be granted only upon written application therefor. Upon granting such exception permit, the General Manager may impose any conditions he determines to be just and proper.

5.2 Appeal to Board.

a. Deadline - Any person whose application for an exception permit is denied by the General Manager may appeal the denial to the Board. The applicant shall file a written appeal not later than ten (10) days following issuance of the General Manager's decision.

b. Hearing - The appeal shall be scheduled for the next regular meeting of the Board; provided that, the Board may continue the appeal hearing in order to carry out an investigation of the dispute and/or to receive additional information relating to the dispute.

c. Decision of the Board - The Board may affirm or deny any appeal, and may impose any and all conditions that the Board determines to be reasonable and necessary under the circumstances. The decision of the Board shall be final. Should the Board not render a decision within thirty (30) days of submittal of the appeal to the Board, this failure to act shall be deemed to be a denial of the appeal unless both parties have agreed to extend the resolution period.

SECTION 6. INSPECTION. Authorized employees of the District may, after proper identification and notice, during reasonable hours, inspect any facility having a water conservation plan, and may enter onto private property for the purpose of observing the operation of any water conservation device, irrigation equipment or water facility, and to investigate possible violations of this Ordinance. The investigation shall be made with consent of the owner or tenant of the property. If consent is refused, the District may apply to the Superior Court for a warrant pursuant to California Code of Civil Procedure Section 1822.50, et seq.

SECTION 7. NOTICE.

7.1 First Violation. For a first violation, written notice shall be given to the customer and/or property owner personally or by regular mail.

7.2 Subsequent Violations. If the penalty assessed is a surcharge for a second or third violation, notice may be given by regular mail.

7.3 Violations Involving Installation of Flow-Restrictors or Discontinuance of Water Service. If the penalty assessed is, or includes, the installation of a flow restrictor or the discontinuance of water service to the customer for any period of time, notice of the violation shall be given in the following manner:

a. By giving written notice thereof to the occupant and/or property owner personally; or

b. If the occupant and/or property owner is absent from his/her place of residence and from his/her assumed place of business, by leaving a copy with some person of suitable age and discretion at either place, and sending a copy through the United States mail addressed to the occupant and/or owner at his/her place of business or residence; or

c. If such place of residence and business cannot be ascertained, or a person of suitable age or discretion cannot be located, then by affixing a copy in a conspicuous place on the property where the failure to comply is occurring and also by delivering a copy to a person there residing, if such person can be found, and also sending a copy through the United States mail addressed to the occupant at the place where the property is situated and to the owner, if different.

d. Form of Notice. All notices provided for in this Section shall contain, in addition to the facts of the violation, a statement of the possible penalties for each violation and a statement informing the occupant/owner of his/her right to a hearing on the violation.

SECTION 8. HEARING.

8.1 General Manager Hearing. Any customer or property owner, against whom a penalty is levied pursuant to this Ordinance, shall have a right to a hearing. A written request for a hearing before the General Manager shall be filed with the General Manager within ten (10) business days after notification by the District of the alleged violation.

8.2 Appeal. The customer or property owner may appeal the General Manager's decision to the Board. Such appeal shall be filed within ten (10) business days of issuance of the General Manager's decision. The appeal shall be scheduled at the next regularly scheduled meeting of the Board; provided that, the Board may continue the appeal hearing in order to carry out an investigation of the dispute and/or to receive additional information relating to the dispute. The customer or property owner may appear and present any evidence in support of his/her position to the Board.

8.3 Decision of the Board. The Board may affirm, reverse or modify the decision of the General Manager, in its discretion. The decision of the Board shall be final. Should the Board not render a decision within thirty (30) days of submittal of the appeal to the Board, this failure to act shall be deemed to be a denial of the appeal unless both parties have agreed to extend the resolution period.

SECTION 9. ENFORCEMENT. Violators of the mandatory provisions of this Ordinance shall be subject to surcharge and other enforcement rights of the District, as follows:

9.1 First Violation: For a first violation, the District shall issue a written notice of violation to the water user violating the provisions of this Ordinance. The notice shall be given pursuant to the requirements of Section 7 herein.

9.2 Second Violation: \$250.00 Surcharge. For a second violation of this Ordinance within a 6-month period, or for failure to comply with the notice of violation within the period stated, a surcharge of up to \$250.00 is hereby imposed for the meter through which the wasted water was supplied.

9.3 Third Violation: \$500.00 Surcharge and/or Installation of Flow Restrictor. For a third violation of this Ordinance within a 12-month period, or for continued failure to comply within 30 days after notice and imposition of second violation sanctions, a monthly penalty surcharge in the maximum amount of \$500.00 is hereby imposed for the meter through which the wasted water was supplied and will continue until the violation is corrected to the satisfaction of the District. In addition to the surcharge, the District may, at its discretion, install a flow-restricting device at such meter with a one-eighth inch orifice for services up to one and one-half inch size, and comparatively sized restrictors for larger services, on the service of the customer at the premises in which the violation occurred for a period of not less than 48 hours. The charge to the customer for installing a flow-restricting device shall be based upon the size of the meter and the actual cost of installation but shall not be less than that provided in the District's Rules and Regulations. The charge for removal of the flow-restricting device and restoration of normal service shall be as provided in the District's Rules and Regulations.

9.4 Subsequent Violations: Discontinuance of service. For any fourth and/or subsequent violation of this Ordinance within 24 calendar months after the first violation as provided in Section 9.1. hereof, the penalty surcharge provided in Section 9.3. hereof shall be imposed and the District may discontinue water service to that customer at the premises or to the meter where the violation occurred. The charge for reconnection and restoration of normal service shall be as provided in the Rules and Regulations of the District. Such restoration of service shall not be made until the General Manager of the District has determined that the water user has provided reasonable assurances that future violations of this Ordinance by such user will not occur.

SECTION 10. INJUNCTION. In addition to the remedies set forth in this Ordinance, the District may file a civil action to compel compliance with this Ordinance, including but expressly not limited to, an action to enjoin any pending or future violations of the Ordinance, or for the issuance of an order stopping or disconnecting a service if the charges for that service are unpaid at the time specified in the Ordinance.

SECTION 11. ENFORCEMENT OFFICER. The General Manager is hereby declared and appointed as the enforcement officer of this Ordinance, and shall be empowered to take such other actions as authorized herein, or as may otherwise be authorized by the Board or be reasonably necessary, for enforcement of the Ordinance.


SECTION 12. RESERVATION OF RIGHTS. All remedies set forth in this Ordinance are herein declared to be cumulative and non-exclusive, and shall not preclude the District from enforcing any other rights or remedies to discontinue service and/or otherwise enforce this Ordinance or any other rules and regulations of the District.

SECTION 13. SEVERABILITY. If any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be unconstitutional or invalid, such decisions shall not affect the validity of the remaining portions of this Ordinance.

SECTION 14. PUBLICATION AND POSTING. The Secretary of the Board is hereby directed to cause a summary of this Ordinance to be published at least five (5) days prior to the date of adoption hereof in a newspaper of general circulation printed and a copy of the full text must be posted at the District office at least five (5) days prior to the meeting. The full text of this Ordinance must be published within ten (10) days after adoption with the names of the directors voting for and against the adoption, and must likewise be posted at the District office.

SECTION 15. EFFECTIVE DATE. This Ordinance supersedes Ordinance No. 2015-02 adopted by the Board on July 1, 2015, and shall become effective immediately upon its adoption.

APPROVED AND ADOPTED this 16th day of March, 2016.


President of the Phelan Piñon Hills
Community Services District and
of the Board of Directors thereof.

STATE OF CALIFORNIA)
)
COUNTY OF SAN BERNARDINO)


I, Kimberly Ward, Secretary of the Board of Directors of the Phelan Piñon Hills Community Services District, do hereby certify that the foregoing Ordinance, being Ordinance No. 2016-01, was duly adopted by the Board of Directors of said District at a regular meeting of said Board held on March 16, 2016, and that it was so adopted by the following vote:

AYES: Brandon, Morrissette, Roberts, Whalen

NOES: Pace

ABSENT:

ATTEST:



Secretary of the Phelan Piñon Hills
Community Services District and
of the Board of Directors thereof.

SEAL

Appendix L- Notification of Preparation of 2020 UWMP



A. 4176 Warbler Road
P.O. Box 294049
Phelan, CA 92329
P. (760) 868-1212
F. (760) 868-2323
W. www.pphcsd.org

January 7, 2021

Nicholas Schneider
Water Conservation & Forecast Manager
Executive Director of AWAC
Mojave Water Agency
22450 Headquarters Dr
Apple Valley, CA 92307

Reference: Notification to Review and Comment on 2020 Urban Water Management Plan

Dear Mr. Schneider,

The Urban Water Management Planning Act requires each urban water supplier to update its Urban Water Management Plan (UWMP) at least once every five (5) years. The UWMP provides information on water supply and demand forecasts, water shortage contingency planning, and other ongoing activities to demonstrate the water supplier's ability to meet existing and future demands.

As an urban water supplier, Phelan Piñon Hills Community Services District (PPHCSD) is currently updating its 2015 UWMP which was last adopted by the Board of Directors in June 2016. Pursuant to California Water Code Division 6, Part 2.6, Section 10621, we are notifying any City, County, or water agency within which PPHCSD provides water supplies that the UWMP is being reviewed and updated.

A draft of our 2020 UWMP will be provided in the coming months and we invite you to review and submit any comments. Please note that the updated plan is to be submitted by July 1st, 2021 to the California Department of Water Resources. Please contact George Cardenas at (760) 868-1212 ext. 311 if you have any questions about PPHCSD's 2020 UWMP update.

Sincerely,



George Cardenas
Engineering Manager
Phelan Piñon Hills Community Services District





A. 4176 Warbler Road
P.O. Box 294049
Phelan, CA 92329
P. (760) 868-1212
F. (760) 868-2323
W. www.pphcsd.org

January 7, 2021

Gabriela Garcia
EHS Environmental Health Specialist
County of San Bernardino
Division of Environmental Health Services
385 North Arrowhead Avenue, 2nd Floor
San Bernardino, CA 92415

Reference: Notification to Review and Comment on 2020 Urban Water Management Plan

Dear Ms. Garcia,

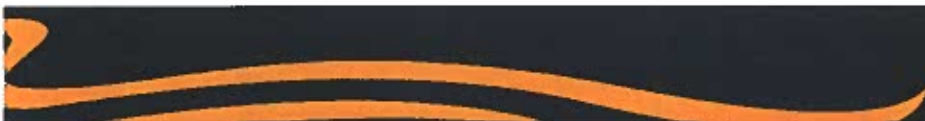
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A draft of our 2020 UWMP will be provided in the coming months and we invite you to review and submit any comments. Please note that the updated plan is to be submitted by July 1st, 2021 to the California Department of Water Resources. Please contact George Cardenas at (760) 868-1212 ext. 311 if you have any questions about PPHCSD's 2020 UWMP update.

Sincerely,

George Cardenas
Engineering Manager
Phelan Piñon Hills Community Services District



Appendix M- Notice of the Public Hearing of 2020 UWMP and WSCP



A. 4176 Warbler Road
P.O. Box 294049
Phelan, CA 92329
P. (760) 868-1212
F. (760) 868-2323
W. www.pphcsd.org

April 27, 2021

Nicholas Schneider
Water Conservation & Forecast Manager
Executive Director of AWAC
Mojave Water Agency
22450 Headquarters Dr
Apple Valley, CA 92307

Reference: Notification of Public Hearing and Comment Period for 2020 Urban Water Management Plan and Water Shortage Contingency Plan

Dear Mr. Schneider,

As an urban water supplier, Phelan Piñon Hills Community Services District (PPHCSD) is currently updating its 2015 UWMP which was last adopted by the Board of Directors in June 2016. Pursuant to California Water Code Division 6, Part 2.6, Section 10642, PPHCSD will be holding a Public Hearing regarding the District's 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP). The following are details of time and venue of the Public Hearing:

Date: Wednesday, June 2nd, 2021 at 6:00 PM

Venue: Phelan Community Center located at 4128 Warbler Road, Phelan, CA 92371

A draft of our 2020 UWMP is located at the District's office and website <https://www.pphcsd.org/> and we invite you to review and submit any comments. The updated plan is to be submitted to the California Department of Water Resources by July 1st, 2021.

Please contact George Cardenas at (760) 868-1212 ext. 311 if you have any questions about PPHCSD's 2020 UWMP update.

Sincerely,

George Cardenas
Engineering Manager
Phelan Piñon Hills Community Services District





A 4176 Warbler Road
P.O. Box 294049
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P (760) 868-1212
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W www.pphcsd.org

April 27, 2021

Gabriela Garcia
EHS Environmental Health Specialist
County of San Bernardino
Division of Environmental Health Services
385 North Arrowhead Avenue, 2nd Floor
San Bernardino, CA 92415

Reference: Notification of Public Hearing and Comment Period for 2020 Urban Water Management Plan and Water Shortage Contingency Plan

Dear Ms. Garcia,

As an urban water supplier, Phelan Piñon Hills Community Services District (PPHCSD) is currently updating its 2015 UWMP which was last adopted by the Board of Directors in June 2016. Pursuant to California Water Code Division 6, Part 2.6, Section 10642, PPHCSD will be holding a Public Hearing regarding the District's 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP). The following are details of time and venue of the Public Hearing:

Date: Wednesday, June 2nd, 2021 at 6:00 PM

Venue: Phelan Community Center located at 4128 Warbler Road, Phelan, CA 92371

A draft of our 2020 UWMP and 2020 WSCP will be located at the District's office and website <https://www.pphcsd.org/> and we invite you to review and submit any comments. The updated plan is to be submitted to the California Department of Water Resources by July 1st, 2021.

Please contact George Cardenas at (760) 868-1212 ext. 311 if you have any questions about PPHCSD's 2020 UWMP update.

Sincerely,

George Cardenas
Engineering Manager
Phelan Piñon Hills Community Services District



Appendix N- Resolution 2021-13

RESOLUTION NO. 2021-13
A RESOLUTION OF THE BOARD OF DIRECTORS
OF THE PHELAN PIÑON HILLS COMMUNITY SERVICES DISTRICT,
COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA,
ADOPTING THE DISTRICT'S 2020 URBAN WATER MANAGEMENT PLAN
AND WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, the California Water Management Planning Act, Water Code Section 10610 et seq. ("Act"), requires urban water suppliers providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre-feet of water annually, to prepare an Urban Water Management Plan ("UWMP"), the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, Act further requires urban water suppliers providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre-feet of water annually, to also prepare a Water Shortage Contingency Plan ("WSCP") as part of its UWMP; and

WHEREAS, the Phelan Piñon Hills Community Services District ("District") is an urban supplier of retail water services to a population of over 19,000; and

WHEREAS, the Act requires that the UWMP shall be periodically reviewed at least once every five years, and mandates that the District make any amendments or changes to its UWMP which are indicated in the review; and

WHEREAS, the UWMP and WSCP must be adopted by July 1, 2021, after public review and hearing, and filed with the California Department of Water Resources ("DWR") within thirty days of adoption; and

WHEREAS, the District has therefore prepared and circulated for public review a draft UWMP and WCSP, and a properly noticed public hearing regarding said UWMP and WSCP was held by the Board of Directors on June 16, 2021; and

WHEREAS, the District did prepare, and shall file, said UWMP and WSCP with the California Department of Water Resources.

NOW, THEREFORE BE IT RESOLVED, the Board of Directors of the Phelan Piñon Hills Community Services District does hereby, by this Resolution, authorize the adoption of its 2020 Urban Water Management Plan and Water Shortage Contingency Plan, and orders the filing of said UWMP and WSCP with DWR.

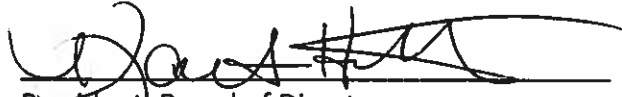
Approved and adopted this 16th day of June, 2021.

I, the undersigned, hereby certify that the foregoing Resolution Number 2021-13 was duly adopted by the Board of Directors following a roll call vote:

Ayes: Hoffman, Johnson, Kujawa, Philips, Roberts

Noes:

Absent:



President, Board of Directors

Phelan Piñon Hills Community Services District

ATTEST:



Secretary, Board of Directors

Phelan Piñon Hills Community Services District